F2003-0019
(2)

DECONTAMINATION OF

SYLCOR 1293 AREA

HICKSVILLE, LONG ISLAND, NEW YORK

F. J. Bradley, Ph.D.
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ISOTOPES, INC.
123 Woodland Ave.
Westwood, New Jersey

213573

DOE's Response to Estevez
FOIA F2003-00195

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I. INTRODUCTION

A. Initial Surveys

The planning and execution of the decontamination operations at the Sylcor Area #1293 was under the direction of Dr. F. J. Bradley, Health Physicist to Isotopes, Inc. The decontamination plan was prepared as a result of a complete survey of the area, and subsequent experience required little modification to the original concept. The time schedule was closely adhered to for the decontamination operation per se, but slippage occurred by the difficulties experienced in transporting the wastes off-site. This latter contingency was not, however, under the immediate control of Isotopes, Inc.

The surveys were made using an alpha survey meter (Eberline Model PAC-3G) for the determination of fixed contamination levels, and smears were taken using Whatman 41 filter paper to determine levels of transferable contamination. All smears pre- and post-decontamination were counted in a windowless gas flow counter operating in the alpha proportional region and having an absolute counting efficiency of 50%. Both the windowless flow counter and the Eberline Instrument Company PAC-3G portable counter were calibrated with a Pu-239 alpha standard with an activity of 2914 dpm.

B. Cleaning Techniques

The general decontamination procedure was to first survey, then in turn dry vacuum, scrub and wash, wet vacuum, followed by a further survey. The procedure would be repeated until decontamination was complete or the surface removed. The procedure was, in fact, repeated for several areas four times

before it became apparent that complete removal of the area was required. On the other hand, Building #8 was demolished and the surrounding concrete and macadam removed without prior attempts at decontamination except for dry vacuuming.

Liquid wastes generated in the scrubbing, washing and wet vacuuming operation were transferred to steel drums and vermiculite added to convert from liquid to solid wastes.

Personnel involved were provided with disposable cover clothing, shoe covering, gloves, and respirators where necessary. All heavy construction equipment used in decontamination operations were monitored by Isotopes, Inc. before reverting back to normal non-radiation use.

II. SCHEDULE OF DECONTAMINATION OPERATIONS

A. Building #1

1. Pre-Decontamination Survey

The building was divided for operational convenience into 59 sections encompassing approximately 20,000 square feet within the confines of a one-story structure. The results of the initial smear survey are givin in Appendix A. This survey indicated that extensive deoontamination would be required in the metallographic and adjacent laboratory areas (Sections 14, 15, 24, 25, 26, 27 and 28). The floors in these areas were covered with linoleum tile, or a mastic floor covering and the rooms were serviced by seven exhaust ducts, at least four of which were internally contaminated.

Sections 49 and 52 housed a conveyor area which was contaminated with uranium in soluble form. Since the area was covered in part with brick or ceramic tile it was assumed that some of the uranium had penetrated the cracks and that brick and tile, in part at least, would need to be removed. Two areas adjacent to the conveyor area, Sections 51 and 54, also showed evidence of smearable contamination and would require decontamination.

On the roof of Building #1 there were two areas which required decontamination. The exhaust system including fan and filter for the metallographic area would need to be removed and a contaminated wooden shack over section 52 cut down.

The exterior concrete area adjoining section 52 was also found to be contaminated. Since soluble uranium had penetrated the porous concrete to an unknown depth, the standard decontamination procedure would be followed initially, but should these procedures prove ineffective the concrete would be removed.

2. Decontamination

In room 14 the contaminated ductwork was removed by cutting down, sealing the ends with plastic sheet and passing up to the roof through a hole in the ceiling. This procedure facilitated removal and also prevented spread of activity in the building. The ductwork was then lowered off the roof and placed onto trucks for shipment off-site as radioactive waste. The walls and floor were then subjected to the standard decontamination procedure. Altogether this procedure was repeated three times. In some places one layer of floor tile in others two layers of tile had to be removed before the room was brought within acceptable limits.

Rooms 15, 24, 25, 26, 27 and 28 were decontaminated in the standard manner together with the removal of tile of "mastic" floor covering in a few places.

The plating area comprising sections 49 and 52 were decontaminated three times by the standard procedure which brought the smearable contamination well within limits, but nevertheless fixed contamination levels remained above acceptable limits. In the final washing in this area dilute hydrochloric acid solutions with "Radiac Wash" were used,but this appeared to increase the level of surface contamination since uranium was brought up through the cracks. Since the prescribed limits could not be reached by washing and scrubbing, all of the ceramic tile and about one quarter of the facing brick on conveyor pad were removed. This procedure exposed several further contaminated areas and the whole area was cleaned again.

Sections 51 and 54 were simply washed and scrubbed three times and were readily brought within limits.

Three more areas in Sections 48 and 56 not included in the preliminary survey were found to be contaminated but responded to decontamination by standard techniques.

On the roof the filtering system for section 14 was cut down and lowered off the roof. The wooden shack over section 52 was removed in a similar manner.

Several areas in the building which were within the acceptable range for transferable contamination, but not fixed contamination, were covered over with a permanent plastic sealer. These areas were found to be isolated instances and not general in extent. The only alternative would have been the removal of the concrete floor.

The concrete pad outside section 52 was washed, scrubbed, vacuumed four times, the last time with an acid solution of pH3. Despite such vigorous washing and scrubbing, even with metal brushes, the fixed contamination limits were not reached. In fact, the acid solution appeared again to have the effect of bringing dissolved uranium to the surface. This whole concrete area was therefore removed and the concrete shipped off-site.

B. Building #2

1. Pre-Decontamination Survey

Building #2 was a one story, wooden frame structure with an area of approximately 32,000 square feet. The uranium which had been in this building proved less soluble than that in Building #1 and therefore the washing procedure might be less effective than scrubbing. The building for purposes of the survey and decontamination was divided into 45 sections.

Portions of section #27 gave survey meter readings above 2000 dpm/100cm^2 although smears were within the acceptable range. Since the floor was covered in part with a layer of grease it was felt that the use of grease cutting agents in cleaning solution would remove the contaminant.

Sections 33 and 34 were a locker washroom with tile floor; standard decontamination procedure with removal of tile where necessary was anticipated for this area.

Section 45 showed evidence of considerable floor contamination. It was expected that two repeat standard decontamination procedures with possible removal of some concrete layers would be sufficient.

Two areas, one exterior to section 20 and the other exterior to section 27, were thought to require decontamination by cleaning and possibly by removal of concrete.

2. Decontamination

Section 27 was given the standard decontamination procedure and brought to within acceptable limits after three washing-scrubbing combinations. The section was more generally contaminated than originally thought and therefore the whole machine shop area (sections 27 and 30) was thoroughly cleaned. Apparently the contamination had not penetrated deeply since the area was decontaminated relatively easily. In checking the ceiling a heavily contaminated exhaust duct was discovered and this required careful cutting and subsequent removal to prevent the spread of contaminated dust.

Sections 32, 33, 34, 35 and 38 were washed and scrubbed and readily brought within limits.

The Production Machining Section, 45, was decontaminated using the standard procedures three times followed by an acid solution of pH3. Uranium was found embedded in the tape which outlined access walks in the room. Removal of the tape left no residual traces. The room was brought within acceptable limits for removable contamination with few problems but more difficulty was experienced with fixed contamination.

Section 31 was decontaminated by washing and scrubbing and the removal of dry-wall up to a height of five feet on one wall.

The exterior areas adjacent to sections 20 and 27 were cleaned by vigorous washing and scrubbing.

In a few areas in Building #2 which were within acceptable limits for transferable contamination, but not for fixed, were covered with a permanent plastic sealer.

C. Building #7

1. Pre-Decontamination Survey

The concrete floor of Building #7 showed relatively low levels of contamination. One or possibly two standard decontamination procedures were deemed adequate to reduce the contamination level to acceptable limits.

2. Decontamination

The floor and walls up to a height of five feet were cleaned twice in the standard manner and the activity levels in the building were thereafter within acceptable limits.

D. Building #8 and Adjoining Exterior Areas

1. Pre-Decontamination Survey

This building was the most heavily contaminated of the buildings

surveyed. The building had a concrete base with center structure fabricated from cinder block and additions to each side constructed with "Transite." There was a concrete drive up to one of the "Transite" additions and a macadam drive up to the other. Around the rear of the building there was a concrete walk that also proved contaminated. Within the building the contamination extended onto the walls of the structure. Because of the extensive interior and exterior contamination and the type of construction materials, used, it was proposed to demolish the building and remove the contaminated concrete and macadam around the building.

After all the utilities had been turned off, the building would first be dry vacuumed to reduce potential hazards during demolition. The building would then be carefully demolished with the aid of a bulldozer. All demolition equipment would be checked before removal from the premises

2. Decontamination

The interior of the building was vacuumed and then all of the utilities turned off. A bulldozer with a 14 foot blade was used to demolish the building and the debris was stacked for shipment off-site. The contaminated concrete and macadam between Building #8 and section 45, Building #2 was totally removed and also stacked for shipment off-site. During the course of this operation the bulldozer unearthed an uncharted sump approximately 15 feet in diameter by 20 feet deep and narrowly escaped an accident.

E. Other Areas

1. Pre-Decontamination Survey

Meter readings on the soil on which 30 and 55 gallon drums were stored between buildings 6 and 7 and sump #2 indicated heavy soil contamination.

It was proposed that the top four inches of soil would be removed on removal of of the contaminated drums.

All three sumps were checked but only sump #3 indicated levels requiring extensive decontamination. Removal of the top four inches of soil from this sump was also recommended.

2. Decontamination

The contaminated soil between Buildings 6 and 7 and sump #2 was removed with the aid of a bulldozer. The soil was then placed in sealed drums and shipped off-site.

In the case of sump #3, the removal of the top soil layer proved more difficult. The bottom of the sump was about 15 feet below grade which prevented the use of a bulldozer. Nor was it possible for personnel to stand in the bottom of the sump to perform manual operations due to the soft texture of the soil. The most effective method of removing the top soil layer was by the use of a crane with bucket. The soil was removed by this means and placed aboard tractor trailers for removal off-site.

III. COMMENTS AND CONCLUSIONS

Fifteen truckloads averaging 20 tons each for a total of 300 tons of contaminated waste material was shipped off-site starting on 9 November 1965 and ending on 27 December 1965. This material was placed on the truck in drums of bins using a forklift, crane or payloader.

All of the equipment used by Isotopes, Inc. in the decontamination operation was cleaned and checked before removal off-site. Because the decontamination techniques which were used tended to reduce air contamination, respirators were needed only when it was necessary to cut out contaminated ductwork. Twenty-four pre- and post-decontamination urine samples were collected and analyzed and all were found to be within the normal background range.

Five soil samples and two water samples and a tap water sample were analyzed by fluorimetry for uranium. The results are given in Appendix I. Since there was no water in sump #3 when the sumps were sampled, the probable uranium water concentration was estimated based on the results found for the ratio of water to soil activity in sumps #1 and #2.

The Appendix summarizes the health physics efforts in cleaning the 1293 area. In Appendix I the final decontamination survey and certificate are reproduced together with an addendum for the survey of the roof of Building #2 and the radiochemical results on the soil and water samples from the sumps. Appendix II reproduces the intermediate smear results which were taken following dry vacuum, scrub, wash and wet vacuum sequence. This was not done following each sequence in every area because experience had shown from the early surveys that two and usually three sequences were required to bring a contamin-

ated area within the prescribed limits, and intermediate surveys were deemed unecessary. With the techniques and cleaning solutions which were used there was no area which could not be brought well below 100 dpm/100cm^2 removable contamination. Furthermore, with personnel control that was employed no spread of activity outside of originally contaminated areas was experienced. On the other hand, more difficulty was experienced in decontaminating to less than 2,000 dpm/100cm^2 fixed activity. This was partly the result of the depth to which the contamination had penetrated, and the porous surface of most contaminated areas. In some areas, such as Building #1, section 52, and the exterior concrete pad adjacent to it which were decontaminated below 100 dpm/100cm^2 removable the surfaces had to be removed because the average fixed contamination was greater than an average 2,000 dpm/100 cm^2. The acid solutions did not prove as effective as one might have hoped in decontamination since they dissolved the contaminant in the porous cracks and brought it to the surface where it was not entirely removed by wash solution.

Approximately 900 smears were taken on all surfaces in the course of the pre-, intermediate-, and post-contamination surveys. These smears covered an actual area of 100 square feet and, taken together with a spreading factor of about 10 square feet, an estimated 10,000 square feet was carefully checked out of a total floor area of 50,000 square feet. It is felt that such surveillance leaves only a small probability that areas above 100 dpm/100cm^2 removable and 2,000 dpm/100 cm^2 average fixed still exist in the 1293 area.

APPENDIX I

Copy of Original Decontamination

Certificate with Addendum

CERTIFICATE OF DECONTAMINATION

This is to certify that the following location

Sylvania Electric Products, Inc.
Sylcor Division
1293 Area
Cantiague Road
Hicksville, New York 11802

has been decontaminated to the following limits

0 to 100 alpha dpm per 100 cm^2 transferable contamination

and 0 to 2,000 alpha dpm per 100 cm^2 fixed contamination.

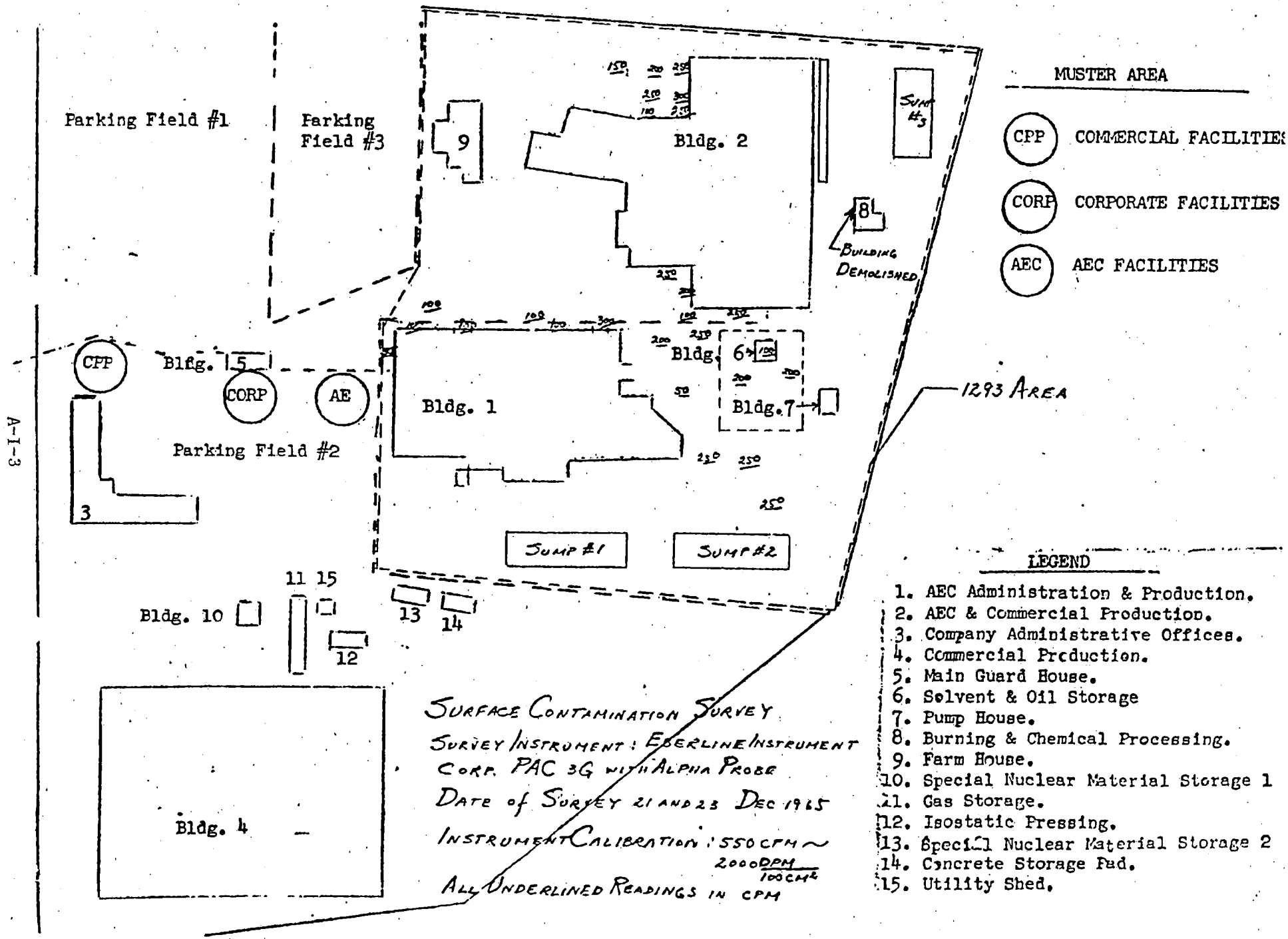
Transferable contamination was determined with a windowless flow counter operating in the alpha proportional region. The counter was calibrated with a Pu-239 alpha standard with an activity of 2914 dpm and operated with an efficiency of 50%.

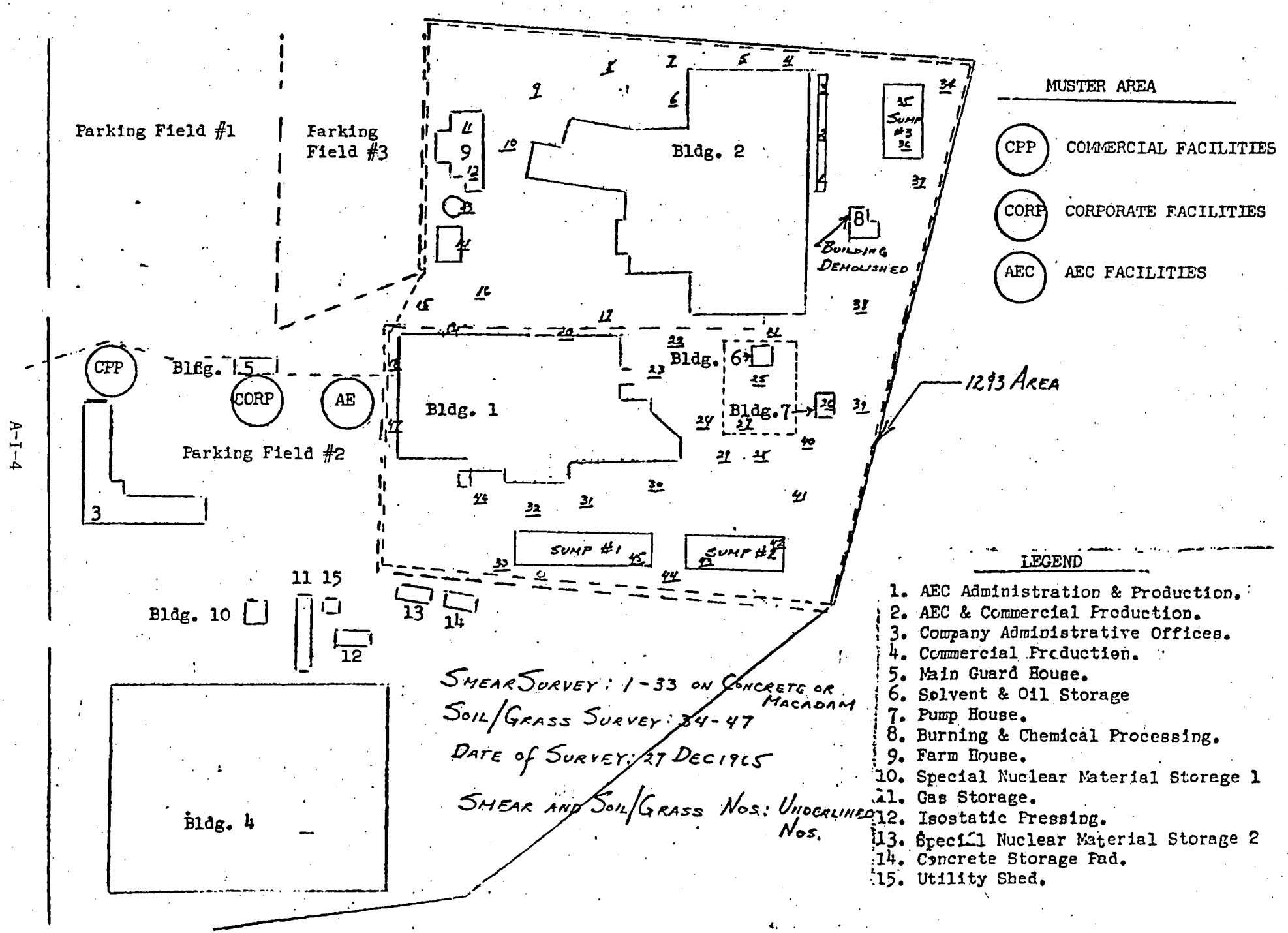
Fixed contamination was determined with an Eberline Instrument Corporation Model PAC-3G Gas Proportional Alpha Counter. This instrument was calibrated with a Pu-239 alpha standard with an activity of 2914 dpm. Overall efficiency, including area correction, was 27%. Meter response equivalent to 2,000 alpha dpm per 100 cm^2 was therefore 540 cpm.

The above location is decontaminated in conformity with the State of New York Industrial Code Rule Number 38-29. All work performed in accordance with U. S. Atomic Energy Commission Title 10, Part 20 and New York State Industrial Code Rule 38.

T. J. Bradley

Head, Health Physics Section
January 3, 1966


Parking Field #1
Parking Field #3
Parking Field #2
Bldg. 2
Bldg. 1
Bldg. 4
Bldg. 5
Bldg. 6
Bldg. 7
Bldg. 10
Sump #1
Sump #2
Sump #3
Building Demolished
CPP
CORP
AE
1293 Area
MUSTER AREA
CPP COMMERCIAL FACILITIES
CORP CORPORATE FACILITIES
AEC AEC FACILITIES
LEGEND
1. AEC Administration & Production.
2. AEC & Commercial Production.
3. Company Administrative Offices.
4. Commercial Production.
5. Main Guard House.
6. Solvent & Oil Storage
7. Pump House.
8. Burning & Chemical Processing.
9. Farm House.
10. Special Nuclear Material Storage 1
11. Gas Storage.
12. Isostatic Pressing.
13. Special Nuclear Material Storage 2
14. Concrete Storage Pad.
15. Utility Shed.
Surface Contamination Survey
Survey Instrument: Eberline Instrument Corp. PAC 3G with Alpha Probe
Date of Survey 21 and 23 Dec 1965
Instrument Calibration: 550 cpm ~ 2000 DPM / 100 cm²
All Underlined Readings in cpm
A-1-3



LEGEND

1. AEC Administration & Production.
2. AEC & Commercial Production.
3. Company Administrative Offices.
4. Commercial Production.
5. Main Guard House.
6. Solvent & Oil Storage
7. Pump House.
8. Burning & Chemical Processing.
9. Farm House.
10. Special Nuclear Material Storage 1
11. Gas Storage.
12. Isostatic Pressing.
13. Special Nuclear Material Storage 2
14. Concrete Storage Pad.
15. Utility Shed.

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor 1293 Area (Exterior) Date of Survey 12/27/65

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12/29/65

Person Doing Survey E. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS (Pu^{239})
STD#1	2863	2	1431.5			$\frac{dpm}{cpm} = \frac{2914}{1432} - 2.04$
BG#1	2	2	1.0			
BG#2	3	2	1.5			
BG#3	5	2	2.5	1.7 avg.		
1	3	2	1.5	-		
2	4	2	2.0	0.3	0.6	
3	5	2	2.5	0.8	1.6	
4	1	2	0.5	-	-	
5	3	2	1.5	-	-	
6	6	2	3.0	1.3	2.6	
7	7	2	3.5	1.8	3.6	
8	4	2	2.0	0.3	0.6	
9	6	2	3.0	1.3	2.6	
10	2	2	1.0	-	-	
11	8	2	4.0	2.3	4.6	
12	2	2	1.0	-	-	
13	3	2	1.5	-	-	
14	2	2	1.0	-	-	
15	5	2	2.5	0.8	1.6	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor 1293 Area (Exterior) Date of Survey: 12/27/65

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 12/29/65

Person Doing Survey: F. J. Bradley Person Doing Counting: F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
16	4	2	2.0	0.3	0.6	
17	3	2	1.5	-	-	
18	7	2	3.5	1.8	3.6	
19	5	2	2.5	0.8	1.6	
20	2	2	1.0	-	-	
21	9	2	4.5	2.8	5.6	
22	4	2	2.0	0.3	0.6	
23	9	2	4.5	2.8	5.6	
24	9	2	4.5	2.8	5.6	
25	7	2	3.5	1.8	3.6	
26	14	2	7.0	5.3	10.6	
27	5	2	2.5	0.8	1.6	
28	8	2	4.0	2.3	4.6	
29	9	2	4.5	2.8	5.6	
30	6	2	3.0	1.3	2.6	
31	10	2	5.0	3.3	6.6	
32	5	2	2.5	0.8	1.6	
33	5	2	2.5	0.8	1.6	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor: 1293 Area (Exterior) Date of Survey: 12/27/65

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 12/31/65

Person Doing Survey: F. J. Bradley Person Doing Counting: F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/β gram sample	REMARKS
34	8	2	4.0	3.2	6.4	Soil/Grass Samples
35	22	2	11.0	10.2	20.4	Soil/Grass Samples
36	28	2	14.0	13.2	26.4	Soil/Grass Samples
37	21	2	10.5	9.7	19.4	Soil/Grass Samples
38	4	2	2.0	0.2	0.4	Soil/Grass Samples
39	63	2	31.5	30.7	61.4	Soil/Grass Samples
40	15	2	7.5	6.7	13.4	Soil/Grass Samples
41	14	2	7.0	6.2	12.4	Soil/Grass Samples
42	8	2	4.0	3.2	6.4	Soil/Grass Samples
43	17	2	8.5	7.7	15.4	Soil/Grass Samples
44	8	2	4.0	3.2	6.4	Soil/Grass Samples
45	10	2	5.0	4.2	8.4	Soil/Grass Samples
46	7	2	3.5	2.7	5.4	Soil/Grass Samples
47	1	2	0.5	-	-	Soil/Grass Samples

HP Form I

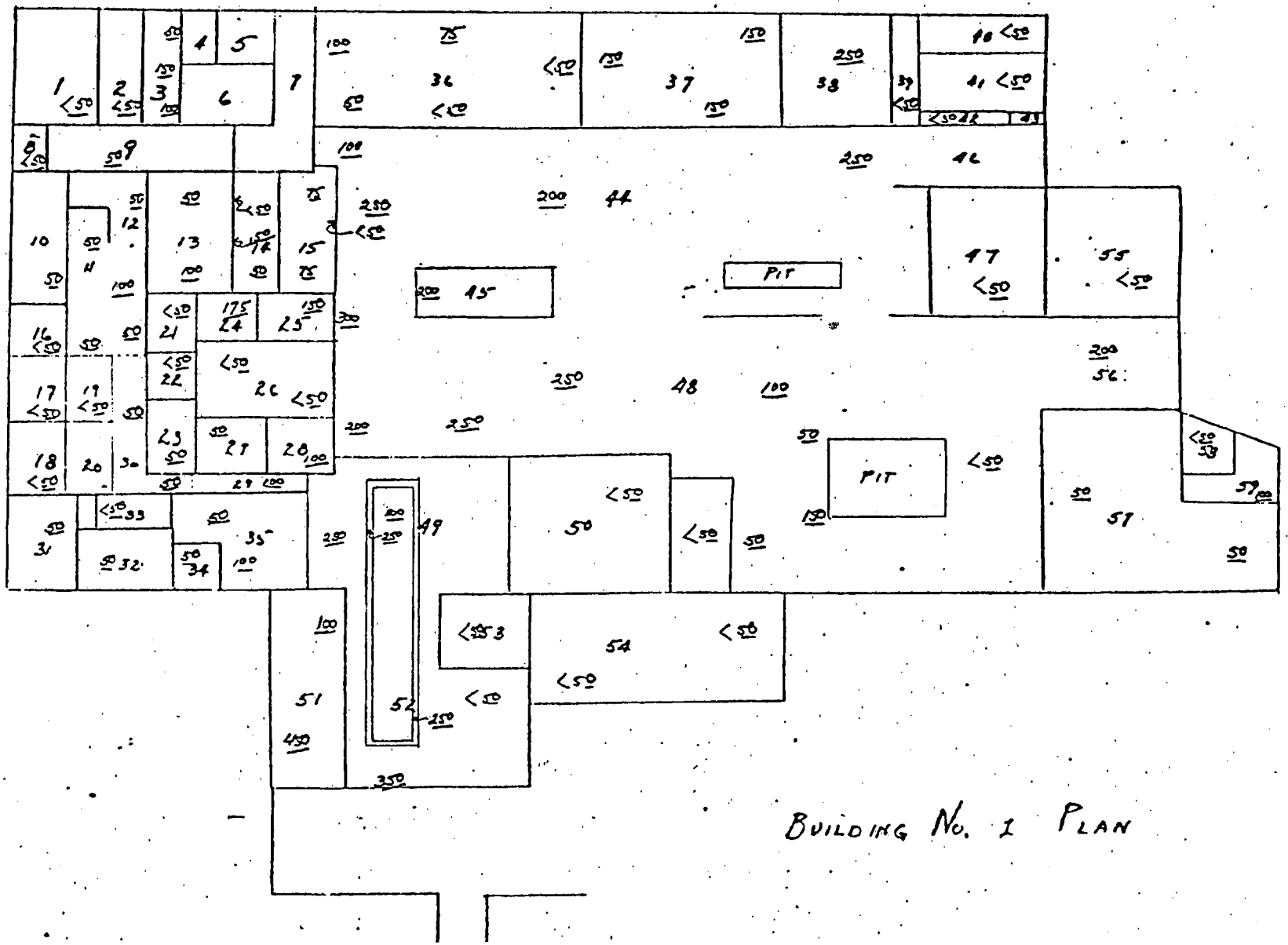
SURFACE CONTAMINATION LEVEL

SURVEY INSTRUMENT: EBERLINE INSTRUMENT CORP. : PAC-3G WITH ALPHA PROBE

DATE of SURVEY 27 AND 30 DEC 1965

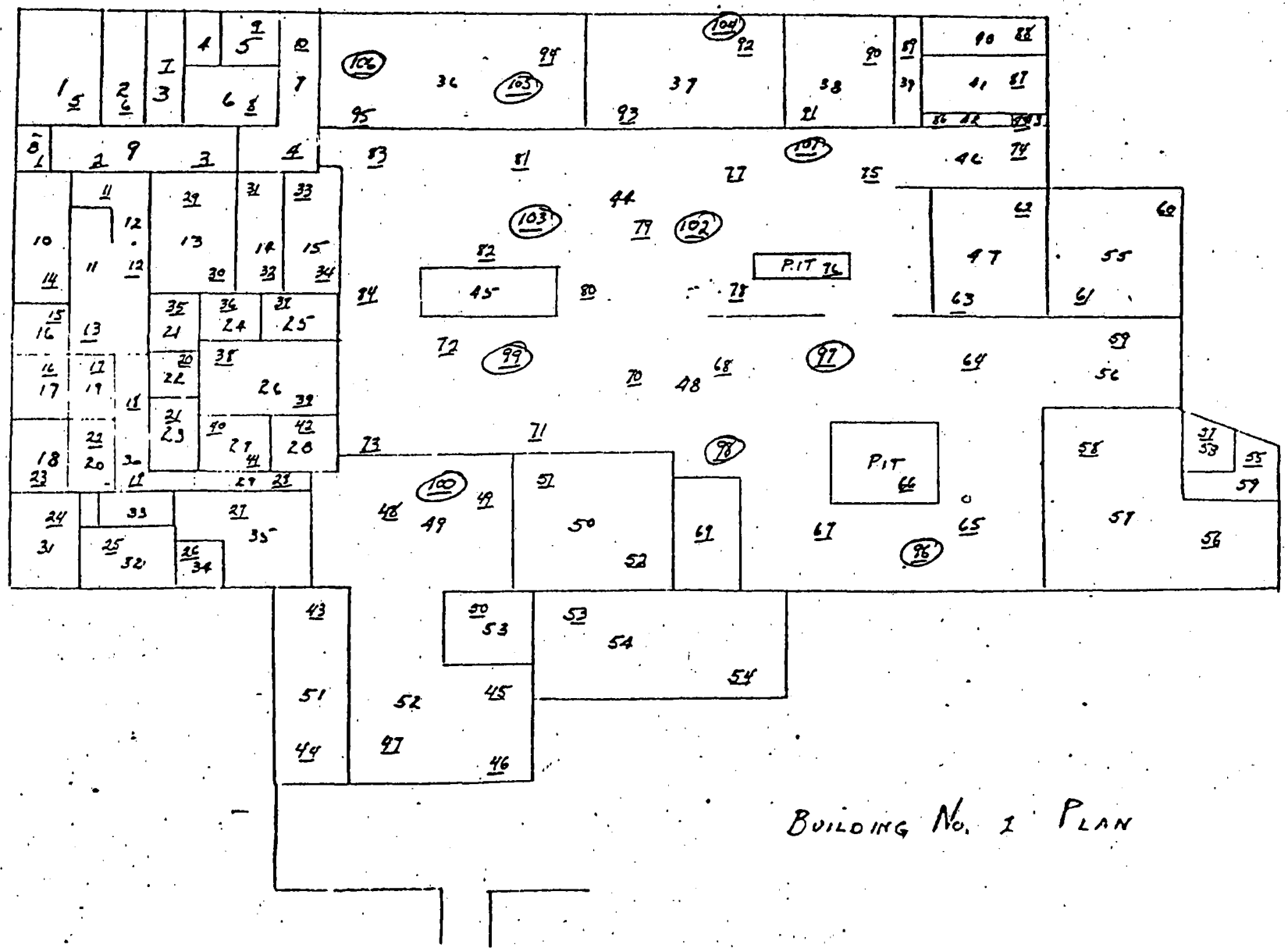
INSTRUMENT CALIBRATION : 550 CPM ~ 2000 DPM / 100 CM²

ALL UNDERLINED READINGS IN CPM



BUILDING No. 1 PLAN

SMEAR SURVEY
DATE OF SURVEY : 27 DEC 1965
SMEAR NOS. : UNDERLINED NOS.
SMEAR NOS. CIRCLED : SMEARS TAKEN ON OVERHEAD FIXTURES



BUILDING NO. 1 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #1 (1293 Area) Date of Survey: 12/27/65

Counting Instrument: RIDL 2π Proportional (Windowless) Date of Counting: 12/28/65

Person Doing Survey: F. J. Bradley Person Doing Counting: J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS Pu^{239} (2914 dpm)
STD#1	2934	2				$\frac{dpm}{cpm}$ $\frac{2914}{1467}$ =1.9 ≈ 2.0
BG#1	5	2	2.5			
BG#2	3	2	1.5			
BG#3	4	2	2.0			
			average=2			
1	7	2	3.5	1.5	3.0	
2	5	2	2.5	.5	1.0	
3	3	2	1.5	-	-	
4	11	2	5.5	3.5	7.0	
5	7	2	3.5	1.5	3.0	
6	5	2	2.5	.5	1.0	
7	10	2	5.0	3.0	6.0	
8	6	2	3.0	1.0	2.0	
9	4	2	2.0	-	-	
10	11	2	5.5	3.5	7.0	
11	3	2	1.5	-	-	
12	8	2	4.0	2.0	4.0	
13	7	2	3.5	1.5	3.0	
14	5	2	2.5	.5	1.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 12/27/65

Counting Instrument RIDL 2π:Proportional (Windowless) Date of Counting 12/28/65

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
15	8	2	4.0	2.0	4.0	
16	6	2	3.0	1.0	2.0	
17	5	2	2.5	.5	1.0	
18	6	2	3.0	1.0	2.0	
19	4	2	2.0	-	-	
20	8	2	4.0	2.0	4.0	
21	2	2	1.0	-	-	
22	4	2	2.0	-	-	
23	9	2	4.5	2.5	5.0	
24	5	2	2.5	.5	1.0	
25	7	2	3.5	1.5	3.0	
						Pu^{239} (2914 dpm)
STD#1	2876	2	-	-		$\frac{dpm}{cpm} = \frac{2914}{1438} \cong 2.0$
BG#1	3	2	1.5			
BG#2	4	2	2.0			
BG#3	5	2	2.5			
			Av.= 2.0			
26	9	2	4.5	2.5	5.0	
27	10	2	5.0	3.0	6.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 12/27/65

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12/28/65

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
28	12	2	6.0	4.0	8.0	
29	4	2	2.0	-	-	
30	3	2	1.5	-	-	
31	14	2	7.0	5.0	10.0	
32	12	2	6.0	4.0	8.0	
33	30	2	15.0	13.0	26.0	
34	7	2	3.5	1.5	3.0	
35	1	2	-	-	-	
36	8	2	4.0	2.0	4.0	
37	9	2	4.5	2.5	5.0	
38	5	2	2.5	.5	1.0	
39	6	2	3.0	1.0	2.0	
40	12	2	6.0	4.0	8.0	
41	3	2	1.5	-	-	
42	4	2	2.0	-	-	
43	6	2	3.0	1.0	2.0	
44	4	2	2.0	-	-	
45	7	2	3.5	1.5	3.0	
46	9	2	4.5	2.5	5.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Bulding #1 (1293 Area) Date of Survey 12/27/65

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12/29/65

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
47	7	2	3.5	1.5	3.0	
48	13	2	6.5	4.5	9.0	
49	5	2	2.5	.5	1.0	
50	7	2	3.5	1.5	3.0	
STD#1	1523	/				Pu^{239}(2914 dpm) $\frac{dpm}{cpm} = \frac{2914}{1523} = 1.9 \approx 2.0$
BG#1	3	2	1.5			
BG#2	7	2	3.5			
BG#3	3	2	1.5			
			Av. $\cong$ 2.0			
51	5	2	2.5	.5	1.0	
52	17	2	8.5	6.5	13.0	
53	6	2	3.0	1.0	2.0	
54	4	2	2.0	-	-	
55	4	2	2.0	-	-	
56	11	2	5.5	3.5	7.0	
57	5	2	2.5	.5	1.0	
58	10	2	5.0	3.0	6.0	
59	8	2	4.0	2.0	4.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1203 Area) Date of Survey 12/27/65

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12/29/65

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
60	7	2	3.5	1.5	3.0	
61	2	2	1.0	-	-	
62	8	2	4.0	2.0	4.0	
63	11	2	5.5	3.5	7.0	
64	16	2	8.0	6.0	12.0	
65	13	2	6.5	4.5	9.0	
66	7	2	3.5	1.5	3.0	
67	17	2	8.5	6.5	13.0	
68	13	2	6.5	4.5	9.0	
69	8	2	4.0	2.0	4.0	
70	14	2	7.0	5.0	10.0	
71	19	2	9.5	7.5	15.0	
72	22	2	11.0	9.0	18.0	
73	16	2	8.0	6.0	12.0	
74	11	2	5.5	3.5	7.0	
75	5	2	2.5	.5	1.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #1 (1293 Area) Date of Survey: 12/27/65

Counting Instrument: KIDL 2π: Proportional (Windowless) Date of Counting: 12/29/65

Person Doing Survey: F. J. Bradley Person Doing Counting: J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY $dpm/100cm^2$	REMARKS Pu^{239} (2914 dpm)
STD#1	2649	2				$\frac{dpm}{cpm}\ \frac{2914}{1348} \simeq 2.0$
BG#1	4	2	2.0			
BG#2	3	2	1.5			
BG#3	4	2	2.0			
			Av.≅ 2.0			
76	11	2	5.5	3.5	7.0	
77	8	2	4.0	2.0	4.0	
78	19	2	9.5	7.5	15.0	
79	12	2	6.0	4.0	8.0	
80	7	2	3.5	1.5	3.0	
81	9	2	4.5	2.5	5.0	
82	7	2	3.5	1.5	3.0	
83	8	2	4.0	2.0	4.0	
84	9	2	4.5	2.5	5.0	
85	6	2	3.0	1.0	2.0	
86	3	2	1.5	-	-	
87	10	2	5.0	3.0	6.0	
88	7	2	3.5	1.5	3.0	
89	4	2	2.0	-	-	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 12/27/65

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12/29/65

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
90	7	2	3.5	1.5	3.0	
91	8	2	4.0	2.0	4.0	
92	14	2	7.0	5.0	10.0	
93	17	2	8.5	6.5	13.0	
94	11	2	5.5	3.5	7.0	
95	9	2	4.5	2.5	5.0	
96	22	2	11.0	9.0	18.0	
97	8	2	4.0	2.0	4.0	
98	6	2	3.0	1.0	2.0	
99	11	2	5.5	3.5	7.0	
100	12	2	6.0	4.0	8.0	
101	7	2	3.5	1.5	3.0	
102	8	2	4.0	2.0	4.0	
103	5	2	2.5	.5	1.0	
104	14	2	7.0	5.0	10.0	
105	8	2	4.0	2.0	4.0	
106	5	2	2.5	.5	1.0	

HP Form I

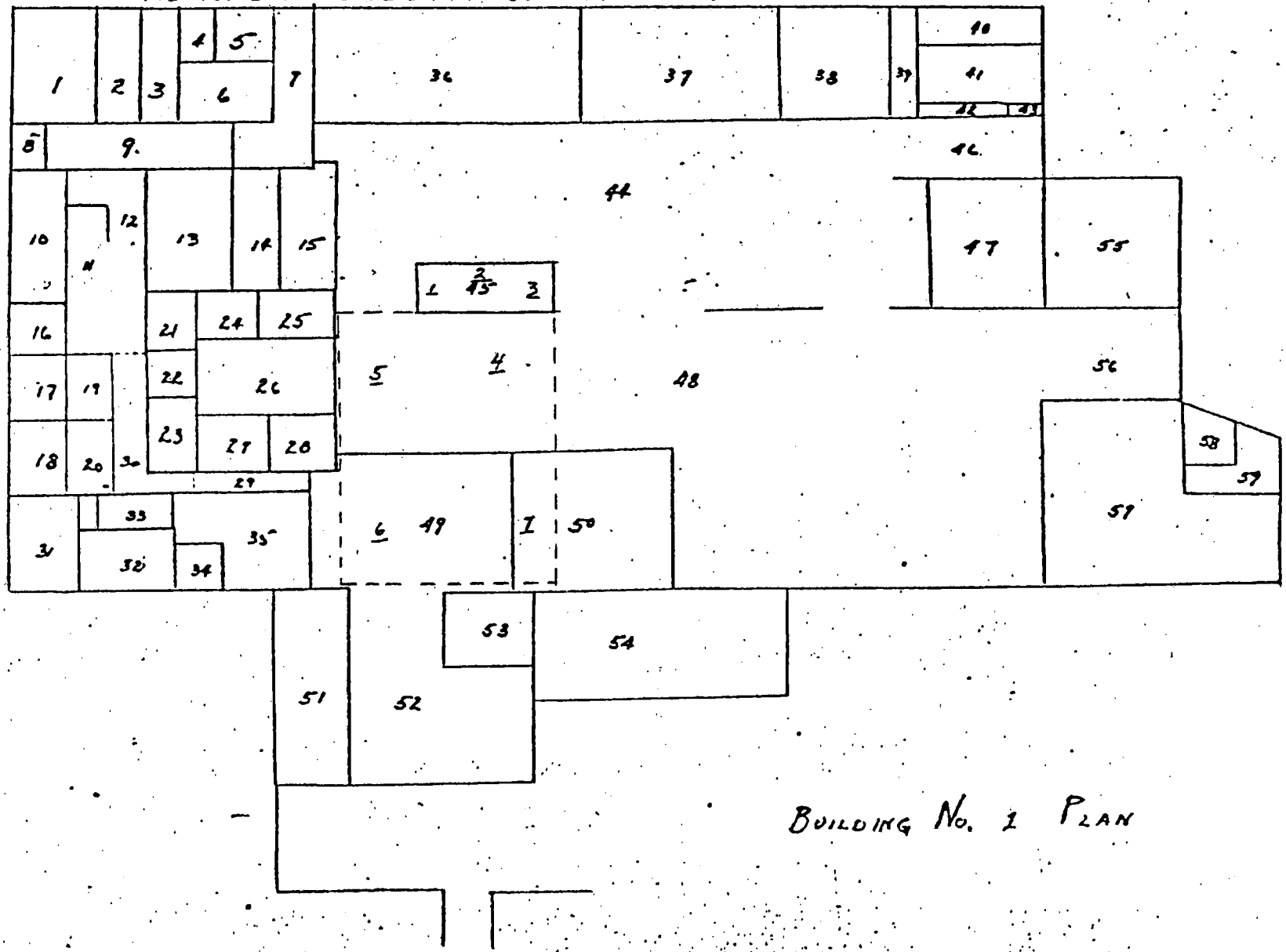
SMEAR SURVEY

DATE of SURVEY: 27 DEC 1965

LOCATION: STAIRS, ROOM OVER PLATING AREA (ROOMS 49, 52 AND 53) AND ROOF

SMEAR NOS.: UNDERLINED NOS.

ALL AREAS WERE CHECKED ON ROOF WITH AN EBERLINE INSTRUMENT CORP. PAC-3G WITH ALPHA PROBE AND FOUND TO BE LESS THAN 50 CPM.



BUILDING NO. 1 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

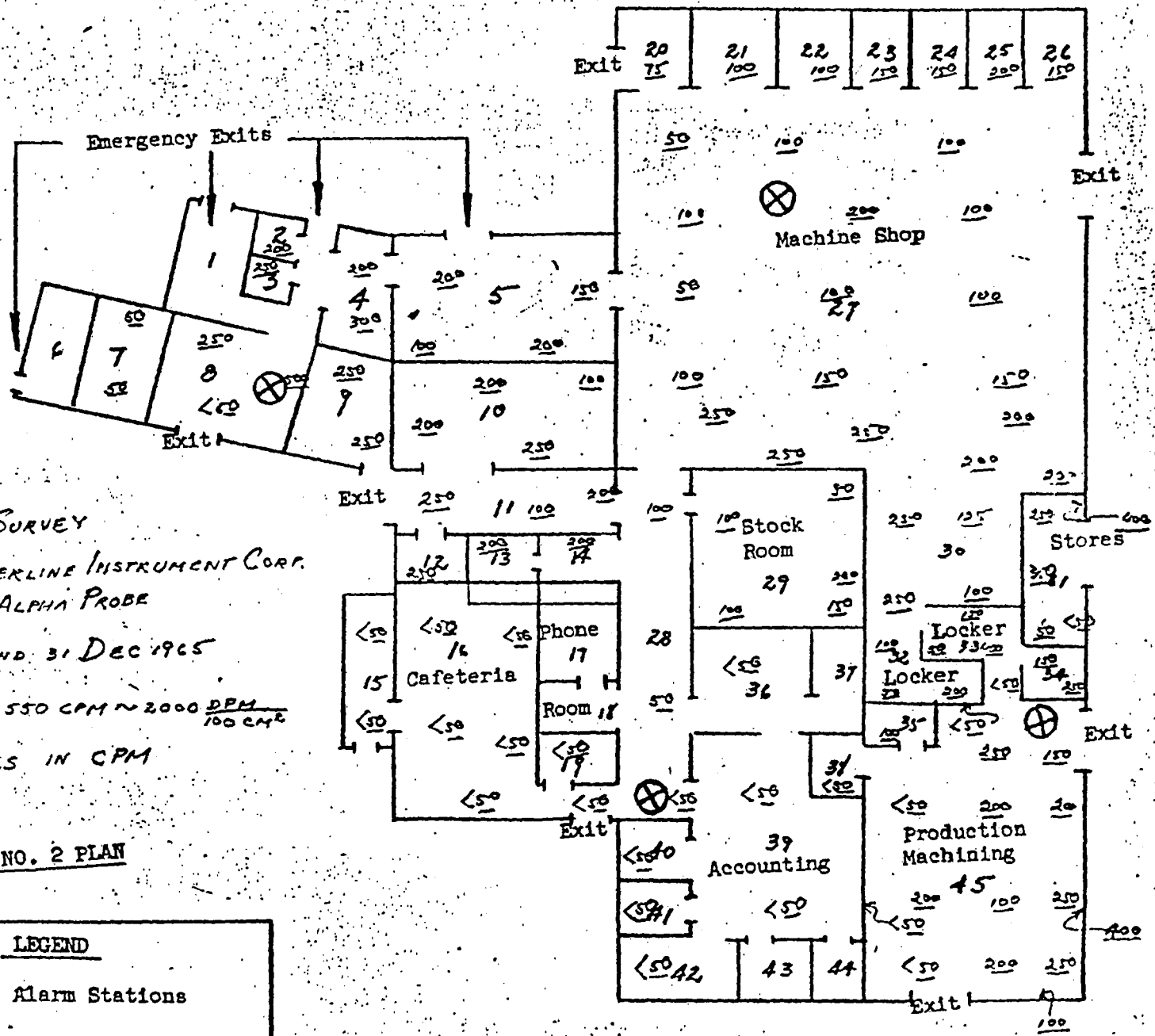
Location of Survey: Sylcor Building #1: 1293 Area
Upper loft area + stairs of Building #1
Date of Survey: 12/27/65

Counting Instrument: RIDL 2π: Proportional (Windowless)
Date of Counting: 12/29/65

Person Doing Survey: F. J. Bradley
Person Doing Counting: J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
1	14	2	7.0	5.0	10.0	
2	11	2	5.5	3.5	7.0	
3	4	2	2.0	-	-	
4	22	2	11.0	9.0	18.0	
5	11	2	5.5	3.5	7.0	
6	8	2	4.0	2.0	4.0	
7	7	2	3.5	1.5	3.0	

HP Form 1



A-I-19

SURFACE CONTAMINATION SURVEY

SURVEY INSTRUMENT: EBERLINE INSTRUMENT CORP. PAC 3G WITH ALPHA PROBE

DATE OF SURVEY 30 AND 31 DEC 1965

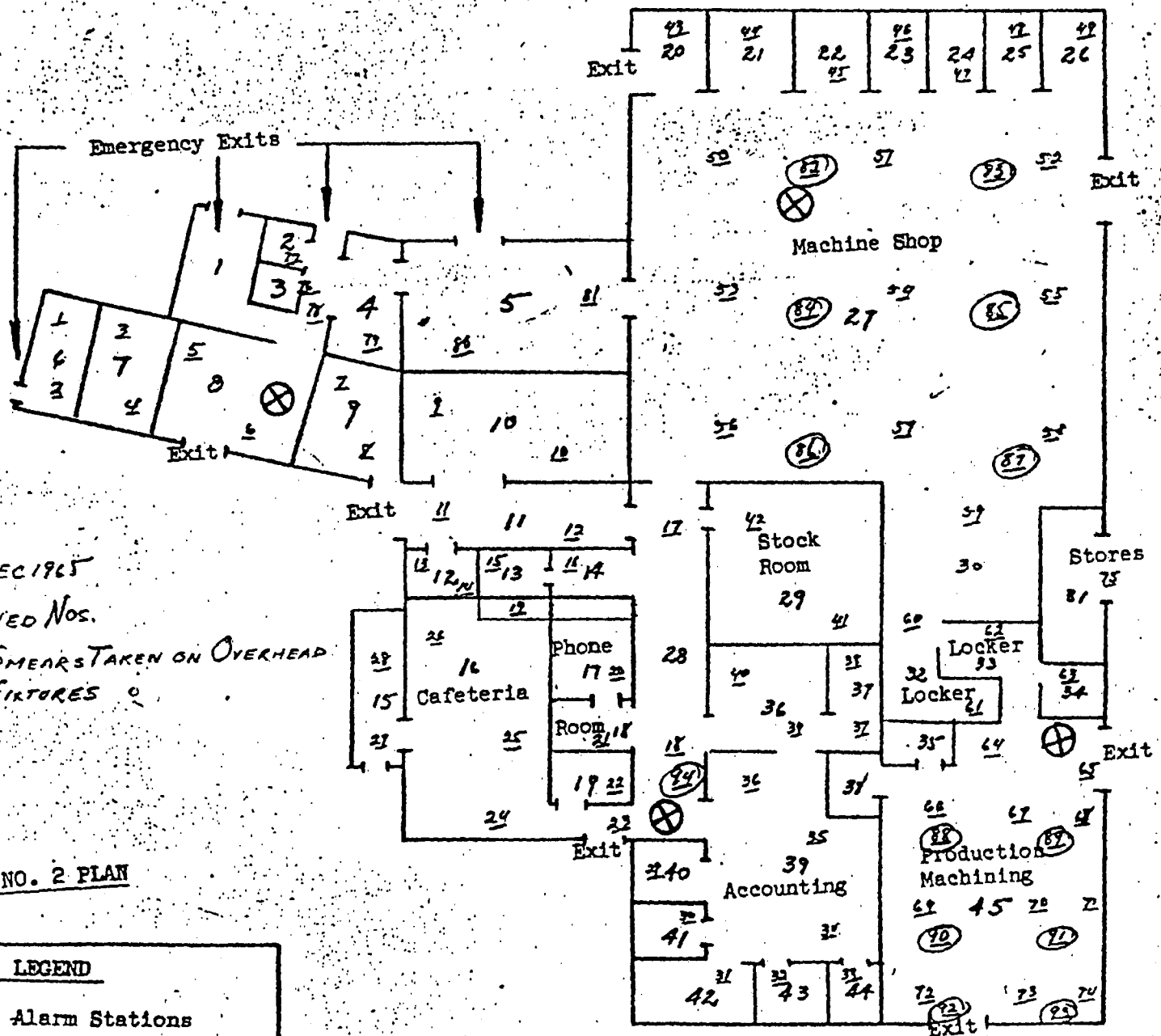
INSTRUMENT CALIBRATION: 550 CPM ~ 2000 DPM / 100 CM²

ALL UNDERLINED READINGS IN CPM

BUILDING NO. 2 PLAN

LEGEND

⊗ Fire Alarm Stations



A-I-20

SMEAR SURVEY
DATE of SURVEY : 27 DEC 1965
SMEAR NOS. : UNDERLINED NOS.
SMEAR NOS. CIRCLED : SMEARS TAKEN ON OVERHEAD FIXTURES

BUILDING NO. 2 PLAN

LEGEND

⊗ Fire Alarm Stations

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Date of Survey 12/27/65

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12/29/65

Person Doing Survey F. J. Bradley Person Doing Counting F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS Pu^{239}: 2914 dpm
STD#1	2836	2	1418			$\frac{dpm}{cpm} = \frac{2914}{1418} = 2.05 \approx 2.0$
BG#1	4	2	2.0			
BG#2	3	2	1.5			
BG#3	3	2	1.5	1.7 Avg.		
1	30	2	15.0	13.3	26.6	
2	39	2	19.5	17.8	35.6	
3	6	2	3.0	1.3	2.6	
4	7	2	3.5	1.8	3.6	
5	6	2	3.0	1.3	2.6	
6	21	2	10.5	8.8	17.6	
7	11	2	5.5	3.8	7.6	
8	3	2	1.5	-	-	
9	7	2	3.5	1.8	3.6	
10	3	2	1.5	-	-	
11	3	2	1.5	-	-	
12	8	2	4.0	2.3	4.6	
13	4	2	2.0	0.3	0.6	
14	11	2	5.5	3.8	7.6	
15	7	2	3.5	1.8	3.6	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Date of Survey 12/27/65

Counting Instrument RIDL 2π : Proportional (Windowless) Date of Counting 12/29/65

Person Doing Survey F. J. Bradley Person Doing Counting F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
16	3	2	1.5	-	-	
17	6	2	3.0	1.3	2.6	
18	9	2	4.5	2.8	5.6	
19	9	2	4.5	2.8	5.6	
20	6	2	3.0	1.3	2.6	
21	6	2	3.0	1.3	2.6	
22	9	2	4.5	2.8	5.6	
23	2	2	1.0	-	-	
24	5	2	2.5	0.8	1.6	
25	4	2	2.0	0.3	0.6	
26	10	2	5.0	3.3	6.6	
27	6	2	3.0	1.3	2.6	
28	7	2	3.5	1.8	3.6	
29	5	2	2.5	0.8	1.6	
30	5	2	2.5	0.8	1.6	
31	3	2	1.5	-	-	
32	5	2	2.5	0.8	1.6	
33	2	2	1.0	-	-	
34	1	2	0.5	-	-	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor: Building #2 (1293 Area) Date of Survey: 12/27/65

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 12/29/65

Person Doing Survey: F. J. Bradley Person Doing Counting: F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
35	2	2	1.0	-	-	
36	9	2	4.5	2.8	5.6	
37	2	2	1.0	-	-	
38	7	2	3.5	1.8	3.6	
39	14	2	7.0	5.3	10.6	
40	3	2	1.5	-	-	
41	12	2	6.0	4.3	8.6	
42	3	2	1.5	-	-	
43	9	2	4.5	2.8	5.6	
44	6	2	3.0	1.3	2.6	
45	8	2	4.0	2.3	4.6	
46	10	2	5.0	3.3	6.6	
47	11	2	5.5	3.8	7.6	
48	15	2	7.5	5.8	11.6	
49	14	2	7.0	5.3	10.6	
50	8	2	4.0	2.3	4.6	
51	10	2	5.0	3.3	6.6	
52	5	2	2.5	0.8	1.6	
53	13	2	6.5	4.8	9.6	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2:(1293 Area) Date of Survey: 12/27/65

Counting Instrument: RIDL 2π:Proportional (Windowless) Date of Counting: 12/29/65

Person Doing Survey: F. J. Bradley Person Doing Counting: F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
54	6	2	3.0	1.3	2.6	
55	8	2	4.0	2.3	4.6	
56	17	2	8.5	6.8	13.6	
57	5	2	2.5	0.8	1.6	
58	6	2	3.0	1.3	2.6	
59	8	2	4.0	2.3	4.6	
60	9	2	4.5	2.8	5.6	
61	3	2	1.5	-	-	
62	22	2	11.0	9.3	18.6	
63	10	2	5.0	3.3	6.6	
64	2	2	1.0	-	-	
65	4	2	2.0	0.3	0.6	
66	8	2	4.0	2.3	4.6	
67	3	2	1.5	-	-	
68	9	2	4.5	2.8	5.6	
69	8	2	4.0	2.3	4.6	
70	4	2	2.0	0.3	0.6	
71	1	2	0.5	-	-	
72	3	2	1.5	-	-	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2 (1293 Area) Date of Survey: 12/27/65

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 12/31/65

Person Doing Survey: F. J. Bradley Person Doing Counting: F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS Pu^{239}: 2914 dpm
ST#1	2824	2	1412	1411		$\frac{dpm}{cpm} = \frac{2914}{1411} = 2.06 \approx 2.0$
BG#1	2	2	1.0			
BG#2	1	2	0.5			
BG#3	2	2	1.0	0.8 Avg.		
73	4	2	2.0	1.2	2.4	
74	2	2	1.0	0.2	0.4	
75	15	2	7.5	6.7	13.4	
76	6	2	3.0	2.2	4.4	
77	10	2	5.0	4.2	8.4	
78	13	2	6.5	5.7	11.4	
79	19	2	9.5	8.7	17.4	
80	10	2	5.0	4.2	8.4	
81	15	2	7.5	6.7	13.4	
82	31	2	15.5	14.7	29.5	
83	16	2	8.0	7.2	14.4	
84	21	2	10.5	9.7	19.4	
85	9	2	4.5	3.7	7.4	
86	8	2	4.0	3.2	6.4	
87	22	2	11.0	10.2	20.4	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2 (1293 Area) Date of Survey: 12/27/65

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 12/31/65

Person Doing Survey: F. J. Bradley Person Doing Counting: F. J. Bradley

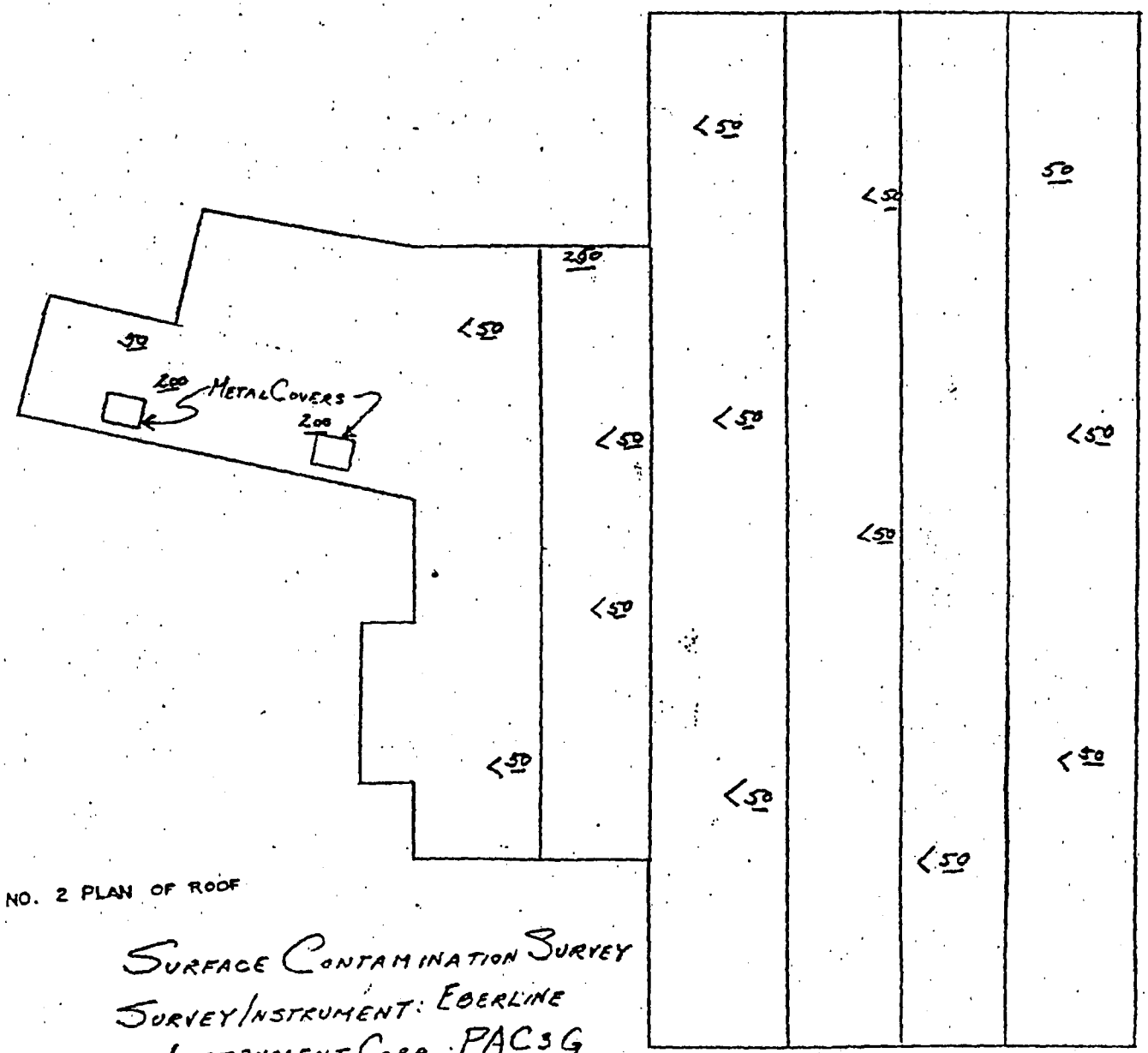
SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
88	21	2	10.5	9.7	19.4	
89	68	2	34.0	33.2	66.4	
90	8	2	4.0	3.2	6.4	
91	68	2	34.0	33.2	66.4	
92	10	2	5.0	4.2	8.4	
93	27	2	13.5	12.7	25.4	
94	7	2	3.5	2.7	5.4	

HP Form 1

A D D E N D U M

I. Roof Survey

II. Specific Chemical Analysis of Soil and Water Samples for Uranium



BUILDING NO. 2 PLAN OF ROOF

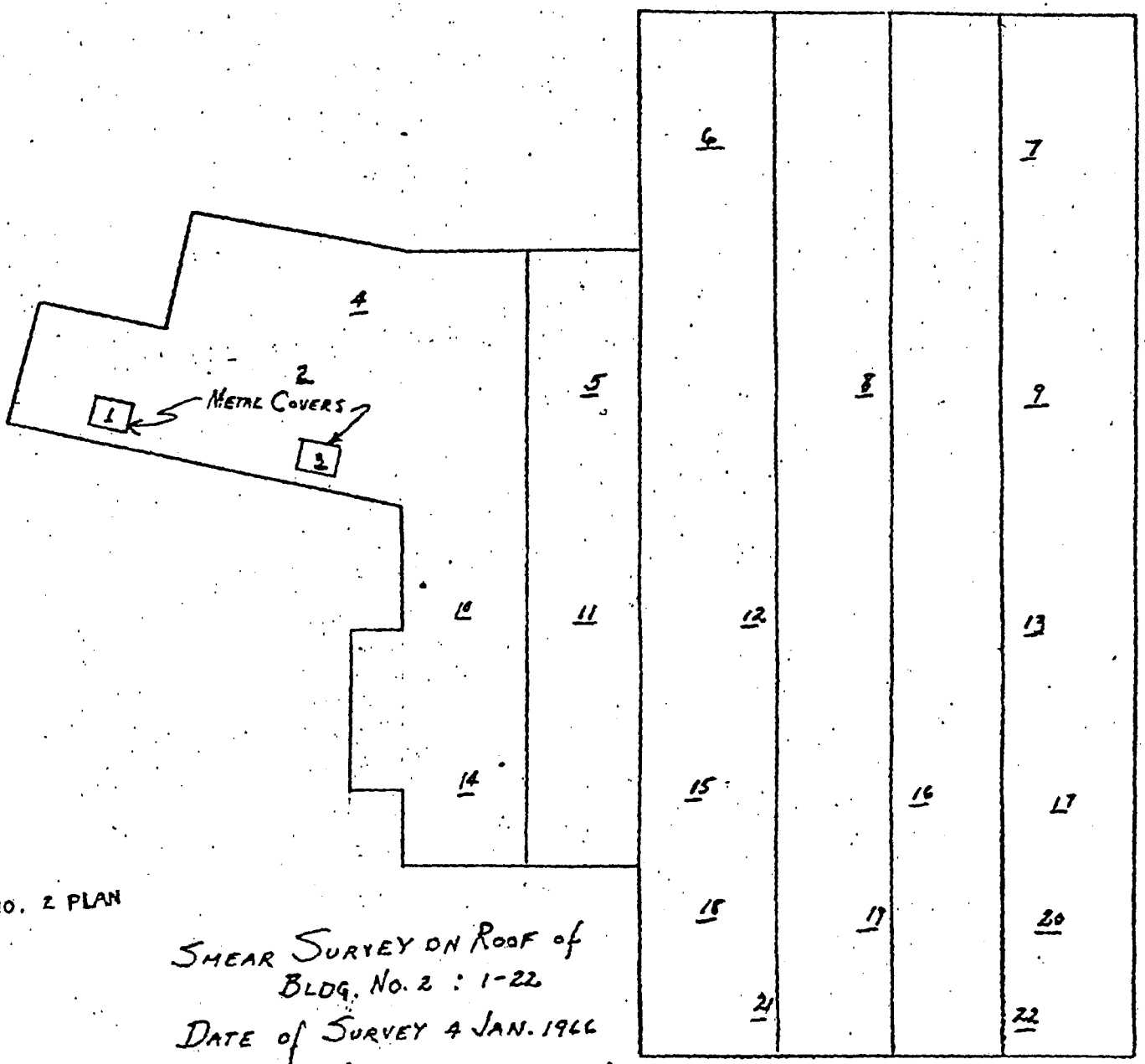
SURFACE CONTAMINATION SURVEY

SURVEY/INSTRUMENT: EBERLINE INSTRUMENT CORP.: PAC3G WITH ALPHA PROBE

INSTRUMENT CALIBRATION 650 CPM ~ 2000 DPM/100 CM²

ALL UNDERLINED READINGS IN CPM

DATE of SURVEY: 4 JAN 1966



BUILDING NO. 2 PLAN

SMEAR SURVEY ON ROOF of BLDG. NO. 2 : 1-22

DATE of SURVEY 4 JAN. 1966

SMEAR NOS.: UNDERLINED NOS.

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor: 1293 Area : Roof of Bldg. #2 — Date of Survey: 4 January 1966

Counting Instrument: RIDL 2π: Proportional (Windowless) — Date of Counting: 7 January 1966

Person Doing Survey: F. J. Bradley — Person Doing Counting: F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
STD #1	2920	2	1460	1458		Pu^{239}: 2914 dpm dpm/cpm = 2914/1458 ~2.0
BG#3	4	2	2.0			
BG#1	4	2	2.0			
BG#2	2	2	1.0	1.7 avg.		
1	7	2	3.5	1.8	3.6	
2	6	2	3.0	1.3	2.6	
3	3	2	1.5	-	-	
4	2	2	1.0	-	-	
5	8	2	4.0	2.3	4.6	
6	3	2	1.5	-	-	
7	1	2	0.5	-	-	
8	3	2	1.5	-	-	
9	3	2	1.5	-	-	
10	1	2	0.5	-	-	
11	6	2	3.0	1.3	2.6	
12	3	2	1.5	-	-	
13	0	2	-	-	-	
14	2	2	1.0	-	-	
15	2	2	1.0	-	-	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

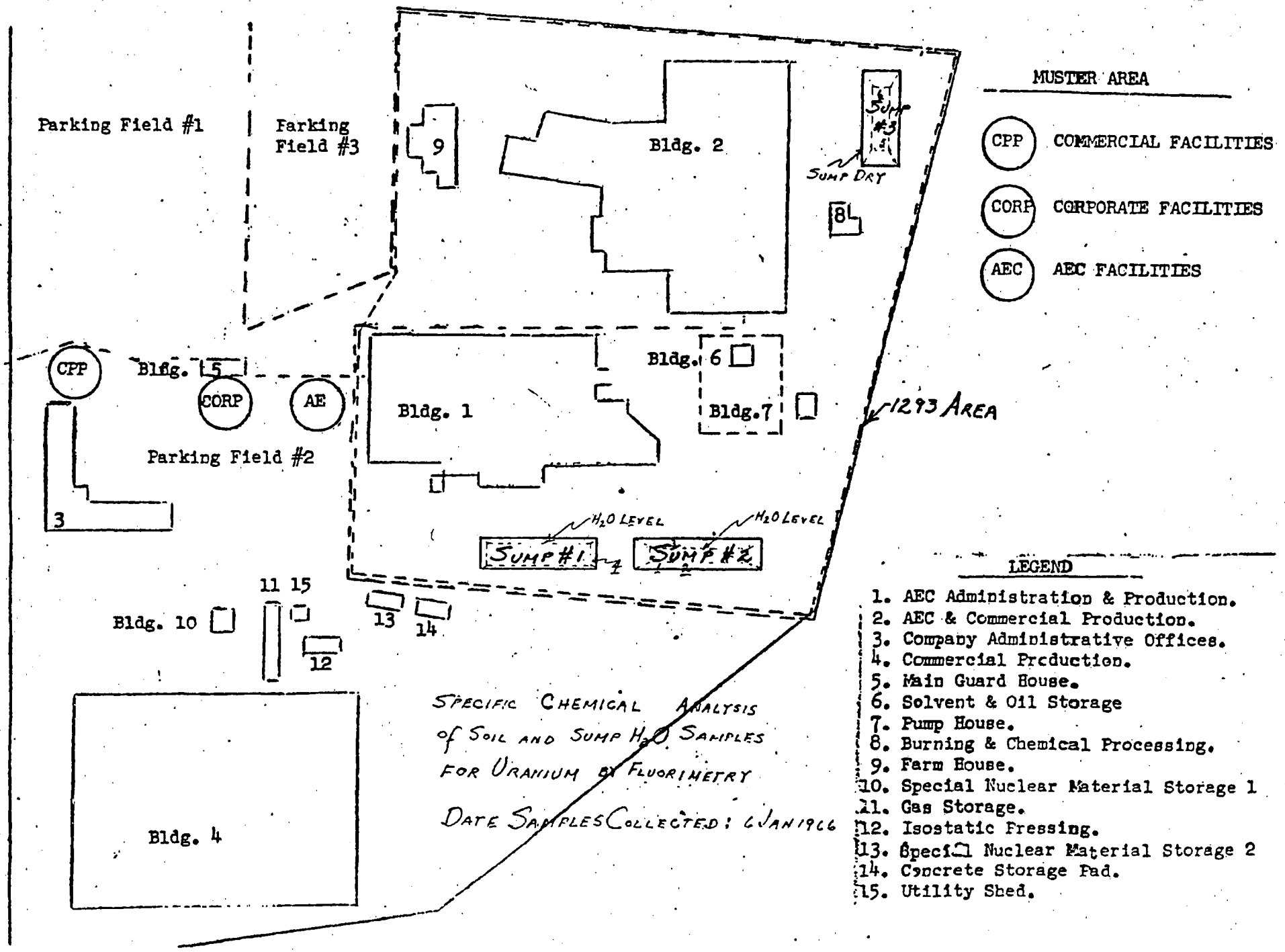
Location of Survey: Sylcor: 1293 Area: Roof of Building #2 Date of Survey: 4 January 1966

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 7 January 1966

Person Doing Survey: F. J. Bradley Person Doing Counting: F. J. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
16	3	2	1.5	-	-	
17	1	2	0.5	-	-	
18	4	2	2.6	0.3	0.6	
19	3	2	1.5	-	-	
20	1	2	0.5	-	-	
21	2	2	1.0	-	-	
22	2	2	1.0	-	-	

HP Form I


Parking Field #1
Parking Field #3
Parking Field #2
9
Bldg. 2
Sump #3
Sump Dry
8
MUSTER AREA
CPP
COMMERCIAL FACILITIES
CORP
CORPORATE FACILITIES
AEC
AEC FACILITIES
CPP
Bldg. 5
CORP
AE
Bldg. 1
Bldg. 6
Bldg. 7
1293 Area
3
H2O Level
H2O Level
Sump #1
Sump #2
11 15
Bldg. 10
13
14
12
Bldg. 4
Specific Chemical Analysis
of Soil and Sump H2O Samples
for Uranium by Fluorimetry
Date Samples Collected: 6 Jan 1966
LEGEND
1. AEC Administration & Production.
2. AEC & Commercial Production.
3. Company Administrative Offices.
4. Commercial Production.
5. Main Guard House.
6. Solvent & Oil Storage
7. Pump House.
8. Burning & Chemical Processing.
9. Farm House.
10. Special Nuclear Material Storage 1
11. Gas Storage.
12. Isostatic Pressing.
13. Special Nuclear Material Storage 2
14. Concrete Storage Pad.
15. Utility Shed.

WATER AND SOIL SAMPLE RESULTS

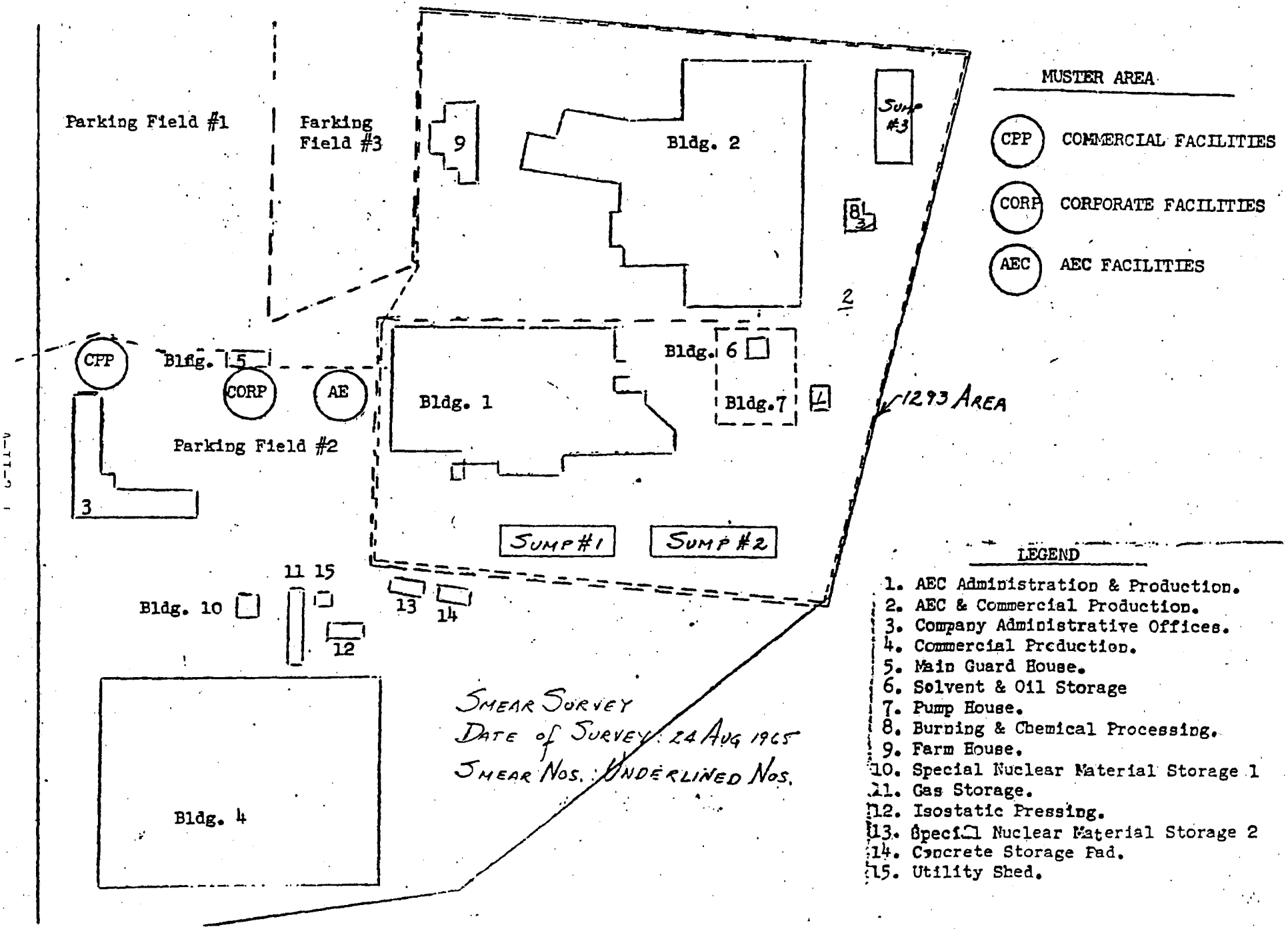
Sample Number	Weight of Sample (Grams)	Volume of Sample (ml)	Activity[1] picocurie gram or ml	% of MPC $\left(\frac{\text{x}}{\text{20 pc/ml}}\right)_{\text{Gen.pop.}}$
Soil #1	8.1855		49.1	
Soil #2	N O T A N A L Y Z E D			
Soil #3	8.5960		66.0	
Soil #4	11.0558		15.0	
Soil #5	14.5939		126	
Soil #6	27.1072		74.7	
H_2O Sump #1		440	0.058	0.29
H_2O Sump #2		546	0.103	0.52
H_2O Sump #3			0.284	1.42)[2]
Tap Water		163	< 0.01	

[1] Estimated standard error ± 20%.

[2] Estimation based on relation between water and soil activity in sumps 1 & 2.

APPENDIX II

Pre-Decontamination Surveys


Parking Field #1
Parking Field #3
9
Bldg. 2
Sump #3
MUSTER AREA
CPP
COMMERCIAL FACILITIES
CORP
CORPORATE FACILITIES
AEC
AEC FACILITIES
8
3
2
CPP
Bldg. 5
CORP
AE
Bldg. 1
Bldg. 6
Bldg. 7
1
1293 AREA
Parking Field #2
3
SUMP #1
SUMP #2
11
15
Bldg. 10
13
14
12
Bldg. 4
SMEAR SURVEY
DATE of SURVEY: 24 AUG 1965
SMEAR NOS.: UNDERLINED NOS.
LEGEND
1. AEC Administration & Production.
2. AEC & Commercial Production.
3. Company Administrative Offices.
4. Commercial Production.
5. Main Guard House.
6. Solvent & Oil Storage
7. Pump House.
8. Burning & Chemical Processing.
9. Farm House.
10. Special Nuclear Material Storage 1
11. Gas Storage.
12. Isostatic Pressing.
13. Special Nuclear Material Storage 2
14. Concrete Storage Pad.
15. Utility Shed.

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

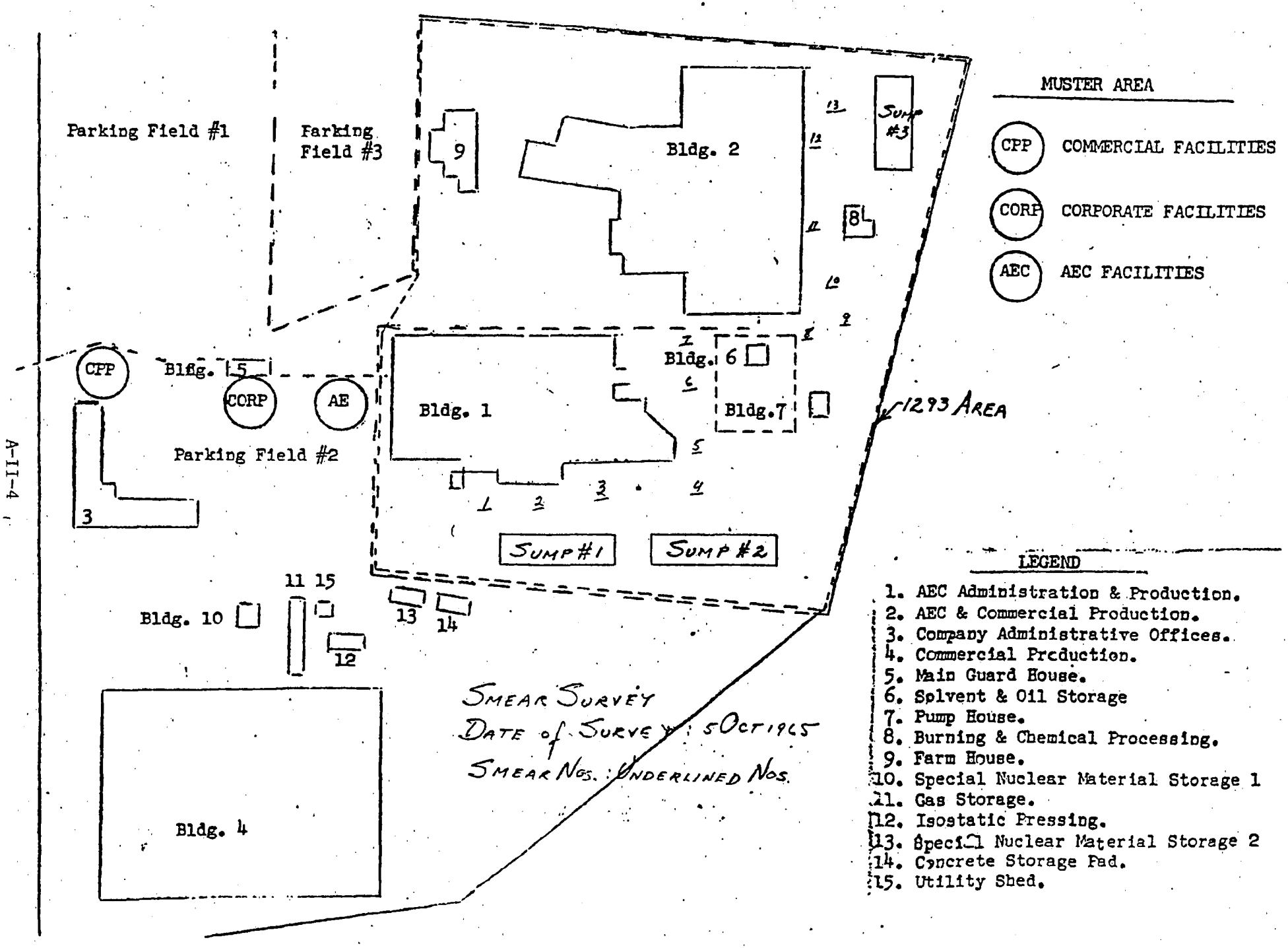
Location of Survey Sylcor Building #7 and #8 (Area 1293) Date of Survey 24 August 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 25 August 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
1	53	1	53		106	
2	39	1	39		78	
3	159	1	159		318	

HP Form 1


Parking Field #1
Parking Field #3
Parking Field #2
Bldg. 1
Bldg. 2
Bldg. 4
Bldg. 5
Bldg. 6
Bldg. 7
Bldg. 10
CPP
CORP
AE
Sump #1
Sump #2
Sump #3
1293 Area
MUSTER AREA
CPP COMMERCIAL FACILITIES
CORP CORPORATE FACILITIES
AEC AEC FACILITIES
LEGEND
1. AEC Administration & Production.
2. AEC & Commercial Production.
3. Company Administrative Offices.
4. Commercial Production.
5. Main Guard House.
6. Solvent & Oil Storage
7. Pump House.
8. Burning & Chemical Processing.
9. Farm House.
10. Special Nuclear Material Storage 1
11. Gas Storage.
12. Isostatic Pressing.
13. Special Nuclear Material Storage 2
14. Concrete Storage Pad.
15. Utility Shed.
Smear Survey
Date of Survey: 5 Oct 1965
Smear Nos.: Underlined Nos.

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor (1293 Area) Exterior Date of Survey 5 October 1965

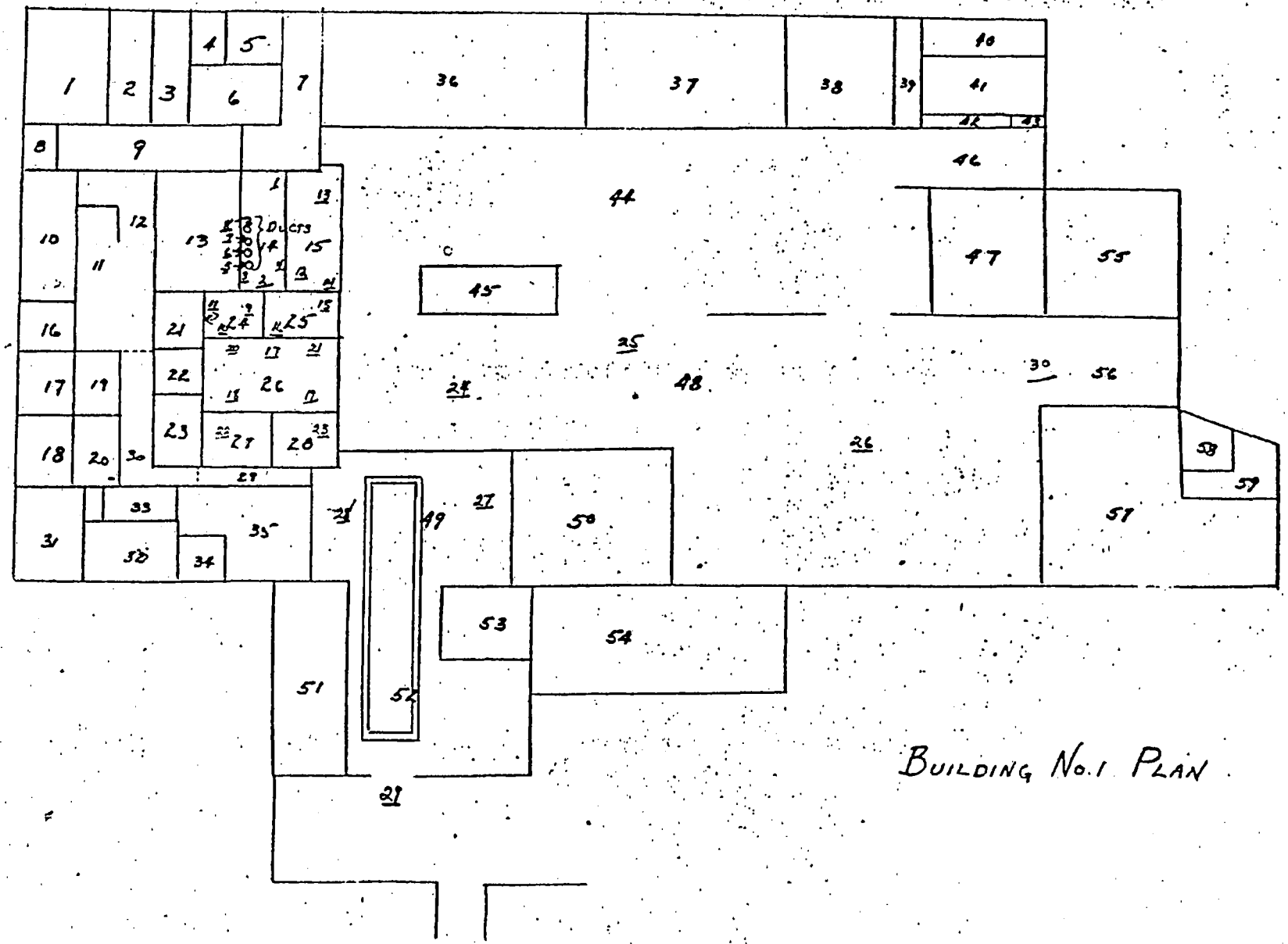
Counting Instrument RIDL 2π:Proportional (Windowless) Date of Counting 7 October 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
1	9	2	4.5	3.5	7.0	
2	19	2	9.5	8.5	17.0	
3	11	2	5.5	4.5	9.0	
4	5	2	2.5	1.5	3.0	
5	13	2	6.5	5.5	11.0	
6	4	2	2.0	1.0	2.0	
7	8	2	4.0	3.0	6.0	
8	32	2	16.0	15.0	30.0	
9	18	2	9.0	8.0	16.0	
10	110	2	55.0	54.0	108.0	
11	20	2	10.0	9.0	18.0	
12	4	2	2.0	1.0	2.0	
13	10	2	5.0	4.0	8.0	

HP Form I

SMEAR SURVEY
DATE of SURVEY : 24 AUG 1965
SMEAR NOS. : UNDERLINED NOS.



BUILDING No. 1 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 24 August 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
BG	3	10	0.3			
1	124	1	124		248	
2	94	1	94		188	
3	58	1	58		116	
4	83	1	83		166	
5	314	1	314		628	
6	227	1	227		454	
7	437	1	437		874	
8	852	1	852		1704	
9	113	1	113		226	
10	44	1	44		88	
11	110	1	110		220	
12	48	1	48		96	
13	123	1	123		246	
14	72	1	72		144	
15	58	1	58		116	
16	66	1	66		132	
17	62	1	62		124	
18	54	1	54		108	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #1 (1293 Area) Date of Survey: 24 August 1965

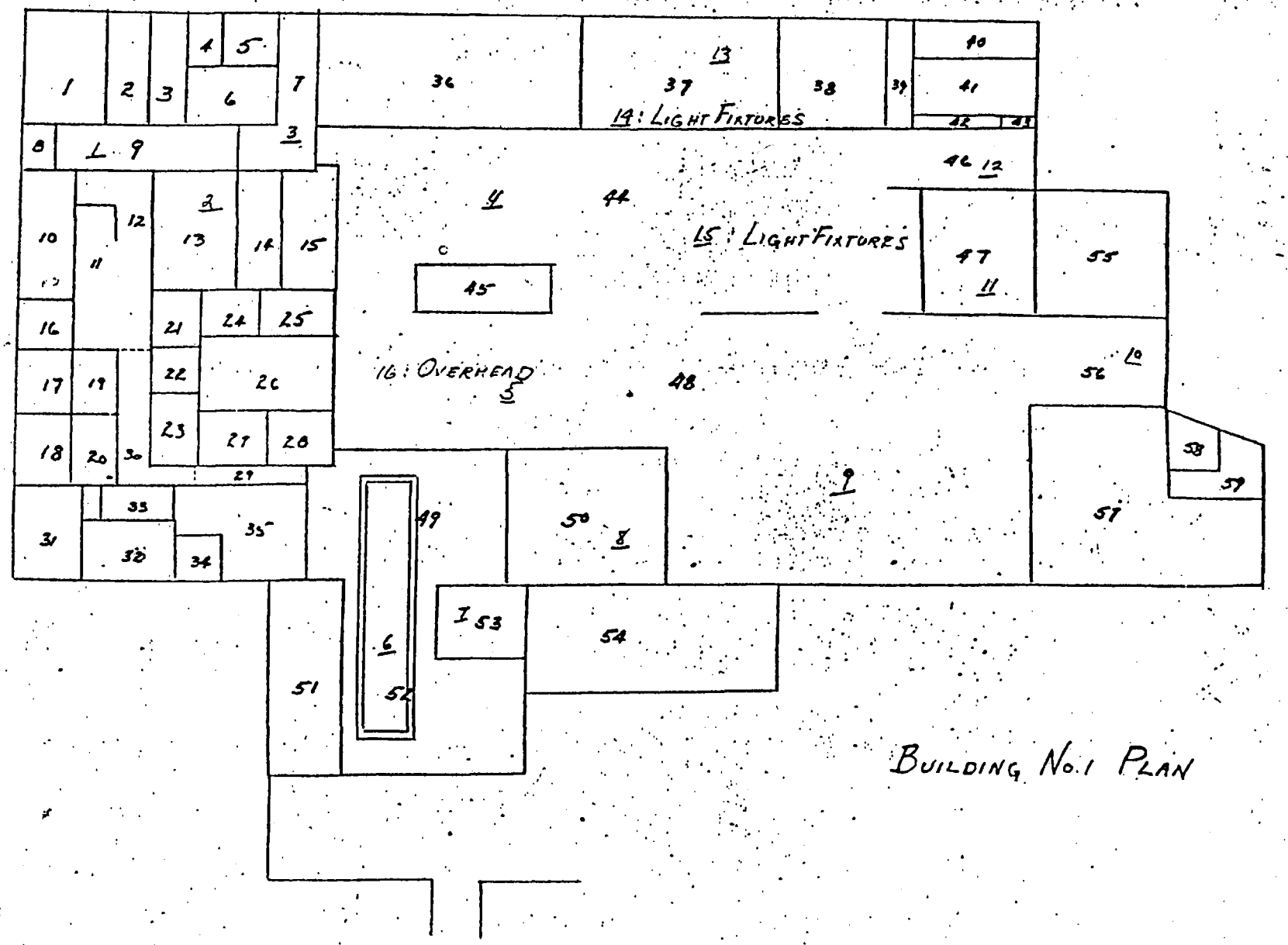
Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting:

Person Doing Survey: F. J. Bradley Person Doing Counting: J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
19	55	1	55		110	
20	58	1	58		116	
21	66	1	66		132	
22	52	1	52		104	
23	54	1	54		108	
24	36	1	36		72	
25	42	1	42		84	
26	49	1	49		98	
27	131	1	131		262	
28	58	1	58		116	
29	126	1	126		252	
30	44	1	44		88	

HP Form 1

SMEAR SURVEY
DATE of SURVEY: 5 OCT. 1965
SMEAR NOS.: UNDERLINED NOS.



BUILDING No. 1 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

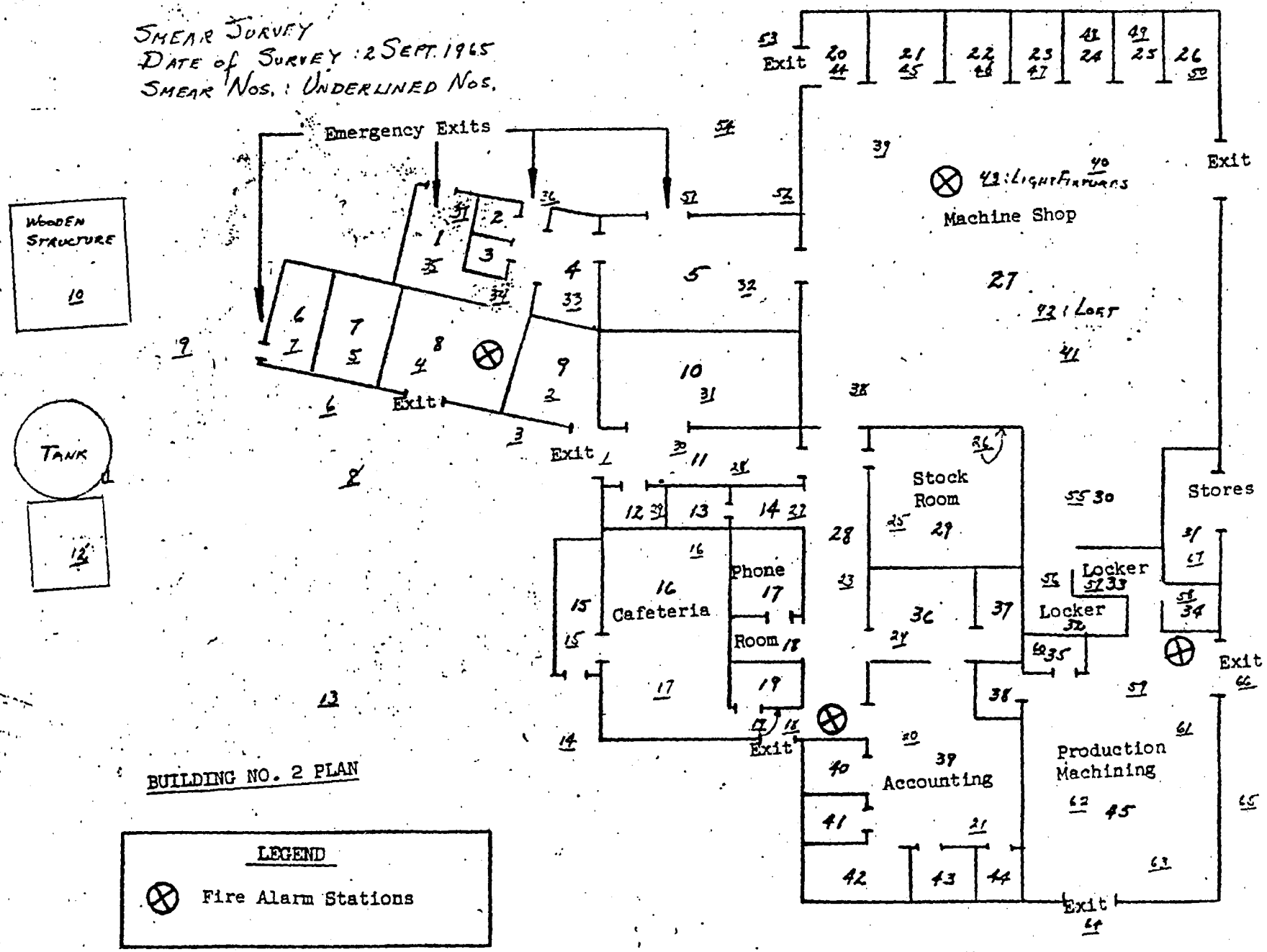
Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 5 October 1965

Counting Instrument RIDL 2 π: Proportional (Windowless) Date of Counting 7 October 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

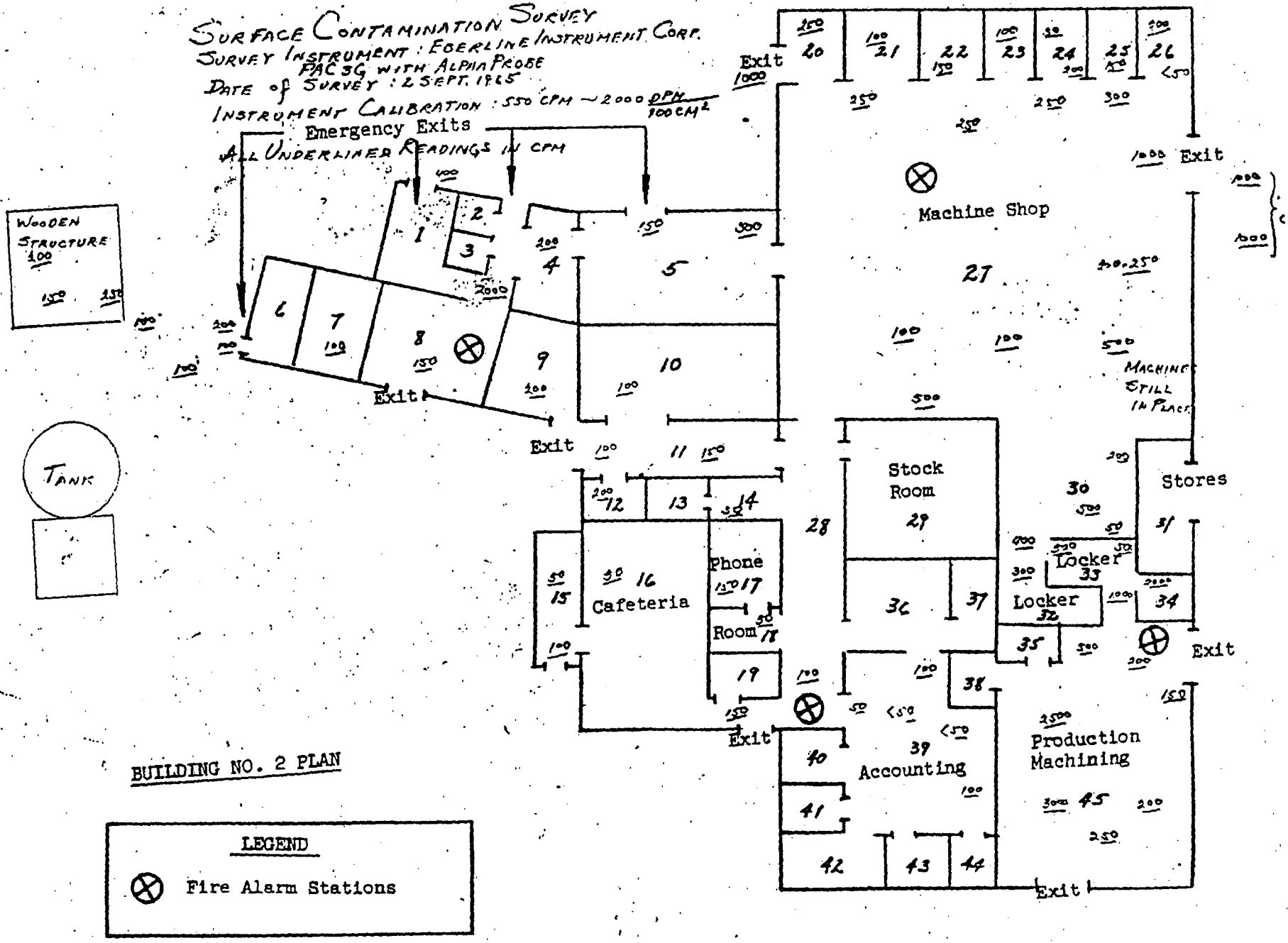
SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
1	2	2	1.0	-	-	
2	3	2	1.5	0.5	1.0	
3	3	2	1.5	0.5	1.0	
4	7	2	3.5	2.5	5.0	
5	9	2	4.5	3.5	7.0	
6	16	2	8.0	7.0	14.0	
7	10	2	5.0	4.0	8.0	
8	14	2	7.0	6.0	12.0	
9	6	2	3.0	2.0	4.0	
10	1	2	0.5	-	-	
11	5	2	2.5	1.5	3.0	
12	4	2	2.0	1.0	2.0	
13	3	2	1.5	0.5	1.0	
14	4	2	2.0	1.0	2.0	
15	5	2	2.5	1.5	3.0	
16	11	2	5.5	4.5	9.0	

HP Form I


SMEAR SURVEY
DATE of SURVEY : 2 SEPT. 1965
SMEAR NOS. : UNDERLINED NOS.
Emergency Exits
WOODEN STRUCTURE
10
TANK
12
Exit
Exit
Exit
Exit
Exit
Exit
Exit
Machine Shop
43 : Light Fixtures
27
93 : Loft
41
Stock Room
29
Stores
Locker
Locker
Phone
Room
16
Cafeteria
17
18
19
Accounting
39
Production Machining
45
BUILDING NO. 2 PLAN
LEGEND
Fire Alarm Stations

A-11-11

SURFACE CONTAMINATION SURVEY
SURVEY INSTRUMENT : EBERLINE INSTRUMENT CORP.
PAC 3G WITH ALPHA PROBE
DATE of SURVEY : 2 SEPT. 1965
INSTRUMENT CALIBRATION : 550 CPM ~ 2000 DPM/100 CM²
Emergency Exits
ALL UNDERLINED READINGS IN CPM



BUILDING NO. 2 PLAN

LEGEND

⊗ Fire Alarm Stations

A-II-12

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2 (1293 Area) Date of Survey: 2 September 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 2 September 1965

Person Doing Survey: F.J. Bradley Person Doing Counting: J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
BG	25	137	0.18			
1	39	1	39		78	
2	36	1	36		72	
3	31	1	31		62	
4	28	1	28		56	
5	20	1	20		40	
6	36	1	36		72	
7	N O T	A P P L I	C A B L E			
8	20	1	20		40	
9	9	1	9		18	
10	26	1	26		52	
11	31	1	31		62	
12	25	1	25		50	
13	21	1	21		42	
14	23	1	23		46	
15	25	1	25		50	
16	25	1	25		50	
17	21	1	21		42	
18	23	1	23		46	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Date of Survey 2 September 1965

Counting Instrument RIDL:2π Proportional (Windowless) Date of Counting 2 September 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V.Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
19	21	1	21		42	
20	21	1	21		42	
21	18	1	18		36	
22	29	1	29		58	
23	19	1	19		38	
24	21	1	21		42	
25	28	1	28		56	
26	26	1	26		52	
27	22	1	22		44	
28	18	1	18		36	
29	33	1	33		66	
30	24	1	24		48	
31	30	1	30		60	
32	16	1	16		32	
33	24	1	24		48	
34	28	1	28		56	
35	N O T	A P P L I	C A B L E			
36	18	1	18		36	
37	N O T	A P P L I	C A B L E			

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (Area 1293) Date of Survey 2 September 1965

Counting Instrument RIDL: 2π Proportional (Windowless) Date of Counting 2 September 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ COUNTS/MIN	ACTIVITY dpm/100cm^2	REMARKS
BG	2	2	1.0			
BG	6	5	1.2			
38	7	1	7	6	12	
39	0	1	-	-	-	
40	12	1	12	11	22	
41	12	1	12	11	22	
42	8	1	8	7	14	
43	5	1	5	4	8	
44	6	1	6	5	10	
45	9	1	9	8	16	
46	5	1	5	4	8	
47	5	1	5	4	8	
48	8	1	8	7	14	
49	8	1	8	7	14	
50	10	1	10	9	18	
51	2	1	2	1	2	
52	1	1	1	-	-	
53	1	1	1	-	-	
54	N O T	C O U N T	E D			

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

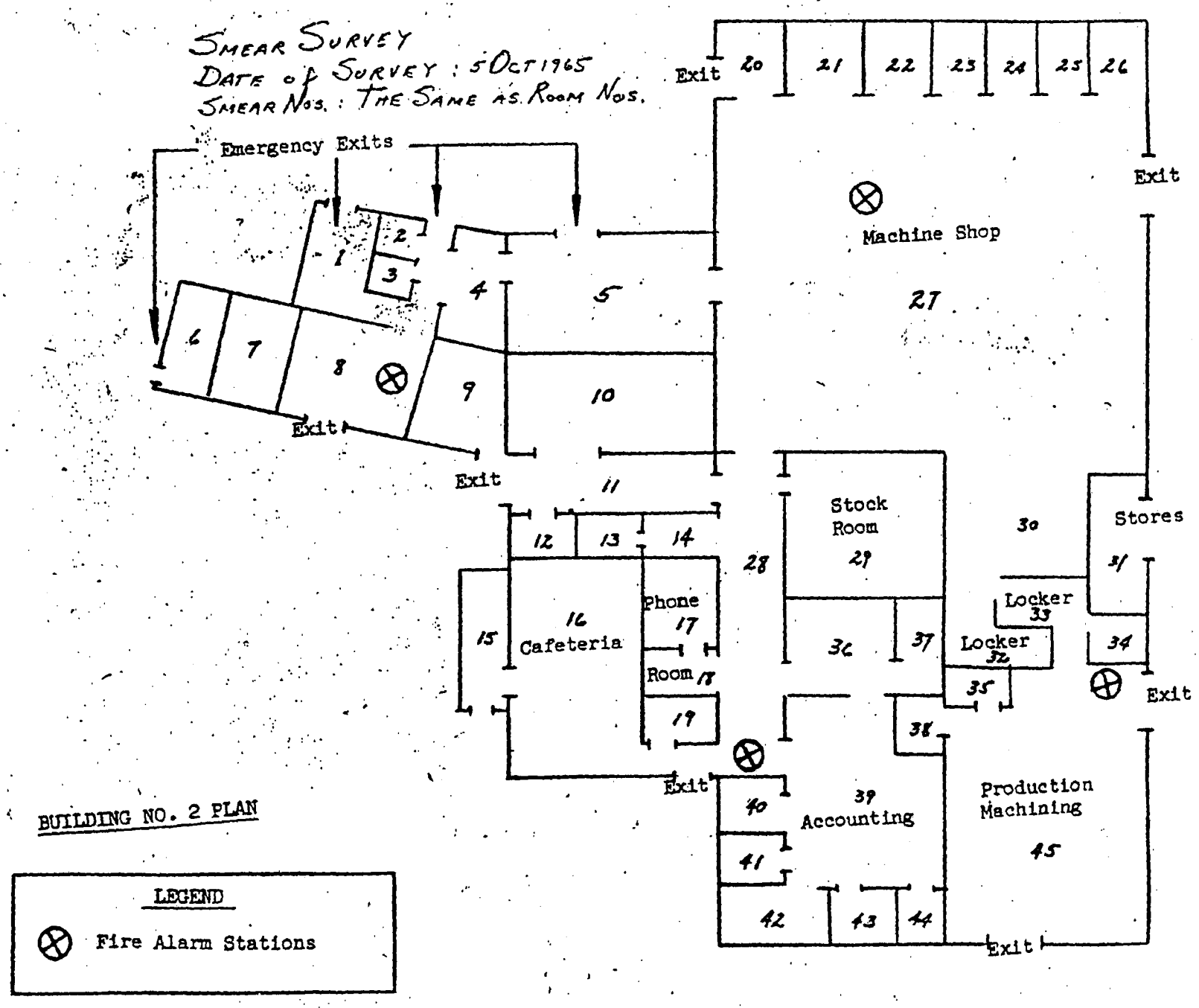
Location of Survey: Sylcor Building #2 (1293 Area) Date of Survey: 2 September 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 2 September 1965

Person Doing Survey: F. J. Bradley Person Doing Counting: J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
55	27	1	27	26	72	
56	22	1	22	21	42	
57	51	1	51	50	100	
58	32	1	32	31	62	
59	85	1	85	84	168	
60	16	1	16	15	30	
61	98	1	98	97	194	
62	162	1	162	161	322	
63	43	1	43	42	84	
64	3	1	3	2	4	
65	7	1	7	6	12	
66	26	1	26	25	50	
67	26	1	26	25	50	

HP Form 1



BUILDING NO. 2 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Date of Survey 5 October 1965

Counting Instrument RIDL: 2π Proportional (Windowless) Date of Counting 7 October 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
1	NOT	APPLI	CABLE			
2	43	5	8.6	7.6	15.2	
3	57	5	11.4	10.4	20.8	
4	125	5	25.0	24.0	48.0	
5	48	5	9.6	8.6	17.2	
6	NOT	APPLI	CABLE			
7	NO	SMEARS	TAKEN			
8	NO	SMEARS	TAKEN			
9	NO	SMEARS	TAKEN			
10	82	5	16.4	15.4	30.8	
11	15	5	3.0	2.0	4.0	
12	14	5	2.8	1.8	3.6	
13	20	5	4.0	3.0	6.0	
14	22	5	4.4	3.4	6.8	
15	17	5	3.4	2.4	4.8	
16	17	5	3.4	2.4	4.8	
17	58	5	10.6	9.6	19.2	
18	39	5	7.8	6.8	13.6	
19	14	5	2.8	1.8	3.6	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Contt. Date of Survey 5 October 1965

Counting Instrument RIDL: 2π Proportional (Windowless) Date of Counting 7 October 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
20	22	5	4.4	3.4	6.8	
21	10	2	5.0	4.0	8.0	
22	17	2	8.5	7.5	15.0	
23	23	2	11.5	10.5	21.0	
24	30	2	15.0	14.0	28.0	
25	61	2	30.5	29.5	59.0	
26	50	2	25.0	24.0	48.0	
27	25	2	12.5	11.5	23.0	
28	44	2	22.0	21.0	42.0	
29	30	2	15.0	14.0	28.0	
30	12	2	6.0	5.0	10.0	
31	36	2	12.0	11.0	22.0	
32	108	2	54.0	53.0	106.0	
33	50	2	25.0	24.0	48.0	
34	396	2	198.0	197.0	394.0	
35	15	2	7.5	6.5	13.0	
36	9	2	4.5	3.5	7.0	
37	NO SMEAR TAKEN					
38	185	2	92.5	91.5	183.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2 (Cont't) Date of Survey: 5 October 1965

Counting Instrument: RIDL: 2πProportional (Windowless) Date of Counting: 7 October 1965

Person Doing Survey: F. J. Bradley Person Doing Counting: J. V. Tekin

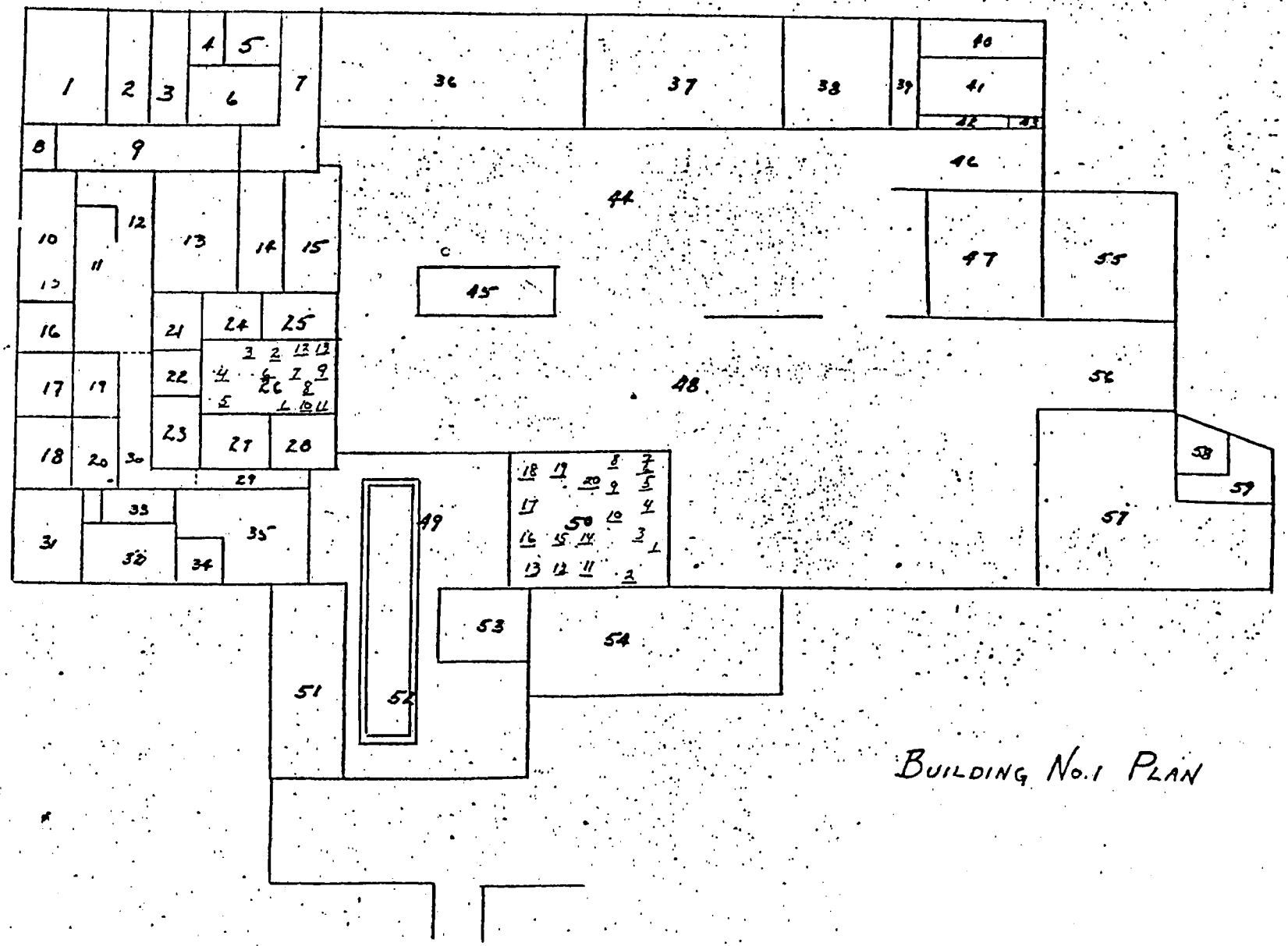
SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm / 100 cm^2	REMARKS
39	31	2	15.5	14.5	29.0	
40	35	2	17.5	16.5	33.0	
41	32	2	16.0	15.0	30.0	
42	41	2	20.5	19.5	39.0	
43	30	2	15.0	14.0	28.0	
44	13	2	6.5	5.5	11.0	
45	377	2	188.5	187.5	375.0	

HP Form 1

APPENDIX III

Intermediate Smear Surveys

SMEAR SURVEY
DATE of SURVEY: 27 & 28 OCT 1965
SMEAR NOS.: UNDERLINED NOS.
SMEARS TAKEN AFTER 1ST SCRUB-WASH



BUILDING No.1 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1, Room 26 Date of Survey 27 October 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 27 October 1965

Person Doing Survey J.V. Tekin Person Doing Counting D. C. Bogen

After First Scrub Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
BG						1.0 avg.
1	1	2	0.5	-	-	
2	2	2	1.0	-	-	
3	19	5	3.8	2.8	5.6	
4	9	2	4.5	3.5	7.0	
5	1	2	0.5	-	-	
6	5	2	2.5	1.5	3.0	
7	7	2	3.5	2.5	5.0	
8	12	2	6.0	5.0	10.0	
9	5	2	2.5	1.5	3.0	
10	1	2	0.5	-	-	
11	3	2	1.5	0.5	1.0	
12	8	2	4.0	3.0	6.0	
13	3	2	1.5	0.5	1.0	
14	4	2	2.0	1.0	2.0	Overhead light fixtures
15	10	2	5.0	4.0	8.0	" " "
16	2	2	1.0	-	-	" " "
17	9	2	4.5	3.5	7.0	" " "
18	9	2	4.5	3.5	7.0	Wall molding, left side

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1, Room 26 Date of Survey 27 October 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 27 October 1965

Person Doing Survey J. V. Tekin Person Doing Counting D. C. Bogen

After First Scrub Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
19	20	2	10.0	9.0	18.0	Wall tile, left side
20	6	2	3.0	2.0	4.0	Right wall
21	14	3	4.7	3.7	7.4	Back wall

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #1 Room #50 — Date of Survey: 28 October 1965

Counting Instrument: RIDL 2π Proportional (Windowless) — Date of Counting: 28 October 1965

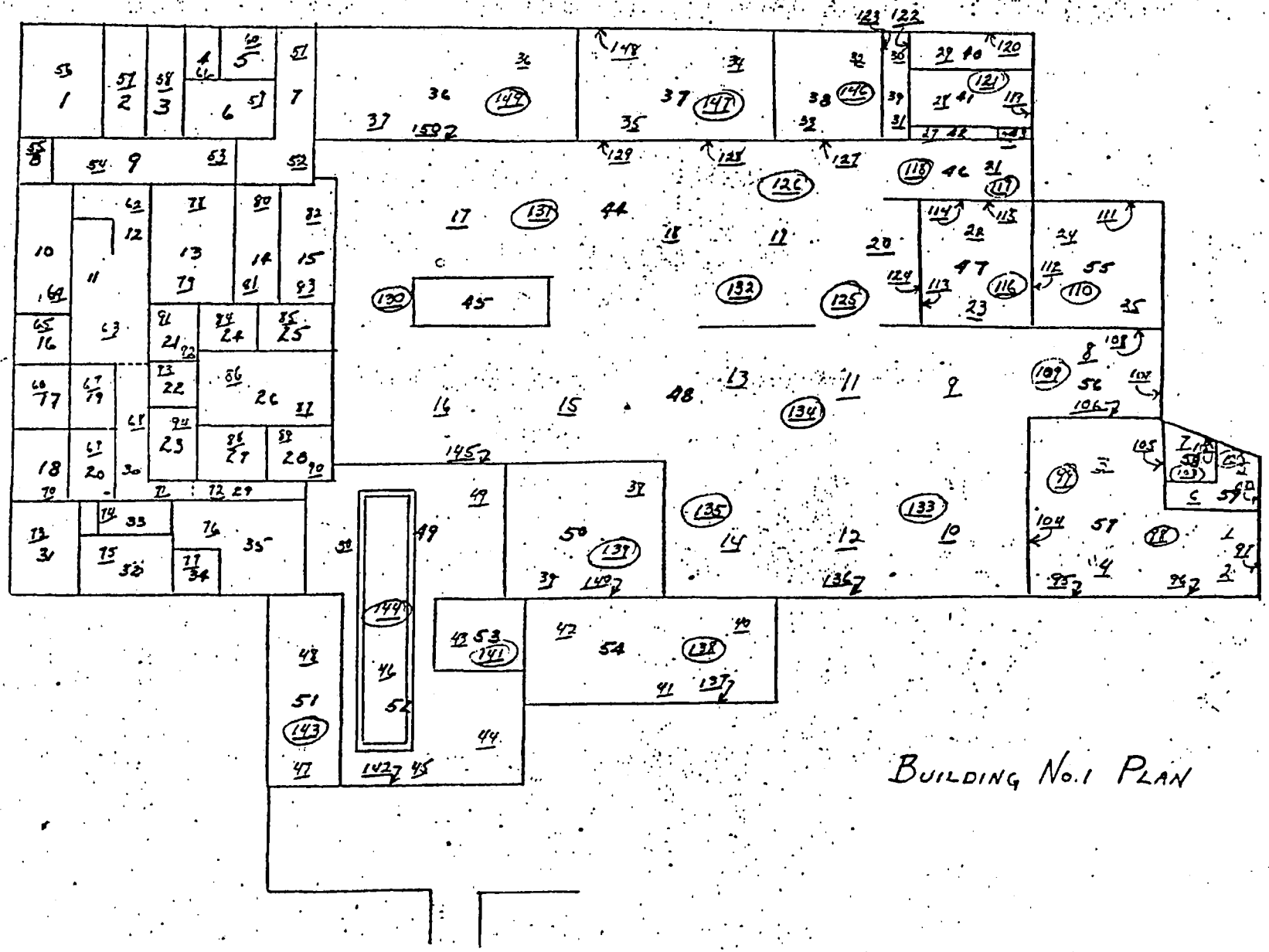
Person Doing Survey: J. V. Tekin — Person Doing Counting: J. V. Tekin

After First Scrub Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
BG						1.0 avg.
1	3	2	1.5	0.5	1.0	
2	16	2	8.0	7.0	14.0	
3	9	2	4.5	3.5	7.0	
4	12	2	6.0	5.0	10.0	
5	8	2	4.0	3.0	6.0	
6	8	2	4.0	3.0	6.0	
7	2	2	1.0	-	-	
8	16	4	4.0	3.0	6.0	
9	15	6	5.0	4.0	8.0	
10	28	6	4.6	3.6	7.2	
11	11	4	2.7	1.7	3.4	
12	6	2	3.0	2.0	4.0	
13	13	3	4.3	3.3	6.6	
14	10	2	5.0	4.0	8.0	
15	11	4	2.7	1.7	3.4	
16	7	2	3.5	2.5	5.0	
17	4	2	2.0	1.0	2.0	
18	7	2	3.5	2.5	5.0	

HP Form I

SMEAR SURVEY
DATE of SURVEY: 8&9 NOV 1965
SMEAR NOS.: UNDERLINED NOS.
SMEAR NOS, CIRCLED: SMEARS TAKEN ON OVERHEAD FIXTURES



BUILDING No.1 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 8 & 9 November 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 9 November 1965

Person Doing Survey F. J. Bradley & E. L. Bradley Person Doing Counting J. V. Tekin & E.L. Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm²	REMARKS
BG #1	6	2	3.0			
BG #2	2	2	1.0			
BG #3	3	2	1.5	1.8 avg.~2.0		
Std.#1 1	2875 8	2 2	1437.5	1435.5		$\frac{dpm}{cpm} = \frac{2914}{1436} = 2.02 \sim 2.0$
2	5	2				
3	10	2				
4	8	2				
5	3	2				
6	10	2				
7	5	2				
8	420	148	2.8	0.8	1.6	
9	14	2	7.0	5.0	10.0	
10	13	2	6.5	4.5	9.0	
11	12	2	6.0	4.0	8.0	
12	6	2	3.0	1.0	2.0	
13	13	2	6.5	4.5	9.0	
14	6	2	3.0	1.0	2.0	
15	27	2	13.5	11.5	23.0	
16	6	2	3.0	1.0	2.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 8 & 9 November 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 9 November 1965

Person Doing Survey F.J.Bradley & E.L.Bradley Person Doing Counting J.V.Tekin&F.J.Bradley

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
36	6	2	3.0	1.0	2.0	
37	6	2	3.0	1.0	2.0	
38	22	2	11.0	9.0	18.0	
39	10	2	5.0	3.0	6.0	
40	6	2	3.0	1.0	2.0	
41	15	2	7.5	5.5	11.0	
42	8	2	4.0	2.0	4.0	
43	4	2	2.0	-	-	
44	15	2	7.5	5.5	11.0	
45	22	2	11.0	9.0	18.0	
46	6	2	3.0	1.0	2.0	
47	12	2	6.0	4.0	8.0	
48	7	2	3.5	1.5	3.0	
49	8	2	4.0	2.0	4.0	
50	9	2	4.5	2.5	5.0	
51	18	2	9.0	7.0	14.0	
52	25	2	12.5	10.5	21.0	
53	5	2	2.5	0.5	1.0	
54	12	2	6.0	4.0	8.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 8 & 9 Novemebr 1965

Counting Instrument RIDL 2π Proportional (Windowless) Date of Counting 9 November 1965

Person Doing Survey F.J.Bradley & E.L.Bradley Person Doing Counting F.J.Bradley&J.V.Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ COUNTS/MIN	ACTIVITY dpm/100cm^2	REMARKS
55	3	2	1.5	-	-	
56	4	2	2.0	-	-	
57	6	2	3.0	1.0	2.0	
58	10	2	5.0	3.0	6.0	
59	2	2	1.0	-	-	
60	4	2	2.0	-	-	
61	11	2	5.5	3.5	7.0	
62	6	2	3.0	1.0	2.0	
63	6	2	3.0	1.0	2.0	
64	12	2	6.0	4.0	8.0	
65	7	2	3.5	1.5	3.0	
66	5	2	2.5	0.5	1.0	
67	4	2	2.0	-	-	
68	7	4	3.5	1.5	3.0	
69	4	2	2.0	-	-	
70	3	2	1.5	-	-	
71	16	2	8.0	6.0	12.0	
72	14	2	7.0	5.0	10.0	
73	7	2	3.5	1.5	3.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #1 (1293 Area) Date of Survey: 8 & 9 November 1965

Counting Instrument: RIDL 2π Proportional (Windowless) Date of Counting: 9 November 1965

Person Doing Survey: F.J.Bradley & E.L.Bradley Person Doing Counting: F.J.Bradley & J.V.Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100 cm^2	REMARKS
74	10	2	5.0	3.0	6.0	
75	5	2	2.5	0.5	1.0	
76	11	2	5.5	3.5	7.0	
77	10	2	5.0	3.0	6.0	
78	7	2	3.5	1.5	3.0	
79	4	2	2.0	-	-	
80	130	2	65.0	63	126	Decontaminate
81	26	2	13.0	11.0	22.0	
82	40	2	20.0	18.0	36.0	
83	25	2	12.5	10.5	21.0	
84	21	2	10.5	8.5	17.0	
85	17	2	8.5	6.5	13.0	
86	14	2	7.0	5.0	10.0	
87	7	2	3.5	1.5	3.0	
88	8	2	4.0	2.0	4.0	
89	N O T	C O U N T	E D			
90	7	2	3.5	1.5	3.0	
91	9	2	4.5	2.5	5.0	
92	8	2	4.0	2.0	4.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 8 & 9 November 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 9 November 1965

Person Doing Survey F.J. Bradley, E.L. Bradley Person Doing Counting F.J. Bradley, I.V. Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
93	10	2	5.0	3.0	6.0	
94	5	2	2.5	0.5	1.0	
95	4	2	2.0	1.0	2.0	BG = 1.0 avg.
96	3	2	1.5	0.5	1.0	
97	3	2	1.5	0.5	1.0	
98	6	2	3.0	2.0	4.0	
99	17	11	1.5	0.5	1.0	
100	6	2	3.0	2.0	4.0	
101	2	2	1.0	-	-	
102	6	2	3.0	2.0	4.0	
103	6	2	3.0	2.0	4.0	
104	4	2	2.0	1.0	2.0	
105	4	2	2.0	1.0	2.0	
106	6	2	3.0	2.0	4.0	
107	6	2	3.0	2.0	4.0	
108	11	2	5.5	4.5	9.0	
109	10	2	5.0	4.0	8.0	
110	9	2	4.5	3.5	7.0	
111	3	2	1.5	0.5	1.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #1 (1293 Area) Date of Survey: 8 & 9 November 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 9 November 1965

Person Doing Survey: F.J.Bradley, E.L.Bradley Person Doing Counting: F.J.Bradley, J.V.Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
112	9	2	4.5	3.5	7.0	
113	N O T C O U N T E D					
114	4	2	2.0	1.0	2.0	
115	9	2	4.5	3.5	7.0	
116	5	2	2.5	1.5	3.0	
117	7	2	3.5	2.5	5.0	
118	7	2	3.5	2.5	5.0	
119	4	2	2.0	1.0	2.0	
120	7	2	3.5	2.5	5.0	
121	6	2	3.0	2.0	4.0	
122	7	2	3.5	2.5	5.0	
123	7	2	3.5	2.5	5.0	
124	8	2	4.0	3.0	6.0	
125	16	2	8.0	7.0	14.0	
126	11	2	5.5	4.5	9.0	
127	4	2	2.0	1.0	2.0	
128	6	2	3.0	2.0	4.0	
129	8	2	4.0	3.0	6.0	
130	18	2	9.0	8.0	16.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 8 & 9 November 1965

Counting Instrument RIDL 2π:Proportional (Windowless) Date of Counting 9 November 1965

Person Doing Survey F.J.Bradley & E.L.Bradley Person Doing Counting F.J.Bradley,J.V.Tekin

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
131	5	2	2.5	1.5	3.0	
132	5	2	2.5	1.5	3.0	
133	5	2	2.5	1.5	3.0	
134	2	2	1.0	-	-	
135	14	2	7.0	6.0	12.0	
136	5	2	2.5	1.5	3.0	
137	4	2	2.0	1.0	2.0	
138	2	2	1.0	-	-	
139	3	2	1.5	0.5	1.0	
140	2	2	1.0	-	-	
141	4	2	2.0	1.0	2.0	
142	2	2	1.0	-	-	
143	1	2	0.5	-	-	
144	1	2	0.5	-	-	
145	3	2	1.5	0.5	1.0	
146	3	2	1.5	0.5	1.0	
147	6	2	3.0	2.0	4.0	
148	2	2	1.0	-	-	
149	3	2	1.5	0.5	1.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

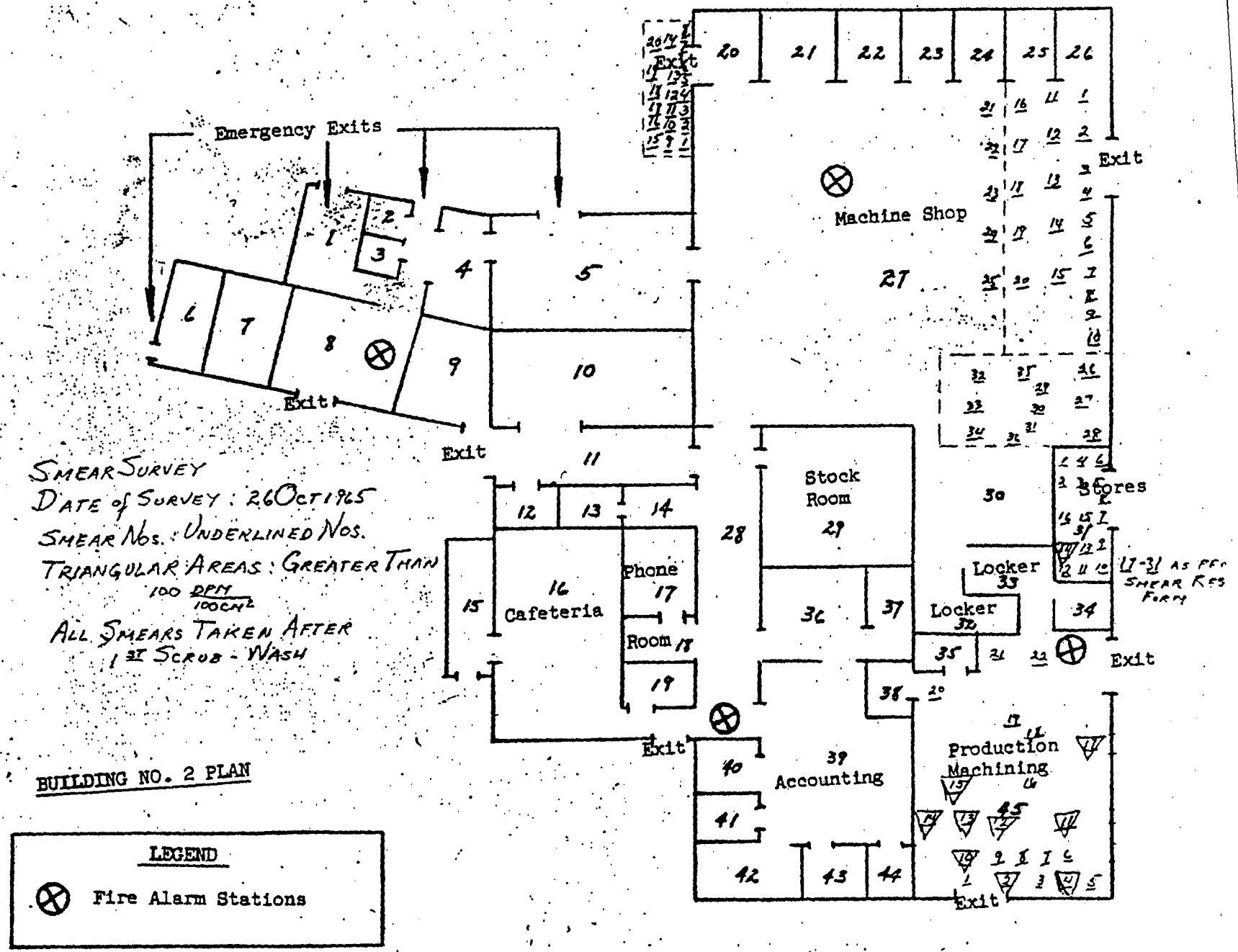
Location of Survey Sylcor Building #1 (1293 Area) Date of Survey 8 & 9 November 1965

Counting Instrument RIDL 2π:Proportional (Windowless) Date of Counting 9 November 1965

Person Doing Survey F.J.Bradley & E.L.Bradley Person Doing Counting F.J.Bradley & J.V.Tek

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
150	5	2	2.5	1.5	3.0	

HP Form I


Emergency Exits
Exit
Exit
Exit
Machine Shop
27
Stock Room
29
Stores
30
Locker
33
Locker
32
Exit
Exit
Phone
17
Room
18
16
Cafeteria
15
28
Exit
39
Accounting
40
41
42
43
44
Production Machining
Exit
SMEAR SURVEY
DATE of SURVEY : 26 OCT 1965
SMEAR Nos. : UNDERLINED Nos.
TRIANGULAR AREAS : GREATER THAN
100 DPM / 100 CM²
ALL SMEARS TAKEN AFTER
1ST SCRUB - WASH
BUILDING NO. 2 PLAN
LEGEND
Fire Alarm Stations

A-III-16

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 Outside of Room #20 Date of Survey 26 October 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 26 October 1965

Person Doing Survey D. C. Bogen Person Doing Counting D. C. Bogen

After First Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
BG						1.0 avg.
1	1	2	0.5	-	-	
2	1	2	0.5			
3	0	2	-	-	-	
4	1	2	0.5	-	-	
5	0	2	-	-	-	
6	2	2	1.0	-	-	
7	1	2	0.5	-	-	
8	2	2	1.0	-	-	
9	1	2	0.5	-	-	
10	1	2	0.5	-	-	
11	0	2	-	-	-	
12	1	2	0.5	-	-	
13	7	7	1.0	-	-	
14	9	2	4.5	3.5	7.0	
15	3	2	1.5	0.5	1.0	
16	1	2	0.5	-	-	
17	0	2	-	-	-	
18	2	3	0.6	-	-	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2 Outside of Room #20 Date of Survey: 26 October 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 26 October 1965

Person Doing Survey: D. C. Bogen Person Doing Counting: D. C. Bogen

After Fisrt Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
19	1	2	0.5	-	-	
20	2	2	1.0	-	-	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2, Room 27 — Date of Survey: October 26, 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) — Date of Counting: October 26, 1965

Person Doing Survey: D. C. Bogen — Person Doing Counting: D. C. Bogen

After First Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
BG						1.0
1	7	2	3.5	2.5	5.0	
2	2	2	1.0	-	-	
3	2	2	1.0	-	-	
4	4	2	2.0	1.0	2.0	
5	6	2	3.0	2.0	4.0	
6	2	2	1.0	-	-	
7	0	2	-	-	-	
8	3	2	1.5	0.5	1.0	
9	1	2	0.5	-	-	
10	2	2	1.0	-	-	
11	0	2	-	-	-	
12	2	2	1.0	-	-	
13	2	2	1.0	-	-	
14	1	2	0.5	-	-	
15	1	2	0.5	-	-	
16	2	2	1.0	-	-	
17	4	2	2.0	1.0	2.0	
18	6	2	3.0	2.0	4.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building,#2, Room 27 Date of Survey October 26, 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting October 26, 1965

Person Doing Survey D. C. Bogen Person Doing Counting D. C. Bogen

After First Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
19	60	11	5.5	4.5	9.0	
20	15	2	7.5	6.5	13.0	
21	15	2	7.5	6.5	13.0	
22	8	2	4.0	3.0	6.0	
23	6	2	3.0	2.0	4.0	
24	2	2	1.0	-	-	
25	0	2	-	-	-	
26	4	2	2.0	1.0	2.0	
27	2	2	1.0	-	-	
28	6	2	3.0	2.0	4.0	
29	14	2	7.0	6.0	12.0	
30	46	2	23.0	22.0	44.0	
31	26	2	13.0	12.0	24.0	
32	17	2	8.5	7.5	15.0	
33	29	2	14.5	13.5	27.0	
34	28	2	14.0	13.0	26.0	
35	35	2	17.5	16.5	33.0	
36	26	2	13.0	12.0	24.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2, Room #31 Date of Survey 26 October 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 26 October 1965

Person Doing Survey J. V. Tekin Person Doing Counting J. V. Tekin

After First Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
BG						~ 1.0
1	35	2	17.5	16.5	33.0	
2	17	2	8.5	7.5	15.0	
3	49	2	24.5	23.5	47.0	
4	16	2	8.0	7.0	14.0	
5	23	2	11.5	10.5	21.0	
6	62	2	31.0	30.0	60.0	
7	22	2	11.0	10.0	20.0	
8	27	2	13.5	12.5	25.0	
9	12	2	6.0	5.0	10.0	
10	59	2	29.5	28.5	57.0	
11	6	2	3.0	2.0	4.0	
12	51	2	25.5	24.5	49.0	
13	7	2	3.5	2.5	5.0	
14	692	2	346.0	345.0	790.0	
15	13	2	6.5	5.5	11.0	
16	14	2	7.0	6.0	12.0	
17	4	2	2.0	1.0	2.0	Black water pipe
18	4	2	7.0	6.0	12	Black water pipe

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2, Room #31 Date of Survey: 26 October 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 26 October 1965

Person Doing Survey: J. V. Tekin Person Doing Counting: J. V. Tekin

After First Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
19	3	2	1.5	0.5	1.0	Insulated pipe
20	2	1	2.0	1.0	2.0	Insulated pipe
21	1	1	1.0	-	-	Right wall
22	3	1	3.0	2.0	4.0	Right wall
23	13	1	13.0	12.0	24.0	Right wall
24	1	1	1.0	-	-	Back wall
25	0	1	-	-	-	Back wall
26	0	1	-	-	-	Back wall
27	D I D	N O T	C O U N T			Left wall
28	0	1	-	-	-	Left wall
29	1	5	0.2	-	-	Left wall
30	0	1	-	-	-	Light fixture
31	0	2	-	-	-	Light fixture

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2(1293 Area),Room45 Date of Survey: 25 October 1965

Counting Instrument: RIDL 2π:Proportional (Windowless) Date of Counting: 25 October 1965

Person Doing Survey: J. V. Tekin Person Doing Counting: J. V. Tekin

After First Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
BG#3	3	7	0.43			
BG#1	3	6	0.50			
BG#2	1	1	1.00	0.6~1.0		
1	24	2	12.0	11.0	22.0	
2	138	2	69.0	68.0	136.0	
3	72	2	36.0	35.0	70.0	
4	112	2	56.0	55.0	110.0	
5	33	2	16.5	15.5	31.0	
6	27	2	13.5	12.5	25.0	
7	18	2	9.0	8.0	16.0	
8	52	2	26.0	25.0	50.0	
9	87	2	43.5	42.5	85.0	
10	134	2	67.0	66.0	132.0	
11	263	2	131.5	130.5	261.0	
12	136	2	68.0	67.0	134.0	
13	146	2	73.0	72.0	144.0	
14	127	2	63.5	62.5	125.0	
15	136	2	68.0	67.0	134.0	
16	93	2	46.5	45.5	91.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Room 45 Date of Survey 25 October 1965

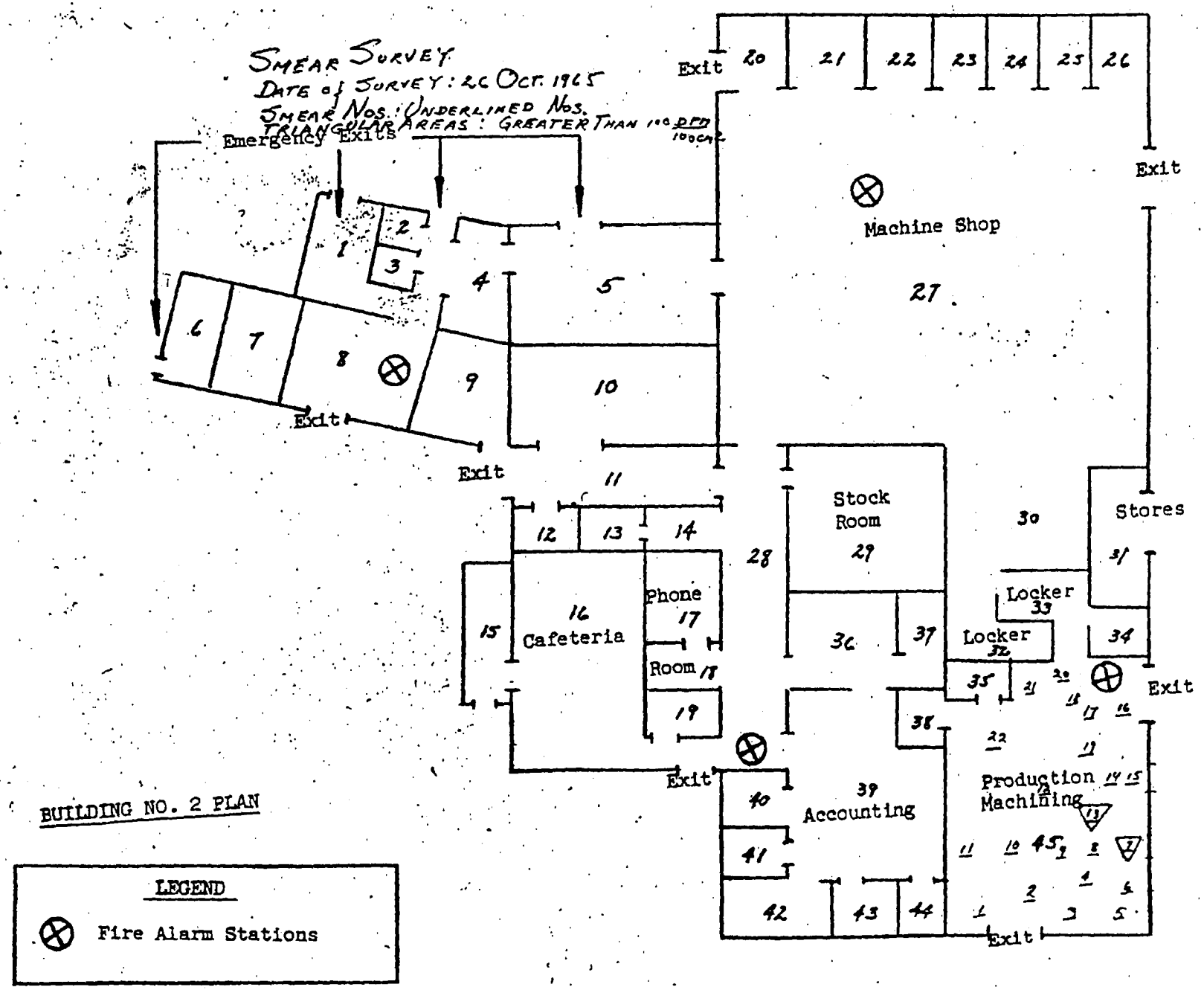
Counting Instrument RIDL 2π Proportional (Windowless) Date of Counting 25 October 1965

Person Doing Survey J. V. Tekin Person Doing Counting J. V. Tekin

After First Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
17	273	2	136.5	135.0	270.0	
18	69	2	34.5	33.5	67.0	
19	90	2	45.0	44.0	88.0	
20	81	2	40.5	39.5	79.0	
21	32	2	16.0	15.0	30.0	
22	45	2	22.5	21.5	43.0	

HP Form 1



BUILDING NO. 2 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2 , Room 45 — Date of Survey: 26 October 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) — Date of Counting: 26 October 1965

Person Doing Survey: D. C. Bogen — Person Doing Counting: D. C. Bogen

Room 45 After 2nd Scrub Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
1	81	2	40.5	39.5	79.0	
2	285	10	28.5	27.5	55.0	
3	38	2	19.0	18.0	36.0	
4	19	2	9.5	8.5	17.0	
5	110	4	27.5	26.5	53.0	
6	48	2	24.0	23.0	46.0	
7	229	2	114.5	113.5	227.0	
8	5	2	2.5	1.5	3.0	
9	13	2	6.5	5.5	11.0	
10	50	2	25.0	24.5	49.0	
11	8	2	4.0	3.0	6.0	
12	63	2	31.5	30.5	61.0	
13	332	2	166.0	165.0	330.0	
14	63	2	31.5	30.5	61.0	
15	59	2	29.5	28.5	57.0	
16	19	2	9.5	8.5	17.0	
17	22	2	11.0	10.0	20.0	
18	17	2	8.5	7.5	15.0	
19	30	2	15.0	14.0	28.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2, Room45 Date of Survey 26 October 1965

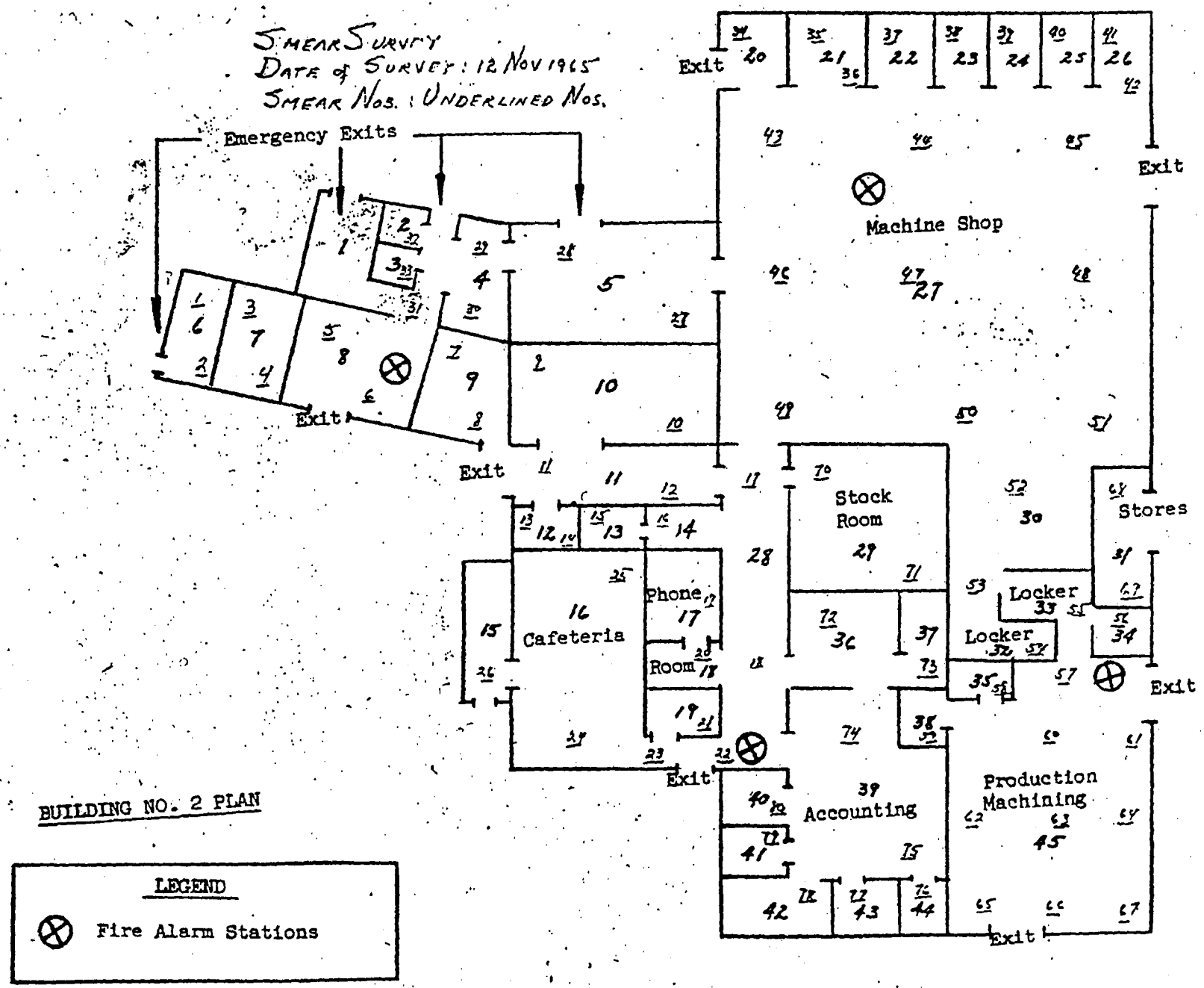
Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 26 October 1965

Person Doing Survey D. C. Bogen Person Doing Counting D. C. Bogen

Room 45 After 2nd Scrub Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
20	40	2	20.0	19.0	38.0	
21	10	2	5.0	4.0	8.0	
22	16	2	8.0	7.0	14.0	
23	8	2	4.0	3.0	6.0	
24	33	2	16.5	15.5	31.0	Red pipe overhead at entrance
25	25	2	12.5	11.5	23.0	I Beam
26	112	2	56.0	55.0	110.0	Left bus electrical distribution
27	125	2	62.5	61.5	123.0	Block pipe-left side
28	23	2	11.5	10.5	21.0	1 row from left 3rd light
29	34	2	17.0	16.0	32.0	Heating unit near exit
30	23	2	11.5	10.5	21.0	Top of speaker
31	77	2	38.5	37.5	75.0	3rd row of lights from left; 1st one from entran
32	60	4	15.0	14.0	28.0	Red pipe underneath 4th row of lights

HP Form 1



BUILDING NO. 2 PLAN

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Date of Survey 12 November 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12 November 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

After Third Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
BG						1.0 Avg.
1	NOT APPLICABLE					
2	NOT APPLICABLE					
3	9	2	4.5	3.5	7.0	
4	4	2	2.0	1.0	2.0	
5	19	2	9.5	8.5	17.0	
6	17	2	8.5	7.5	15.0	
7	8	2	4.0	3.0	6.0	
8	6	2	3.0	2.0	4.0	
9	9	2	4.5	3.5	7.0	
10	3	2	1.5	0.5	1.0	
11	5	2	2.5	1.5	3.0	
12	10	2	5.0	4.0	8.0	
13	4	2	2.0	1.0	2.0	
14	8	2	4.0	3.0	6.0	
15	4	2	2.0	1.0	2.0	
16	NOT COUNTED					
17	12	2	6.0	5.0	10.0	
18	6	2	3.0	2.0	4.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey: Sylcor Building #2 (1293 Area) Date of Survey: 12 November 1965

Counting Instrument: RIDL 2π: Proportional (Windowless) Date of Counting: 12 November 1965

Person Doing Survey: F. J. Bradley Person Doing Counting: J. V. Tekin

After Third Scrub Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
19	8	2	4.0	3.0	6.0	
20	5	2	2.5	1.5	3.0	
21	N O T C O U N T E D					
22	8	2	4.0	3.0	6.0	
23	6	2	3.0	2.0	4.0	
24	4	2	2.0	1.0	2.0	
25	5	2	2.5	1.5	3.0	
26	9	2	4.5	3.5	7.0	
27	12	2	6.0	5.0	10.0	
28	16	2	8.0	7.0	14.0	
29	18	2	9.0	8.0	16.0	
30	16	2	8.0	7.0	14.0	
31	7	2	3.5	2.5	5.0	
32	8	2	4.0	3.0	6.0	
33	10	2	5.0	4.0	8.0	
34	7	2	3.5	2.5	5.0	
35	9	2	4.5	3.5	7.0	
36	12	2	6.0	5.0	10.0	
37	11	2	5.5	4.5	9.0	

HP Form 1

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2(1293 Area) Date of Survey 12 November 1965

Counting Instrument RIDL 2π:Proportional (Windowless) Date of Counting 12 November 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

After Third Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS-BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
38	12	2	6.0	5.0	10	
39	10	2	5.0	4.0	8	
40	9	2	4.5	3.5	7	
41	9	2	4.5	3.5	7	
42	7	2	3.5	2.5	5	
43	8	2	4.0	3.0	6	
44	10	2	5.0	4.0	8	
45	6	2	3.0	2.0	4	
46	9	2	4.5	3.5	7	
47	11	2	5.5	4.5	9	
48	9	2	4.5	3.5	7	
49	6	2	3.0	2.0	4	
50	5	2	4.5	3.5	7	
51	4	2	2.0	1.0	2	
52	4	2	2.0	1.0	2	
53	5	2	2.5	1.5	3.0	
54	12	2	6.0	5.0	10.0	
55	12	2	6.0	5.0	10.0	
56	12	2	6.0	5.0	10.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Date of Survey 12 November 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12 November 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

After Third Wash-Scrub

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
57	26	2	13.0	12.0	24.0	
58	30	2	15.0	14.0	28.0	
59	19	2	9.5	8.5	17.0	
60	80	2	40.0	39.0	78.0	Grease spot
61	50	2	25.0	24.0	48.0	
62	27	2	13.5	12.5	25.0	
63	20	2	10.0	9.0	18.0	
64	23	2	11.5	10.5	21.0	
65	26	2	13.0	12.0	24.0	
66	19	2	9.5	8.5	17.0	
67	15	2	7.5	6.5	13.0	
68	85	2	42.5	41.5	83.0	
69	12	2	6.0	5.0	10.0	
70	8	2	4.0	3.0	6.0	
71	9	2	4.5	3.5	7.0	
72	13	2	6.5	5.5	10.0	
73	13	2	6.5	5.5	10.0	
74	4	2	2.0	1.0	2.0	
75	2	2	1.0	0.5	1.0	

HP Form I

ISOTOPES, INC.
123 WOODLAND AVENUE
WESTWOOD, NEW JERSEY 07675

SMEAR RESULTS

Location of Survey Sylcor Building #2 (1293 Area) Date of Survey 12 November 1965

Counting Instrument RIDL 2π: Proportional (Windowless) Date of Counting 12 November 1965

Person Doing Survey F. J. Bradley Person Doing Counting J. V. Tekin

After Third Scrub-Wash

SMEAR NO.	N_{GROSS} (COUNTS)	t (MIN)	R_{GROSS} (COUNTS/MIN)	$R_{GROSS}-R_{BG}$ (COUNTS/MIN)	ACTIVITY dpm/100cm^2	REMARKS
76	8	2	4.0	3.0	6.0	
77	2	2	1.0	-	-	
78	6	2	3.0	2.0	4.0	
79	9	2	4.5	3.5	7.0	
80	5	2	2.5	1.5	3.0	

HP Form 1

F2003-0019

6

May 26, 1965

Mr. R. C. Blair, Manager
U.S. Atomic Energy Commission
Savannah River Operations Office
P.O. Box A
Aiken, S.C.

Attention: Mr. N. J. Donahue

Gentlemen:

In order to expedite the cleaning up of the Hicksville area, it is necessary that the uranium scrap be returned to Fernald, Ohio for recovery. The limitations on the amount of material allowed on a truck when moving from Hicksville to Fernald will require the use of these trucks with an extremely light load (3-1/2 tons). The use of aluminum boxes would enable us to ship full loads, but the scarcity of these boxes prevents us from using them.

Fernald now ships material to us in wooden boxes constructed so that there is a water space above and below the cores. These boxes are available for use for shipping the scrap to Fernald but they do not meet the requirements of the Hicksville license.

As a temporary measure, therefore, I would like to request that permission be given to deviate from the license at this time to allow us to return scrap uranium material to

DOE's Response to Estevez
FOIA F2003-00195

Fernald in the same boxes used to ship the material to us and in full truck amounts (33,000 lbs.). This would enable us to remove all uranium material from the area in a reasonable time at a reasonable cost. This deviation will be required for two to four trucks only and will end when the contract is terminated.

I would like, therefore, to solicit your aid in the solution of this problem and would like permission to use these boxes as soon as possible.

Very truly yours,

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.

Edward Meyer
Engineer-in-Charge

EM/gg
cc: J. Hopkins

bcc: W.R Mandaro

F2003-0019

7

R. C. Blair, Manager

July 30, 1965

I. A. Hobbs, Director
Technical and Production Division

DISPOSAL OF CONTAMINATED WASTE FROM SYLCOR

TM:JFS:jcl

With your approval, contaminated scrap from Sylcor will be disposed of by burial at SRP. As much as possible will be handled as bulk shipment rather than being broken up and drummed for transfer between sites. The type and degree of contamination present on this scrap material and equipment is incapable of causing a significant health problem, even under maximum credible accident conditions.

The estimated savings by using this method instead of burial at NFS is shown by the following comparison:

	Burial at SRP	Burial at NFS
Value of 800 drums @ $6.75	$ -	$ 5,400
Burial of 800 drums @ $.80/ft^3	-	4,480
Labor for crushing and drumming (Not required for bulk burial)	-	2,000
Shipping 24 loads @ $280	-	6,720
@ $410	9,840	-
Decontamination or burial of truck bed	500	-
Other Costs	same	same
Total	$10,340	$18,600
Savings	$8,260	

cc: J. S. Hopkins, Admin. Div.
A. M. Coker, Legal
P. J. Hagelston, S&TS
C. B. Bastin, Chem. Proc. Br.

Approved

AUG 4 - 1965

DOE's Response to Estevez
FOIA F2003-00195

F2003-0019
8

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
SAVANNAH RIVER PLANT
AIKEN, SOUTH CAROLINA 29802
(TEL. & TEL. ADDRESS, AUGUSTA, GA.)

EXPLOSIVES DEPARTMENT
ATOMIC ENERGY DIVISION

August 4, 1965

Mr. R. C. Blair, Manager
Savannah River Operations Office
U. S. Atomic Energy Commission
Aiken, South Carolina

Attention: Mr. J. S. Hopkins, Director
Administrative Division

Dear Mr. Blair:

TRANSFER OF EQUIPMENT FROM SYLCOR TO SAVANNAH RIVER PLANT

As a followup to my letter of June 18, 1965, and in compliance with Mr. Hopkins' request, we are attaching instructions for delivery of equipment to be transferred. This information was given to Mr. Hopkins informally last week. In general the equipment will be delivered to Building 714-6G for storage prior to installation. Certain items of laboratory and inspection equipment, and machine tools will be delivered to buildings in 300/700 Areas. The attached list slightly modifies the previous list transmitted on June 18. Descriptions of equipment have been improved and clarified. Several small items have been added or omitted as a result of further review by engineering inspection teams.

We are proceeding with the necessary authorization requests for transfer of this equipment. Several items of machine tools, to be utilized by the Savannah River Laboratory and the Plant Maintenance Department, are being authorized on Indirect Repair Orders or Purchase Requisitions. Use of these items will not be directly related to increased production capabilities for the 300 Area. The various items to be used in fuel element production will be authorized on existing projects or on the planned new project for increased capabilities.

As mentioned previously, we can foresee no immediate use for the uranium machining equipment described on page 4 of the attached but, as requested, we are in the process of transferring it here for storage. Agreement was reached with members of your Staff that we would be provided with authorization to undertake this action as well as with instructions on property accounting treatment.

Yours very truly,

J. A. Monier, Jr.
Assistant Plant Manager

WJB:is
Attachment

DOE's Response to Estevez
FOIA F2003-00195

APPENDIX A

SHIPPING INSTRUCTIONS FOR EQUIPMENT TO BE TRANSFERRED FROM SYLCOR TO SAVANNAH RIVER PLANT

TO BE DELIVERED TO BUILDING 313-M

Equipment No.	Description
1719	Positioner for reflectoscope
1980	Reflectoscope
3771	Reflectoscope
3822	Camera (photo identification with associated fixtures, supports and conveyor)
3916	Toledo counter balance - capacity 5 kg.
3789	Taft-Pierce centering fixture
3791	Ultrasonic Flaw Detector w/scope

TO BE DELIVERED TO BUILDING 322-M

Equipment No.	Description
2357	Illuminator
2358	Microscope
3747	Camera

TO BE DELIVERED TO BUILDING 723-A

Equipment No.	Description
1713	15 KC F.T.C.
3913	Nickel Detector
3712	Conductivity meter
3303	Rate Meter
3333	Potentiometer
3110	Potentiometer
3719, 3873, 3897	Brush recorder with radiation thermometer and infra-red measuring system
3846, 3826, 3928, 3929, 3938	D.C. recorder, amplifier and infra-red temperature measuring system, complete with cart
3165	Dermitron

TO BE DELIVERED TO BUILDING 717-A

Equipment No.	Description
3261	Bridgeport mill
3436	Hartford dividing head
3787	Pullman machine
3637	Elox machine
3408	P & H AC-DC welder

TO BE DELIVERED TO BUILDING 773-A

Equipment No.	Description
270	Moore No. 2 jig borer
341	B & L Toolmakers Microscope
3844	Lown sheetmetal roll
256	Metal brake

All other items requested for transfer by Du Pont will be delivered to the Fuel Fabrication Equipment Storage, Building 714-6G (formerly Z-8321-C) (see attached list).

All items of machine tools, used for machining uranium, as listed on Appendix B - Letter of June 18, are to be delivered for contaminated equipment storage in Building 714-6G.

It will be desirable in dispatching equipment for receipt and storage in Building 714-6G that all items associated with the automatic plating machine complex be identified so they can be set aside as one group. This will also apply to Equipment No. 3765 - Sheffield Gage System.

TO BE DELIVERED TO BUILDING 714-6G

Equipment No.	Description
3699	Grain size tester
3412	Trim-Weld machine
3780	Nicket test equip.
3782	Conveyor
3813	Bond tester
3820	Accumulator
3921	Lubricator
3934	Saw
3940	Accumulator
3842	Rib trimmer
3920	Rib trimmer
3824	End trimmer
	Plating Line Complex
2033	Rubber lined tank
3108	Filter pump assembly
3109	Filter pump assembly
3162	PH controller
3169	Filter
3220, 3221, 3222	Pumps
3224	Deionizer
3255	Temp. Controller
3276	Conveyor
3319	Plating Machine
3363	Filter
3366	Mixers
3370	Rinse Tank

Equipment No.	Description
	Plating Line Complex (Continued)
3374	Pump
3388	Coil
3391	Flowrater
3396	Rack Carts
3398	Pump
3406	Temp. controller
3454	Coil
3538	Controller
3596	Controller
3602	Manometer
3655	Pump
3817	Karbo clear
3541	Demineralizer
3698	PH meter
3796	Solubridge
3866	Pump
3909	PH analyzer
3910	PH analyzer
3208 3209 3210 3211 3212	Vacuum driers
2230	Pangborn sand blaster
3384	Temp. controller
3404	Fume scrubber
3595	Temp. controller
3776	Eimco filter
3884	Electric oven
All Mark V E Plating Racks, Inner & Outer	
All Mark V E Anodes	
All Mark V B Anodes	
	Inspection Equipment
341	Tool Makers Microscope
1,500	Sheffield Air Gage
1,852	Gaging Fixture
1,857	Federal Gage
1,873	Comtor Amplifiers P-2
1,874	" " "
1,875	" " "
1,876	" " "
1,877	" " "
1,892	Gagine Fixture
1,893	" "
1,905	Model P-2 Amplifier
1,912	Sheffield Height Gage
1,989	Gaging Fixture
1,990	" "
2,030	Dial Gage
2,512	Gaging Fixture

Equipment No.	Description
	Inspection Equipment (Continued)
2,518	Comtor P-2 Amplifier
2,519	" " "
3,050	B & S Thrift Blocks
3,142	Federal Caliper Gauge M9P
3,143	" " " "
3,191	Federal Groove Gage P-12
3,291	Borescope M-27A
3,301	Vernier Gage
3,597	B & S Intrimik
3,598	" "
3,599	" "
	Uranium Machining Equipment
3706	Arbor Press
1731	Matco
3372	Motor
3714	Lathe
664	Press
238	Degreaser
3704	Hendy Lathe
3650	Excello
2045	Lathe
3245	Excello
1314	Saw
3609	Excello
1803	Sander
1773	Lathe
3540	Excello
2067	Cincinnati
3376	Gearotor
3622	Lathe
2034	Drill Press
3280	Cut Off
	Other Equipment
3765	Sheffield Gage with all attachments
3720	Lithium Search Unit
24 Sets Mark V E I.F. Furnace Dies and Hardware	
24 Sets Mark V B Furnace Dies only	
Inconel X-750 Stock	
3892	Die Sizer
6 Vacuum Pumps w. 3 H.P. Drive	
6 Hydraulic Power Units - Gearotor 8 GPM - 1000 psi	
	3835 Die Loading Fixture
	3861 Die Breaking Fixture
	2 Ea. Complete Units
	2 Ea. Pump & Motor Sets
Hydraulic Power Unit - Viking	
	Gearotor, 3 GPM - 1000 psi
	Racine - 2 pumps - 12 GPM - 1000 psi
	Gearotor - 12 GPM - 500 psi
	Helishaw - 3 GPM - 5000 psi
	Racine - 8 GPM - Variable

Equipment No.	Description
	Other Equipment (Continued)
3788	Auto analyzer
2377	Metallograph
2452	Polishing table
3693	Electro-polisher
3755	Stud sharpener
3874	Polishing table
3734	Polishing table
3786	Polishing table

Hydraulic Power Unit Denison model A051- 240FF with 7 1/2-hp motor

F2003-0019

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA GEN. REG. NO. 27
5010-107

UNITED STATES GOVERNMENT

Memorandum

9

TO : J. S. Hopkins, Director
Administrative Division

DATE: November 4, 1965

FROM : O. H. Giboney, Deputy Director
Safety and Technical Services Division

SUBJECT: SURVEY AND DISPOSAL OF EQUIPMENT AT SYLCOR

STR:DCC:fh

We have reviewed the results of a survey performed by this Division on October 28 and 29 as previously discussed with you, and recommend disposal of the remaining Sylcor equipment as follows:

Cafeteria Equipment

Uranium contamination on this equipment ranges from 0 to 10 dpm per 100 sq. centimeters on all parts with the exception of bases and legs that have been in contact with the slightly contaminated cafeteria floor. These legs and bases smeared up to about 50 dpm per 100 sq. centimeters. No direct readings could be obtained on any of the cafeteria equipment with an Eberline alpha scintillation counter. Since uranium contamination at these levels is totally insignificant from a health hazards viewpoint, it is recommended that this equipment be unconditionally released, for any use whatsoever, with the possible exception of use in a facility where very low background levels are required for physics measurements.

Three-quarter Ton Stake Body Truck

Contamination on this vehicle ranges up to about 50 dpm per 100 sq. centimeters smearable, and up to 600 dpm by direct surface reading. Low level contamination was found even on the springs and frame of the truck. Although these levels are considered completely safe from a health standpoint, because of the possibility of a public relations incident that would ultimately cost more than the value of the truck, it is recommended that it be released only for use in a contaminated facility.

Fork Lift

Smearable contamination on this vehicle ranges up to about 55 dpm per 100 sq. centimeters, and direct surface readings up to about 1200 dpm per 100 sq. centimeters. It is recommended that this vehicle be released in the same manner, and for the same reason, as the stake body truck described above.

Detecto Scale

The platform of this scale smears up to 70 dpm per 100 sq. centimeters and a direct surface reading shows 600 dpm per 100 sq. centimeters. It is

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recommended that this item be released for use in a contaminated facility unless the salvage value is such as to justify an expenditure of $25.00 to $50.00 for decontamination of the platform, weights, and all outer surfaces.

Fisher Oven, Double Pan Balance, Filing Cabinets, and Other Miscellaneous Equipment

These items may be released unconditionally with the one exception mentioned under cafeteria equipment.

We point out that all of the above equipment is within limits for release as scrap metal established by AEC Manual issuance.

cc: N. J. Donahue, T&P Division

F2003-0019

SYLVANIA ELECTRIC PRODUCTS INC.

SYLCOR DIVISION

HICKSVILLE, NEW YORK

Attachment "A" 10

Effective JAN. 1, 1965

Use of Government Owned Facilities In Performance of Private Commercial Work

I. For purposes of this agreement all private commercial work will be referred to as "outside work" and will be considered work for the Sylcor Commercial Plant at Hicksville. All outside work to be performed will be requested on the Sylcor Work Order Form to be approved by the AEC SROO prior to start of work (or in accordance with agreements to be made with AEC).

II. The work under Contract AT(30-1)-1293 shall at all times, and without any qualification or limitation whatsoever, have the absolute priority in time, effort, and in all other significant respects over any outside work. This agreement excludes all cost type work performed under an Appendix "C" agreement sponsored by the AEC as provided for in the contract under paragraph 2 of article 1.

III. The work to be performed under this agreement will exclude the AEC Production, Inspection and Process Control Departments including the area occupied, equipment and personnel of these departments. These departments will hereinafter be referred to as AEC Operations Departments.

IV. The work to be performed under this agreement will include the Area Occupied, Equipment and Personnel of the following departments hereinafter referred to as Production Support Departments:

Dept. #	Name
21	Chemical Services
23	Engineering Dept.
24	Machining Services
27	Plant Engineering (Drafting & Maint.)
28	Metallography Services

V. The AEC Plant (Contract 1293) expenses will be credited monthly on a full cost reimbursement basis for all outside work performed by the Production Support Departments for the sum total of the following expenses:

1. Direct Labor

   Based on actual time card charges to job numbers assigned to outside work.

continued

DOE's Response to Estevez
FOIA F2003-00195

V. (continued)

2. Overhead

An overhead rate to be applied to direct labor which represents total AEC Plant overhead including all service department prorates and security department expenses.
A provisional rate will be established for interim use on outside work. This provisional rate will be adjusted to actual on a semi-annual basis.

3. Depreciation of AEC Owned Equipment

An overhead rate to be applied to direct labor which represents the depreciation of the equipment included in the production support departments. The amount charged will be calculated using the depreciation rates recorded on AEC records and will include an amount to represent depreciation on fully depreciated items.
A provisional rate will be established for interim use on outside work. This provisional rate will be adjusted to actual on a semi-annual basis.
The depreciation overhead rate will be arrived at by dividing the total direct labor of the Production Support Departments into the total depreciation dollars of the equipment in these departments plus an allocation of the Administration Department equipment depreciation. Due to the specialized nature of the plating equipment a separate rate will be established for outside plating work in the event such work becomes available.

4. Stores Materials

Any common use materials withdrawn from the stockroom for use on outside work will be charged to the job on the basis of a properly approved Stores Requisition charging the appropriate outside work order.

5. Charge For AEC Administration

A factor to be agreed upon by the parties will be applied to the sum of items 1 through 4 above. This amount will be credited to the AEC contract and will represent a charge for AEC administration of the procedures of this agreement.

continued -

VI. The Work Order form will show the job number, customer, estimated cost in detail and a complete description of the work to be done and the facilities to be used. The period of performance will also be indicated on the work order. Work will not be contracted for in excess of a six (6) month period.

VII. An up-to-date listing of all equipment included in the Production Support Departments will be maintained showing tag number, date acquired, first cost, annual and monthly depreciation amounts. This listing will substantiate the monthly depreciation amounts to be used in developing the Depreciation Overhead Rate described in Article V Paragraph 3.

F2003-0019

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UNCLAS TO R C BLAIR FM F P BARANOWSKI PD CONFIRMING MY TELCON CMM THE COMMISSION HAS APPROVED THE TERMINATION OF THE SYLCOR CONTRACT PD ACCORDINGLY CMM SYLCOR SHOULD BE NOTIFIED IMMEDIATELY THAT YOU PLAN TO PHASE OUT ALL WORK UNDER THAT CONTRACT AT THE EARLIEST POSSIBLE DATE PD JCAE AND LOCAL CONGRESSMAN HAVE BEEN NOTIFIED PD PARA

PLEASE ADVISE THIS OFFICE ASAP OF HOW YOU PLAN TO PHASE OUT SYLCOR AND SWITCH THE LOAD TO SRP CMM INCLUDING TIME SCHEDULE CMM FY 1966 COSTS AT SYLCOR AND PROPOSED DISPOSITION OF AEC-OWNED EQUIPMENT CMM MATERIALS CMM ETC PD PARA

PAGE 2 RUEHAE 004 UNCLAS

IN THIS CONNECTION CMM IT IS SUGGESTED THAT THE LIST OF AEC-OWNED EQUIPMENT AT SYLCOR BE FURNISHED TO RICHLAND FOR CONSIDERATION OF POSSIBLE USE IN ITS CANNING OPERATIONS PD END REF PAB CLN PBW AEC 412 BT

NNNN

F2003-0019

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Wells 1-3500
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SYLVANIA

SYLVANIA ELECTRIC PRODUCTS INC. Subsidiary of GENERAL TELEPHONE & ELECTRONICS CORPORATION

GENERAL SYSTEM

Sylcor Division

Cantiague Road
Hicksville, N.Y.

10

December 6, 1965

Mr. R. C. Blair, Manager
U.S. Atomic Energy Commission
Savannah River Operations Office
P.O. Box A
Aiken, S.C.

Dear Mr. Blair:

Re: Contract AT(30-1)-1293 - Termination

Pursuant to the termination of the aforesaid Contract by the United States Atomic Energy Commission and to the provision of Article VIII, as amended, entitled "Settlement of Government Investment in Improvements," a meeting was held at our Hicksville site on November 17, 1965 to determine a mutually agreed upon value of certain government improvements at said Hicksville location. The meeting was attended by Mr. Wise and certain of his associates, as well as various representatives of Sylvania. After extended discussions, it was agreed that Sylvania would make a settlement offer, as described below. Both Mr. Wise and his associates were in agreement therewith.

As background for the subject offer, it was important to recite certain considerations bearing thereon and which we discussed as a result of the aforesaid Contract provision re "Initial Improvements."

In accordance with the subject Contract provision, a mutually agreed upon net salvage value for the subject improvements was concluded in an amount of $1,700. This took into consideration the respective appraisals of the parties, wherein your quoted net salvage value was $3,400 and our quoted net salvage value was zero. The zero figure quoted by the Company does not take

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into consideration the fact that the cost of removal of said improvements and related restoration far exceeds the value of said improvements. This, however, was called to the Savannah River representatives' attention.

Thereafter, the parties attempted to agree upon an appraised value in place for the subject improvements, based, in part, on the respective appraisals which had been obtained. The figure the AEC quoted was $36,000, whereas our appraised value in place ranged from zero to $64,400.25, depending on the usage of the building, or the likelihood thereof. Our appraiser noted that the subject building may well have already reached a state of economic and functional obsolescence, which would make the likelihood of resale remote and thus result in the value of improvements being zero. As indicated in our discussions, we do not intend to use the subject building, but rather intend to sell it and thus the salability thereof has a direct effect on the value of these improvements. The subject appraiser, as well as other realtors has indicated that the sale of the subject building is remote, but that the land on which these improvements are located does have marketability and a prospective purchaser undoubtedly would demolish the subject buildings. In this instance, of course, the value of these improvements would be zero and that was the basis of our initial offer.

In view of our wide divergence for an amount applicable to appraised value in place for the subject improvements we negotiated a mutually agreed appraised value in place of $25,000.00. With that figure and the mutually agreed net salvage value as our bases and in the interest of settling the subject problem without awaiting the final disposition of these improvements, we agreed to officially make the following offer to you:

1. Sylvania will pay to the AEC in full settlement for the subject improvements, pursuant to the aforesaid Contract provision, the sum of $10,000.

2. In addition to the aforementioned, Sylvania will withdraw its claim for reimbursement for cost of damage incurred in the removal of government owned equipment from the plant said claim being in the amount of $3,852.00. It will also relieve the AEC from any further obligation for repairs, restoration, and/or damages re the contractor's property. This release shall not include or affect the agreement of the parties expressed in Modification No. 42 to Contract AT(30-1)-1293.

The aforesaid offer reflects our discussions at the above mentioned meeting and is made without prejudice to the Company's position on its interpretation of the subject Contract provisions. It is offered, subject to final agreement on contract language, in the interest of obtaining an equitable and expeditious settlement of the problem.

We would appreciate your prompt consideration of this settlement offer.

Very truly yours,

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.

W. R. Mandaro
Manufacturing Manager

WRM/gg

F2003-0019

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W. M. Johnson, Manager, NYOO

April 1, 1956

(Signed) K. L. Stetson

K. Stetson, Manager, SROO

FINAL INSPECTION OF SYLCOR'S HICKSVILLE PLANT

STR:KEH:fh

As discussed with A. J. Rizzo and Harold Glauberman of your staff by Karl Herde of this office, we request that Mr. Glauberman, who was at Sylcor with Herde on January 4, be made available again on April 6 or 7 for another brief inspection of subject facility. The exact time and date will be arranged by telephone.

The attached charts of the Sylcor Buildings indicate the areas being recleaned and indicate relative contamination levels. Also attached is a copy of the requisition arranging additional cleanup by Isotopes, Inc.

We recommend that Glauberman work with Grieb making a few spot alpha instrument readings at each building. We have little doubt that the building will be found to have less than 2000 d/m smearable activity at any location. An informal confirmation of the survey and general statement on apparent improvements since January 4 will be appreciated.

Attachments:
1. Sylcor Bldg Charts (2)
2. Requisition

bcc: Manager's File, w/o attachments
SROO Rdg. File, w/o attachments
Adm. Div., w/o attachments

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P. J. Hagelston, Director
Safety and Technical Services Division

April 4, 1966

K. E. Herde, Chief
Radiation and Health Branch

ARRANGEMENTS FOR RADIOLOGICAL MONITORING AND CONSULTATION AT SYLCOR

STR:KEH:fh

Telephone conversation with H. Grieb, Sylcor, at 10:00 a.m. today confirmed that satisfactory progress was being made by Isotopes, Inc., in the cleaning of the two Sylcor buildings. Work at building 1 is complete and the crew started on building 2 this morning. The best predictions are that the work will be completed by April 8. Grieb reports that the cleanup is apparently very effective and satisfactory. He was asked to make an independent report in the form of a letter of his monitoring measurements before and after the cleanup and an independent evaluation of the method.

Grieb was informed that arrangements had been made for Harold Glauberman, Operational Safety Branch, NYOO, to make an AEC review and inspection during the last 20 percent of the cleaning. He is to personally inspect with Grieb and survey with NYOO instruments and advise upon needed recleaning. To SROO he will report upon changes in appearance and in general radiation levels since his original visit there January 4, 1966. In case excessive condensate water is collected he may advise upon possible volume reduction.

Immediately after conversation with Grieb I called Mr. Glauberman, who concurred in my description of his role in the inspection. He will call Grieb to arrange for a visit there sometime Thursday, April 7. I described the contents of a memo and attachments that were sent to his office on April 1 and should be received later today.

In my opinion this arrangement will be very satisfactory to all concerned and will save this office the expense of a trip. NYOO stands to gain from this experience in that they are in the early stages of similarly closing a building in Connecticut used in a contract with Pratt and Whitney, Inc.

cc: J. S. Hopkins, Adm. Div.

DOE's Response to Estevez
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P. J. Hagelston, Director
Safety and Technical Services Division

April 12, 1966

K. E. Herde, Chief
Radiation and Health Branch

LEVELS OF CONTAMINATION OBSERVED AT SYLCOR

STR:KEH:fh

Hal Glauberman of NYOO made a report by telephone on April 11 of his instrument survey of uranium contamination remaining in parts of Building 1 of the Hicksville Plant on April 7. (See Memo of March 4 Herde to Hagelston.) He made no survey of Building 2 where the steam cleaning was in progress and expected to continue through April 14.

Due to differences in instrument performance Mr. Glauberman reported activity levels considerably higher than those reported by Isotopes, Inc. Mr. Glauberman used instruments with scintillation probes (Eberline PAC 1 S.A. and Texas - Ludlam) instead of the Eberline gas flow counters used by Isotopes, Inc. The two instruments gave comparable readings on a standard alpha source but the NYOO instruments and Sylcor's instruments all read higher on the contaminated floors than did the instruments of Isotopes, Inc.

Though Glauberman had planned to make only a few readings of confirmation, after finding a few readings higher than anticipated he was obliged to make many more (about 200) separate instrument measurements. In a room of Building 1 designated Area 37 on work charts, a spot about 4' X 16' was consistently over 4,000 d/m with one isolated spot of about 30,000 d/m (7400 c/m on an instrument of about 25% efficiency in detection).

The discrepancy in instrument readings had no obvious explanation. Mr. Glauberman advised Frank Bradley of Isotopes, Inc., to contact Eberline Instrument Company representatives for their interpretation of the anomaly.

Since the activity was firmly fixed, Mr. Glauberman suggested that additional sealing of the spots of higher contamination would satisfactorily control and conceal it. He recommended that an additional monitoring visit by this office may be timed to correspond with his next visit. As I see my schedule now I would plan to stop there Thursday and Friday, April 21 and 22 immediately following a visit to N.F.S. near Buffalo, New York.

cc: J. S. Hopkins, Adm. Div.

DOE's Response to Estevez
FOIA F2003-00195

CONTRACT 1293 AND MODIFICATIONS

1	Letter Contract No. AT(30-1)-1293, dated December 10, 1951
2	Contract AT(30-1)-1293, dated December 10, 1951
3	Contract AT(30-1)-1293 True Copy, dated December 10, 1951
4	Contract AT(30-1)-1293, Appendix B, dated December 10, 1951
5	Letter Contract No. AT(30-1)-1293, Modification No. 1, dated January 25, 1952
6	Letter Contract No. AT(30-1)-1293, Modification No. 2, dated March 14, 1952
7	Letter Contract No. AT(30-1)-1293, Modification No. 3, dated April 9, 1952
8	Letter Contract No. AT(30-1)-1293, Modification No. 4, dated May 15, 1952
9	Letter Contract No. AT(30-1)-1293, Modification No. 5, dated June 26, 1952
10	Letter Contract No. AT(30-1)-1293, Modification No. 6, dated August 11, 1952
11	Letter Contract No. AT(30-1)-1293, Modification No. 7, dated September 30, 1952
12	Letter Contract No. AT(30-1)-1293, Modification No. 8, dated October 31, 1952
13	Letter Contract No. AT(30-1)-1293, Modification No. 9, dated November 30, 1952
14	Letter Contract No. AT(30-1)-1293, Modification No. 10, dated January 13, 1953
15	Contract No. AT(30-1)-1293, Amendment No. 5, dated July 1, 1953 [this appears to be a typographical error]
16	Contract No. AT(30-1)-1293, Amendment No. 1, dated June 19, 1953
17	Letter from United States Atomic Energy Commission to W. E. Kingston, dated September 1, 1953, regarding Approval For Outside Work.
18	Contract No. AT(30-1)-1293, Amendment No. 2, dated September 29, 1953
19	Contract No. AT(30-1)-1293, Amendment No. 3, dated October 29, 1953
20	Contract No. AT(30-1)-1293, Amendment No. 4, dated November 25, 1953
21	Contract No. AT(30-1)-1293, Amendment No. 1 to Appendix B, dated December 7, 1953

22	Modification No. 6, Supplemental Agreement to Contract No. AT(30-1)-1293, dated March 17, 1954
23	Modification No. 7, Supplemental Agreement to Contract No. AT(30-1)-1293, dated June 8, 1954
24	Modification No. 8, Supplemental Agreement to Contract No. AT(30-1)-1293, dated July 1, 1954
25	Modification No. 9, Supplemental Agreement to Contract No. AT(30-1)-1293, dated November 15, 1954
26	Sylvania Electric Products, Inc. Contract No. AT(30-1)-1293 (As amended by Modifications 1 thru 8 and as proposed in Modification No. 9) (undated)
27	Modification No. 10, Supplemental Agreement to Contract No. AT(30-1)-1293, dated July 1, 1955
28	Modification No. 12, Supplemental Agreement to Contract No. AT(30-1)-1293, dated November 1, 1955.
29	Modification No. 26, Supplemental Agreement to Contract No. AT-30-1-GEN-366 and Modification No. 16, Supplemental Agreement to Contract No. AT(30-1)-1293, dated April 1, 1957.
30	Sponsored Task No. CH-4, Modification No. 1, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated September 11, 1959.
31	Sponsored Task No. CH-4, Modification No. 2, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated December 14, 1959.
32	Sponsored Task No. CH-4, Modification No. 3, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated March 15, 1960.
33	Letter from John W. Ruch to R. G. Humphries, dated March 30, 1960, regarding Sylcor Contract Extension.
34	Sponsored Task No. CH-4, Modification No. 4, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated June 30, 1960.
35	Sponsored Task No. CH-4, Modification No. 5, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated September 30, 1960.
36	Sponsored Task No. CH-4, Modification No. 6, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated February 6, 1961.

37	Sponsored Task No. CH-4, Modification No. 7, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated April 28, 1961.
38	Modification No. 29, Supplemental Agreement to Contract No. AT(30-1)-1293, dated October 1, 1961.
39	Contract AT(30-1)-1293, Appendix B to Modification No. 29, effective as of October 1, 1961, Under Modification No. 30
40	Modification No. 29, Supplemental Agreement to Contract AT(30-1)-1293, dated January 11, 1962 (authorized on January 10, 1962) (effective as of October 1, 1961)
41	Sponsored Task No. CH-4, Modification No. 8, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated October 3, 1961.
42	Authorization for Modification of Cost-Plus-Fixed-Fee Contract, Modification No. 30, Supplemental Agreement to Contract No. AT(30-1)-1293, dated April 5, 1962 (authorized on April 5, 1962) (effective as of December 1, 1961)
43	Modification No. 30, Supplemental Agreement to Contract No. AT(30-1)-1293, dated April 5, 1962 (authorized on April 5, 1962) (effective as of December 1, 1962)
44	Sponsored Task No. CH-4, Modification No. 9, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated February 26, 1962.
45	Sponsored Task No. CH-4, Modification No. 10, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated March 28, 1962.
46	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised April 1, 1962, Under Modification No. 31
47	Authorization for Modification of Cost-Plus-Fixed-Fee Contract, Modification No. 31, Supplemental Agreement to Contract No. AT(30-1)-1293, dated May 31, 1962 (authorized on May 10, 1962) (effective as of April 1, 1962)
48	Modification No. 32, Supplemental Agreement to Contract AT(30-1)-1293, dated February 18, 1963 (effective as of October 1, 1962).
49	Sponsored Task No. CH-4, Modification No. 11, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated September 28, 1962.
50	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised October 1, 1962, Under Modification No. 32
51	Modification No. 32, Supplemental Agreement to Contract AT(30-1)-1293, dated February 18, 1963 (effective as of October 1, 1962) (non-conformed copy)

52	Modification No. 32, Supplemental Agreement to Contract AT(30-1)-1293, dated February 18, 1963 (effective as of October 1, 1962).
53	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised March 1, 1963, Under Modification No. 33
54	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised May 1, 1963, Under Modification No. 34
55	Sponsored Task No. CH-4, Modification No. 12, Contract AT(30-1)-1293, Appendix "C", Work Under Paragraph 2 of Article I, dated December 19, 1962.
56	Modification No. 33, Supplemental Agreement to Contract AT(30-1)-1293, dated May 17, 1963 (effective as of March 1, 1963).
57	Modification No. 33, Supplemental Agreement to Contract AT(30-1)-1293, dated May 17, 1963 (authorized on May 2, 1963) (effective as of March 1, 1963)
58	Modification No. 34, Supplemental Agreement to Contract AT(30-1)-1293, dated August 23, 1963 (effective as of May 1, 1963).
59	Modification No. 34, Supplemental Agreement to Contract AT(30-1)-1293, dated August 23, 1963 (authorized on August 23, 1963) (effective as of May 1, 1963).
60	Modification No. 35, Supplemental Agreement to Contract AT(30-1)-1293, dated February 28, 1964 (effective as of October 1, 1963).
61	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised October 1, 1963, Under Modification No. 35
62	Modification No. 35, Supplemental Agreement to Contract AT(30-1)-1293, dated February 28, 1964 (authorized on January 21, 1964) (effective as of October 1, 1963)
63	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised February 1, 1964, Under Modification No. 36
64	Modification No. 36, Supplemental Agreement to Contract AT(30-1)-1293, dated April 20, 1964 (effective as of February 1, 1964).
65	Modification No. 36, Supplemental Agreement to Contract AT(30-1)-1293, dated April 20, 1964 (authorized on April 2, 1964) (effective as of February 1, 1964)
66	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised June 30, 1964, Under Modification No. 37
67	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised August 1, 1964, Under Modification No. 38

68	Modification No. 37, Supplemental Agreement to Contract AT(30-1)-1293, dated August 24, 1964 (effective as of April 1, 1964).
69	Modification No. 37, Supplemental Agreement to Contract AT(30-1)-1293, dated August 24, 1964 (authorized on June 30, 1964) (effective as of April 1, 1964)
70	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised October 1, 1964, Under Modification No. 39
71	Modification No. 38, Supplemental Agreement to Contract AT(30-1)-1293, dated October 14, 1964 (effective as of August 1, 1964).
72	Modification No. 38, Supplemental Agreement to Contract AT(30-1)-1293, dated October 14, 1964 (effective as of August 1, 1964) (non-conformed copy)
73	Modification No. 39, Supplemental Agreement to Contract AT(30-1)-1293, dated November 24, 1964 (effective as of October 1, 1964).
74	Modification No. 39, Supplemental Agreement to Contract AT(30-1)-1293, dated November 24, 1964 (effective as of October 1, 1964) (non-conformed copy)
75	Appendix "B" To Modification No. 29, Contract AT(30-1)-1293, Revised January 1, 1965, Under Modification No. 40.
76	United States Atomic Energy Commission Findings and Determination, dated October 26, 1964.
77	Modification No. 40, Supplemental Agreement to Contract AT(30-1)-1293, dated February 26, 1965 (effective as of January 1, 1965).
78	Contract AT(30-1)-1293, Appendix B to Modification No. 29, revised June 1, 1965, Under Modification No. 41
79	Modification No. 41, Supplemental Agreement to Contract AT(30-1)-1293, dated November 29, 1965 (effective as of June 1, 1965).
80	Modification No. 42, Supplemental Agreement to Contract AT(30-1)-1293, dated December 15, 1965.
81	Modification No. 42, Supplemental Agreement to Contract AT(30-1)-1293, dated December 15, 1965 (effective as of October 1, 1965) (non-conformed copy)
82	Modification No. 43, Supplemental Agreement to Contract AT(30-1)-1293, dated January 14, 1966.

83	Modification No. 43, Supplemental Agreement to Contract AT(30-1)-1293, dated January 14, 1966 (authorized on October 26, 1964) (effective as of December 16, 1965) (non-conformed copy)
84	Final Release, Contract No. AT(30-1)-1293, dated June 29, 1966.
85	General Assignment Between Sylvania Electric Products Inc. and the United States Atomic Energy Commission, dated June 29, 1966.

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[redacted] Responsive Record 25

This document consists of 6 pages
No. 1 of 12 copies, Series A

[redacted]

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P.O. Box 30, Ansonia Station
New York 23, New York

SR 846

GC:CHS:sw
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Dated: December 10, 1951

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: R L Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other CG-RMP-2 9/80

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

Attention: Dr. W. E. Kingston

Gentlemen:

1. This letter, subject to your written acceptance, sets forth the initial agreement between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government") acting through the Atomic Energy Commission (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor") in anticipation of a definitive contract under which the Contractor (i) shall conduct studies, experimental investigations, and other research and development work, with respect to the establishment and operation of a pilot plant for the evaluation of the following:

a. The production feasibility of preparing uncanned hot-pressed uranium slugs;

b. The production feasibility of canning beta-treated conventional uranium slugs and powder metallurgy uranium slugs by elevated temperature, pressure-canning techniques;

c. The production feasibility of preparing canned slugs by hot pressing uranium and/or uranium hydride powder in aluminum and zirconium cans in a single operation;

DEC 1951
SYLVANIA CENTER MET. LAB. #999173

[redacted]

Encl 14

SROO Response to
FOIA (SR) - 04-028

[redacted]

and (ii) shall establish and operate such a pilot plant. It is contemplated that the foregoing work will demonstrate the feasibility or non-feasibility of large scale production by, among other things:

aa. Determining the practicability of production equipment;

bb. Providing sufficient samples for statistical quality analysis;

cc. Determining the health and safety requirements;

dd. Providing adequate cost data for complete process analyses.

2. Pending the execution of said definitive contract and to the extent requested by the Commission from time to time, the Contractor shall enter upon, and continue, performance of said work.

3. All applicable articles and provisions required by law, regulation or Executive Order to be included in Government contracts for the type of work described in paragraph 1 above are incorporated herein by reference.

4. Negotiations have been undertaken, and will be continued, for the execution of said definitive contract which will supersede this letter contract. It will include all provisions and articles mentioned in paragraph 3 hereof and such other detailed terms and conditions as the parties agree upon which may or may not be at variance with the provisions of this letter contract.

5. Pending the execution of said definitive contract, (i) the Contractor's expenditures, purchase orders, subcontracts or other commitments in its performance hereunder shall not exceed Eight Hundred Thousand Dollars ($800,000.00) in the aggregate, and (ii) payments on account, not in the aggregate exceeding said limiting amount, will be made by the Government as the work progresses in accordance with estimates (prepared by the Contractor and approved by the Commission) of the cost to the Contractor of work performed.

6.(a) In case said definitive contract is not executed by January 31, 1952, (or any subsequent date mutually agreed upon) this letter contract will terminate on the stated date or such subsequent date, as the case may be.

(b) The Commission may by written notice at any time terminate this letter contract.

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(c) In the event of termination pursuant to either sub-paragraph (a) or (b) of this paragraph, the Government will pay the Contractor an amount equal to the sum of its actual expenditures in the performance of this letter contract (less payments previously made) plus an amount equal to the sum paid or to be paid, in settling, with the approval of the Commission, its obligations for commitments made in such performance, but in no event more than the limiting amount set forth in subdivision (i) of paragraph 5 hereof. The Government may, in its discretion, assume any such obligations.

7.(a) All property furnished by the Government to the Contractor for use in performance of this letter contract shall remain the property of the Government.

(b) Title to all property specially procured by the Contractor in performance of this letter contract and the entire acquisition cost of which is directly recoverable hereunder shall pass directly from the vendors or other suppliers to the Government and shall remain the property of the Government. Title to all other property furnished by the Contractor in performance of this letter contract and the entire acquisition cost of which is directly recoverable hereunder shall pass to the Government at the respective times of such furnishing and shall remain the property of the Government.

(c) All technical data (including, without being restricted to drawings, designs, specifications, memoranda and notes), of whatsoever kind or nature furnished or prepared by the Contractor pursuant to or developed in connection with its performance under this letter contract, shall be (as and when prepared) and remain the property of the Government.

(d) All items of property referred to in sub-paragraphs (a) and (b) of this paragraph, including products, by-products, work-in-process, residues, salvage, wastage and scrap resulting therefrom, and all data referred to in sub-paragraph (c) of this paragraph, are hereinafter referred to as "Government property".

(e) The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property, but not of any consumption of materials and supplies in its performance under this letter contract, nor of any lost, destroyed or damaged technical data which are worthless from three standpoints, to wit: monetary, practical, and security. The Contractor shall not be liable to the Government for any damage to, or loss or destruction of, Government property, provided such damage, loss, or destruction is not due to any act or failure to act, on the part of a then corporate officer of the Contractor, which is tantamount to wilful misconduct or gross negligence.

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8.(a) Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of any of the work under this letter contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and the rights under any application or patent that may result; provided, however, that the Contractor, in any event, shall retain at least a non-exclusive, irrevocable, royalty-free license under said invention, discovery, application, or patent, such license being limited to the manufacture, use, and sale for purposes other than use in the production or utilization of fissionable material or atomic energy. Subject to the license retained by the Contractor, as provided in this paragraph, the judgment of the Commission on these matters shall be accepted as final; and the Contractor for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

(b) No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1946 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of any of the work under this letter contract.

(c) Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of sub-paragraphs (a) and (b) of this paragraph 8 from all persons who perform any part of the work under this letter contract, except such clerical and manual labor personnel as will not have access to technical data.

(d) Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions making this paragraph 8 applicable to the subcontractor and its employees.

9.(a) It is understood that unauthorized disclosure of any, or failure to safeguard all top secret, secret, confidential and restricted matter specifically indorsed as "Security Information" that may come to the Contractor or any person under its control in connection with the work under this letter contract, may subject the Contractor, its agents, employees and subcontractors to criminal liability under the laws of the United States. See the Atomic Energy Act of 1946 (Public Law 585 - 79th Congress). See also Title 18, United States Code, Secs. 5 and 11, Secs. 791 to 797, both inclusive, Secs. 2381 to 2390, both inclusive, and Sec. 3241; and Title 50, United States Code, Secs. 40 and 42.

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(b) The Contractor agrees to conform to all security regulations and requirements of the Commission. Except as the Commission may authorize, in accordance with the provisions of the Atomic Energy Act of 1946, the Contractor agrees not to permit any individual to have access to restricted data until the Federal Bureau of Investigation shall have made an investigation and report to the Commission on the character, associations and loyalty of such individual and the Commission shall have determined that permitting such person to have access to restricted data will not endanger the common defense or security. The term "restricted data" as used in this sub-paragraph means all data concerning the manufacture or utilization of atomic weapons, the production of fissionable material, or the use of fissionable material in the production of power, but shall not include any data which the Commission from time to time determines may be published without adversely affecting the common defense and security.

(c) The Contractor shall insert in all subcontracts under this letter contract, and in other agreements entered into by the Contractor if the scope thereof involves classified data, provisions similar to the text of subparagraphs (a) and (b) above.

10.(a) The Commission shall have the right to inspect in such manner and at such times as it deems appropriate all activities of the Contractor arising in the course of the work under this letter contract.

(b) The Contractor shall make such reports to the Commission, with respect to the Contractor's activities under this letter contract, as the Commission may require from time to time.

11. The Contractor agrees to conform to all health and safety regulations and requirements of the Commission. The Contractor shall take all reasonable steps and precautions to protect health and minimize danger from all hazards to life and property, and shall make all reports and permit all inspections as provided in such regulations or requirements.

12. The Contractor shall not subcontract any part of the work it is obligated to perform under this letter contract, except as authorized in writing by the Commission. All subcontracts hereunder shall be subject to, and submitted for, Commission approval. The Government reserves the right from time to time by written notice from the Commission to the Contractor to make any or all commitments or classes of commitments hereunder other than subcontracts subject to, and to require their submission for, Commission approval.

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13. Except as otherwise specifically provided in this letter contract, all disputes which may arise under or in connection with this letter contract, and which are not disposed of by mutual agreement, shall be decided by a representative of the Commission duly authorized to administer performance of the undertakings hereunder, who shall reduce his decision to writing and mail a copy thereof to the Contractor. Said decision shall be final and conclusive on the parties hereto, subject to the right of the Contractor to appeal as provided for in the sentence next following. Within 30 days from this mailing, the Contractor may appeal in writing to the Commission, whose written decision thereon, or that of its representative, representatives or board duly authorized to determine such appeal or such an appeal, not including the representative mentioned in the first sentence of this paragraph, shall be final and conclusive on the parties hereto. Pending and subsequent to the decision on any dispute under or in connection with this letter contract which may arise prior to completion of the Contractor's performance hereunder, the Contractor shall diligently proceed with the performance of its undertakings under this letter contract. Expenses incurred by the Contractor in connection with the submittal of disputes for initial decision and/or for appellate decision under this paragraph shall not be recoverable under this letter contract. In connection with any appeal procedure under this paragraph, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal.

14. The terms "Atomic Energy Commission" and "Commission" as used herein mean the United States Atomic Energy Commission or its duly authorized representative or representatives.

15. This letter, executed in triplicate on behalf of the Government, is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereof be executed on behalf of your company and that such copies be returned to this office as promptly as possible. Copy 3 is for your retention.

Very truly yours,

THE UNITED STATES OF AMERICA

BY: U. S. ATOMIC ENERGY COMMISSION

By: W. E. Kelley

Accepted as of the 10th day of December, 1951.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: C. Shirley Carter

Its: Vice President
(Title)

[redacted]

2

This document consists of 53 pages.
No. 2 of 12 copies, Series A .

CONTRACT NO. AT(30-1)-1293

CONTRACT

CONTRACTOR AND ADDRESS:	SYLVANIA ELECTRIC PRODUCTS, INC. 1740 Broadway New York, New York
CONTRACT FOR:	RESEARCH AND DEVELOPMENT
TERM OF CONTRACT:	December 10, 1951 to June 30, 1953
LIMIT OF GOVERNMENT LIABILITY:	$3,253,897.00
PAYMENT TO BE MADE BY:	Division of Disbursement, United States Treasury Department, New York, New York. Submit invoices to: United States Atomic Energy Commission, P. O. Box 30, Ansonia Station, New York 23, New York
BASIS OF AWARD:	NEGOTIATION

Priority Rating

In accordance with authority delegated to the Atomic Energy Commission by the National Production Authority, this contract is rated DO-E-2, certified under NPA Regulation 2.

Authorized Representative

SROO Response to
FOIA (SR) - 04-028

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THIS CONTRACT, entered into as of the 10th day of December, 1951, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, with its principal place of business in New York City, New York;

WITNESSETH THAT:

WHEREAS, by Letter Contract No. AT(30-1)-1293, dated December 10, 1951, the Government and the Contractor agreed, among other things, that the Contractor would perform for the Government the research and development work provided for in said Letter Contract; and

WHEREAS, the Government and the Contractor, as contemplated by said Letter Contract, have negotiated and arrived at this definitive agreement which merges with and supersedes said Letter Contract; and

WHEREAS, this contract is authorized by law, including the Atomic Energy Act of 1946;

NOW, THEREFORE, the parties hereto agree as follows:

ARTICLE I - SCOPE OF THE WORK

1. The Contractor shall conduct studies, experimental investigations and other research and development work for the Government, the details of which research and development work are set forth in the classified Appendix 'B' to this contract. A copy of said Appendix 'B' signed by the Contractor is on file in the offices of the Commission and said Appendix 'B' is incorporated herein by reference and made a part hereof.

2. The Contractor shall furnish all materials, equipment, facilities and premises, and all other properties and services requisite to the proper performance of the work under this contract, except to the extent that the Government may elect to furnish such properties or services.

ARTICLE II - SITE OF THE WORK

1. Principal Site

The principal site of the work of this contract shall be the land and plant of the Contractor on Cantiague Road in Hicksville, Long Island, including, but only from January 1, 1953 on, the one-story frame building at this location, leased at the date of commencement of the period of performance of the work of this contract, to the United States Department

of Agriculture, unless the Commission approves a substitute site in writing and until the date approved by the Commission for such substitution.

2. Alteration at Site

The Contractor shall alter the plant and other facilities at any principal site of the work, referred to in paragraph 1 above, to the extent the Commission considers such alterations necessary to the proper performance of the work hereunder.

3. Transfer of Site

The Contractor shall not sell, lease, license or otherwise transfer ownership or occupancy of any plant space or other facilities at any principal site of the work referred to in paragraph 1 above, or of said site or any portion thereof, without the approval of the Commission.

4. Non-Contract Activities

The Contractor shall not engage in or permit others to engage in activities other than activities in performance of the work of this contract at any principal site of the work referred to in paragraph 1 above, without the approval of the Commission.

5. Request for Approval

Any request of the Contractor to the Commission for approval pursuant to either of paragraphs 3 or 4 above, shall specify the extent of such transfer or non-contract activities and should further specify the Contractor's proposed reduction in the allowance for use and occupancy set forth in paragraph 3 of Article IV, CONSIDERATION, and the Contractor's estimate of the reduction in other costs of this contract to the Government that would result should the Commission grant the requested approval. Any reduction in the allowance for use and occupancy agreed upon shall be set forth in an amendment to this contract.

ARTICLE III - TERM, EXPIRATION AND TERMINATION

1. The period of performance of the work under this contract shall commence on December 10, 1951 and, subject to the provisions of this Article, shall end on June 30, 1953.

2. Termination

a. For Default.

The Government may at any time terminate performance of the work under this contract for the default of the Contractor.

b. For the Convenience of the Government.

The Government, at its election, may for its convenience, (i) from time to time terminate in part performance of work under this contract, or (ii) at any time terminate in whole the performance of the work under this contract.

c. Notice of Termination.

Termination, under this paragraph, shall be effected by delivery to the Contractor of a written notice of termination, which notice (i) shall specify a date upon which said termination shall become effective, which date shall be at least sixty (60) days after the delivery of said notice; (ii) in the event of a termination in part, shall specify the portion or portions of the work so terminated and the period or periods during which said termination shall be effective; and (iii) shall specify whether said termination is for the default of the Contractor or for the convenience of the Government. Upon receipt of said notice of termination, the Contractor promptly, except as the notice may direct otherwise, shall (i) discontinue all terminated work as soon as is reasonably practicable, if the notice so directs, and in any event by the date specified in said notice of termination; (ii) cease all placing of orders for property or services in connection with the performance of the terminated work; (iii) proceed to the best of its ability to terminate all orders and subcontracts to the extent that they relate to the terminated work; (iv) assign to the Government in the manner and to the extent directed by the Commission, all the right, title and interest of the Contractor under the terminated portion of the orders and subcontracts so terminated; (v) settle, with the approval of the Commission, all subcontracts, obligations, commitments and claims related to the terminated work, the cost of which would be allowable in accordance with the provisions of this contract; (vi) continue performance of such part of the contract work, if any, as shall not have been terminated; and (vii) take such other action with respect to the terminated work as may be required under other Articles of this contract and, subject to the approval of the Commission, as may be otherwise appropriate, including but not limited to, action for the protection and preservation of Government property.

d. Entry by Government After Default.

(i) If performance of the work under this contract is terminated for the default of the Contractor, the Government (1) may exercise the option granted in Article VI, OPTION IN THE GOVERNMENT, to purchase the principal site of the work hereunder; (2) may exercise the right given in item (ii) of this subparagraph.

(ii) Instead of exercising the option to purchase referred to in (i) above, the Government may elect, pursuant to this subsection, to occupy the property for a period not to exceed one year by paying the Contractor a monthly charge in full satisfaction of all claims of the Contractor arising out of said entry and occupancy, including a claim for the fair rental value of said premises and facilities. Said monthly charge will be one-twelfth the yearly allowance for use and occupancy set forth in subparagraph j, of paragraph 3 of Article IV, CONSIDERATION.

(iii) After termination for the default of the Contractor, and the exercise of either the option or right referred to in subparagraphs (i) and (ii) above, the Government may (a) enter upon and have exclusive occupancy of any principal site of the work described as such in paragraph 1 of Article II, SITE OF THE WORK, (b) take possession, for the period of such occupancy, of all materials, tools, machinery and appliances therein which may be owned by or are in the possession of the Contractor, (c) exercise during said occupancy all options, privileges and rights belonging to or exercisable by the Contractor in connection with such premises and facilities, and (d) complete or employ others to complete, the work of this contract therein. Said occupancy if done under (ii) above shall be for a period not to exceed one year.

(iv) In addition, the Commission shall within the limits of its authority, indemnify and hold the Contractor harmless against any damages finally awarded in court actions or settlements made with the consent of the Commission, and against expenses incident to such court actions or settlements, where such actions and settlements are based on claims by third parties against the Contractor arising out of actions by the Government in use and occupancy of said premises and facilities pursuant to this subparagraph d.

e. Terms of Settlement.

Upon a termination of performance of all or part of the work under this contract, full and complete settlement of all claims of the Contractor with respect to the work of this contract so terminated shall be made as follows:

(i) Assumption of Contractor's obligations. The Government may at the discretion of the Commission, assume and become liable for all obligations, commitments, and claims that the Contractor may have theretofore in good faith undertaken or incurred in connection with the terminated work, the cost of which would be allowable in accordance with the provisions of this contract; and the

Contractor shall, as a condition of receiving the payments mentioned in this Article, execute and deliver all such papers and take all such steps as the Commission may require for the purpose of fully vesting in the Government all the rights and benefits of the Contractor under such obligations or commitments.

(ii) Payment for Allowable Costs. The Government shall reimburse the Contractor or allow credit for all allowable costs incurred in the performance of the terminated work and not previously reimbursed or otherwise discharged.

(iii) Payment for Close-Out Expense. The Government shall reimburse the Contractor (a) for such close-out expenses, (b) for such further expenditures as are made after the date of termination for the protection of the Government property, and (c) for such legal and accounting services in connection with settlement, as are required or approved by the Commission.

(iv) Payment on Account of the Fixed Fee.

a. If the performance of the work under this contract is terminated in whole for the default of the Contractor, no further payment on account of the fixed fee set forth in subparagarph a. of paragraph 1 of Article IV, CONSIDERATION, shall be made.

b. If the performance of the work under this contract is terminated in whole for the convenience of the Government, the Contractor shall be paid that portion of the fixed fee which the work actually completed, as determined by the Commission, bears to the entire work under this contract less payments previously made on account of the fee.

c. If the performance of the work under this contract is terminated in part for the convenience of the Government, the Contractor and the Commission shall promptly negotiate to agree upon an equitable adjustment of the fixed fee set forth in subparagraph a. of paragraph 1 of Article IV, CONSIDERATION, and the agreement reached shall be evidenced by a written, executed supplemental agreement to this contract. If the Contractor and the Commission fail to so agree upon such fee adjustment, within a reasonable time after such partial termination, the failure to agree shall be disposed of in accordance with Article XIV, DISPUTES, hereof.

3. Expiration. In the event of expiration of the period of work performance hereunder without prior termination hereof, the Contractor shall (i) discontinue the contract work at the end of the day of expiration and (ii) take such other action as may be required under other provisions of this contract and, subject to the approval or ratification of the Commission, as may be otherwise appropriate, including but not limited to, action for the protection and preservation of Government property.

4. Claims in Favor of the Government. The obligation of the Government to make any of the payments required by this Article shall be subject to any unsettled claims in connection with this contract which the Government may have against the Contractor. Nothing contained in this Article shall be construed to limit or affect any other remedies which the Government may have as a result of a default by the Contractor.

5. Settlement upon Termination or Expiration. Any other provisions of this contract to the contrary notwithstanding, the Contractor and the Commission may agree upon the whole or any part of the amount or amounts which the Contractor is to receive upon and in connection with (i) any termination pursuant to this Article or (ii) expiration of the term of this contract without prior termination thereof. Any agreement so reached shall be evidenced by a written supplemental agreement to this contract which shall be final and binding upon the parties with regard to their respective claims against each other except as therein otherwise expressly provided.

ARTICLE IV - CONSIDERATION

1. Compensation for Contractor's Services.

As full consideration for the performance by the Contractor of the work of this contract (including (i) profit on all items and for all work, and (ii) reimbursement for all costs and expenses listed hereunder as unallowable costs or otherwise not allowable under the terms of this contract) the Contractor shall receive from the Government:

a. A fixed fee of One Hundred Twenty Thousand Dollars ($120,000.00).

b. Payment for allowable costs as hereinafter provided.

2. Basis for Determination of Allowable Costs.

The costs allowable under this contract shall be costs and expenses which are actually incurred by the Contractor in performing the work under this contract and which are necessary or incident to that performance. Allowable costs shall include, without limitation on the generality of the foregoing, the items described as allowable in paragraph 3 of this Article but shall not in any event include the items described as

unallowable in paragraph 4 of this Article except to the extent indicated therein. Failure to mention any item of cost in this Article is not intended to imply that it is either allowable or unallowable.

3. Examples of Allowable Costs.

The following are examples of items, the cost of which is allowable under this contract to the extent indicated:

a. Bonds and insurance, including self-insurance, approved by the Commission, the cost of which is not excluded by other provisions of this contract.

b. Transportation and communication, including (i) reconsignment, switching, demurrage and diversion charges, (ii) loading, unloading, storage, crating and packing charges, (iii) local and long distance telephone charges, facsimile and teletype messages, telegrams, cablegrams, radiograms, postage, post office box rental, messenger charges and delivery services.

c. Materials, supplies, tools, machinery, equipment, fuel and utilities, including the cost of processing and testing thereof by others and inspection, expediting, storage, salvage and other usual expenses incident to the procurement and use thereof, subject to the approvals required under any other provisions of this contract.

(i) The Contractor may use in its performance of the work of this contract, items manufactured by it in the ordinary course of its commercial business, provided that the Commission grants approval to each such use and provided further that the Commission and the Contractor shall have agreed, prior to any such approval, in writing but not necessarily by execution of an amendment to this contract, upon a unit price or prices for such items. The unit price or prices so agreed upon may include profit.

(ii) The Contractor may withdraw from its general stores and use in its performance of the work of this contract items purchased by it before or during the period of performance of this contract for its general stores, provided that such withdrawal and use of said items shall be in accordance with the Contractor's statements of its daily procurement practices and procedures submitted to the Commission and approved by the Commission pursuant to subparagraph b of paragraph 1 of Article IX, PROCUREMENT AND SUBCONTRACTS. The cost of any such item shall be determined in accordance with last-in, first-out inventory accounting principles.

(iii) The Commission shall have the right to inspect any item provided by the Contractor for the work of this contract pursuant to sub-subparagraphs (i) and (ii) above and to reject any or all of such items which the Commission determines to be defective, in which event there shall be no cost to the Government on account of such rejected items and the Contractor shall at its own non-allowable cost and expense, remove all such rejected items from any site of the work to which they may have been delivered. The failure of the Government to inspect and reject any such item prior to its use by the Contractor in the work of this contract in accordance with the provisions of sub-subparagraphs (i) and (ii) above shall be deemed inspection and acceptance thereof, except as to latent defects, fraud and such gross negligence as constitutes fraud.

d. Patents, purchased designs and royalty payments, to the extent approved by the Commission.

e. Expert technical or professional assistance to the extent allowed by Article XXII, TECHNICAL AND PROFESSIONAL ASSISTANCE.

f. Taxes, fees and charges, levied by public authorities, which the Contractor is required by law to pay, except those which are imposed upon or arise by reason of or are measured by the Contractor's fee or which are excluded pursuant to other provisions of this contract. This item shall include interest costs and penalties incurred by the Contractor in compliance with Article XX, STATE AND LOCAL TAXES AND FEES, hereof.

g. In accordance with Appendix "A", or modifications thereto, labor (whether as wages, salaries, benefits, or other compensation, as prescribed by the Contractor's employment and employee welfare policies), recruiting of personnel, (including "help wanted" advertising), travel (including subsistence during travel), and the transportation of personnel and their household goods and effects. In case the full time of an employee of the Contractor is not applied to the work of this contract, the cost of his labor shall be included in this item only in proportion to the actual time so employed.

h. Expenses of litigation, including reasonable counsel fees, incurred in accordance with the provisions of this contract, and such other legal, accounting, and consulting fees as are approved by the Commission.

i. Alterations, additions, improvements and repairs to, and remodeling, reconstruction and ordinary maintenance of, facilities employed by the Contractor in performing the work of this contract, in accordance with Article XI, CONSTRUCTION, ALTERATION, AND REPAIR.

j. An allowance of Forty-One Thousand Seven Hundred Eighty Dollars ($41,780.00) for the period from March 1, 1952 to December 31, 1952,

and Fifty-Three Thousand Six Hundred Dollars ($53,600.00) per year during the period thereafter of the Contractor's performance of the work of this contract at the Hicksville plant of the Contractor, prorated over said period. Said allowance is in lieu of any charge by the Contractor for the use and occupancy of said plant and is in lieu of costs and expenses actually incurred by the Contractor during said period for the following:

(i) Depreciation of buildings on the Hicksville site of the work hereunder.

(ii) Real estate taxes, including, among others, school, water, and sewage taxes and special assessments, on the land and buildings at said Hicksville site.

(iii) Premiums for fire, smoke, storm, and hail insurance, and similar property insurance policies on the Contractor's Hicksville plant and on all property of the Contractor therein.

(iv) Premiums for public liability insurance against damages to persons and properties of employees of the Contractor (except but not for Workmen's Compensation insurance) or of third persons, at the Contractor's Hicksville plant or resulting from the Contractor's operations therein.

(v) Premiums for insurance against damages to motor vehicles, not Government-owned, used by the Contractor in connection with the work of this contract and against damages to persons and property resulting from operation by the Contractor and its employees of motor vehicles in connection with the work of this contract.

In the event the Hicksville plant is totally or partially made unusable for the performance of the work of this contract as a result of fire, explosion or other casualty, the Commission and the Contractor shall negotiate to agree upon an equitable downward adjustment of the allowance set forth in this subparagraph j. If the Commission and the Contractor fail to agree upon such adjustment within a reasonable time after such casualty, the failure to agree shall be disposed of in accordance with Article XIV, DISPUTES.

k. An allowance (in lieu of direct reimbursement) to cover the general and administrative expenses incurred by the Contractor's corporate office in New York City allocable to the work of this contract. The amount of this allowance shall be computed as a percentage, otherwise referred to herein as the G and A rate, of the costs of operation hereunder. For the purposes of this subparagraph costs of operation are defined as the costs, without duplication, incurred by the Contractor and allowable pursuant to subparagraphs a, b, c, e, g, l, n and o of this paragraph 3 but excluding costs of capital items of machinery and equipment procured for the work of this contract and including the costs of ordinary repairs and maintenance to any site of the work defined as a principle site of the work by Article II, SITE OF THE WORK.

(i) A provisional G and A rate of three (3%) percent, subject to review and retroactive adjustment, is agreed upon at the commencement of this contract and the Government's

payments to the Contractor shall be based initially upon said provisional rate. As soon after each June 30th during the term of this contract (or as soon after any intervening date of termination or expiration thereof) as is practicable, the Commission in consultation with the Contractor, shall review the actual expense to, and obligation incurred by, the Contractor during the contract period from the close of the previous period reviewed (or the date of commencement of the contract if there has been no previous period reviewed) to said June 30th (or intervening date of termination or expiration) attributable to the elements of costs covered by this allowance. Based upon such review, the Commission and the Contractor shall negotiate and agree upon a fixed rate for the period reviewed. Said fixed rate shall retroactively replace the provisional rate hitherto in effect for the period reviewed. Said fixed rate, or any other rate which the Commission and the Contractor may agree upon at said negotiation, shall, as a new provisional rate, (i) retroactively replace the provisional rate hitherto in effect from the close of the contract period reviewed to the date of agreement on said new rate, and (ii) prospectively be the new provisional rate until it is in turn replaced pursuant to the foregoing by a new provisional or fixed rate. In the event that a provisional rate is replaced by a lower or higher fixed or provisional rate, suitable retroactive adjustments in the payments shall be made promptly. Failure to agree upon a fixed rate pursuant to the foregoing shall be considered a dispute to be settled in accordance with the provisions of Article XIV, DISPUTES, hereof.

l. Costs of providing cafeteria, restaurant, or food commissary services to employees of the Contractor directly engaged in the performance of the work hereunder.

m. Expenses of moving and transporting the Contractor's and Government's property from any principal site of the work, as defined in paragraph 1 of Article II hereof, to any other site for the work, provided that the Commission orders or approves in advance the move, the new site and the method of transportation.

n. Close-out costs incurred by the Contractor after the expiration or termination of the period of performance of the work of this contract.

o. The cost to the Contractor of compliance with health and safety, security and property management standards and regulations of the Commission.

p. Losses and expenses, including losses and expenses resulting from claims of patent infringement, not compensated for by insurance or otherwise (including settlements made with the consent of the Commission),

sustained by the Contractor in the performance of the work and certified in writing by the Commission to be just and reasonable, except losses and expenses expressly made unallowable under other provisions of this contract.

q. An allowance of Sixteen Thousand Six Hundred Dollars ($16,600.00) for the procurement and accounting services performed by the Contractor's Central Engineering Department 50 Staff from the commencement of the term of this contract to June 30, 1952 in Contractor facilities other than the Contractor's Hicksville, Long Island Plant.

r. The direct cost to the Contractor of work performed under this contract with the approval of the Commission at the Bayside, Long Island, plant of the Contractor, plus indirect costs allocable to such work to the extent such indirect costs are agreed upon by the Commission and the Contractor.

s. Items of cost which are not expressly excluded by other provisions of this contract and which are specifically certified in writing by the Commission as allowable costs hereunder.

4. Example of Unallowable Costs: The following are examples of items, the cost of which is not allowable except as indicated:

a. Advertising, except "help-wanted" advertising or other advertising to the extent such other advertising is specifically authorized by the Commission.

b. Central and branch office expenses of the Contractor, except expenses of any principal site of the work described as such in paragraph 1 of Article II, SITE OF THE WORK, and except as expressly provided for elsewhere in this contract.

c. Commissions and bonuses (under whatever name) in connection with obtaining or negotiating for a Government contract.

d. Unless otherwise authorized by the Commission, costs of the character described in subdivision g. under examples of allowable costs, which are not in accordance with Appendix "A", or modifications thereto.

e. Provisions for contingent reserves.

f. Contributions, donations, dividend payments, interest on borrowings (however represented), bond discounts and expense and financial charges.

g. Entertainment expenses, except as provided in Appendix "A", or modifications thereto.

h. Fines and penalties, unless incurred as a result of action by the Contractor in accordance with the express direction of the Commission or in accordance with the provisions of Article XX, STATE AND LOCAL TAXES AND FEES.

i. Capital additions and structural improvements to Contractor-owned or Contractor-leased facilities, except where such additions or improvements have been specifically approved by the Commission as being an aid to the performance of this contract, and only to the extent specifically agreed to by the Commission.

j. Losses from sales and exchanges of the Contractor's capital assets and losses on other contracts.

k. Membership in trade, business and professional organizations, except as specifically authorized by the Commission.

l. Subscriptions to periodicals or other publications, technical or otherwise, except as specifically authorized by the Commission.

m. Pensions, retirement, group health, accident and life insurance plans, except to the extent authorized under Appendix "A", or modifications thereto.

n. Storage of contract records after completion of contract operations, irrespective of contractual or statutory requirements regarding preservation of records, except as specifically allowed pursuant to paragraph 3 of Article VIII, hereof.

o. Taxes, fees and charges, levied by public agencies, which are imposed upon or arise by reason of or are measured by the Contractor's fixed fee.

p. Government-furnished property, except to the extent that cash payment therefor is required pursuant to procedures of the Commission applicable to transfers of such property to the Contractor from others (including other agencies of the Government) and the cost of insurance against loss, destruction or damage to Government-owned property.

q. Wages, salaries, or other compensation of the Contractor's corporate officers, except to the extent such wages, salaries or other compensation (including travel and subsistence) is paid (without duplication) pursuant to subparagraphs g. and k. of paragraph 2 of this Article.

r. Other items made unallowable by the provisions of this contract.

5. Payment:

a. Payment of the Fixed Fee. Payment of ninety (90%) per cent of the fixed fee set forth in subparagraph a. of paragraph 1 of this Article shall be made by the Government monthly in amounts based on the percentage of the completion of the work hereunder, as determined from estimates submitted to and approved by the Commission.

b. The Government will make reimbursement payments for the allowable costs set forth in paragraph 3 of this Article monthly, or in the discretion of the Commission, at more frequent intervals.

c. Upon (i) the expiration of the period of performance of the work of the contract, (ii) completion of the work required by paragraph 3 of Article III, TERM, TERMINATION AND EXPIRATION, and (iii) the furnishing by the Contractor of a release in such form and with such exception as may be approved by the Commission of all claims against the Government under or arising out of this contract, accompanied by any accounting for Government-owned property required by Article V, GOVERNMENT PROPERTY, the Government shall promptly pay to the Contractor the unpaid balance of the consideration set forth in paragraph 1 of this Article (including any portion of the fixed fee withheld or not yet paid pursuant to subparagraph a. above) less deductions due under the terms of this contract and any sum required to settle any unsettled claim which the Government may have against the Contractor.

d. Claims for Payment. Claims for payment shall be accompanied by such supporting documents and justifications as the Commission shall prescribe.

e. Discounts. The Contractor shall take and afford the Government advantage of all available cash and trade discounts, rebates, allowances, credits, salvage, commissions and bonifications.

f. Revenues. Any revenues, apart from the fixed fee, accruing to the Contractor in connection with the work under this contract, shall be applied in reduction of allowable costs under this contract.

g. Direct Payment of Charges - Deductions. The Government reserves the right, upon ten (10) days written notice from the Commission to the Contractor, to pay directly to the persons concerned any charges for services, materials or freight which otherwise would be allowable under this contract. Any payment so made shall discharge the Government of all liability to the Contractor therefor.

6. Limit of Government Liability.

a. Estimates. The initially estimated cost of the work under this contract, including the fixed fee set forth in subparagraph a, of paragraph 1 of this Article, is Three Million Two Hundred Fifty-Three Thousand Eight Hundred Ninety-Seven Dollars ($3,253,897.00). It is understood that neither the Government nor the Contractor guarantees the correctness of the initial estimate of cost or any revision thereof, and that there shall be no adjustment in the amount of the Contractor's fixed fee by reason of any errors in the computation of estimated costs or revised estimated costs, or any difference between any estimated cost or revisions thereof and the actual cost of the work.

b. Obligations. The Commission has initially obligated for this contract, from obligational authority available to it, the sum of Three Million Two Hundred Fifty-Three Thousand Eight Hundred Ninety-Seven Dollars ($3,253,897.00). Said amount may be increased by the Commission in its discretion, from time to time. The Contractor promptly shall notify the Commission in writing whenever it believes that the then Commission obligation for this contract is insufficient, and its notice shall contain its estimate of the amount of such insufficiency. When and if the total of amounts paid and payable to the Contractor under this contract (including the fixed fee and the actual or estimated amounts unpaid by the Contractor on all subcontracts and all other commitments on the assumption that they will be completed), shall equal the then Commission obligation for this contract, the Contractor shall not be expected to incur further expenses nor to perform further hereunder unless the Commission agrees in writing to increase said obligation for this contract in an amount sufficient to cover additional work hereunder. Notwithstanding any other provisions of this contract the liability of the Government under this contract shall be limited to the Commission obligation specified in this subparagraph, as same may be increased by the Commission by notice to the Contractor in writing.

ARTICLE V - GOVERNMENT PROPERTY

1. Except as otherwise specifically agreed upon in writing by the Contractor and the Commission and except as otherwise specifically provided herein

a. title to all property specially purchased by the Contractor for this contract, for which the Contractor is entitled to direct reimbursement under the provisions of paragraphs 2 and 3 of Article IV, CONSIDERATION, shall pass directly from the vendor to the Government; and

b. title to all property utilized in the work of this contract, provided by the Contractor from Contractor-owned stores or manufactured by the Contractor in the ordinary course of its commercial business, for which the Contractor is entitled to reimbursement under the provisions of paragraphs 2 and 3 of Article IV, CONSIDERATION, shall pass to the Government at the time of such utilization.

2. The Government reserves the right to furnish any property or services required for or useful in the performance of the work under this contract. Title to all property so furnished shall remain in the Government.

3. The Government shall retain title to all products, by-products, wastage, salvage, work-in-process, residues and scrap resulting from property to which the Government has or had title pursuant to paragraphs 1 and 2 above.

4. All items of Government-owned property referred to above are hereafter collectively referred to in this Article as "Government property". To the extent practicable, the Contractor shall cause all non-expendable items of Government property to be suitably marked with an identifying mark or symbol indicating that the items are the property of the Government. The Contractor shall maintain, at all times and in a manner satisfactory to the Commission, records showing the disposition and use of Government property. Such records shall be subject to Commission inspection at all reasonable times. It is understood that the Commission shall at all reasonable times have access to the premises wherein any items of Government property are located.

5. The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property (but not of any consumption of materials or supplies in the performance of its undertakings hereunder). Except as otherwise specifically provided in this contract, the Contractor shall not be liable for loss or destruction of or damage to Government property (in the possession or custody of the Contractor in connection with this contract) unless such loss, destruction or damage is due to gross negligence or wilful misconduct attributable to the Contractor or its supervisory employees.

6. Items of Government property referred to above shall not be used by the Contractor except in the performance of its obligations under this contract.

7. In the event of loss or destruction of or damage to Government property, the Contractor shall take such steps to subserve the Government's interest as the Commission authorizes or approves. If the Contractor is

liable for loss or destruction of or damage to any items of Government property, it shall promptly account therefor to the satisfaction of the Commission; if the Contractor is not liable therefor, and is indemnified, reimbursed, or otherwise compensated for such loss, destruction or damage (other than by the Government under this contract), the Contractor shall promptly account to the Government for an equitable share of such indemnification, reimbursement, or other compensation; in any event, the Contractor shall do nothing to prejudice the Government's rights to recover against third parties for any such loss, destruction or damage, and, upon request of the Commission, shall furnish the Government all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery.

8. The Contractor may, with the approval of the Commission, (i) transfer or otherwise dispose of items of Government property to such parties and upon such terms and conditions as so approved, or (ii) itself acquire title to items of property at prices mutually agreed upon by the Commission and the Contractor without the necessity of execution of an amendment to this contract. The proceeds of any such transfer or disposition, and the agreed price of any such Contractor acquisition, shall be applied in reduction of any payments or reimbursement to be made by the Government to the Contractor under this contract or shall otherwise be paid in such manner as the Commission may direct.

9. The Contractor shall conform to all regulations and requirements of the Commission concerning the management, inventory control, storing and disposal of Government property. The Contractor agrees to prepare and submit to the Commission for review, within sixty (60) days after the execution of this contract, a written statement of the methods to be used and of the procedures to be followed by the Contractor in regard to management, inventory control, storing and disposal of Government property. The Contractor shall not use any method or procedure in this regard which the Commission has advised the Contractor is contrary to Commission policy or which is otherwise prohibited by this contract.

10. With respect to each item of Government property located at the Contractor's Hicksville, Long Island plant, not sold or otherwise disposed of by the Contractor or acquired by the Contractor pursuant to paragraph 8 above, the Government, within one hundred twenty days following the termination or expiration of the period of performance of this contract or any extensions thereof, if it has not exercised the option to purchase said plant as provided in Article VI, OPTION IN THE GOVERNMENT, shall abandon or remove it.

(a) In the event the Government occupies said plant pursuant to subparagraph d (ii) of paragraph 1 of Article III, TERM, TERMINATION AND EXPIRATION, the rights in the Government to abandon or remove set forth in this paragraph shall be suspended during the period of such occupancy and the one hundred twenty day period during which the Government must either abandon or remove such property shall not commence to run until the end of such occupancy.

(b) Prior to determination by the Government to abandon or remove said item the Contractor agrees, if the Government so requests, to negotiate with the Government in good faith to purchase said item at a price mutually agreed upon, it being understood, however, that the Contractor shall not be required to negotiate any price in excess of the value to the Contractor of said item.

(c) In the event the Government removes any such item of Government property which is structurally incorporated in a building on the Hicksville site, either directly or by means of its foundations, accessory piping or instrumentation, the Government shall restore the pertinent portion of the Contractor's structure to substantially the condition immediately prior to the incorporation therein of the item of property except for reasonable wear and tear and except for damage by fire, explosion or other casualty. The Government agrees that in the event the Contractor requests, in lieu of such restoration, restoration to a condition other than that set forth in the preceding sentence, to restore in accordance with the Contractor's request if the Commission determines such alternative restoration will be in the interests of the Government.

(d) There shall be no charge to the Government by the Contractor for the storage of such property (i) for any period during which the Government may exercise the option set forth in Article VI hereof, (ii) for any period during which the Government may elect, in accordance with this paragraph, to abandon or remove such property, or (iii) during the period of the close-out of this contract.

ARTICLE VI - OPTION IN THE GOVERNMENT

As part of the consideration for this contract the Government hereby is granted the option set forth in the following paragraph. This option may be exercised by the Government, by written notice to the Contractor of such exercise, at any time up to one hundred Twenty (120) days after the expiration or termination of this contract and, in the event of occupancy by the Government pursuant to subparagraph d(ii) of paragraph 2 of Article III, TERM, EXPIRATION AND TERMINATION, at any time during said occupancy.

The Government may, if it so elects, purchase, and the Contractor shall, if requested to do so by the Government, sell to the Government, (i) the land and buildings owned by the Contractor, as of the date of execution of this contract by the Contractor at Hicksville in the Township of Oyster Bay, New York, and all additions and improvements to said buildings and land subsequently acquired by the Contractor. In the event of purchase pursuant to the preceding sentence, the Government shall pay the Contractor the purchase price paid by the Contractor for said buildings and land plus the cost of acquiring said additions and improvements less, without duplication, any costs of acquiring said additions and improvements for which the Contractor is reimbursed otherwise under this contract and the depreciation of said buildings, additions and improvements. For the purposes of this paragraph, the purchase price of said land and buildings includes closing costs, and costs of necessary building and use permits and variances, to the extent that the Contractor is not reimbursed otherwise for such costs under this contract. Depreciation for the purposes of this paragraph is defined as the depreciation allowed or allowable to the Contractor for tax purposes in accordance with Internal Revenue Code Section 23(l).

ARTICLE VII - PATENTS

1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of any of the work under this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title and rights under any application or patent that may result; provided, however, that the Contractor, in any event, shall retain at least a non-exclusive, irrevocable, royalty-free license under said invention,

discovery, application, or patent, such license being limited to the manufacture, use, and sale for purposes other than use in the production or utilization of fissionable material or atomic energy. Subject to the license retained by the Contractor, as provided in this Article, the judgment of the Commission on these matters shall be accepted as final; and the Contractor for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

2. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1946 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of any of the work under this contract.

3. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs 1 and 2 of this Article from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.

4. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions making this Article applicable to the subcontractor and its employees.

5. The Contractor shall grant to the Government, to practise or have practised, an irrevocable, non-exclusive license in and to any inventions (whether patented or not), secret processes, technical information and techniques of production, research and plant operation, which are directly utilized by the Contractor in the performance of the work of this contract. Such license shall apply to the manufacture, use and disposition of any article and material and to the use of any method or process. Such license shall be limited to governmental purposes related to (i) production of fissionable material, (ii) utilization of fissionable material, and (iii) utilization of atomic energy; provided, however, that the foregoing shall not limit the Government's right to sell, or cause to be sold, all products or by-products not used by or for the Government which result or remain from the use of any invention, process, information or technique to which such license applies.

ARTICLE VIII - RECORDS AND ACCOUNTS

1. The Contractor shall keep and maintain a separate and distinct set of records and books of account together with all related memoranda, supporting documents and correspondence, showing all allowable costs incurred, revenues earned, fixed fee accruals and the use and disposition of all Government-owned property coming into the possession of the Contractor under this contract. The Contractor shall accurately record its financial transactions hereunder in said records and books of account. The system of accounts employed by the Contractor shall be in accordance with generally accepted accounting principles and subject to the approval of the Commission.

2. Except to the extent, if any, otherwise approved by the Commission, all records, books of account, memoranda, supporting documents and correspondence referred to in paragraph 1 above

(i) shall be the property of the Government

(ii) shall be kept and maintained at the principal site of the work referred to in paragraph 1 of Article II, SITE OF THE WORK;

(iii) shall be subject to audit and inspection by the Commission at all reasonable times and the Contractor shall afford the Commission proper facilities for such inspection and audit; and

(iv) shall be delivered to the Government or otherwise disposed of by the Contractor either as the Commission may from time to time direct during the progress of the work or in any event as the Commission shall determine upon completion or termination of this contract and final audit of all accounts hereunder.

3. All records in the possession of the Contractor related to this contract, except those referred to in paragraph 1 above, and in Article XVI, SCIENTIFIC AND TECHNICAL DATA, shall be preserved by the Contractor without additional compensation therefor, for a period of five (5) years after final settlement of the contract or otherwise disposed of in such manner as may be agreed upon by the Government and the Contractor. The Government shall at all reasonable times have the right to examine, make copies of, and borrow said records, at no cost to the Government; provided, however, that

except as otherwise agreed upon by the Government and the Contractor all such records which bear a security classification at the time of completion or termination of the work set forth in Article I, SCOPE OF THE WORK, or at the time of the expiration of this contract, shall become the property of the Government at such time and shall thereafter be delivered to the Government or otherwise disposed of by the Contractor as the Commission shall determine and provided further that neither this paragraph nor any other provision of this contract shall be deemed to require the Contractor at its unallowable cost to store or preserve records which bear a security classification.

ARTICLE IX - PROCUREMENT AND SUBCONTRACTS

1. Approvals

a. The Contractor shall not enter into any subcontract without the written approval of the Commission of its terms and conditions. For the purposes of this paragraph, a subcontract is defined as any contractual arrangement (whether or not in the form commonly referred to as a "purchase order") with a third party for the performance of a specific part of the work to be performed under this contract, which arrangement is specifically made for such performance and the cost of which is, apart from the provisions of this paragraph, an allowable cost under this contract, except, however, arrangements covering (i) the furnishing of a basic raw material, (ii) the furnishing of a standard commercial or catalog item, or (iii) the employer-employee relation.

b. The Commission reserves the right, from time to time, by written notice from the Commission to the Contractor (i) to make any or all other commitments or classes of commitments hereunder (other than the contractual arrangements referred to in a. above) subject to, and to require their submission for, Commission approval, and (ii) to make any or all methods, practices, and procedures used or proposed to be used in effecting all arrangements and commitments hereunder subject to, and to require their submission for, Commission approval. In this regard, the Contractor agrees to prepare and submit to the Commission for review, within thirty (30) days after the execution of this contract (or any extension thereof approved in writing by the Commission), written statements of the daily procurement practices and procedures to be used and of the objectives intended to be accomplished by such practices and procedures. The Contractor will not use any procurement procedures prohibited by this contract or which the Commission has advised the Contractor are contrary to Commission policy.

c. The Contractor shall obtain the prior written approval of the Commission before (i) purchasing motor vehicles, airplanes, typewriters, printing equipment, helium or alcohol, (ii) leasing, purchasing, or otherwise acquiring real property, (iii) procuring any item or service on a cost, cost-plus-fee or 'time and materials' basis, (iv) purchasing any item which the Commission specifies is to be obtained from indicated Government sources, and (v) purchasing any item at a cost in excess of $2,000.00, where payment for the cost of any action specified in (i) through (v) will be claimed hereunder.

2. Writing; Terms: The Contractor shall reduce to writing, unless this provision is waived in writing by the Commission, every subcontract or other commitment in excess of One Hundred Dollars ($100.00) made by it for the purpose of its undertakings hereunder, except contracts covering the employer-employee relation (but not excepting contracts with consultants); insert therein a provision that such commitment is assignable to the Government; insert therein all other provisions required by law or expressly required by the provisions of this contract; and make all such commitments in its own name and not bind or purport to bind the Government or the Commission thereunder.

3. Procurement from Government Sources: From time to time, by separate instrument or instruments, the Contractor may be duly authorized to act as agent for and on behalf of the Government or the Commission respecting (i) the making of procurements in and for performance under this contract from so-called Government sources such as Federal Supply Schedule commercial sources, Armed Services Petroleum Purchasing Agency, Federal Prison Industries, Inc. and Federal Supply Service, and (ii) the issuing of tax exemption certificates pertinent to such procurements. The action so authorized shall be deemed to be within the scope of the Contractor's allowable cost of work performance under this contract.

ARTICLE X - CONDUCT OF THE WORK, INSPECTION AND REPORTS

1. In performing the work called for under this contract, the Contractor

(i) shall utilize its best efforts, know-how and ability;

(ii) shall utilize its best efforts to have the work executed in the most workmanlike manner by qualified, careful and efficient workers in strict conformity with the best standard practices (subject to the directions of the Commission);

(iii) shall utilize its best efforts to provide sufficient technical, supervisory, administrative and other personnel to insure the prosecution of the work in accordance with pertinent production or other progress schedules;

(iv) shall, if in the opinion of the Commission the Contractor falls behind any pertinent production or other progress schedule, use its best efforts to take such steps to improve its progress as the Commission may direct; and

(v) shall, if in the opinion of the Commission, the Contractor's personnel or other reimbursable costs are excessive for the proper performance of this contract, make such prospective reductions thereof as the Commission may direct.

2. The work of this contract is subject to (i) the general supervision of the Commission, and (ii) the Commission authorizations, approvals and directions otherwise provided for in this contract. The Contractor shall proceed in the performance of this contract and shall place emphasis (or relative emphasis) on the various phases of the work of said contract, as and to the extent requested by the Commission from time to time. The Commission shall have the right to inspect in such manner and at such times as it deems appropriate, all activities of the Contractor in, or related to the course of the work under this contract.

3. The Contractor shall keep the Commission fully advised of its progress hereunder and of the difficulties, if any, which it experiences and shall prepare and submit to the Commission, in such quantity and form as may be directed by the Commission

(i) monthly progress reports,

(ii) interim technical reports on completion of specific phases of the work,

(iii) production schedules, financial and cost reports, construction completion reports and such other special reports as may be requested by the Commission from time to time, and

(iv) a final report summarizing its activities, findings, and conclusions.

4. The Contractor shall appoint from its staff an over-all director of the work of this contract. The selection and continued assignment to said work of this director shall be subject to the approval of the Commission.

ARTICLE XI - CONSTRUCTION, ALTERATION OR REPAIR WORK

1. The Contractor shall not perform or have performed under this contract any construction, alteration or repair work in excess of One Thousand Dollars ($1,000.00), including painting and decorating, without the prior written approval of the Commission.

2. In the event that the Contractor, under this contract, performs or has performed, construction, alteration or repair work, including painting and decorating, which work is within the scope of the Davis-Bacon Act (Act of March 3, 1931, c.411, Sec. 1, 46 Stat. 1494, as amended; 40 U. S. Code 276 (a) et seq.), the following provisions shall apply to such work:

a. All mechanics and laborers employed or working upon the site of the work, or under the Housing Act of 1949 in the construction or development of the project, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Anti-Kickback Regulations (29 C.F.R. Part 3)), the full amounts due at the time of payment computed at wage rates not less than those contained in the wage determination decision of the Secretary of Labor, to be furnished to the Contractor by the Commission and which will be attached to Appendix "A" and made a part thereof, regardless of any contractual relationship which may be alleged to exist between the Contractor or subcontractor and such laborers and mechanics; and the wage determination decision shall be posted by the Contractor at the site of the work in a prominent place where it can be easily seen by the workers.

b. The Commission may withhold or cause to be withheld from the Contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics employed by the Contractor or any subcontractor on the work the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic employed or working on the site of the work or under the Housing Act of 1949 in the construction or development of the project, all or part of the wages required by the contract, the Commission may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

c. (1) Payroll records will be maintained during the course of the work and preserved for a period of three (3) years thereafter for all laborers and mechanics working at the site of the work, or under the Housing Act of 1949 in the construction or development of the project. Such records will contain the name and address of each such employee, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made and actual wages paid.

(c) The Contractor will submit weekly a certified copy of all payrolls to the United States Atomic Energy Commission if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the certified payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Commission. The certification will affirm that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the Secretary of Labor and that the classifications set forth for each laborer or mechanic conform with the work he performed. The Contractor will make his employment records available for inspection by authorized representatives of the Commission and the Department of Labor, and will permit such representatives to interview employees during working hours on the job.

d. Apprentices will be permitted to work only under a bona fide apprenticeship program registered with a State Apprenticeship Council which is recognized by the Federal Committee on Apprenticeship, U. S. Department of Labor; or if no such recognized Council exists in a State, under a program registered with the Bureau of Apprenticeship, U. S. Department of Labor.

e. The Contractor will comply with the regulations of the Secretary of Labor made pursuant to the Anti-Kickback Act of June 13, 1934, 48 Stat. 948; 62 Stat. 740; 63 Stat. 108; 18 U.S.C. 874, 40 U.S.C. 276 b, c, and any amendments or modifications thereof, will cause appropriate provisions to be inserted in subcontracts to insure compliance therewith by all subcontractors subject thereto, and will be responsible for the submission of affidavits required of subcontractors thereunder, except as the Secretary of may specifically provide for reasonable limitations, variations, tolerances and exemptions from the requirements thereof.

f. The Contractor will insert in each of its subcontracts the provisions set forth in stipulations (a), (b), (c), (d), (e) and (g) hereof, and such other stipulations as the Commission may by appropriate instructions require.

g. A Breach of stipulations (a) through (f) may be grounds for termination of the contract.

ARTICLE XII - EIGHT-HOUR LAW

No laborer or mechanic doing any part of the work contemplated by this contract, in the employ of the Contractor or any subcontractor contracting for any part of said work contemplated, shall be required or permitted to work more than eight hours in any one calendar day upon such work, except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this paragraph of the contract. The wages of every laborer or mechanic employed by the Contractor or any subcontractor engaged in the performance of this contract shall be computed on a basic day rate of eight hours per day and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For

each violation of the requirements of this paragraph of the contract a penalty of five dollars shall be imposed upon the Contractor for each laborer or mechanic for every calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this paragraph of the contract, and all penalties thus imposed shall be withheld for the use and benefit of the Government: Provided, That this stipulation shall be subject in all respects to the exceptions and provisions of the Eight-Hour Laws as set forth in U. S. Code, Title 40, Sections 321, 324, 325, 325a, and 326, which relate to hours of labor and compensation for overtime.

ARTICLE XIII - DISCLOSURE OF INFORMATION

1. It is understood that unauthorized disclosure of any, or failure to safeguard all, material marked as "Security Information" that may come to the Contractor, or any person under its control, in connection with the work under this contract may subject the Contractor, its agents, and employees to criminal liability under the laws of the United States. See the Atomic Energy Act of 1946, 60 Stat. 755, as amended, Title 42, United States Code, Sec. 1801, et. seq. See also Title 18, United States Code, Secs. 791 to 798, both inclusive, and Executive Order No. 10,104, February 1, 1950, 15 F. R. 597.

2. The Contractor agrees to conform to all security regulations and requirements of the Commission. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1946, as amended, the Contractor shall not permit any individual to have access to restricted data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual, and the Commission shall have determined that permitting such person to have access to restricted data will not endanger the common defense and security. As used in this paragraph the term "designated investigating agency" means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1946, as amended by the Act of April 5, 1952, Public Law 298, 82nd Congress, 66 Stat. 43. The term "restricted data" as used in this paragraph means all data concerning the manufacture or utilization of atomic weapons, the production of fissionable material, or the use of fissionable material in the production of power, but shall not include any data which the Commission from time to time determines may be published without adversely affecting the common defense and security.

3. Except as otherwise authorized in writing by the Commission, the Contractor shall insert in all agreements, made pursuant to the provisions of this contract which may involve security information, the provisions of paragraphs 1 and 2 of this Article.

ARTICLE XIV - DISPUTES

Except as otherwise specifically provided in this contract, all disputes between the parties which may arise under, or in connection with, any part of this contract, prior to final payment, and which are not disposed of by mutual agreement, shall be decided by a representative of the Commission, duly authorized to supervise and administer performance of the undertakings hereunder, who shall reduce his decision to writing and mail a copy of said decision to the Contractor; said decision shall be final and conclusive on the parties hereto, subject to the right of the Contractor to appeal, as provided for in the sentence next following. Within thirty days from the mailing of said decision, the Contractor may appeal, in writing, to the Commission, whose written decision thereon, or that of its duly authorized representative, representatives, or Board (but not including the Commission representative mentioned in the first sentence of this Article), duly authorized to determine such an appeal, shall be final and conclusive on the parties hereto. If any such dispute arises during performance by the Contractor of its undertakings hereunder, the Contractor shall diligently proceed with the performance of its undertakings under this contract, pending the decision of such dispute.

ARTICLE XV - SECURITY ACTION

Upon notice from the Commission that such action is considered to be in the interests of the common defense and security, the Contractor shall (i) deny any employee or other person access to the site of any contract undertakings or to "restricted data" within the meaning of the Atomic Energy Act of 1946, or (ii) dismiss from its undertakings under this contract any employee or other person.

ARTICLE XVI - SCIENTIFIC AND TECHNICAL DATA

All compilations of scientific and technical data (including, but not limited to, reports, notes, drawings, designs, specifications and memoranda) furnished or prepared by the Contractor pursuant to, or developed in connection with, the Contractor's undertakings under this contract, shall be property of the Government and the Government shall have the right to use such material in any manner and for any purpose without any claim on the part of the Contractor for additional compensation therefor. All provisions of paragraphs 4, 5, 6, 7, 8 and 9 of Article V relating to Government property are applicable to such material.

ARTICLE XVII - SOURCE AND FISSIONABLE MATERIALS

The Contractor agrees to conform to all regulations and requirements of the Commission with respect to accounting for source and fissionable materials (defined in the Atomic Energy Act of 1946).

ARTICLE XVIII - GUARD AND FIRE FIGHTING FORCES

In connection with its work under this contract, the Contractor shall provide such guard or fire fighting forces, with such uniforms and equipment, as the Commission may from time to time require or approve. The cost thereof shall be deemed to be allowable costs under paragraph 3 of Article IV hereof.

ARTICLE XIX - BONDS AND INSURANCE

1. Except as otherwise specifically provided, the Contractor shall exert all reasonable efforts to procure and maintain such bonds and insurance policies as are (i) required by law, or (ii) required by the Commission.

2. Except as otherwise directed by the Commission, in every instance where the premium on a bond or insurance policy is an allowable cost under the contract, the bond or insurance policy shall contain endorsements or other recitals (i) excluding, by appropriate language, any claim on the part of the insurer or obligor to be subrogated, on payment of a loss or otherwise, to any claim against the United States, and (ii) providing for at least thirty (30) days prior written notice by registered mail to the United States Atomic Energy Commission of bond or policy cancellation, as the case may be.

ARTICLE XX - STATE AND LOCAL TAXES AND FEES

The Contractor shall notify the Commission of any tax, fee, assessment, duty or other charge asserted in behalf of any State, county, municipality, or any officer, commission, body or subdivision thereof, (i) in connection with property which is or will be Government-owned property covered by Articles V, VIII, and XVI hereof, (ii) in connection with any transaction between the Contractor and the Government, or (iii) in connection with the payments by the Government for the Contractor's performance under this contract, and shall refrain from paying same unless authorized to do so by the Commission. To the extent requested by the Commission, the Contractor (i) shall take steps to cause any such taxes, fees, assessments, duties or other charges to be paid under protest, and (ii) shall cause to be assigned to the Government or its designees, any and all rights to the abatement, refund or other recoupment of such charges paid under protest.

ARTICLE XXI - NON-DISCRIMINATION IN EMPLOYMENT

In connection with the performance of this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, or national origin; and further agrees to insert the foregoing provision in all subcontracts hereunder except subcontracts for standard commercial supplies or for raw materials.

ARTICLE XXII - TECHNICAL AND PROFESSIONAL ASSISTANCE

When, in the judgment of the Contractor, the complexity and nature of the contract undertakings are such as to require supplemental expert technical or professional assistance, services or advice in connection with special phases of a technical character, the Contractor may, with the written approval of the Commission, engage or otherwise obtain such supplemental services. Compensation and reimbursement to any consultant engaged pursuant to this article shall be governed by the provisions of Appendix "A" attached hereto except as may otherwise be specifically stated in the contract with such consultant approved by the Commission.

ARTICLE XXIII - ASSIGNMENT

Neither this contract nor any interest therein or claim thereunder shall be assigned or transferred by the Contractor except with the written approval of the Commission.

ARTICLE XXIV - LABOR DISPUTES

Whenever an actual or potential labor dispute interferes or threatens interference with the work of this contract, the Contractor shall immediately inform the Commission of such dispute and of the relevant facts.

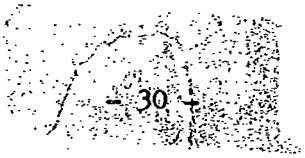
ARTICLE XXV - COVENANT AGAINST CONTINGENT FEES

1. The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

2. Unless otherwise authorized by the Commission in writing the Contractor shall cause provisions similar to paragraph 1 above to be inserted in all subcontracts and purchase orders entered into under this contract.

ARTICLE XXVI - CONVICT LABOR

In connection with the performance of this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor. This provision shall not be construed to prevent the Contractor or any



subcontractor from obtaining any of the supplies or any component parts or ingredients to be furnished under this contract or any of the materials or supplies to be used in connection with the performance of this contract, directly or indirectly, from any Federal, state or territorial prison or prison industry, provided, that such articles, materials or supplies are not produced pursuant to any contract or other arrangements under which prison labor is hired or employed or used by any private person, firm or corporation.

ARTICLE XXVII - WALSH-HEALEY ACT

To the extent only that the Walsh-Healey Public Contracts Acts, as amended (41 United States Code 35-45) is applicable to this contract, the following provision shall apply:

> There are hereby incorporated by reference, the representations and stipulations required by said Act and regulations issued thereunder by the Secretary of Labor, such representations and stipulations being subject to all applicable rulings and interpretations of the Secretary of Labor which are now or may hereafter be in effect.

ARTICLE XXVIII - DOMESTIC ARTICLES

1. Unless the Commission shall determine it to be inconsistent with the public interest, or the cost to be unreasonable, the Contractor, its subcontractors, and all materialmen or suppliers shall use, in the performance of the work, only such unmanufactured articles, materials, and supplies as have been mined or produced in the United States, and only such manufactured articles, materials, or supplies as have been manufactured in the United States substantially all from articles, materials, or supplies, mined, produced, or manufactured, as the case may be, in the United States. The provisions of this paragraph shall not apply if the articles, materials, or supplies of the class or kind to be used, or the articles, materials, or supplies from which they are manufactured are not mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of satisfactory quality.

2. Unless otherwise authorized by the Commission in writing, the Contractor shall cause provisions similar to paragraph 1 above to be inserted in all subcontracts and purchase orders entered into under this contract.

ARTICLE XXIX - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE XXX - RENEGOTIATION

1. This contract shall be deemed to contain all the provisions required by Section 104 of the Renegotiation Act of 1951 (Public Law 9, 82nd Congress).

2. The Contractor agrees to insert the provisions of this paragraph, including this subparagraph 2, in all subcontracts specified in Section 103 (g) of the Renegotiation Act of 1951; provided, that the Contractor shall not be required to insert the provisions of this paragraph in any subcontract excepted by or pursuant to Section 106 of the Renegotiation Act of 1951.

ARTICLE XXXI - SAFETY AND ACCIDENT PREVENTION

The Contractor shall initiate and take all reasonable steps and precautions to protect health and minimize danger from all hazards to life and property, shall make all reports and permit all inspections as required by the Commission, and shall conform to all health and safety regulations and requirements of the Commission.

ARTICLE XXXII - COMPLIANCE WITH LAWS

Except as otherwise directed by the Commission and subject to the provisions of Article XX, STATE AND LOCAL TAXES AND FEES, the Contractor shall procure all necessary permits and licenses; obey and abide by all applicable laws, regulations, ordinances, and other rules of the United States of America, of the State, territory, or political subdivision thereof, wherever the work is done, or of any other duly constituted public authority.

ARTICLE XXXIII - APPENDIX "A"

The Contractor shall abide by the provisions of Appendix "A" of this contract, as the same may be modified from time to time; provided, however, that in the event of conflict between the provisions of said Appendix "A" and the other provisions of this contract, the latter shall prevail.

ARTICLE XXXIX - EXAMINATION OF RECORDS

1. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this contract.

2. The Contractor further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under such subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract. The term subcontract as used herein does not include (i) purchase orders not exceeding One Thousand Dollars ($1,000.00), or (ii) contracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

3. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

ARTICLE XXXV - CLAIMS AND LITIGATIONS

1. The Contractor shall give the Commission immediate notice of any claim against the Contractor or suit or action filed or commenced against the Contractor, arising out of or connected with the performance of this contract, irrespective of whether or not the cost or expense of such claim, suit or action, is to be borne wholly or in part by the Government hereunder and irrespective of whether the Contractor is insured against any risk which may be involved. The Contractor shall furnish immediately to the Commission copies of all pertinent papers received by the Contractor.

2. Insofar as the following shall not conflict with any policy or contract of insurance, and to the extent requested by the Commission, the Contractor, with respect to any claim, suit or action, the cost and expense of which is or would be an allowable cost as defined in paragraph 2 of Article IV, or the proceeds of which is or would be revenues covered by paragraph 5 f. of Article IV, (i) shall promptly do any and all things to effect an assignment and subrogation in favor of the Government of all the Contractor's rights and claims, except as against the Government, arising from or growing out of any such claim, suit or action, or (ii) shall promptly authorise representatives of the Government to settle, defend, or otherwise handle any such claim,

suit or action and to represent the Contractor in, and take charge of, any litigation resulting therefrom, or (iii) shall diligently handly any such claim, suit or action or defend or initiate any litigation in connection with any such claim, suit or action and in so doing, shall consult with the Commission as to the steps to be taken and shall otherwise endeavor in good faith to subserve the interests of the Government.

3. Subject to the provisions of paragraph 2 above, the Contractor shall diligently handle any claim whatsoever arising out of the performance of this contract and shall promptly defend or initiate any litigation in connection with any such claim, consulting with the Commission as to the steps to be taken.

4. With respect to any claim, matter or litigation arising out of the performance of this contract, the handling of which is undertaken by an insurance carrier or by a representative or representatives of the Government, the Contractor shall furnish all reasonable assistance and cooperation that may be requested by the Commission.

5. "Litigation", for the purposes of this Article, is defined to include proceedings before administrative agencies.

ARTICLE XXXVI - LETTER CONTRACT NO. AT(30-1)-1293

Letter Contract No. AT(30-1)-1293, entered into as of December 10, 1951, hereby is merged with and superseded by this contract.

ARTICLE XXXVII - CONTRACT APPROVAL

This contract is subject to the approval of the Director of the Division of Production of the United States Atomic Energy Commission and shall not be binding unless so approved.

ARTICLE XXXVIII - DEFINITIONS

1. As used in this contract, the terms "United States Atomic Energy Commission", "Atomic Energy Commission", and "Commission" shall mean the United States Atomic Energy Commission or its duly authorized representative or representatives.

2. All references in this contract to Commission or Government approvals, authorizations, directions or notices contemplate and require written action.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

H. B. Fry

H. B. FRY
MANAGER
NEW YORK OPERATIONS OFFICE

Witnesses:

W E Kingston

P.O. Box 59 - Bayside, N.Y.
(Address)

W. F. Rueger

1740 Broadway, N.Y.C.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

By: J B Merrill

Title: Vice Pres.

I, J.S. LEAROYD, certify that I am the SECRETARY of the corporation named as Contractor herein; that J. B. MERRILL who signed this contract on behalf of the Contractor was then VICE PRES. of said corporation; that said contract was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

J S Learoyd
Secretary

(Corporate Seal)

The above contract, AT(30-1)-1293, with Sylvania Electric Products, Inc., is hereby approved.

Director, Division of Production
United States Atomic Energy Commission

Date: 3/10, 1953

APPENDIX "A"

Contract No. AT(30-1)-1293

with

Sylvania Electric Products, Inc.

I N D E X

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I. JOB CLASSIFICATIONS AND SALARY RANGES

PLAN "A" (Normally Exempt)

Job Title	Grade	Rate Range
Division Traffic Manager	6K	$464 - $724
Area Safety Engineer	6K	464 - 724
Supervisor of Warehousing	6K	464 - 724
Division Purchasing Agent	9J	602 - 947
Supervisor - Expediting	5K	422 - 664
Priorities Coordinator	4K	384 - 602
Chief Buyer	6K	464 - 724
Buyer	5K	422 - 664
Division Industrial Engineer	9J	602 - 947
Division Supervisor of Maintenance	8K	552 - 868
Division Manager of Quality Control	9J	602 - 947
Quality Control Spec.	7K	505 - 787
Division and Staff Counsel	13J	922 - 1492
Office Manager	7K	505 - 787
Supervisor of an Office Department	4K	384 - 602
Supervisor of an Office Department Sec.	2K	321 - 505
Manager of Accounting	12J	812 - 1338
Supervisor of Equipment Design	9J	602 - 947
Equipment Design Spec.	7K	505 - 787
Equipment Designer	4K	384 - 602
Mechanical Equipment Spec.	8K	552 - 868
Tool Room Foreman	6K	464 - 724
Supervisor of Prod. Scheduling & Control	8K	552 - 868
Supervisor of Material Control	6K	464 - 724
Tool Coordinator	6K	464 - 724
Administrative Engineer	10J	664 - 1091
Plant Manager - Class A Plant	13J	922 - 1492
Plant Manager - Class B Plant	12J	812 - 1338
Plant Manager - Class C Plant	10J	664 - 1091
Manufacturing Superintendent	9J	602 - 947
General Foreman	8K	552 - 868
Technical Foreman	6K	464 - 724
Foreman, Class I	6K	464 - 724
Foreman, Class II	3K	345 - 546
Supervisor of Personnel	7K	505 - 787
Personnel Assistant	4K	384 - 602
Safety Engineer	4K	384 - [illegible]
Supervisor of Product Engineering	9J	602 - [illegible]
Supervisor of Quality Control	7K	505 - 787
Supervisor of Industrial Engineers	7K	505 - 787
Industrial Engineer, Sr.	6K	464 - 724
Industrial Engineer, Jr.	3K	345 - 546
Standards Applicator	3K	345 - 546
Supervision of Production Control	7K	505 - 787
Supervisor of Plant A/C	7K	505 - 787

I. JOB CLASSIFICATIONS AND SALARY RANGES (continued)

PLAN "A" (Normally Exempt) - (continued)

Job Title	Grade	Rate Range
Cost Accountant	3K	$345 - $546
Purchasing Agent	5K	422 - 664
Supervisor of Maintenance	6K	464 - 724
Engineering Manager A	12J	812 - 1338
Engineering Manager B	10J	664 - 1091
Engineering Specialist	10J	664 - 1091
Section Head	9J	602 - 947
Engineer in Charge	7K	505 - 787
Senior Engineer	6K	464 - 724
Junior Engineer	3K	345 - 546
Accountant Special	9J	602 - 947
Supervisor of A/C Department	7K	505 - 787
Supervisor of A/C Department Sec.	5K	422 - 664
Accountant, Senior	4K	384 - 602
Industrial Relations Assistant	3K	345 - 546
Industrial Relations Specialist	9J	602 - 947

PLAN "B" (Non-Exempt)

Cost Accountant, Jr.	60R	$321 - $472
Time Study and/or Methods Clerk	59R	302 - 442
Time Study and/or Methods Clerk, Jr.	56R	247 - 360
Materials Requirements Analyst	62R	365 - 540
Production Control Clerk	59R	302 - 442
Production Control Clerk, Jr.	56R	247 - 360
Stock Clerk	59R	302 - 442
Stock Clerk, Jr.	56R	247 - 360
Drafting Section Supervisor	64R	427 - 626
Designer - Draftsman	63R	397 - 579
Draftsman	60R	321 - 473
Draftsman, Jr.	57R	265 - 391
Tracer	54R	224 - 309
Internal Expediter	59R	302 - 442
External Expediter	60R	321 - 473
Master Craftsman	64R	427 - 626
Production or Maintenance Supervisor I	62R	365 - 540
Production or Maintenance Supervisor II	60R	321 - 473
Safety Inspector	60R	321 - 473
Employment Interviewer or Counsellor	59R	302 - 442
Employment Interviewer or Counsellor, Jr.	56R	247 - 360
Nurse	57R	265 - 391
Nurse, Sr.	59R	302 - 442
Buyer, Jr.	59R	302 - 442
Production Scheduling Clerk	62R	365 - 540
Technician, Sr.	62R	365 - 540
Technician	59R	302 - 442
Technician, Jr.	56R	247 - 360
Experimental Glass Blower	62R	365 - 540

366-RA #23
1293-RA #11

Revision of all salary ranges Effective 9/22/54

I. JOB CLASSIFICATIONS AND SALARY RANGES (continued)

PLAN "B" (Non-Exempt) - (continued)	Grade	Rate Range
Billing Checker	54R	$224 - $309
Specifications	62R	365 - 540
Requisition Clerk	57R	265 - 391
Office Boy or Girl	51R	207 - 247
Supervisor of an Office Dept., Sec. (Cl.I)	60R	321 - 473
Supervisor of an Office Dept., Sec. (Cl.II)	57R	265 - 391
Functional Clerk	59R	302 - 442
Clerk, Sr.	55R	236 - 333
Routine Clerk	52R	224 - 265
Mail and File Clerk	52R	224 - 265
Office and Stockroom Clerk	54R	224 - 309
Secretary Exec.	59R	302 - 442
Secretary, Sr.	57R	265 - 391
Secretary-Steno	55R	236 - 333
Steno	54R	224 - 309
Transcriber	53R	224 - 284
Copy Typist	52R	224 - 265
Order Typist	54R	224 - 309
Duplicating Machine Operator	53R	224 - 284
Photostat and Blue Print Operator	54R	224 - 309
Multilith Operator "A"	55R	236 - 333
Multilith Operator "B"	54R	224 - 309
Multigraph Operator	54R	224 - 309
Billing Machine Operator	54R	224 - 309
Bookkeeping Machine Operator, Sr.	55R	236 - 333
Bookkeeping Machine Operator, Jr.	54R	224 - 309
Tabulating Procedure Clerk	59R	302 - 442
Tabulating Machine Operator "A"	56R	247 - 360
Tabulating Machine Operator "B"	55R	236 - 333
Key Punch Operator	54R	224 - 309
A/C Clerk, Sr.	56R	247 - 360
A/C Clerk, Jr.	54R	224 - 309
Bookkeeper, Sr.	56R	247 - 360
Bookkeeper, Jr.	54R	224 - 309
Payroll Clerk, Sr.	56R	247 - 360
Payroll Clerk, Jr.	54R	224 - 309
Cost Clerk, Sr.	56R	247 - 360
Cost Clerk, Jr.	54R	224 - 309
Invoice Clerk	55R	236 - 333
Telephone Operator & Receptionist I	56R	247 - 360
Telephone Operator & Receptionist II	54R	224 - 309
Accountant, Trainee	60R	321 - 473
Accountant, Jr.	60R	321 - 473
Traffic Clerk	62R	365 - 540
Warehouse Supervisor	58R	284 - 416
Warehouseman	54R	224 - 309
Industrial Relation Analyst or Asst., Jr.	58R	284 - 416
Routing Clerk	55R	236 - 333
Billing Clerk	56R	247 - 360
Inventory Clerk	55R	236 - 333
Addressograph Operator	54R	224 - 309

I. JOB CLASSIFICATIONS AND SALARY RANGES (continued)

HOURLY

Job Title	Grade	Rate Range
Janitor	5	$1.33 - $1.54
Handyman	5	1.33 - 1.54
Lab Helper - Metallographic	4	1.33 - 1.51
Lab Helper Special Products	6	1.36 - 1.57
Machinist - Special Products	13	1.69 - 1.99
Group Leader - Maintenance	18	2.09 - 2.45
Mechanic "A"	17	2.00 - 2.35
Mechanic "B"	16	1.91 - 2.24
Development Machinist	20	2.28 - 2.67
Machinist "A"	18	2.09 - 2.45
Electrician	18	2.09 - 2.45
Gas Cylinder Supply	10	1.55 - 1.79
Pipefitter "A"	16	1.91 - 2.24
Tool and Stock Clerk	10	1.55 - 1.79
Tool and Die Maker "A"	20	2.28 - 2.67
Welder	18	2.09 - 2.45
Sheet Metal Worker	14	1.76 - 2.08
Tool Crib Attendent	9	1.50 - 1.72
Carpenter	16	1.91 - 2.24
Pipefitter	16	1.91 - 2.24
Lathe Operator	15	1.83 - 2.16
Milling Machine Operator	15	1.83 - 2.16
Contour Saw Operator - Learner	7	1.42 - 1.62
Tool & Die Maker "B"	18	2.09 - 2.45
Tool & Die Maker "C"	16	1.91 - 2.24
Machinist "B"	16	1.91 - 2.24
Machinist "C"	12	1.62 - 1.91
Millwright "A"	15	1.83 - 2.16
Millwright "B"	12	1.62 - 1.91
Groupleader - Maintenance	20	2.28 - 2.67
Shipping and Receiving Clerk	9	1.50 - 1.72
Stock Clerk	10	1.55 - 1.79
Caretaker	10	1.55 - 1.79
Groupleader - Equipment Assm.	19	2.18 - 2.56
Assembly Machinist "A"	18	2.09 - 2.45
Assembly Machinist "B"	16	1.91 - 2.24
Assembly Machinist "C"	11	1.59 - 1.85
Maintenance Machinist "A"	18	2.09 - 2.45
Maintenance Machinist "B"	16	1.91 - 2.24
Maintenance Machinist "C"	11	1.59 - 1.85
Guard Sergeant	13	1.69 - 1.99
Armed Courier	12	1.62 - 1.91
Armed Guard	11	1.59 - 1.85
Groupleader - Machine Shop	20	2.28 - 2.67
Inspector	20	2.28 - 2.67

I. JOB CLASSIFICATIONS AND SALARY RANGES - HOURLY (continued)

Job Title	Grade	Rate Range
Pump & Boiler Maintenance	16	$1.91 - $2.24
Trades Helper	7	1.42 - 1.62
Laboratory Assistant - X-Ray	8	1.46 - 1.67
Engineering Assistant - Metallographic	12	1.62 - 1.91
Characterizing Powder Metallurgy Specimens	9	1.50 - 1.72
Powder Preparation, Pressing & Sintering	13	1.69 - 1.99
Engineering Assistant - Metal Processing	16	1.91 - 2.24

II. EMPLOYMENT RELATIONS POLICIES

A. Moving Expenses

Whenever a new key or technical employee is hired for a position in an exempt salary classification or a regular key or technical employee is transferred from a locality which is more than a reasonable commuting distance from the Sylvania plant or office in which he is to work, the Company may pay the cost of moving the employee, his immediate family, and his household goods and personal effects to (or near) the new location.

In general, the company will not pay the moving and transportation expenses of an employee living within a thirty-mile radius of the plant or office location.

Immediate family shall include a man's wife, children and any relative living with him and dependent upon him for support.

After arrival at the new location a daily allowance may be paid for a period not to exceed 30 days. This may be extended only if the employee has been unsuccessful in a sincere effort to find a place to live in the new location. Any such extension will require prior AEC approval.

Transportation expense will be reimbursed in accordance with the travel policy except that the subsistence allowance during travel will be as follows:

Employee	-	$6.
Employee and wife	-	12.
Employee, wife and child	-	16.
Each additional person	-	4.

After arrival, the daily allowance, which includes subsistence and lodging will be as follows:

Employee	-	$12.
Employee and wife	-	18.
Employee, wife and child	-	24.
Each additional person	-	4.

Actual expense of moving household goods and personal effects will include, packing, crating, insurance on goods in transit, unpacking, temporary storage charges not to exceed 30 days, disconnecting and connecting equipment such as stoves, ranges, etc.

B. Educational Benefits

The Company makes available to employees the following educational benefits. Payments by the company to or for the benefit of an employee are considered wages, and all such educational benefits are subject to both withholding and social security tax deductions, except when the Company requires an employee as part of his work to take a course or become a member of a society or club. In all cases

listed ...ere the employee receives financ... assistan... the employee pa... the whole cost, submits the receipted bill and is reimbursed for 50% of the cost less withholding and social security tax deductions.

1. Magazines

If the employee wishes to subscribe personally to a magazine which will be helpful to him on the job, the Company will pay one-half the subscription price and the magazine may be sent directly to the employee's home or to his company address. Only technical trade or similar magazines that apply to a specific problem will be approved. Such payments are subject to tax deductions.

2. Engineering and Management Societies

Where an employee is the official representative of the Company or attends meetings as part of his work, the Company will pay the whole cost of membership. Such payments are not subject to tax deductions. If the employee wishes a personal membership, and such membership will be helpful to the employee on his job, the Company will pay one-half of the membership fee, less tax deductions.

3. Outside Educational Courses

When an employee is assigned to a course as part of his work, the Company will pay the whole cost of the course.

In cases where an employee voluntarily elects to take an outside course of study, he will receive help from the Company towards meeting his tuition costs provided the course meets the following requirements:

a. The course will improve the performance of the employee in his present job.

b. He must obtain approval before enrolling in the course.

c. He must complete the course satisfactorily and pay the tuition bill.

On presentation of the receipted tutition bill and a certificate of satisfactory completion of such a course, the Company will reimburse the employee for 50% of the tutition fee, less tax deductions.

C. Employee Benefit Program

The Company provides at no cost to the employee a program covering Group Life Insurance, Pensioner's Life Insurance, Accidental Death and Dismemberment Insurance, Non-occupational Disability Benefits, Hospital Benefits, and Surgical Benefits. A booklet describing these programs is on file in the Organization and Personnel Division.

D. Reporting Time

1. An hourly employee reporting for work on any regular workday, not having been previously notified not to report, will receive full pay for his scheduled hours for the day even though idle or sent home early because of a delay, shortage or other reason beyond his control. This payment will not be made in the case of general or departmental shutdowns caused by power interruptions, fire, flood, or other conditions beyond the control of the Company.

2. No regular workday will be scheduled for less than four (4) hours.

3. Hourly employees who are called in for emergency work after they have left for the day, or during their scheduled day off, will be paid not less than four (4) hours work.

4. When an hourly employee works less than his regular scheduled hours for the day due to conditions within his own control, he will be paid only for the time worked.

5. Schedules of work hours will be made up each week for the following week.

E. Planned Overtime

1. Planned overtime payments are made to an exempt employee when he works assigned hours on a Saturday, Sunday or a paid holiday. On a paid holiday, the planned overtime rate is in addition to the straight time rate. Such payments will be made when the employee's salary base rate is between $430 and $911 per month; and when he is classified as an executive, professional, or administrative employee. No planned overtime will be paid if the Saturday or Sunday work is a part of the employee's regular 40-hour schedule.

2. Planned overtime payments for hours worked will be made in accordance with the following schedule for any week in which an exempt employee is told to work a minimum of 2 hours on Saturday, Sunday, or a paid holiday. Payment will not be made for any worked period of less than 2 hours. Payment for work periods of 8 hours or more will be limited to 8 hours pay. Absence, for any reason, earlier in the week will not take away his planned overtime. If the employee is absent for the period assigned on Saturday, Sunday or a paid holiday, planned overtime will not be paid.

Schedule of Planned Overtime Amounts
(Subject to the pay limitations specified in paragraph 3)

Saturday or Sunday

a. If the exempt employee's salary base rate is $430 but less than $460 per month, planned overtime will be paid at the rate of time and one-half.
b. If the exempt employee's salary base rate is $460 but less than $693 per month, planned overtime will be paid at the rate of $4.00 per hour.
c. If the exempt employee's salary base rate is $693 but less than $911 per month, planned overtime will be paid at a straight time rate.

Paid Holiday

a. If the exempt employee's salary base rate is $430 but less than $911 per month, planned overtime will be paid at a straight time rate, in addition to regular holiday pay.

3. The planned overtime payment each week will be adjusted so that the total pay for the week, exclusive of night shift premium, does not exceed $210.

4. Planned overtime payments may be worked out for employees regularly assigned to exceptionally heavy work schedules during the normal 5-day week, Monday through Friday. These payments will be on the same basis as for Saturday or Sunday.

5. Travel time on Saturday or Sunday will be considered for purposes of planned overtime to the extent that it falls within the period of the employee's regularly scheduled hours on other days of the week.

F. Premium Shift

1. Premium shift is defined as any regular workday shift which begins outside the hours of 7:00 a.m. to 9:00 a.m.

2. Any employee assigned to a premium shift will be paid a premium of 10% of his straight time and overtime earnings for all work performed while assigned to such shift.

3. When an employee works overtime before or after his regularly scheduled shift, it will be considered as part of that shift for the purposes of calculating shift premium.

4. Whenever, for any reason, an employee's shift assignment is changed during his workweek, his shift premium for that workweek will be computed on a daily basis.

G. Vacations

1. Hourly employees on the payroll at the beginning of the vacation period, who have or will have on July 1 of the current year, the following record of continuous service, will be paid vacation pay at their current hourly base rate as indicated:

Less than 26 weeks	0 hours
26 weeks but less than 1 year. . .	20 hours plus 1/26 of 20 hours for each week beyond 26 weeks
1 year but less than 2 years 12 weeks	40 hours
2 years 12 weeks but less than 3 years	40 hours plus 1 hour for each week beyond 2 years 12 weeks
3 years but less than 14 years 12 weeks	80 hours
14 years 12 weeks but less than 15 years	80 hours plus 1 hour for each week beyond 14 years 12 weeks
15 years and more.	120 hours

Salary employees on the payroll at the beginning of the vacation period, who have or will have on July 1 of the current year the following records of continuous service, will be paid vacation pay at their current salary base rate for a 40-hour week as indicated:

Less than 26 weeks	0 hours
26 weeks but less than 1 year . .	40 hours plus 1/26 of 40 hours for each week beyond 26 weeks
1 year but less than 14 years 12 weeks	80 hours
14 years 12 weeks but less than 15 years	80 hours plus 1 hour for each week beyond 14 years 12 weeks
15 years	120 hours

Shift premium shall be added to such straight time wages for employees who, if they had worked during their vacation period, would have been assigned to a premium shift.

3. Employees who leave the Company at any time will be paid the accrued vacation pay to which their continous service as of the time of leaving would entitle them under the applicable schedule.

4. In the event the majority of the employees have actually worked on a schedule averaging 48 hours a week for the first 6 months of the year, vacation payments provided above will be on a 48 hour week straight time pay basis so that each amount specified above will be increased by 20%.

H. Overtime Pay

1. Time and a half will be paid to hourly and non-exempt salary employees for all hours worked in excess of eight hours in any 24-hour period after the employee actually starts work.

2. The 24-hour period on consecutive days starts on the same hour as that which the employee reports for work on the first day of the week, except that if for any reason an employee reports for work at a later hour some later day in the week, the 24-hour period on the following days of that workweek will begin at such later hour.

3. Time and a half will be paid to hourly and non-exempt salary employees for all hours worked:

a. In excess of 40 in any one workweek.
b. During the Saturday workday.

4. Double time will be paid to hourly and non-exempt salary employees for all hours worked:

a. During the Sunday workday.
b. During the workday and on holidays listed in 0.

5. Overtime for work during the Saturday and Sunday workdays as such will not be paid to employees on continuous operations (such as watchmen, firemen, tending gas house, etc.) but instead such an employee will be paid:

a. One and one-half his regular straight time rate of pay for all work performed during the workday of his first scheduled day off for that workweek; and
b. Twice his regular straight time rate of pay for all work performed during the workday of his second scheduled day off for that workweek.

Overtime for work during the holiday workday as such will be paid to employees on continuous operations for the holidays listed in O.

6. Overtime rates will not be pyramided where more than one rate applies. Only the highest single rate will be paid.

I. Savings and Retirement Plan

1. The employee contribution to the Savings and Retirement Plan is 3% of payroll earnings.

2. The company contributions to the plan are reimbursable as follows:

a. A prorata share of the actual normal contribution which is required to cover the currently accruing cost of benefits to be provided from contribution of the Company other than profit distributions.

b. A prorata share of the profit contribution up to but not to exceed five percent (5%) of direct labor cost.

The details of the plan are contained in a booklet which is on file in the Organization and Personnel Division.

J. Separation Pay

1. Any hourly employee with six or more months of continuous service who is laid off or discharged without prejudice by the Company may be given one week's notice or one week's separation pay at straight time for his regularly scheduled work week but not to exceed 40 hours.

2. Any salary employee with six or more months continuous service who is laid off or discharged without prejudice by the Company will be given two weeks' separation pay at his basic 40 hour week rate.

K. Travel Time (Hourly and Non-Exempt Salary Employees)

1. Time spent by an employee during regular working hours in traveling at the Company's instructions should be treated as hours worked. If the Company requests an employee to do a job during regular working hours which requires the employee to leave the place of business, the traveling time of the employee should be included in hours worked whether or not the particular job is within the employee's regular duties.

2. Travel time outside of regular working hours should be treated as hours worked when there is a continuation or extension of the employee's normal working day.

3. If an employee is told to report to work at a designated place other than his regular work location, but within the normal commuting area at a specified hour, or told to go directly home from such a location after completing his day's work, he will be paid for the time actually spent on the job but not for traveling time, unless the time spent going to and from such designated place of work is unreasonably disproportionate to the normal traveling time required in reporting for work at the usual work location. Normally, additional travel time in excess of one hour will be considered unreasonably disproportionate.

4. If an employee is told to report for work at a distant location requiring overnight travel by public transportation, or outside the normal commuting area, the hours spent in such travel outside of his regular working hours will not be treated as hours worked, provided that the employee is given adequate accommodations for sleep and relaxation, but the Company will pay for the costs of meals, room and transportation required in accordance with the travel policy shown in Q. If the employee chooses to use his own car instead of available public or company provided transportation, travel time in such cases will not be counted as work time unless it falls within his regular working hours.

5. If an employee is required to travel continously for more than a full working day during which time he is not engaged in actual work for the Company, the time spent traveling during the regular working hours should be considered hours worked. The time outside of regular working hours need not ordinarily be considered hours worked except that if the employee is required to travel on Saturdays, Sundays and holidays, he should be considered as working on these days for the number of traveling hours between his established starting and stopping time on other days of the week.

6. In any case when an employee traveling for the Company is required to do any work at all, such as guarding materials, driving a car or truck or acting as a helper or relief man on a truck, such hours must be treated as hours worked.

L. Time Off for Marriage

1. When an hourly employee elects to be married at a time other than his scheduled vacation he will, upon request, be granted a week's time off without pay. If it is necessary to allow additional time for travel such additional time will be without pay.

2. When a non-exempt salary employee elects to be married at a time other than his scheduled vacation he will, upon request, be granted a week's time off with 40 hours pay. If additional time is allowed for travel such additional time will be without pay.

3. When an exempt key or technical salary employee elects to be married at a time other than his scheduled vacation and requests time off, he will be allowed up to 2 weeks with pay.

4. If an employee is married either immediately before or immediately after his scheduled vacation, such extra time off as limited above will be in addition to his scheduled vacation.

M. Jury Duty

1. Whenever employees are called for jury duty and must therefore be absent from work, they will be given time off for the duration of their service as jurors. Employees will be paid as follows during this time.

a. Exempt employees - continue at full pay. These employees are expected to carry on their regular duties for the company during this period so far as it is possible.

b. Hourly and non-exempt employees - The difference between their fees as jurors and their regular week's pay based on forty hours or their regularly scheduled hours, whichever is less.

N. Rest Periods

1. It has long been the practice of the Company to provide sufficient utility operators to relieve hourly employees on machine operations as necessary. Provision has also been made for relief of employees on non-machine operations.

2. In addition to the above, a ten minute rest period will be provided for factory employees at approximately the middle of each of the two work periods in any work day of eight or more hours. In shorter work days, a ten minute rest period will be provided at approximately the middle of any work period of four but less than six hours, and a fifteen minute rest period will be provided at approximately the middle of any work period of six but less than eight hours.

3. Becuase the work of supervisory, office and engineering employees does not permit the scheduling of a specific rest period, other provisions must be made for such employees.

O. Paid Holidays

1. New Year's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Columbus Day (Salary employees only), Election Day, Thanksgiving, and Christmas.

2. When a holiday falls on Sunday, it will be observed the following Monday. When a holiday falls on Saturday, it will be observed either: (a) on the Friday preceeding the holiday; (b) by paying six days pay for 5 days work. That is, paying for Monday through Friday as days worked plus Saturday as a day of holiday pay; or (c) by declaring another and presumably more convenient date as the holiday.

P. Pay for Workmen's Compensation Waiting Period

1. When an employee received compensation for disability under a state Workmen's Compensation law, such as the New York State Law, which does not cover the one week's waiting period, the Company will pay him for that week's waiting period at the Workmen's Compensation rate, less tax deductions. The Company will make no payments under this policy when the time lost is sever calendar days or less.

2. In some states Workmen's Compensation is paid from the first day of injury if absence as a result of that injury extends beyond a specified period of time (five weeks in New York). In such states the Company will make no payment for the first week of absence where absence extends beyond these periods of time and Workmen's Compensation is paid from the first day of injury.

Q. Travel Policy

Travel on official business in the interest of this contract will be reimbursed as follows:

> Actual transportation expense, plus pullman in the event travel is by rail. Transportation expense via private automobile at the rate of 7¢ per mile, plus ferry, bridge, tunnel or toll road charges and parking fees. Actual expense for lodging and an allowance of six dollars per day to cover other subsistence expenses during period of travel. Other allowable expenses include official telegrams, and telephone calls; streetcar and bus fares; taxi fares when public transportation is not practical; checking and handling of baggage.

R. Attendance at Meetings

When it is in the interest of the contract for an employee to attend professional meetings, he will be reimbursed in accordance with the Travel Policy as shown in Q.

S. Standards for Administration

1. In Excess of Maximum Rate

No person's rate will be increased to a level above the upper limit of the classification to which he is assigned.

2. Below the Minimum Rate

Wages or salaries below the minimum rate approved for a classification may be paid during probationary or training periods. That portion of an increase necessary to bring the wage or salary to the minimum of the range will not be subject to the fifteen per cent limitation on merit increases.

T. Military Leave Payment

The Company will pay to each employee with six or more months of continuous service, who is granted Long Term Military Leave, one month's pay at his current base rate, but not exceeding 173 hours of pay unless he enlists during a period of an approved occupational deferment. This payment will be made after the employee has reported to his first military station and upon receipt from him of notification of his service address, rank, and serial number.

U. Insurance

The Company will pay for each employee granted Long Term Military Leave, the premium for his group life insurance in effect at the time of his Military Leave for a period of 120 days.

* V. Sick Leave

The Contractor may at his discretion grant leaves with pay to employees who are incapacitated because of accident or illness. Any such leave in excess of fifteen working days in any calendar year is subject to approval of the Atomic Energy Commission.

* W. Miscellaneous Leave with Pay

In addition to other leaves with pay, the Contractor may grant paid leaves to employees for reasons such as death in the immediate family and illness in the immediate family, or other reasons personal in nature. If any such leave with pay exceeds five days during any calendar year, the Contractor must secure Atomic Energy Commission approval in order to be entitled to reimbursement.

** X Supper Money

When employees working standard shifts are required by the Contractor to work through their normal supper hour, the Contractor will provide for a supper period of not less than one half an hour, without pay, and will reimburse employees for the additional expense resulting from having to purchase supper up to but not in excess of $1.50.

*Addition of policies.	Effective 12/10/51.	1293 - RA #7
Addition of policies.	Effective 6/25/50.	366 - RA #19
**Addition of policy	Effective 2/1/54.	1293 & 366 -RA #7 &

APPENDIX A

of U. S. Government Contract No. AT(30-1)-1293

WITH

SYLVANIA ELECTRIC PRODUCTS INC.

Appendix "A" in "Drawings" Folder.

I N D E X

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I. JOB CLASSIFICATIONS AND SALARY RANGES

PLAN "A" (Normally Exempt)

Job Title	Grade
Division Traffic Manager	6K
Area Safety Engineer	6K
Supervisor of Warehousing	6K
Division Purchasing Agent	9J
Supervisor - Expediting	5K
Priorities Coordinator	4K
Chief Buyer	6K
Buyer	5K
Division Industrial Engineer	9J
Division Supervisor of Maintenance	8K
Division Manager of Quality Control	9J
Quality Control Spec.	7K
Division and Staff Counsel	13J
Office Manager	7K
Supervisor of an Office Department	4K
Supervisor of an Office Department Sec.	2K
Manager of Accounting	12J
Supervisor of Equipment Design	9J
* Equipment Design Spec.	8K
Equipment Designer	4K
Mechanical Equipment Spec.	8K
Tool Room Foreman	6K
Supervisor of Prod. Scheduling & Control	8K
Supervisor of Material Control	6K
Tool Coordinator	6K
Administrative Engineer	10J
Plant Manager - Class A Plant	13J
Plant Manager - Class B Plant	12J
Plant Manager - Class C Plant	10J
Manufacturing Superintendent	9J
General Foreman	8K
Technical Foreman	6K
Foreman, Class I	6K
Foreman, Class II	3K
Supervisor of Personnel	7K
Personnel Assistant	4K
Safety Engineer	4K
Supervisor of Product Engineering	9J
Supervisor of Quality Control	7K
Supervisor of Industrial Engineers	7K
Industrial Engineer, Sr.	6K
Industrial Engineer, Jr.	3K
Standards Applicator	3K
Supervision of Production Control	7K
Supervisor of Plant A/C	7K

* Revision of salary grade Effective 3/1/56

I. JOB CLASSIFICATIONS AND SALARY RANGES (continued)

PLAN "A" (Normally Exempt) - (continued)

Job Title	Grade
* Engineering Specialist, Sr.	13J
Cost Accountant	3K
Purchasing Agent	5K
Supervisor of Maintenance	6K
** Engineering Manager A	13J
** Engineering Manager B	11J
Engineering Specialist	10J
** Section Head	10J
** Engineer in Charge	8K
** Senior Engineer	7K
Engineer	3K
Accountant Special	9J
Supervisor of A/C Department	7K
Supervisor of A/C Department Sec.	5K
Accountant, Senior	4K
Industrial Relations Assistant	3K
Industrial Relations Specialist	9J

PLAN "B" (Non-Exempt)

Cost Accountant, Jr.	60R
Time Study and/or Methods Clerk	59R
Time Study and/or Methods Clerk, Jr.	56R
Materials Requirements Analyst	62R
Production Control Clerk	59R
Production Control Clerk, Jr.	56R
Stock Clerk	59R
Stock Clerk, Jr.	56R
Drafting Section Supervisor	64R
Designer - Draftsman	63R
Draftsman	60R
Draftsman, Jr.	57R
Tracer	54R
Internal Expediter	59R
External Expediter	60R
Master Craftsman	64R
Production or Maintenance Supervisor I	62R
Production or Maintenance Supervisor II	60R
Safety Inspector	60R
Employment Interviewer or Counsellor	59R
Employment Interviewer or Counsellor, Jr.	56R
Nurse	57R
Nurse, Sr.	59R
Buyer, Jr.	59R
Production Scheduling Clerk	62R
Technician, Sr.	62R
Technician	59R
Technician, Jr.	56R
Experimental Glass Blower	62R

366-RA #27
1293-RA #15
Effective 3/1/56

*Addition of job classification
**Revision of salary grades

I. JOB CLASSIFICATIONS AND SALARY RANGES (continued

PLAN "B" (Non-Exempt) - (continued)	Grade
Billing Checker	54R
Specifications	62R
Requisition Clerk	57R
Office Boy or Girl	51R
Supervisor of an Office Dept., Sec. (Cl.I)	60R
Supervisor of an Office Dept., Sec. (Cl.II)	57R
Functional Clerk	59R
Clerk, Sr.	55R
Routine Clerk	52R
Mail and File Clerk	52R
Office and Stockroom Clerk	54R
Secretary Exec.	* 59Z
Secretary, Sr.	* 57Z
Secretary-Steno	* 55Z
Steno	54R
Transcriber	53R
Copy Typist	52R
Order Typist	54R
Duplicating Machine Operator	53R
Photostat and Blue Print Operator	54R
Multilith Operator "A"	55R
Multilith Operator "B"	54R
Multigraph Operator	54R
Billing Machine Operator	54R
Bookkeeping Machine Operator, Sr.	55R
Bookkeeping Machine Operator, Jr.	54R
Tabulating Procedure Clerk	59R
Tabulating Machine Operator "A"	56R
Tabulating Machine Operator "B"	55R
Key Punch Operator	54R
A/C Clerk, Sr.	56R
A/C Clerk, Jr.	54R
Bookkeeper, Sr.	56R
Bookkeeper, Jr.	54R
Payroll Clerk, Sr.	56R
Payroll Clerk, Jr.	54R
Cost Clerk, Sr.	56R
Cost Clerk, Jr.	54R
Invoice Clerk	55R
Telephone Operator & Receptionist I	56R
Telephone Operator & Receptionist II	54R
Accountant, Trainee	60R
Accountant, Jr.	60R
Traffic Clerk	62R
Warehouse Supervisor	58R
Warehouseman	54R
Industrial Relation Analyst or Asst., Jr.	58R
Routing Clerk	55R
Billing Clerk	56R
Inventory Clerk	55R
Addressograph Operator	54R

I. JOB CLASSIFICATIONS AND SALARY RANGES (continued)

HOURLY

Job Title	Grade
Janitor	5
Handyman	5
Lab Helper - Metallographic	4
Lab Helper Special Products	6
Machinist - Special Products	13
Mechanic "A"	17
Mechanic "B"	16
Development Machinist	20
Machinist "A"	18
Electrician	18
Gas Cylinder Supply	10
Pipefitter "A"	16
Tool and Stock Clerk	10
Tool and Die Maker "A"	20
Welder	18
Sheet Metal Worker	16
Tool Crib Attendant	10
Carpenter	16
Pipefitter	16
Lathe Operator	15
Milling Machine Operator	15
Contour Saw Operator - Learner	7
Tool & Die Maker "B"	18
Tool & Die Maker "C"	16
Machinist "B"	16
Machinist "C"	12
Millwright "A"	15
Millwright "B"	12
Group Leader, Maintenance	19
Shipping and Receiving Clerk	10
Stock Clerk	10
Caretaker	10
Groupleader - Equipment Assm.	19
Assembly Machinist "A"	18
Assembly Machinist "B"	16
Assembly Machinist "C"	11
Maintenance Machinist "A"	18
Maintenance Machinist "B"	16
Maintenance Machinist "C"	11
Guard Sergeant	13
Armed Courier	12
Armed Guard	11
Groupleader - Machine Shop	20
Inspector	20
* Electrician "C"	11

*Addition of job classification Effective 8/29/55

I. JOB CLASSIFICATIONS AND SALARY RANGES - HOURLY (continued)

Job Title	Grade
Pump & Boiler Maintenance	16
Trades Helper	8
Laboratory Assistant - X-Ray	8
Engineering Assistant - Metallographic	12
Characterizing Powder Metallurgy Specimens	9
Powder Preparation, Pressing & Sintering	13
Engineering Assistant - Metal Processing	16

HOURLY RATE RANGES

Grade	Starting Rate	Step 3	Step 2	Base Rate or Job Rate
1	1.34	1.38	1.44	1.50
2	1.36	1.40	1.47	1.52
3	1.36	1.41	1.48	1.54
4	1.38	1.44	1.50	1.58
5	1.38	1.46	1.52	1.61
6	1.41	1.49	1.55	1.64
7	1.47	1.53	1.62	1.69
8	1.51	1.60	1.66	1.74
9	1.55	1.64	1.71	1.79
10	1.62	1.69	1.78	1.86
11	1.66	1.75	1.84	1.94
12	1.69	1.79	1.90	2.00
13	1.76	1.85	1.97	2.08
14	1.83	1.95	2.06	2.17
15	1.92	2.02	2.14	2.27
16	2.00	2.10	2.23	2.35
17	2.09	2.22	2.34	2.46
18	2.18	2.32	2.44	2.58
19	2.29	2.42	2.56	2.69
20	2.39	2.55	2.69	2.82

MONTHLY RATE RANGES

SCHEDULE J

SALARY GRADE	RANGE	
9J	$626	$985
10J	691	1135
11J	766	1262
12J	844	1392
13J	959	1552

SCHEDULE K

SALARY GRADE	RANGE	
2K	$334	$525
3K	359	568
4K	399	626
5K	439	691
6K	483	753
7K	525	818
8K	574	903

SCHEDULE Z

SALARY GRADE	RANGE	
55Z	$257	$374
57Z	295	433
59Z	334	492
60Z	354	525

MONTHLY RATE RANGES

SCHEDULE R

SALARY GRADE	RANGE	
51R	$216	$257
52R	233	276
53R	233	295
54R	233	321
55R	245	346
56R	257	374
57R	276	407
58R	295	433
59R	314	460
60R	334	492
61R	354	525
62R	380	562
63R	413	600
64R	444	651
65R	477	702

II. EMPLOYEE RELATIONS POLICIES

A. Moving Expenses

Whenever a new key or technical employee is hired for a position in an exempt salary classification or a regular key or technical employee is transferred from a locality which is more than a reasonable commuting distance from the Sylvania plant or office in which he is to work, the Company may pay the cost of moving the employee, his immediate family, and his household goods and personal effects to (or near) the new location.

In general, the company will not pay the moving and transportation expenses of an employee living within a thirty-mile radius of the plant or office location.

Immediate family shall include a man's wife, children and any relative living with him and dependent upon him for support.

After arrival at the new location a daily allowance may be paid for a period not to exceed 30 days. This may be extended only if the employee has been unsuccessful in a sincere effort to find a place to live in the new location. Any such extension will require prior AEC approval.

Transportation expense will be reimbursed in accordance with the travel policy except that the subsistence allowance during travel will be as follows:

Employee	-	$6.
Employee and wife	-	12.
Employee, wife and child	-	16.
Each additional person	-	4.

After arrival, the daily allowance, which includes subsistence and lodging will be as follows:

Employee	-	$12.
Employee and wife	-	18.
Employee, wife and child	-	24.
Each additional person	-	4.

Actual expense of moving household goods and personal effects will include, packing, crating, insurance on goods in transit, unpacking, temporary storage charges not to exceed 30 days, disconnecting and connecting equipment such as stoves, ranges, etc.

B. Educational Benefits

The Company makes available to employees the following educational benefits. Payments by the company to or for the benefit of an employee are considered wages, and all such educational benefits are subject to both withholding and social security tax deductions, except when the Company requires an employee as part of his work to take a course or become a member of a society or club. In all cases

listed below where the employee receives financial assistance, the employee pa the whole cost, submits the receipted bill and is reimbursed for 50% of the cost less withholding and social security tax deductions.

1. Magazines

If the employee wishes to subscribe personally to a magazine which will be helpful to him on the job, the Company will pay one-half the subscription price and the magazine may be sent directly to the employee's home or to his company address. Only technical trade or similar magazines that apply to a specific problem will be approved. Such payments are subject to tax deductions.

2. Engineering and Management Societies

Where an employee is the official representative of the Company or attends meetings as part of his work, the Company will pay the whole cost of membership. Such payments are not subject to tax deductions. If the employee wishes a personal membership, and such membership will be helpful to the employee on his job, the Company will pay one-helf of the membership fee, less tax deductions.

3. Outside Educational Courses

When an employee is assigned to a course as part of his work, the Company will pay the whole cost of the course.

In cases where an employee voluntarily elects to take an outside course of study, he will receive help from the Company towards meeting his tuition costs provided the course meets the following requirements:

a. The course will improve the performance of the employee in his present job.

b. He must obtain approval before enrolling in the course.

c. He must complete the course satisfactorily and pay the tuition bill.

On presentation of the receipted tutition bill and a certificate of satisfactory completion of such a course, the Company will reimburse the employee for 50% of the tutition fee, less tax deductions.

C. Employee Benefit Program

The Company provides at no cost to the employee a program covering Group Life Insurance, Pensioner's Life Insurance, Accidental Death and Dismemberment Insurance, Non-occupational Disability Benefits, Hospital Benefits, and Surgical Benefits. A booklet describing these programs is on file in the Organization and Personnel Division.

D. Reporting T...

1. An hourly employee reporting for work on any regular workday, not having been previously notified not to report, will receive full pay for his scheduled hours for the day even though idle or sent home early because of a delay, shortage or other reason beyond his control. This payment will not be made in the case of general or departmental shutdowns caused by power interruptions, fire, flood, or other conditions beyond the control of the Company.

2. No regular workday will be scheduled for less than four (4) hours.

3. Hourly employees who are called in for emergency work after they have left for the day, or during their scheduled day off, will be paid not less than four (4) hours work.

4. When an hourly employee works less than his regular scheduled hours for the day due to conditions within his own control, he will be paid only for the time worked.

5. Schedules of work hours will be made up each week for the following week.

E. Planned Overtime

1. Planned overtime payments are made to an exempt employee when he works assigned hours on a Saturday, Sunday or a paid holiday. On a paid holida the planned overtime rate is in addition to the straight time rate. Such payments will be made when the employee's salary base rate is between $430 and $911 per month; and when he is classified as an executive, professional, or administrative employee. No planned overtime will be paid if the Saturday or Sunday work is a part of the employee's regular 40-hour schedule.

2. Planned overtime payments for hours worked will be made in accordance with the following schedule for any week in which an exempt employee is told to work a minimum of 2 hours on Saturday, Sunday, or a paid holiday. Payment will not be made for any worked period of less than 2 hours. Payment for work periods of 8 hours or more will be limited to 8 hours pay. Absence, for any reason, earlier in the week will not take away his planned overtime. If the employee is absent for the period assigned on Saturday, Sunday or a paid holiday, planned overtime will not be paid.

Schedule of Planned Overtime Amounts
(Subject to the pay limitations specified in paragraph 3)

Saturday or Sunday

a. If the exempt employee's salary base rate is $430 but less than $460 per month, planned overtime will be paid at the rate of time and one-hal
b. If the exempt employee's salary base rate is $460 but less than $693 per month, planned overtime will be paid at the rate of $4.00 per hour.
c. If the exempt employee's salary base rate is $693 but less than $911 per month, planned overtime will be paid at a straight time rate.

Paid Holiday

a. If the exempt employee's salary base rate is $430 but less than $911 per month, planned overtime will be paid at a straight time rate, in addition to regular holiday pay.

3. The planned overtime payment each week will be adjusted so that the total pay for the week, exclusive of night shift premium, does not exceed $210.

4. Planned overtime payments may be worked out for employees regularly assigned to exceptionally heavy work schedules during the normal 5-day week, Monday through Friday. These payments will be on the same basis as for Saturday or Sunday.

5. Travel time on Saturday or Sunday will be considered for purposes of planned overtime to the extent that it falls within the period of the employee's regularly scheduled hours on other days of the week.

F. Premium Shift

1. Premium shift is defined as any regular workday shift which begins outside the hours of 7:00 a.m. to 9:00 a.m.

2. Any employee assigned to a premium shift will be paid a premium of 10% of his straight time and overtime earnings for all work performed while assigned to such shift.

3. When an employee works overtime before or after his regularly scheduled shift, it will be considered as part of that shift for the purposes of calculating shift premium.

4. Whenever, for any reason, an employee's shift assignment is changed during his workweek, his shift premium for that workweek will be computed on a daily basis.

G. Vacations

1. Hourly employees on the payroll at the beginning of the vacation period, who have or will have on July 1 of the current year, the following record of continuous service, will be paid vacation pay at their current hourly base rate as indicated:

Less than 26 weeks	0 hours
26 weeks but less than 1 year. . .	20 hours plus 1/26 of 20 hours for each week beyond 26 weeks
1 year but less than 2 years 12 weeks	40 hours
2 years 12 weeks but less than 3 years	40 hours plus 1 hour for each week beyond 2 years 12 weeks
3 years but less than 14 years 12 weeks	80 hours
14 years 12 weeks but less than 15 years	80 hours plus 1 hour for each week beyond 14 years 12 weeks
15 years and more.	120 hours

Salary employees on the payroll at the beginning of the vacation period, who have or will have on July 1 of the current year the following records of continuous service, will be paid vacation pay at their current salary base rate for a 40-hour week as indicated:

Less than 26 weeks	0 hours
26 weeks but less than 1 year	40 hours plus 1/26 of 40 hours for each week beyond 26 weeks
1 year but less than 14 years 12 weeks	80 hours
14 years 12 weeks but less than 15 years	80 hours plus 1 hour for each week beyond 14 years 12 weeks
15 years	120 hours

Shift premium shall be added to such straight time wages for employees who, if they had worked during their vacation period, would have been assigned to a premium shift.

3. Employees who leave the Company at any time will be paid the accrued vacation pay to which their continous service as of the time of leaving would entitle them under the applicable schedule.

4. In the event the majority of the employees have actually worked on a schedule averaging 48 hours a week for the first 6 months of the year, vacation payments provided above will be on a 48 hour week straight time pay basis so that each amount specified above will be increased by 20%.

H. Overtime Pay

1. Time and a half will be paid to hourly and non-exempt salary employees for all hours worked in excess of eight hours in any 24-hour period after the employee actually starts work.

2. The 24-hour period on consecutive days starts on the same hour as that which the employee reports for work on the first day of the week, except that if for any reason an employee reports for work at a later hour some later day in the week, the 24-hour period on the following days of that workweek will begin at such later hour.

3. Time and a half will be paid to hourly and non-exempt salary employees for all hours worked:

a. In excess of 40 in any one workweek.
b. During the Saturday workday.

4. Double time will be paid to hourly and non-exempt salary employees for all hours worked:

a. During the Sunday workday.
b. During the workday and on holidays listed in O.

5. Overtime for work during the Saturday and Sunday workdays as such will not be paid to employees on continuous operations (such as watchmen, firemen, tending gas house, etc.) but instead such an employee will be paid:

a. One and one-half his regular straight time rate of pay for all work performed during the workday of his first scheduled day off for that workweek; and

b. Twice his regular straight time rate of pay for all work performed during the workday of his second scheduled day off for that workweek.

Overtime for work during the holiday workday as such will be paid to employees on continuous operations for the holidays listed in O.

6. Overtime rates will not be pyramided where more than one rate applies. Only the highest single rate will be paid.

I. Savings and Retirement Plan

1. The employee contribution to the Savings and Retirement Plan is 3% of payroll earnings.

2. The company contributions to the plan are reimbursable as follows:

a. A prorata share of the actual normal contribution which is required to cover the currently accruing cost of benefits to be provided from contribution of the Company other than profit distributions.

b. A prorata share of the profit contribution up to but not to exceed five percent (5%) of direct labor cost.

The details of the plan are contained in a booklet which is on file in the Organization and Personnel Division.

J. Separation Pay

1. Any hourly employee with six or more months of continuous service who is laid off or discharged without prejudice by the Company may be given one week's notice or one week's separation pay at straight time for his regularly scheduled work week but not to exceed 40 hours.

2. Any salary employee with six or more months continuous service who is laid off or discharged without prejudice by the Company will be given two weeks' separation pay at his basic 40 hour week rate.

K. Travel Time (Hourly and Non-Exempt Salary Employees)

1. Time spent by an employee during regular working hours in traveling at the Company's instructions should be treated as hours worked. If the Company requests an employee to do a job during regular working hours which requires the employee to leave the place of business, the traveling time of the employee should be included in hours worked whether or not the particular job is within the employee's regular duties.

2. Travel time outside of regular working hours should be treated as hours worked when there is a continuation or extension of the employee's normal working day.

3. If an employee is told to report to work at a designated place other than his regular work location, but within the normal commuting area at a specified hour, or told to go directly home from such a location after completing his day's work, he will be paid for the time actually spent on the job but not for traveling time, unless the time spent going to and from such designated place of work is unreasonably disproportionate to the normal traveling time required in reporting for work at the usual work location. Normally, additional travel time in excess of one hour will be considered unreasonably disproportionate.

4. If an employee is told to report for work at a distant location requiring overnight travel by public transportation, or outside the normal commuting area, the hours spent in such travel outside of his regular working hours will not be treated as hours worked, provided that the employee is given adequate accommodations for sleep and relaxation, but the Company will pay for the costs of meals, room and transportation required in accordance with the travel policy shown in Q. If the employee chooses to use his own car instead of available public or company provided transportation, travel time in such cases will not be counted as work time, unless it falls within his regular working hours.

5. If an employee is required to travel continuously for more than a full working day during which time he is not engaged in actual work for the Company, the time spent traveling during the regular working hours should be considered hours worked. The time outside of regular working hours need not ordinarily be considered hours worked except that if the employee is required to travel on Saturdays, Sundays and holidays, he should be considered as working on these days for the number of traveling hours between his established starting and stopping time on other days of the week.

6. In any case when an employee traveling for the Company is required to do any work at all, such as guarding materials, driving a car or truck or acting as a helper or relief man on a truck, such hours must be treated as hours worked.

L. Time Off for Marriage

1. When an hourly employee elects to be married at a time other than his scheduled vacation he will, upon request, be granted a week's time off without pay. If it is necessary to allow additional time for travel such additional time will be without pay.

2. When a non-exempt salary employee elects to be married at a time other than his scheduled vacation he will, upon request, be granted a week's time off with 40 hours pay. If additional time is allowed for travel such additional time will be without pay.

3. When an exempt key or technical salary employee elects to be married at a time other than his scheduled vacation and requests time off, he will be allowed up to 2 weeks with pay.

4. If an employee is married either immediately before or immediately after his scheduled vacation, such extra time off as limited above will be in addition to his scheduled vacation.

M. Jury Duty

1. Whenever employees are called for jury duty and must therefore be absent from work, they will be given time off for the duration of their service as jurors. Employees will be paid as follows during this time.

a. Exempt employees - continue at full pay. These employees are expected to carry on their regular duties for the company during this period so far as it is possible.

b. Hourly and non-exempt employees - The difference between their fees as jurors and their regular week's pay based on forty hours or their regularly scheduled hours, whichever is less.

N. Rest Periods

1. It has long been the practice of the Company to provide sufficient utility operators to relieve hourly employees on machine operations as necessary. Provision has also been made for relief of employees on non-machine operations.

2. In addition to the above, a ten minute rest period will be provided for factory employees at approximately the middle of each of the two work periods in any work day of eight or more hours. In shorter work days, a ten minute rest period will be provided at approximately the middle of any work period of four but less than six hours, and a fifteen minute rest period will be provided at approximately the middle of any work period of six but less than eight hours.

3. Becuase the work of supervisory, office and engineering employees does not permit the scheduling of a specific rest period, other provisions must be made for such employees.

O. Paid Holidays

1. New Year's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Columbus Day (Salary employees only), Election Day, Thanksgiving, and Christmas.

2. When a holiday falls on Sunday, it will be observed the following Monday. When a holiday falls on Saturday, it will be observed either: (a) on the Friday preceeding the holiday; (b) by paying six days pay for 5 days work. That is, paying for Monday through Friday as days worked plus Saturday as a day of holiday pay; or (c) by declaring another and presumably more convenient date as the holiday.

P. Pay for Workmen's Compensation Waiting Period

1. When an employee received compensation for disability under a state Workmen's Compensation law, such as the New York State Law, which does not cover the one week's waiting period, the Company will pay him for that week's waiting period at the Workmen's Compensation rate, less tax deductions. The Company will make no payments under this policy when the time lost is seven calendar days or less.

2. In some states Workmen's Compensation is paid from the first day of injury if absence as a result of that injury extends beyond a specified period of time (five weeks in New York). In such states the Company will make no payment for the first week of absence where absence extends beyond these periods of time and Workmen's Compensation is paid from the first day of injury.

Q. Travel Policy

Travel on official business in the interest of this contract will be reimbursed as follows:

Actual transportation expense, plus pullman in the event travel is by rail. Transportation expense via private automobile at the rate of 7¢ per mile, plus ferry, bridge, tunnel or toll road charges and parking fees. Actual expense for lodging and an allowance of six dollars per day to cover other subsistence expenses during period of travel. Other allowable expenses include official telegrams, and telephone calls; streetcar and bus fares; taxi fares when public transportation is not practical; checking and handling of baggage.

R. Attendance at Meetings

When it is in the interest of the contract for an employee to attend professional meetings, he will be reimbursed in accordance with the Travel Policy as shown in Q.

S. Standards for Administration

1. In Excess of Maximum Rate

No person's rate will be increased to a level above the upper limit of the classification to which he is assigned.

2. Below the Minimum Rate

Wages or salaries below the minimum rate approved for a classification may be paid during probationary or training periods. That portion of an increase necessary to bring the wage or salary to the minimum of the range will not be subject to the fifteen per cent limitation on merit increases.

T. Military Leave Payment

The Company will pay to each employee with six or more months of continuous service, who is granted Long Term Military Leave, one month's pay at his current base rate, but not exceeding 173 hours of pay unless he enlists during a period of an approved occupational deferment. This payment will be made after the employee has reported to his first military station and upon receipt from him of notification of his service address, rank, and serial number.

U. Insurance

The Company will pay for each employee granted Long Term Military Leave, the premium for his group life insurance in effect at the time of his Military Leave for a period of 120 days.

V. Sick Leave

The Contractor may at his discretion grant leaves with pay to employees who are incapacitated because of accident or illness. Any such leave in excess of fifteen working days in any calendar year is subject to approval of the Atomic Energy Commission.

W. Miscellaneous Leave with Pay

In addition to other leaves with pay, the Contractor may grant paid leaves to employees for reasons such as death in the immediate family and illness in the immediate family, or other reasons personal in nature. If any such leave with pay exceeds five days during any calendar year, the Contractor must secure Atomic Energy Commission approval in order to be entitled to reimbursement.

*X. Supper Money

When employees working standard shifts are required by the Contractor to work through their normal supper hour, the Contractor will provide for a supper period of not less than one half an hour, without pay, and will reimburse employees for the additional expense resulting from having to purchase supper up to but not in excess of $1.50.

Y. Payment of Employment Agency Fee

When, in the contractor's opinion, payment of employment agency fees is necessary to secure properly qualified personnel, such payment will be reimbursed under the contract, provided that the agency fee does not exceed 5% of the offerred annual salary.

*Revision of effective date.	Effective 12/10/51	1293 - RA #12
*Revision of effective date.	Effective 7/1/48	366 - RA #24

Z. Printed Material

The cost of printed material which is distributed to employees for training, information and indoctrination will be reimbursed. The type of material covered includes "Welcome to Sylvania", the "Beam" and "Annual Financial Report".

A-a. Employee Association

The contractor's contribution to the Sylvania Employee Association will be reimbursed at the rate of $.06 per employee per week up to January 1, 1955, at which time the contribution will increase to $.09. The Association sponsors social and recreational activities such as softball, Christmas parties, etc.

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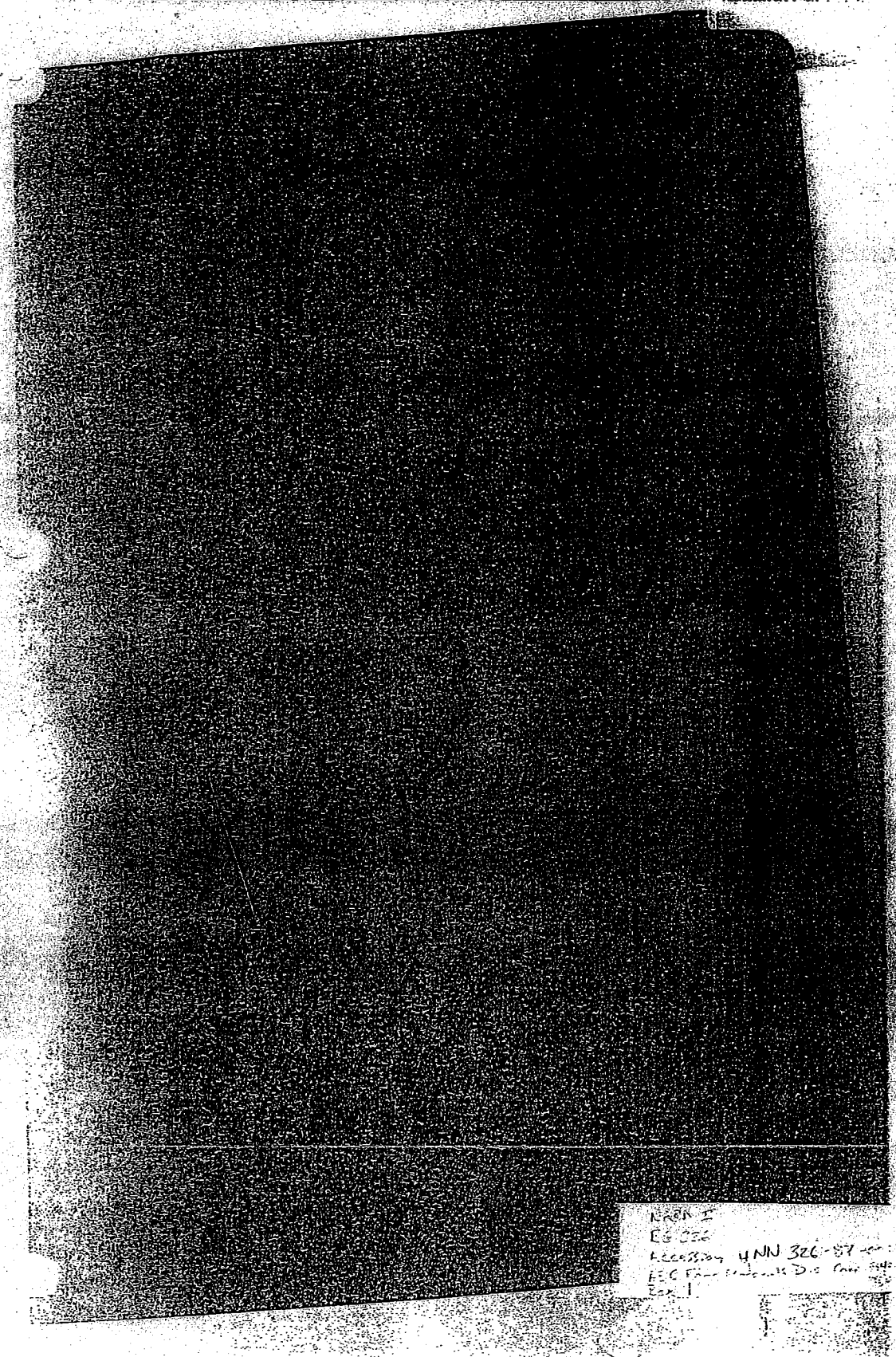

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File

This document consists of 55 pages.
No. 12 of 12 copies, Series A.

CONTRACT NO. AT(30-1)-1293

CONTRACT

CONTRACTOR AND ADDRESS:	SILVANIA ELECTRIC PRODUCTS, INC. 1740 Broadway New York, New York
CONTRACT FOR:	RESEARCH AND DEVELOPMENT
TERM OF CONTRACT:	December 10, 1951 to June 30, 1953
→ LIMIT OF GOVERNMENT LIABILITY:	$3,253,897.00
PAYMENT TO BE MADE BY:	Division of Disbursement, United States Treasury Department, New York, New York. Submit invoices to: United States Atomic Energy Commission, P. O. Box 30, Ansonia Station, New York 23, New York
BASIS OF AWARD:	NEGOTIATION

Priority Rating

In accordance with authority delegated to the Atomic Energy Commission by the National Production Authority, this contract is rated DO-E-2, certified under NPA Regulation 2.

A TRUE COPY

M. M. Murray

Authorized Representative

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Contract No. AT(30-1)-1293

THIS CONTRACT, entered into as of the 10th day of December, 1951, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, with its principal place of business in New York City, New York;

WITNESSETH THAT:

WHEREAS, by Letter Contract No. AT(30-1)-1293, dated December 10, 1951, the Government and the Contractor agreed, among other things, that the Contractor would perform for the Government the research and development work provided for in said Letter Contract; and

WHEREAS, the Government and the Contractor, as contemplated by said Letter Contract, have negotiated and arrived at this definitive agreement which merges with and supersedes said Letter Contract; and

WHEREAS, this contract is authorized by law, including the Atomic Energy Act of 1946;

NOW, THEREFORE, the parties hereto agree as follows:

ARTICLE I - SCOPE OF THE WORK

1. The Contractor shall conduct studies, experimental investigations and other research and development work for the Government, the details of which research and development work are set forth in the classified Appendix 'B' to this contract. A copy of said Appendix 'B' signed by the Contractor is on file in the offices of the Commission and said Appendix 'B' is incorporated herein by reference and made a part hereof.

2. The Contractor shall furnish all materials, equipment, facilities and premises, and all other properties and services requisite to the proper performance of the work under this contract, except to the extent that the Government may elect to furnish such properties or services.

ARTICLE II - SITE OF THE WORK

1. Principal Site

The principal site of the work of this contract shall be the land and plant of the Contractor on Cantiague Road in Hicksville, Long Island, including, but only from January 1, 1953 on, the one-story frame building at this location, leased at the date of commencement of the period of performance of the work of this contract, to the United States Department

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of Agriculture, unless the Commission approves a substitute site in writing and until the date approved by the Commission for such substitution.

2. Alteration at Site

The Contractor shall alter the plant and other facilities at any principal site of the work, referred to in paragraph 1 above, to the extent the Commission considers such alterations necessary to the proper performance of the work hereunder.

3. Transfer of Site

The Contractor shall not sell, lease, license or otherwise transfer ownership or occupancy of any plant space or other facilities at any principal site of the work referred to in paragraph 1 above, or of said site or any portion thereof, without the approval of the Commission.

4. Non-Contract Activities

The Contractor shall not engage in or permit others to engage in activities other than activities in performance of the work of this contract at any principal site of the work referred to in paragraph 1 above, without the approval of the Commission.

5. Request for Approval

Any request of the Contractor to the Commission for approval pursuant to either of paragraphs 3 or 4 above, shall specify the extent of such transfer or non-contract activities and should further specify the Contractor's proposed reduction in the allowance for use and occupancy set forth in paragraph 3 of Article IV, CONSIDERATION, and the Contractor's estimate of the reduction in other costs of this contract to the Government that would result should the Commission grant the requested approval. Any reduction in the allowance for use and occupancy agreed upon shall be set forth in an amendment to this contract.

ARTICLE III - TERM, EXPIRATION AND TERMINATION

1. The period of performance of the work under this contract shall commence on December 10, 1951 and, subject to the provisions of this Article, shall end on June 30, 1953.

2. Termination

a. For Default.

The Government may at any time terminate performance of the work under this contract for the default of the Contractor.

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b. For the Convenience of the Government.

The Government, at its election, may for its convenience, (i) from time to time terminate in part performance of work under this contract, or (ii) at any time terminate in whole the performance of the work under this contract.

c. Notice of Termination.

Termination, under this paragraph, shall be effected by delivery to the Contractor of a written notice of termination, which notice (i) shall specify a date upon which said termination shall become effective, which date shall be at least sixty (60) days after the delivery of said notice; (ii) in the event of a termination in part, shall specify the portion or portions of the work so terminated and the period or periods during which said termination shall be effective; and (iii) shall specify whether said termination is for the default of the Contractor or for the convenience of the Government. Upon receipt of said notice of termination, the Contractor promptly, except as the notice may direct otherwise, shall (i) discontinue all terminated work as soon as is reasonably practicable, if the notice so directs, and in any event by the date specified in said notice of termination; (ii) cease all placing of orders for property or services in connection with the performance of the terminated work; (iii) proceed to the best of its ability to terminate all orders and subcontracts to the extent that they relate to the terminated work; (iv) assign to the Government in the manner and to the extent directed by the Commission, all the right, title and interest of the Contractor under the terminated portion of the orders and subcontracts so terminated; (v) settle, with the approval of the Commission, all subcontracts, obligations, commitments and claims related to the terminated work, the cost of which would be allowable in accordance with the provisions of this contract; (vi) continue performance of such part of the contract work, if any, as shall not have been terminated; and (vii) take such other action with respect to the terminated work as may be required under other Articles of this contract and, subject to the approval of the Commission, as may be otherwise appropriate, including but not limited to, action for the protection and preservation of Government property.

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d. Entry by Government After Default.

(i) If performance of the work under this contract is terminated for the default of the Contractor, the Government (1) may exercise the option granted in Article VI, OPTION IN THE GOVERNMENT, to purchase the principal site of the work hereunder, (2) may exercise the right given in item (ii) of this subparagraph.

(ii) Instead of exercising the option to purchase referred to in (i) above, the Government may elect, pursuant to this subsection, to occupy the property for a period not to exceed one year by paying the Contractor a monthly charge in reasonable satisfaction of all claims of the Contractor arising out of said entry and occupancy, including a claim for the fair rental value of said premises and facilities. Said monthly charge will be one-twelfth the yearly allowance for use and occupancy set forth in subparagraph j. of paragraph 3 of Article IV, CONSIDERATION.

(iii) After termination for the default of the Contractor, and the exercise of either the option or right referred to in subparagraphs (i) and (ii) above, the Government may (a) enter upon and have exclusive occupancy of any principal site of the work described as such in paragraph 1 of Article II, SITE OF THE WORK, (b) take possession, for the period of such occupancy, of all materials, tools, machinery and appliances therein which may be owned by or are in the possession of the Contractor, (c) exercise during said occupancy all options, privileges and rights belonging to or exercisable by the Contractor in connection with such premises and facilities, and (d) complete or employ others to complete, the work of this contract therein. Said occupancy if done under (ii) above shall be for a period not to exceed one year.

(iv) In addition, the Commission shall within the limits of its authority, indemnify and hold the Contractor harmless against any damages finally awarded in court actions or settlements made with the consent of the Commission, and against expenses incident to such court actions or settlements, where such actions and settlements are based on claims by third parties against the Contractor arising out of actions by the Government in use and occupancy of said premises and facilities pursuant to this subparagraph d.

e. Terms of Settlement.

Upon a termination of performance of all or part of the work under this contract, full and complete settlement of all claims of the Contractor with respect to the work of this contract so terminated shall be made as follows:

(1) Assumption of Contractor's obligations. The Government may at the discretion of the Commission, assume and become liable for all obligations, commitments, and claims that the Contractor may have theretofore in good faith undertaken or incurred in connection with the terminated work, the cost of which would be allowable in accordance with the provisions of this contract, and the

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Contractor shall, as a condition of receiving the payments mentioned in this Article, execute and deliver all such papers and take all such steps as the Commission may require for the purpose of fully vesting in the Government all the rights and benefits of the Contractor under such obligations or commitments.

(ii) Payment for Allowable Costs. The Government shall reimburse the Contractor or allow credit for all allowable costs incurred in the performance of the terminated work and not previously reimbursed or otherwise discharged.

(iii) Payment for Close-Out Expense. The Government shall reimburse the Contractor (a) for such close-out expenses, (b) for such further expenditures as are made after the date of termination for the protection of the Government property, and (c) for such legal and accounting services in connection with settlement, as are required or approved by the Commission.

(iv) Payment on Account of the Fixed Fee.

a. If the performance of the work under this contract is terminated in whole for the default of the Contractor, no further payment on account of the fixed fee set forth in subparagraph a. of paragraph 1 of Article IV, CONSIDERATION, shall be made.

b. If the performance of the work under this contract is terminated in whole for the convenience of the Government, the Contractor shall be paid that portion of the fixed fee which the work actually completed, as determined by the Commission, bears to the entire work under this contract less payments previously made on account of the fee.

c. If the performance of the work under this contract is terminated in part for the convenience of the Government, the Contractor and the Commission shall promptly negotiate to agree upon an equitable adjustment of the fixed fee set forth in subparagraph a. of paragraph 1 of Article IV, CONSIDERATION, and the agreement reached shall be evidenced by a written, executed supplemental agreement to this contract. If the Contractor and the Commission fail to so agree upon such fee adjustment, within a reasonable time after such partial termination, the failure to agree shall be disposed of in accordance with Article XIV, DISPUTES, hereof.

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3. Expiration. In the event of expiration of the period of work performance hereunder without prior termination hereof, the Contractor shall (i) discontinue the contract work at the end of the day of expiration and (ii) take such other action as may be required under other provisions of this contract and, subject to the approval or ratification of the Commission, as may be otherwise appropriate, including but not limited to, action for the protection and preservation of Government property.

4. Claims in Favor of the Government. The obligation of the Government to make any of the payments required by this Article shall be subject to any unsettled claims in connection with this contract which the Government may have against the Contractor. Nothing contained in this Article shall be construed to limit or affect any other remedies which the Government may have as a result of a default by the Contractor.

5. Settlement upon Termination or Expiration. Any other provisions of this contract to the contrary notwithstanding, the Contractor and the Commission may agree upon the whole or any part of the amount or amounts which the Contractor is to receive upon and in connection with (i) any termination pursuant to this Article or (ii) expiration of the term of this contract without prior termination thereof. Any agreement so reached shall be evidenced by a written supplemental agreement to this contract which shall be final and binding upon the parties with regard to their respective claims against each other except as therein otherwise expressly provided.

ARTICLE IV - CONSIDERATION

1. Compensation for Contractor's Services.

As full consideration for the performance by the Contractor of the work of this contract (including (i) profit on all items and for all work, and (ii) reimbursement for all costs and expenses listed hereunder as unallowable costs or otherwise not allowable under the terms of this contract) the Contractor shall receive from the Government:

a. A fixed fee of One Hundred Twenty Thousand Dollars ($120,000.00).

b. Payment for allowable costs as hereinafter provided.

2. Basis for Determination of Allowable Costs.

The costs allowable under this contract shall be costs and expenses which are actually incurred by the Contractor in performing the work under this contract and which are necessary or incident to that performance. Allowable costs shall include, without limitation on the generality of the foregoing, the items described as allowable in paragraph 3 of this Article but shall not in any event include the items described as

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unallowable in paragraph 4 of this Article except to the extent indicated therein. Failure to mention any item of cost in this Article is not intended to imply that it is either allowable or unallowable.

3. Examples of Allowable Costs.

The following are examples of items, the cost of which is allowable under this contract to the extent indicated:

a. Bonds and insurance, including self-insurance, approved by the Commission, the cost of which is not excluded by other provisions of this contract.

b. Transportation and communication, including (i) reconsignment, switching, demurrage and diversion charges, (ii) loading, unloading, storage, crating and packing charges, (iii) local and long distance telephone charges, facsimile and teletype messages, telegrams, cablegrams, radiograms, postage, post office box rental, messenger charges and delivery services.

c. Materials, supplies, tools, machinery, equipment, fuel and utilities, including the cost of processing and testing thereof by others and inspection, expediting, storage, salvage and other usual expenses incident to the procurement and use thereof, subject to the approvals required under any other provisions of this contract.

(1) The Contractor may use in its performance of the work of this contract, items manufactured by it in the ordinary course of its commercial business, provided that the Commission grants approval to each such use and provided further that the Commission and the Contractor shall have agreed, prior to any such approval, in writing but not necessarily by execution of an amendment to this contract, upon a unit price or prices for such items. The unit price or prices so agreed upon may include profit.

(ii) The Contractor may withdraw from its general stores and use in its performance of the work of this contract items purchased by it before or during the period of performance of this contract for its general stores, provided that such withdrawal and use of said items shall be in accordance with the Contractor's statements of its daily procurement practices and procedures submitted to the Commission and approved by the Commission pursuant to subparagraph b of paragraph 1 of Article IX, PROCUREMENT AND SUBCONTRACTS. The cost of any such item shall be determined in accordance with last-in, first-out inventory accounting principles.

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(iii) The Commission shall have the right to inspect any item provided by the Contractor for the work of this contract pursuant to sub-subparagraphs (i) and (ii) above and to reject any or all of such items which the Commission determines to be defective, in which event there shall be no cost to the Government on account of such rejected items and the Contractor shall at its own non-allowable cost and expense, remove all such rejected items from any site of the work to which they may have been delivered. The failure of the Government to inspect and reject any such item prior to its use by the Contractor in the work of this contract in accordance with the provisions of sub-subparagraphs (i) and (ii) above shall be deemed inspection and acceptance thereof, except as to latent defects, fraud and such gross negligence as constitutes fraud.

d. Patents, purchased designs and royalty payments, to the extent approved by the Commission.

e. Expert technical or professional assistance to the extent allowed by Article XXII, TECHNICAL AND PROFESSIONAL ASSISTANCE.

f. Taxes, fees and charges, levied by public authorities, which the Contractor is required by law to pay, except those which are imposed upon or arise by reason of or are measured by the Contractor's fee or which are excluded pursuant to other provisions of this contract. This item shall include interest costs and penalties incurred by the Contractor in compliance with Article XX, STATE AND LOCAL TAXES AND FEES, hereof.

g. In accordance with Appendix "A", or modifications thereto, labor (whether as wages, salaries, benefits, or other compensation, as prescribed by the Contractor's employment and employee welfare policies), recruiting of personnel, (including "help wanted" advertising), travel (including subsistence during travel), and the transportation of personnel and their household goods and effects. In case the full time of an employee of the Contractor is not applied to the work of this contract, the cost of his labor shall be included in this item only in proportion to the actual time so employed.

h. Expenses of litigation, including reasonable counsel fees, incurred in accordance with the provisions of this contract, and such other legal, accounting, and consulting fees as are approved by the Commission.

i. Alterations, additions, improvements and repairs to, and remodeling, reconstruction and ordinary maintenance of, facilities employed by the Contractor in performing the work of this contract, in accordance with Article XI, CONSTRUCTION, ALTERATION, AND REPAIR.

j. An allowance of Forty-One Thousand Seven Hundred Eighty Dollars ($41,780.00) for the period from March 1, 1952 to December 31, 1952,

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and Fifty-Three Thousand Six Hundred Dollars ($53,600.00) per year during the period thereafter of the Contractor's performance of the work of this contract at the Hicksville plant of the Contractor, prorated over said period. Said allowance is in lieu of any charge by the Contractor for the use and occupancy of said plant and is in lieu of costs and expenses actually incurred by the Contractor during said period for the following:

(i) Depreciation of buildings on the Hicksville site of the work hereunder.

(ii) Real estate taxes, including, among others, school, water, and sewage taxes and special assessments, on the land and buildings at said Hicksville site.

(iii) Premiums for fire, smoke, storm, and hail insurance, and similar property insurance policies on the Contractor's Hicksville plant and on all property of the Contractor therein.

(iv) Premiums for public liability insurance against damages to persons and properties of employees of the Contractor (except but not for Workmen's Compensation insurance) or of third persons, at the Contractor's Hicksville plant or resulting from the Contractor's operations therein.

(v) Premiums for insurance against damages to motor vehicles, not Government-owned, used by the Contractor in connection with the work of this contract and against damages to persons and property resulting from operation by the Contractor and its employees of motor vehicles in connection with the work of this contract.

In the event the Hicksville plant is totally or partially made unusable for the performance of the work of this contract as a result of fire, explosion or other casualty, the Commission and the Contractor shall negotiate to agree upon an equitable downward adjustment of the allowance set forth in this subparagraph j. If the Commission and the Contractor fail to agree upon such adjustment within a reasonable time after such casualty, the failure to agree shall be disposed of in accordance with Article XIV, DISPUTES.

k. An allowance (in lieu of direct reimbursement) to cover the general and administrative expenses incurred by the Contractor's corporate office in New York City allocable to the work of this contract. The amount of this allowance shall be computed as a percentage, otherwise referred to herein as the G and A rate, of the costs of operation hereunder. For the purposes of this subparagraph costs of operation are defined as the costs, without duplication, incurred by the Contractor and allowable pursuant to subparagraphs a, b, c, e, g, l, n and o of this paragraph 3 but excluding costs of capital items of machinery and equipment procured for the work of this contract and including the costs of ordinary repairs and maintenance to any site of the work defined as a principle site of the work by Article II, SITE OF THE WORK.

(i) A provisional G and A rate of three (3%) percent, subject to review and retroactive adjustment, is agreed upon at the commencement of this contract and the Government's

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payments to the Contractor shall be based initially upon said provisional rate. As soon after each June 30th during the term of this contract (or as soon after any intervening date of termination or expiration thereof) as is practicable, the Commission in consultation with the Contractor, shall review the actual expense to, and obligation incurred by, the Contractor during the contract period from the close of the previous period reviewed (or the date of commencement of the contract if there has been no previous period reviewed) to said June 30th (or intervening date of termination or expiration) attributable to the elements of costs covered by this allowance. Based upon such review, the Commission and the Contractor shall negotiate and agree upon a fixed rate for the period reviewed. Said fixed rate shall retroactively replace the provisional rate hitherto in effect for the period reviewed. Said fixed rate, or any other rate which the Commission and the Contractor may agree upon at said negotiation, shall, as a new provisional rate, (i) retroactively replace the provisional rate hitherto in effect from the close of the contract period reviewed to the date of agreement on said new rate, and (ii) prospectively be the new provisional rate until it is in turn replaced pursuant to the foregoing by a new provisional or fixed rate. In the event that a provisional rate is replaced by a lower or higher fixed or provisional rate, suitable retroactive adjustments in the payments shall be made promptly. Failure to agree upon a fixed rate pursuant to the foregoing shall be considered a dispute to be settled in accordance with the provisions of Article XIV, DISPUTES, hereof.

l. Costs of providing cafeteria, restaurant, or food commissary services to employees of the Contractor directly engaged in the performance of the work hereunder.

m. Expenses of moving and transporting the Contractor's and Government's property from any principal site of the work, as defined in paragraph 1 of Article II hereof, to any other site for the work, provided that the Commission orders or approves in advance the move, the new site and the method of transportation.

n. Close-out costs incurred by the Contractor after the expiration or termination of the period of performance of the work of this contract.

o. The cost to the Contractor of compliance with health and safety, security and property management standards and regulations of the Commission.

p. Losses and expenses, including losses and expenses resulting from claims of patent infringement, not compensated for by insurance or otherwise (including settlements made with the consent of the Commission),

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sustained by the Contractor in the performance of the work and certified in writing by the Commission to be just and reasonable, except losses and expenses expressly made unallowable under other provisions of this contract.

q. An allowance of Sixteen Thousand Six Hundred Dollars ($16,600.00) for the procurement and accounting services performed by the Contractor's Central Engineering Department 50 Staff from the commencement of the term of this contract to June 30, 1952 in Contractor facilities other than the Contractor's Hicksville, Long Island Plant.

r. The direct cost to the Contractor of work performed under this contract with the approval of the Commission at the Bayside, Long Island, plant of the Contractor, plus indirect costs allocable to such work to the extent such indirect costs are agreed upon by the Commission and the Contractor.

s. Items of cost which are not expressly excluded by other provisions of this contract and which are specifically certified in writing by the Commission as allowable costs hereunder.

4. Example of Unallowable Costs: The following are examples of items, the cost of which is not allowable except as indicated:

a. Advertising, except "help-wanted" advertising or other advertising to the extent such other advertising is specifically authorized by the Commission.

b. Central and branch office expenses of the Contractor, except expenses of any principal site of the work described as such in paragraph 1 of Article II, SITE OF THE WORK, and except as expressly provided for elsewhere in this contract.

c. Commissions and bonuses (under whatever name) in connection with obtaining or negotiating for a Government contract.

d. Unless otherwise authorized by the Commission, costs of the character described in subdivision g. under examples of allowable costs, which are not in accordance with Appendix "A", or modifications thereto.

e. Provisions for contingent reserves.

f. Contributions, donations, dividend payments, interest on borrowings (however represented), bond discounts and expense and financial charges.

g. Entertainment expenses, except as provided in Appendix "A", or modifications thereto.

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h. Fines and penalties, unless incurred as a result of action by the Contractor in accordance with the express direction of the Commission or in accordance with the provisions of Article XX, STATE AND LOCAL TAXES AND FEES.

i. Capital additions and structural improvements to Contractor-owned or Contractor-leased facilities, except where such additions or improvements have been specifically approved by the Commission as being an aid to the performance of this contract, and only to the extent specifically agreed to by the Commission.

j. Losses from sales and exchanges of the Contractor's capital assets and losses on other contracts.

k. Membership in trade, business and professional organizations, except as specifically authorized by the Commission.

l. Subscriptions to periodicals or other publications, technical or otherwise, except as specifically authorized by the Commission.

m. Pensions, retirement, group health, accident and life insurance plans, except to the extent authorized under Appendix "A", or modifications thereto.

n. Storage of contract records after completion of contract operations, irrespective of contractual or statutory requirements regarding preservation of records, except as specifically allowed pursuant to paragraph 3 of Article VIII, hereof.

o. Taxes, fees and charges, levied by public agencies, which are imposed upon or arise by reason of or are measured by the Contractor's fixed fee.

p. Government-furnished property, except to the extent that cash payment therefor is required pursuant to procedures of the Commission applicable to transfers of such property to the Contractor from others (including other agencies of the Government) and the cost of insurance against loss, destruction or damage to Government-owned property.

q. Wages, salaries, or other compensation of the Contractor's corporate officers, except to the extent such wages, salaries or other compensation (including travel and subsistence) is paid (without duplication) pursuant to subparagraphs g. and k. of paragraph 3 of this Article.

r. Other items made unallowable by the provisions of this contract.

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5. Payment:

a. Payment of the Fixed Fee. Payment of ninety (90%) per cent of the fixed fee set forth in subparagraph a. of paragraph 1 of this Article shall be made by the Government monthly in amounts based on the percentage of the completion of the work hereunder, as determined from estimates submitted to and approved by the Commission.

b. The Government will make reimbursement payments for the allowable costs set forth in paragraph 3 of this Article monthly, or in the discretion of the Commission, at more frequent intervals.

c. Upon (i) the expiration of the period of performance of the work of the contract, (ii) completion of the work required by paragraph 3 of Article III, TERM, TERMINATION AND EXPIRATION, and (iii) the furnishing by the Contractor of a release in such form and with such exception as may be approved by the Commission of all claims against the Government under or arising out of this contract, accompanied by any accounting for Government-owned property required by Article V, GOVERNMENT PROPERTY, the Government shall promptly pay to the Contractor the unpaid balance of the consideration set forth in paragraph 1 of this Article (including any portion of the fixed fee withheld or not yet paid pursuant to subparagraph a, above) less deductions due under the terms of this contract and any sum required to settle any unsettled claim which the Government may have against the Contractor.

d. Claims for Payment. Claims for payment shall be accompanied by such supporting documents and justifications as the Commission shall prescribe.

e. Discounts. The Contractor shall take and afford the Government advantage of all available cash and trade discounts, rebates, allowances, credits, salvage, commissions and bonifications.

f. Revenues. Any revenues, apart from the fixed fee, accruing to the Contractor in connection with the work under this contract, shall be applied in reduction of allowable costs under this contract.

g. Direct Payment of Charges - Deductions. The Government reserves the right, upon ten (10) days written notice from the Commission to the Contractor, to pay directly to the persons concerned any charges for services, materials or freight which otherwise would be allowable under this contract. Any payment so made shall discharge the Government of all liability to the Contractor therefor.

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6. Limit of Government Liability.

a. Estimates. The initially estimated cost of the work under this contract, including the fixed fee set forth in subparagraph a. of paragraph 1 of this Article, is Three Million Two Hundred Fifty-Three Thousand Eight Hundred Ninety-Seven Dollars ($3,253,897.00). It is understood that neither the Government nor the Contractor guarantees the correctness of the initial estimate of cost or any revision thereof, and that there shall be no adjustment in the amount of the Contractor's fixed fee by reason of any errors in the computation of estimated costs or revised estimated costs, or any difference between any estimated cost or revisions thereof and the actual cost of the work.

b. Obligations. The Commission has initially obligated for this contract, from obligational authority available to it, the sum of Three Million Two Hundred Fifty-Three Thousand Eight Hundred Ninety-Seven Dollars ($3,253,897.00). Said amount may be increased by the Commission in its discretion, from time to time. The Contractor promptly shall notify the Commission in writing whenever it believes that the then Commission obligation for this contract is insufficient, and its notice shall contain its estimate of the amount of such insufficiency. When and if the total of amounts paid and payable to the Contractor under this contract (including the fixed fee and the actual or estimated amounts unpaid by the Contractor on all subcontracts and all other commitments on the assumption that they will be completed), shall equal the then Commission obligation for this contract, the Contractor shall not be expected to incur further expenses nor to perform further hereunder unless the Commission agrees in writing to increase said obligation for this contract in an amount sufficient to cover additional work hereunder. Notwithstanding any other provisions of this contract the liability of the Government under this contract shall be limited to the Commission obligation specified in this subparagraph, as same may be increased by the Commission by notice to the Contractor in writing.

ARTICLE V - GOVERNMENT PROPERTY

1. Except as otherwise specifically agreed upon in writing by the Contractor and the Commission and except as otherwise specifically provided herein

a. title to all property specially purchased by the Contractor for this contract, for which the Contractor is entitled to direct reimbursement under the provisions of paragraphs 2 and 3 of Article IV, CONSIDERATION, shall pass directly from the vendor to the Government; and

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b. title to all property utilized in the work of this contract, provided by the Contractor from Contractor-owned stores or manufactured by the Contractor in the ordinary course of its commercial business, for which the Contractor is entitled to reimbursement under the provisions of paragraphs 2 and 3 of Article IV, CONSIDERATION, shall pass to the Government at the time of such utilization.

2. The Government reserves the right to furnish any property or services required for or useful in the performance of the work under this contract. Title to all property so furnished shall remain in the Government.

3. The Government shall retain title to all products, by-products, wastage, salvage, work-in-process, residues and scrap resulting from property to which the Government has or had title pursuant to paragraphs 1 and 2 above.

4. All items of Government-owned property referred to above are hereafter collectively referred to in this Article as "Government property". To the extent practicable, the Contractor shall cause all non-expendable items of Government property to be suitably marked with an identifying mark or symbol indicating that the items are the property of the Government. The Contractor shall maintain, at all times and in a manner satisfactory to the Commission, records showing the disposition and use of Government property. Such records shall be subject to Commission inspection at all reasonable times. It is understood that the Commission shall at all reasonable times have access to the premises wherein any items of Government property are located.

5. The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property (but not of any consumption of materials or supplies in the performance of its undertakings hereunder). Except as otherwise specifically provided in this contract, the Contractor shall not be liable for loss or destruction of or damage to Government property (in the possession or custody of the Contractor in connection with this contract) unless such loss, destruction or damage is due to gross negligence or wilful misconduct attributable to the Contractor or its supervisory employees.

6. Items of Government property referred to above shall not be used by the Contractor except in the performance of its obligations under this contract.

7. In the event of loss or destruction of or damage to Government property, the Contractor shall take such steps to subserve the Government's interest as the Commission authorizes or approves. If the Contractor is

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liable for loss or destruction of or damage to any items of Government property, it shall promptly account therefor to the satisfaction of the Commission; if the Contractor is not liable therefor, and is indemnified, reimbursed, or otherwise compensated for such loss, destruction or damage (other than by the Government under this contract), the Contractor shall promptly account to the Government for an equitable share of such indemnification, reimbursement, or other compensation; in any event, the Contractor shall do nothing to prejudice the Government's rights to recover against third parties for any such loss, destruction or damage, and upon request of the Commission, shall furnish the Government all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery.

8. The Contractor may, with the approval of the Commission, (i) transfer or otherwise dispose of items of Government property to such parties and upon such terms and conditions as so approved, or (ii) itself acquire title to items of property at prices mutually agreed upon by the Commission and the Contractor, without the necessity of executing a plan amendment to this contract. The proceeds of any such transfer or disposition, and the agreed price of any such Contractor acquisition, shall be applied in reduction of any payments or reimbursement to be made by the Government to the Contractor under this contract or shall otherwise be paid in such manner as the Commission may direct.

9. The Contractor shall conform to all regulations and requirements of the Commission concerning the management, inventory control, storing and disposal of Government property. The Contractor agrees to prepare and submit to the Commission for review, within sixty (60) days after the execution of this contract, a written statement of the methods to be used and of the procedures to be followed by the Contractor in regard to management, inventory control, storing and disposal of Government property. The Contractor shall not use any method or procedure in this regard which the Commission has advised the Contractor is contrary to Commission policy or which is otherwise prohibited by this contract.

10. With respect to each item of Government property located at the Contractor's Hicksville, Long Island plant, not sold or otherwise disposed of by the Contractor or acquired by the Contractor pursuant to paragraph 8 above, the Government, within one hundred twenty days following the termination or expiration of the period of performance of this contract or any extensions thereof, if it has not exercised the option to purchase said plant as provided in Article VI, OPTION IN THE GOVERNMENT, shall abandon or remove it.

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(a) In the event the Government occupies said plant pursuant to subparagraph d (ii) of paragraph 1 of Article III, TERM, TERMINATION AND EXPIRATION, the rights in the Government to abandon or remove set forth in this paragraph shall be suspended during the period of such occupancy and the one hundred twenty day period during which the Government must either abandon or remove such property shall not commence to run until the end of such occupancy.

(b) Prior to determination by the Government to abandon or remove said item the Contractor agrees, if the Government so requests, to negotiate with the Government in good faith to purchase said item at a price mutually agreed upon, it being understood, however, that the Contractor shall not be required to negotiate any price in excess of the value to the Contractor of said item.

(c) In the event the Government removes any such item of Government property which is structurally incorporated in a building on the Hicksville site, either directly or by means of its foundations, accessory piping or instrumentation, the Government shall restore the pertinent portion of the Contractor's structure to substantially the condition immediately prior to the incorporation therein of the item of property except for reasonable wear and tear and except for damage by fire, explosion or other casualty. The Government agrees that in the event the Contractor requests, in lieu of such restoration, restoration to a condition other than that set forth in the preceding sentence, to restore in accordance with the Contractor's request if the Commission determines such alternative restoration will be in the interests of the Government.

(d) There shall be no charge to the Government by the Contractor for the storage of such property (i) for any period during which the Government may exercise the option set forth in Article VI hereof, (ii) for any period during which the Government may elect, in accordance with this paragraph, to abandon or remove such property, or (iii) during the period of the close-out of this contract.

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ARTICLE VI - OPTION IN THE GOVERNMENT

As part of the consideration for this contract the Government hereby is granted the option set forth in the following paragraph. This option may be exercised by the Government, by written notice to the Contractor of such exercise, at any time up to one hundred Twenty (120) days after the expiration or termination of this contract and, in the event of occupancy by the Government pursuant to subparagraph d(ii) of paragraph 2 of Article III, TERM, EXPIRATION AND TERMINATION, at any time during said occupancy.

The Government may, if it so elects, purchase, and the Contractor shall, if requested to do so by the Government, sell to the Government, (i) the land and buildings owned by the Contractor, as of the date of execution of this contract by the Contractor at Hicksville in the Township of Oyster Bay, New York, and all additions and improvements to said buildings and land subsequently acquired by the Contractor. In the event of purchase pursuant to the preceding sentence, the Government shall pay the Contractor the purchase price paid by the Contractor for said buildings and land plus the cost of acquiring said additions and improvements less, without duplication, any costs of acquiring said additions and improvements for which the Contractor is reimbursed otherwise under this contract, and the depreciation of said buildings, additions and improvements. For the purposes of this paragraph, the purchase price of said land and buildings includes closing costs, and costs of necessary building and use permits and variances, to the extent that the Contractor is not reimbursed otherwise for such costs under this contract. Depreciation for the purposes of this paragraph is defined as the depreciation allowed or allowable to the Contractor for tax purposes in accordance with Internal Revenue Code Section 23(l).

ARTICLE VII - PATENTS

1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of any of the work under this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title and rights under any application or patent that may result; provided, however, that the Contractor, in any event, shall retain at least a non-exclusive, irrevocable, royalty-free license under said invention,

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discovery, application, or patent, such license being limited to the manufacture, use, and sale for purposes other than use in the production or utilization of fissionable material or atomic energy. Subject to the license retained by the Contractor, as provided in this Article, the judgment of the Commission on these matters shall be accepted as final; and the Contractor for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

2. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1946 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of any of the work under this contract.

3. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs 1 and 2 of this Article from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.

4. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions making this Article applicable to the subcontractor and its employees.

5. The Contractor shall grant to the Government, to practise or have practised, an irrevocable, non-exclusive license in and to any inventions (whether patented or not), secret processes, technical information and techniques of production, research and plant operation, which are directly utilized by the Contractor in the performance of the work of this contract. Such license shall apply to the manufacture, use, and disposition of any article and material and to the use of any method or process. Such license shall be limited to governmental purposes related to (i) production of fissionable material, (ii) utilization of fissionable material, and (iii) utilization of atomic energy; provided, however, that the foregoing shall not limit the Government's right to sell, or cause to be sold, all products or by-products not used by or for the Government which result or remain from the use of any invention, process, information or technique to which such license applies.

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ARTICLE VIII - RECORDS AND ACCOUNTS

1. The Contractor shall keep and maintain a separate and distinct set of records and books of account together with all related memoranda, supporting documents and correspondence, showing all allowable costs incurred, revenues earned, fixed fee acruals and the use and disposition of all Government-owned property coming into the possession of the Contractor under this contract. The Contractor shall accurately record its financial transactions hereunder in said records and books of account. The system of accounts employed by the Contractor shall be in accordance with generally accepted accounting principles and subject to the approval of the Commission.

2. Except to the extent, if any, otherwise approved by the Commission, all records, books of account, memoranda, supporting documents and correspondence referred to in paragraph 1 above

(i) shall be the property of the Government

(ii) shall be kept and maintained at the principal site of the work referred to in paragraph 1 of Article II, SITE OF THE WORK;

(iii) shall be subject to audit and inspection by the Commission at all reasonable times and the Contractor shall afford the Commission proper facilities for such inspection and audit; and

(iv) shall be delivered to the Government or otherwise disposed of by the Contractor either as the Commission may from time to time direct during the progress of the work or in any event as the Commission shall determine upon completion or termination of this contract and final audit of all accounts hereunder.

3. All records in the possession of the Contractor related to this contract, except those referred to in paragraph 1 above, and in Article XVI, SCIENTIFIC AND TECHNICAL DATA, shall be preserved by the Contractor without additional compensation therefor, for a period of five (5) years after final settlement of the contract or otherwise disposed of in such manner as may be agreed upon by the Government and the Contractor. The Government shall at all reasonable times have the right to examine, make copies of, and borrow said records, at no cost to the Government; provided, however, that

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except as otherwise agreed upon by the Government and the Contractor all such records which bear a security classification at the time of completion or termination of the work set forth in Article I, SCOPE OF THE WORK, or at the time of the expiration of this contract, shall become the property of the Government at such time and shall thereafter be delivered to the Government or otherwise disposed of by the Contractor as the Commission shall determine and provided further that neither this paragraph nor any other provision of this contract shall be deemed to require the Contractor at its unallowable cost to store or preserve records which bear a security classification.

ARTICLE IX - PROCUREMENT AND SUBCONTRACTS

1. Approvals

a. The Contractor shall not enter into any subcontract without the written approval of the Commission of its terms and conditions. For the purposes of this paragraph, a subcontract is defined as any contractual arrangement (whether or not in the form commonly referred to as a "purchase order") with a third party for the performance of a specific part of the work to be performed under this contract, which arrangement is specifically made for such performance and the cost of which is, apart from the provisions of this paragraph, an allowable cost under this contract, except, however, arrangements covering (i) the furnishing of a basic raw material, (ii) the furnishing of a standard commercial or catalog item, or (iii) the employer-employee relation.

b. The Commission reserves the right, from time to time, by written notice from the Commission to the Contractor (i) to make any or all other commitments or classes of commitments hereunder (other than the contractual arrangements referred to in a. above) subject to, and to require their submission for, Commission approval, and (ii) to make any or all methods, practices, and procedures used or proposed to be used in effecting all arrangements and commitments hereunder subject to, and to require their submission for, Commission approval. In this regard, the Contractor agrees to prepare and submit to the Commission for review, within thirty (30) days after the execution of this contract (or any extension thereof approved in writing by the Commission), written statements of the daily procurement practices and procedures to be used and of the objectives intended to be accomplished by such practices and procedures. The Contractor will not use any procurement procedures prohibited by this contract or which the Commission has advised the Contractor are contrary to Commission policy.

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c. The Contractor shall obtain the prior written approval of the Commission before (i) purchasing motor vehicles, airplanes, typewriters, printing equipment, helium or alcohol, (ii) leasing, purchasing, or otherwise acquiring real property, (iii) procuring any item or service on a cost, cost-plus-fee or 'time and materials' basis, (iv) purchasing any item which the Commission specifies is to be obtained from indicated Government sources, and (v) purchasing any item at a cost in excess of $2,000.00, where payment for the cost of any action specified in (i) through (v) will be claimed hereunder.

2. Writing; Terms. The Contractor shall reduce to writing, unless this provision is waived in writing by the Commission, every subcontract or other commitment in excess of One Hundred Dollars ($100.00) made by it for the purpose of its undertakings hereunder, except contracts covering the employer-employee relations (but not excepting contracts with consultants); insert therein a provision that such commitment is assignable to the Government; insert therein all other provisions required by law or expressly required by the provisions of this contract; and make all such commitments in its own name and not bind or purport to bind the Government or the Commission thereunder.

3. Procurement from Government Sources. From time to time, by separate instrument or instruments, the Contractor may be duly authorized to act as agent for and on behalf of the Government or the Commission respecting (i) the making of procurements in and for performance under this contract from so-called Government sources such as Federal Supply Schedule commercial sources, Armed Services Petroleum Purchasing Agency, Federal Prison Industries, Inc. and Federal Supply Service, and (ii) the issuing of tax exemption certificates pertinent to such procurements. The action so authorized shall be deemed to be within the scope of the Contractor's allowable cost of work performance under this contract.

ARTICLE I. - CONDUCT OF THE WORK, INSPECTION AND REPORTS

1. In performing the work called for under this contract, the Contractor

(i) shall utilize its best efforts, know-how and ability;

(ii) shall utilize its best efforts to have the work executed in the most workmanlike manner by qualified, careful and efficient workers in strict conformity with the best standard practices (subject to the directions of the Commission);

(iii) shall utilize its best efforts to provide sufficient technical, supervisory, administrative and other personnel to insure the prosecution of the work in accordance with pertinent production or other progress schedules;

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(iv) shall, if in the opinion of the Commission the Contractor falls behind any pertinent production or other progress schedule, use its best efforts to take such steps to improve its progress as the Commission may direct; and

(v) shall, if in the opinion of the Commission, the Contractor's personnel or other reimbursable costs are excessive for the proper performance of this contract, make such prospective reductions thereof as the Commission may direct.

2. The work of this contract is subject to (i) the general supervision of the Commission, and (ii) the Commission authorizations, approvals and directions otherwise provided for in this contract. The Contractor shall proceed in the performance of this contract and shall place emphasis (or relative emphasis) on the various phases of the work of said contract, as and to the extent requested by the Commission from time to time. The Commission shall have the right to inspect in such manner and at such times as it deems appropriate, all activities of the Contractor in, or related to the course of the work under this contract.

3. The Contractor shall keep the Commission fully advised of its progress hereunder and of the difficulties, if any, which it experiences and shall prepare and submit to the Commission, in such quantity and form as may be directed by the Commission.

(i) monthly progress reports,

(ii) interim technical reports on completion of specific phases of the work,

(iii) production schedules, financial and cost reports, construction completion reports and such other special reports as may be requested by the Commission from time to time, and

(iv) a final report summarizing its activities, findings, and conclusions.

4. The Contractor shall appoint from its staff an over-all director of the work of this contract. The selection and continued assignment to said work of this director shall be subject to the approval of the Commission.

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ARTICLE XI - CONSTRUCTION, ALTERATION OR REPAIR WORK

1. The Contractor shall not perform or have performed under this contract any construction, alteration or repair work in excess of One Thousand Dollars ($1,000.00), including painting and decorating, without the prior written approval of the Commission.

2. In the event that the Contractor, under this contract, performs or has performed, construction, alteration or repair work, including painting and decorating, which work is within the scope of the Davis-Bacon Act (Act of March 3, 1931, c.411, Sec. 1, 46 Stat. 1494, as amended; 40 U. S. Code 276 (a) et seq.), the following provisions shall apply to such work:

a. All mechanics and laborers employed or working upon the site of the work, or under the Housing Act of 1949 in the construction or development of the project, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Anti-Kickback Regulations (29 C.F.R. Part 3)), the full amounts due at the time of payment computed at wage rates not less than those contained in the wage determination decision of the Secretary of Labor, to be furnished to the Contractor by the Commission and which will be attached to Appendix "A" and made a part thereof, regardless of any contractual relationship which may be alleged to exist between the Contractor or subcontractor and such laborers and mechanics; and the wage determination decision shall be posted by the Contractor at the site of the work in a prominent place where it can be easily seen by the workers.

b. The Commission may withhold or cause to be withheld from the Contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics employed by the Contractor or any subcontractor on the work the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic employed or working on the site of the work or under the Housing Act of 1949 in the construction or development of the project, all or part of the wages required by the contract, the Commission may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

c. (1) Payroll records will be maintained during the course of the work and preserved for a period of three (3) years thereafter for all laborers and mechanics working at the site of the work, or under the Housing Act of 1949 in the construction or development of the project. Such records will contain the name and address of each such employee, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made and actual wages paid.

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(2) The Contractor will submit weekly a certified copy of all payrolls to the United States Atomic Energy Commission if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the certified payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Commission. The certification will affirm that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the Secretary of Labor and that the classifications set forth for each laborer or mechanic conform with the work he performed. The Contractor will make his employment records available for inspection by authorized representatives of the Commission and the Department of Labor, and will permit such representatives to interview employees during working hours on the job.

d. Apprentices will be permitted to work only under a bona fide apprenticeship program registered with a State Apprenticeship Council which is recognized by the Federal Committee on Apprenticeship, U. S. Department of Labor; or if no such recognized Council exists in a State, under a program registered with the Bureau of Apprenticeship, U. S. Department of Labor.

e. The Contractor will comply with the regulations of the Secretary of Labor made pursuant to the Anti-Kickback Act of June 13, 1934, 48 Stat. 948; 62 Stat. 740; 63 Stat. 108; 18 U.S.C. 874, 40 U.S.C. 276 b, c, and any amendments or modifications thereof, will cause appropriate provisions to be inserted in subcontracts to insure compliance therewith by all subcontractors subject thereto, and will be responsible for the submission of affidavits required of subcontractors thereunder, except as the Secretary of may specifically provide for reasonable limitations, variations, tolerances and exemptions from the requirements thereof.

f. The Contractor will insert in each of its subcontracts the provisions set forth in stipulations (a), (b), (c), (d), (e) and (g) hereof, and such other stipulations as the Commission may by appropriate instructions require.

g. A Breach of stipulations (a) through (f) may be grounds for termination of the contract.

ARTICLE XII - EIGHT-HOUR LAW

No laborer or mechanic doing any part of the work contemplated by this contract, in the employ of the Contractor or any subcontractor contracting for any part of said work contemplated, shall be required or permitted to work more than eight hours in any one calendar day upon such work, except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this paragraph of the contract. The wages of every laborer or mechanic employed by the Contractor or any subcontractor engaged in the performance of this contract shall be computed on a basic day rate of eight hours per day and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For

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each violation of the requirements of this paragraph of the contract a penalty of five dollars shall be imposed upon the Contractor for each laborer or mechanic for every calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this paragraph of the contract, and all penalties thus imposed shall be withheld for the use and benefit of the Government: Provided, That this stipulation shall be subject in all respects to the exceptions and provisions of the Eight-Hour Laws as set forth in U. S. Code, Title 40, Sections 321, 324, 325, 325a, and 326, which relate to hours of labor and compensation for overtime.

ARTICLE XIII - DISCLOSURE OF INFORMATION

1. It is understood that unauthorized disclosure of any, or failure to safeguard all, material marked as "Security Information" that may come to the Contractor, or any person under its control, in connection with the work under this contract may subject the Contractor, its agents, and employees to criminal liability under the laws of the United States. See the Atomic Energy Act of 1946, 60 Stat. 755, as amended, Title 42, United States Code, Sec. 1801, et. seq. See also Title 18, United States Code, Secs. 791 to 798, both inclusive, and Executive Order No. 10,104, February 1, 1950, 15 F. R. 597.

2. The Contractor agrees to conform to all security regulations and requirements of the Commission. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1946, as amended, the Contractor shall not permit any individual to have access to restricted data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual, and the Commission shall have determined that permitting such person to have access to restricted data will not endanger the common defense and security. As used in this paragraph the term "designated investigating agency" means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1946, as amended by the Act of April 5, 1952, Public Law 298, 82nd Congress, 66 Stat. 43. The term "restricted data" as used in this paragraph means all data concerning the manufacture or utilization of atomic weapons, the production of fissionable material, or the use of fissionable material in the production of power, but shall not include any data which the Commission from time to time determines may be published without adversely affecting the common defense and security.

3. Except as otherwise authorized in writing by the Commission, the Contractor shall insert in all agreements, made pursuant to the provisions of this contract which may involve security information, the provisions of paragraphs 1 and 2 of this Article.

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ARTICLE XIV - DISPUTES

Except as otherwise specifically provided in this contract, all disputes between the parties which may arise under, or in connection with, any part of this contract, prior to final payment, and which are not disposed of by mutual agreement, shall be decided by a representative of the Commission, duly authorized to supervise and administer performance of the undertakings hereunder, who shall reduce his decision to writing and mail a copy of said decision to the Contractor; said decision shall be final and conclusive on the parties hereto, subject to the right of the Contractor to appeal, as provided for in the sentence next following. Within thirty days from the mailing of said decision, the Contractor may appeal, in writing, to the Commission, whose written decision thereon, or that of its duly authorized representative, representatives, or Board (but not including the Commission representative mentioned in the first sentence of this Article), duly authorized to determine such an appeal, shall be final and conclusive on the parties hereto. If any such dispute arises during performance by the Contractor of its undertakings hereunder, the Contractor shall diligently proceed with the performance of its undertakings under this contract, pending the decision of such dispute.

ARTICLE XV - SECURITY ACTION

Upon notice from the Commission that such action is considered to be in the interests of the common defense and security, the Contractor shall (i) deny any employee or other person access to the site of any contract undertakings or to "restricted data" within the meaning of the Atomic Energy Act of 1946, or (ii) dismiss from its undertakings under this contract any employee or other person.

ARTICLE XVI - SCIENTIFIC AND TECHNICAL DATA

All compilations of scientific and technical data (including, but not limited to, reports, notes, drawings, designs, specifications and memoranda) furnished or prepared by the Contractor pursuant to, or developed in connection with, the Contractor's undertakings under this contract, shall be property of the Government and the Government shall have the right to use such material in any manner and for any purpose without any claim on the part of the Contractor for additional compensation therefor. All provisions of paragraphs 4, 5, 6, 7, 8 and 9 of Article V relating to Government property are applicable to such material.

ARTICLE XVII - SOURCE AND FISSIONABLE MATERIALS

The Contractor agrees to conform to all regulations and requirements of the Commission with respect to accounting for source and fissionable materials (defined in the Atomic Energy Act of 1946).

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ARTICLE XVIII - GUARD AND FIRE FIGHTING FORCES

In connection with its work under this contract, the Contractor shall provide such guard or fire fighting forces, with such uniforms and equipment, as the Commission may from time to time require or approve. The cost thereof shall be deemed to be allowable costs under paragraph 3 of Article IV hereof.

ARTICLE XIX - BONDS AND INSURANCE

1. Except as otherwise specifically provided, the Contractor shall exert all reasonable efforts to procure and maintain such bonds and insurance policies as are (i) required by law, or (ii) required by the Commission.

2. Except as otherwise directed by the Commission, in every instance where the premium on a bond or insurance policy is an allowable cost under the contract, the bond or insurance policy shall contain endorsements or other recitals (i) excluding, by appropriate language, any claim on the part of the insurer or obligor to be subrogated, on payment of a loss or otherwise, to any claim against the United States, and (ii) providing for at least thirty (30) days prior written notice by registered mail to the United States Atomic Energy Commission of bond or policy cancellation, as the case may be.

ARTICLE XX - STATE AND LOCAL TAXES AND FEES

The Contractor shall notify the Commission of any tax, fee, assessment, duty or other charge asserted in behalf of any State, county, municipality, or any officer, commission, body or subdivision thereof, (i) in connection with property which is or will be Government-owned property covered by Articles V, VIII, and XVI hereof, (ii) in connection with any transaction between the Contractor and the Government, or (iii) in connection with the payments by the Government for the Contractor's performance under this contract, and shall refrain from paying same unless authorized to do so by the Commission. To the extent requested by the Commission, the Contractor (i) shall take steps to cause any such taxes, fees, assessments, duties or other charges to be paid under protest, and (ii) shall cause to be assigned to the Government or its designees, any and all rights to the abatement, refund or other recoupment of such charges paid under protest.

ARTICLE XXI - NON-DISCRIMINATION IN EMPLOYMENT

In connection with the performance of this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, or national origin; and further agrees to insert the foregoing provision in all subcontracts hereunder except subcontracts for standard commercial supplies or for raw materials.

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ARTICLE XXII - TECHNICAL AND PROFESSIONAL ASSISTANCE

When, in the judgment of the Contractor, the complexity and nature of the contract undertakings are such as to require supplemental expert technical or professional assistance, services or advice in connection with special phases of a technical character, the Contractor may, with the written approval of the Commission, engage or otherwise obtain such supplemental services. Compensation and reimbursement to any consultant engaged pursuant to this article shall be governed by the provisions of Appendix "A" attached hereto except as may otherwise be specifically stated in the contract with such consultant approved by the Commission.

ARTICLE XXIII - ASSIGNMENT

Neither this contract nor any interest therein or claim thereunder shall be assigned or transferred by the Contractor except with the written approval of the Commission.

ARTICLE XXIV - LABOR DISPUTES

Whenever an actual or potential labor dispute interferes or threatens interference with the work of this contract, the Contractor shall immediately inform the Commission of such dispute and of the relevant facts.

ARTICLE XXV - COVENANT AGAINST CONTINGENT FEES

1. The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

2. Unless otherwise authorized by the Commission in writing the Contractor shall cause provisions similar to paragraph 1 above to be inserted in all subcontracts and purchase orders entered into under this contract.

ARTICLE XXVI - CONVICT LABOR

In connection with the performance of this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor. This provision shall not be construed to prevent the Contractor or any

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subcontractor from obtaining any of the supplies or any component parts or ingredients to be furnished under this contract or any of the materials or supplies to be used in connection with the performance of this contract, directly or indirectly, from any Federal, state or territorial prison or prison industry, provided, that such articles, materials or supplies are not produced pursuant to any contract or other arrangements under which prison labor is hired or employed or used by any private person, firm or corporation.

ARTICLE XXVII - WALSH-HEALEY ACT

To the extent only that the Walsh-Healey Public Contracts Acts, as amended (41 United States Code 35-45) is applicable to this contract, the following provision shall apply:

> There are hereby incorporated by reference, the representations and stipulations required by said Act and regulations issued thereunder by the Secretary of Labor, such representations and stipulations being subject to all applicable rulings and interpretations of the Secretary of Labor which are now or may hereafter be in effect.

ARTICLE XXVIII - DOMESTIC ARTICLES

1. Unless the Commission shall determine it to be inconsistent with the public interest, or the cost to be unreasonable, the Contractor, its subcontractors, and all materialmen or suppliers shall use, in the performance of the work, only such unmanufactured articles, materials, and supplies as have been mined or produced in the United States, and only such manufactured articles, materials, or supplies as have been manufactured in the United States substantially all from articles, materials, or supplies mined, produced, or manufactured, as the case may be, in the United States. The provisions of this paragraph shall not apply if the articles, materials, or supplies of the class or kind to be used, or the articles, materials, or supplies from which they are manufactured are not mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of satisfactory quality.

2. Unless otherwise authorized by the Commission in writing, the Contractor shall cause provisions similar to paragraph 1 above to be inserted in all subcontracts and purchase orders entered into under this contract.

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ARTICLE XXIX - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE XXX - RENEGOTIATION

1. This contract shall be deemed to contain all the provisions required by Section 104 of the Renegotiation Act of 1951 (Public Law 9, 82nd Congress).

2. The Contractor agrees to insert the provisions of this paragraph, including this subparagraph 2, in all subcontracts specified in Section 103 (g) of the Renegotiation Act of 1951; provided, that the Contractor shall not be required to insert the provisions of this paragraph in any subcontract excepted by or pursuant to Section 106 of the Renegotiation Act of 1951.

ARTICLE XXXI - SAFETY AND ACCIDENT PREVENTION

The Contractor shall initiate and take all reasonable steps and precautions to protect health and minimize danger from all hazards to life and property, shall make all reports and permit all inspections as required by the Commission, and shall conform to all health and safety regulations and requirements of the Commission.

ARTICLE XXXII - COMPLIANCE WITH LAWS

Except as otherwise directed by the Commission and subject to the provisions of Article XX, STATE AND LOCAL TAXES AND FEES, the Contractor shall procure all necessary permits and licenses; obey and abide by all applicable laws, regulations, ordinances, and other rules of the United States of America, of the State, territory, or political subdivision thereof, wherever the work is done, or of any other duly constituted public authority.

ARTICLE XXXIII - APPENDIX "A"

The Contractor shall abide by the provisions of Appendix "A" of this contract, as the same may be modified from time to time; provided, however, that in the event of conflict between the provisions of said Appendix "A" and the other provisions of this contract, the latter shall prevail.

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ARTICLE XXXIX - EXAMINATION OF RECORDS

1. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this contract.

2. The Contractor further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under such subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract. The term subcontract as used herein does not include (i) purchase orders not exceeding One Thousand Dollars ($1,000.00), or (ii) contracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

3. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

ARTICLE XXXV - CLAIMS AND LITIGATIONS

1. The Contractor shall give the Commission immediate notice of any claim against the Contractor or suit or action filed or commenced against the Contractor, arising out of or connected with the performance of this contract, irrespective of whether or not the cost or expense of such claim, suit or action, is to be borne wholly or in part by the Government hereunder and irrespective of whether the Contractor is insured against any risk which may be involved. The Contractor shall furnish immediately to the Commission copies of all pertinent papers received by the Contractor.

2. Insofar as the following shall not conflict with any policy or contract of insurance, and to the extent requested by the Commission, the Contractor, with respect to any claim, suit or action, the cost and expense of which is or would be an allowable cost as defined in paragraph 2 of Article IV, or the proceeds of which is or would be revenues covered by paragraph 5 f. of Article IV, (i) shall promptly do any and all things to effect an assignment and subrogation in favor of the Government of all the Contractor's rights and claims, except as against the Government, arising from or growing out of any such claim, suit or action, or (ii) shall promptly authorise representatives of the Government to settle, defend, or otherwise handle any such claim,

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suit or action and to represent the Contractor in, and take charge of, any litigation resulting therefrom, or (iii) shall diligently handly any such claim, suit or action or defend or initiate any litigation in connection with any such claim, suit or action and in so doing, shall consult with the Commission as to the steps to be taken and shall otherwise endeavor in good faith to subserve the interests of the Government.

3. Subject to the provisions of paragraph 2 above, the Contractor shall diligently handle any claim whatsoever arising out of the performance of this contract and shall promptly defend or initiate any litigation in connection with any such claim, consulting with the Commission as to the steps to be taken.

4. With respect to any claim, matter or litigation arising out of the performance of this contract, the handling of which is undertaken by an insurance carrier or by a representative or representatives of the Government, the Contractor shall furnish all reasonable assistance and cooperation that may be requested by the Commission.

5. "Litigation", for the purposes of this Article, is defined to include proceedings before administrative agencies.

ARTICLE XXXVI - LETTER CONTRACT NO. AT(30-1)-1293

Letter Contract No. AT(30-1)-1293, entered into as of December 10, 1951, hereby is merged with and superseded by this contract.

ARTICLE XXXVII - CONTRACT APPROVAL

This contract is subject to the approval of the Director of the Division of Production of the United States Atomic Energy Commission and shall not be binding unless so approved.

ARTICLE XXXVIII - DEFINITIONS

1. As used in this contract, the terms "United States Atomic Energy Commission", "Atomic Energy Commission", and "Commission" shall mean the United States Atomic Energy Commission or its duly authorized representative or representatives.

2. All references in this contract to Commission or Government approvals, authorizations, directions or notices contemplate and require written action.

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IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

/s/ W. B. [illegible]
Manager
New York Operations Office

Witnesses:

/s/ W. B. Kingston

P. O. Box 62, Bayside, N.Y.
(Address)

/s/ W. F. Rueger

1740 Broadway, N.Y.C.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

By: /s/ J. B. Merrill

Title: Vice President

I, J. S. Lowroyd, certify that I am the Secretary of the corporation named as Contractor herein; that J. B. Merrill who signed this contract on behalf of the Contractor was then Vice President of said corporation; that said contract was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

/s/ J. S. Lowroyd
Secretary

(Corporate Seal)

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The above contract, AT(30-1)-1293, with Sylvania Electric Products, Inc., is hereby approved.

/s/ R. W. Cook

Director, Division of Production
United States Atomic Energy Commission

Date: 4-10, 1953

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APPENDIX A

of U. S. Government Contract No. AT(30-1)-1293

WITH

SYLVANIA ELECTRIC PRODUCTS INC.

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I. JOB CLASSIFICATIONS AND SALARY RANGES

Exempt Salary Jobs - Metallurgy Laboratories

Salary Grade	Job Classification	Minimum	Maximum
10J	Administrative Engineer	$624	$1026
9J	Division Purchasing Agent	566	891
9J	Manager of Personnel	566	891
5K	Buyer	397	624
9J	Supervisor of Equipment Design	566	891
7K	Equipment Design Specialist	474	740
4K	Equipment Designer	361	566
4K	Chief Draftsman	361	566
8K	Mechanical Equipment Specialist	519	816
4K	Tool Room Foreman	361	566
8K	General Foreman	519	816
6K	Foreman, Class I	437	681
3K	Foreman, Class II	325	513
4K	Personnel Assistant	361	566
4K	Safety Engineer	361	566
6K	Industrial Engineer, Senior	437	681
3K	Industrial Engineer, Junior	325	513
3K	Cost Accountant	325	513
5K	Purchasing Agent	397	624
10J	Engineering Manager	624	1026
10J	Engineering Specialist	624	1026
9J	Section Head	519	816
6K	Glass Equipment Specialist	437	681
7K	Engineer-in-Charge	474	740
6K	Senior Engineer	437	681
3K	Junior Engineer	325	513
4K	Supervisor of an Office Dept.	361	566
2K	Supervisor of an Office Dept. Section	301	474
7K	Supervisor of an Accounting Dept.	474	740
5K	Supervisor of an Accounting Dept. Sect.	397	624
4K	Accountant, Senior	361	566

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All above rate ranges revised Eff. date 9/11/52 - 366 RA #14
1293 RA #2

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Non-Exempt Salary Jobs - Metallurgy Laboratories

Salary Grade	Job Classification	Minimum	Maximum
60R	Cost Accountant, Junior	$301	$444
59R	Stock Clerk	284	415
60R	Draftsman	301	444
57R	Draftsman, Junior	249	368
54R	Tracer	210	291
64R	Master Craftsman	402	588
62R	Production or Maintenance Supervisor I	343	508
60R	Production or Maintenance Supervisor II	301	444
60R	Safety Inspector	301	444
59R	Counsellor	284	415
56R	Counsellor Junior	232	338
58R	Cafeteria Steward	267	391
57R	Nurse	249	368
59R	Buyer, Junior	284	415
63R	Designer-Draftsman	373	543
62R	Technician	343	508
56R	Technician, Junior	232	338
51R	Office Boy or Girl	193	232
60R	Supervisor of Office Department Section I	301	444
57R	Supervisor of Office Department Section II	249	368
55R	Clerk, Senior	221	313
52R	Routine Clerk	210	249
52R	Mail and File Clerk	210	249
57R	Secretary, Senior	249	368
55R	Secretary-Stenographer	221	313
54R	Stenographer	210	291
52R	Copy Typist	210	249
56R	Accounting Clerk, Senior	232	338
54R	Accounting Clerk, Junior	210	249
56R	Cost Clerk, Senior	232	338
54R	Cost Clerk, Junior	210	249
56R	Telephone Operator and Receptionist I	232	338
54R	Telephone Operator and Receptionist II	210	249
60R	Accountant - Trainee	301	444
60R	Accountant, Junior	301	444

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All the above range rates revised. Eff. date 9/11/52 — 366 RA14, 1293 RA #2

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Hourly Jobs - Metallurgy Laboratories

Salary Grade	Job Classifications	Minimum	Maximum
13	Laboratory Assistant - Metallographic	$1.50½	$1.77½
8	Laboratory Assistant - X-Ray	1.30½	1.49
18	Caretaker	1.86½	2.19
10	Laboratory Electrician	1.39	1.60
15	Metallurgical Laboratory Maintenance Mechanic "B"	1.64	1.93
6	Janitor	1.22	1.41
4	Lab Helper - Metallographic	1.19	1.35½
10	Gas Cylinder Supply	1.39	1.60
13	Security Patrolman and Courier	1.50½	1.77½
12	Security Patrolman	1.45	1.71
14	Security Sergeant	1.57	1.85½
20	Development Machinist - Metallurgy	2.04	2.41½
17	Maintenance Mechanic "A" Metallurgy	1.78½	2.09½
16	Engineering Assistant - Metal Processing	1.71	2.01
18	Maintenance Machinist - Metallurgy	1.86½	2.19
6	Laboratory Helper - Special Products	1.22	1.41
9	Characterizing Powder Met. Specimens	1.34½	1.54
13	Powder Prep., Pressing & Sintering	1.50½	1.77½
8	Lab. Man - Applied Research Section	1.30½	1.49
12	Machinist - Special Products	1.45	1.71
18	Group Leader - Maintenance and Construction Section	1.86½	2.19
11	Inspect Safety Conditions	1.43	1.65½

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II. EMPLOYEE RELATIONS POLICIES

A. Moving Expenses

Whenever a new key or technical employee is hired for a position in an exempt salary classification or a regular key or technical employee is transferred from a locality which is more than a reasonable commuting distance from the Sylvania plant or office in which he is to work, the Company may pay the costs of moving the employee, his immediate family, and his household goods and personal effects to (or near) the new location.

In general, the company will not pay the moving and transportation expenses of an employee living within a thirty-mile radius of the plant or office location.

Immediate family shall include a man's wife, children and any relative living with him and dependent upon him for support.

After arrival at the new location a daily allowance may be paid for a period not to exceed 30 days. This may be extended only if the employee has been unsuccessful in a sincere effort to find a place to live in the new location. Any such extension will require prior AEC approval.

Transportation expense will be reimbursed in accordance with the travel policy except that the subsistence allowance during travel will be as follows:

Employee	$ 6
Employee and wife	12
Employee, wife and child	16
For each additional person	4

After arrival, the daily allowance, which includes subsistence and lodging will be as follows:

Employee	$12
Employee and wife	16
Employee, wife and child	24
For each additional person	4

Actual expense of moving household goods and personal effects will include, packing, crating, insurance on goods in transit, unpacking, temporary storage charges not to exceed 30 days, disconnecting and connecting equipment such as stoves, ranges, etc.

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B. Educational Benefits

The Company makes available to employees the following educational benefits. Payments by the Company to or for the benefit of an employee are considered wages, and all such educational benefits are subject to both withholding and social security tax deductions, except when the Company requires an employee as part of his work to take a course or become a member of a society or club. In all cases listed below where the employee receives financial assistance, the employee pays the whole cost, submits the receipted bill and is reimbursed for 50% of the cost less withholding and social security tax deductions. Costs of these educational benefits shall not be allowed costs under this contract except in those instances where the Commission has specifically approved the application of this Section II B and shall be allowed only to the extent approved by the Commission.

1. Magazines

If the employee wishes to subscribe personally to a magazine which will be helpful to him on the job, the Company will pay one-half the subscription price and the magazine may be sent directly to the employee's home or to his company address. Only technical trade or similar magazines that apply to a specific problem will be approved. Such payments are subject to tax deductions.

2. Engineering and Management Societies

Where an employee is the official representative of the Company or attends meetings as part of his work, the Company will pay the whole cost of membership. Such payments are not subject to tax deductions. If the employee wishes a personal membership, and such membership will be helpful to the employee on his job, the Company will pay one-half of the membership fee, less tax deductions.

3. Outside Educational Courses

When an employee is assigned to a course as part of his work, the Company will pay the whole cost of the course.

In cases where an employee voluntarily elects to take an outside course of study, he will receive help from the Company towards meeting his tuition costs provided the course meets the following requirements:

a. The course will improve the performance of the employee in his present job.

b. He must obtain approval before enrolling in the course.

c. He must complete the course satisfactorily and pay the tuition bill.

On presentation of the receipted tuition bill and a certificate of satisfactory completion of such a course, the Company will reimburse the employee for 50% of the tuition fee, less tax deductions.

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C. Employee Benefit Program

The Company provides at no cost to the employee a program covering Group Life Insurance, Pensioner's Life Insurance, Accidental Death and Dismemberment Insurance, Non-occupational Disability Benefits, Blue Cross Hospital Benefits, and Blue Shield Surgical Benefits. A booklet describing these programs is on file in the Organization and Personnel Division.

D. Reporting Time

1. An hourly employee reporting for work on any regular workday, not having been previously notified not to report, will receive full pay for his scheduled hours for the day even though idle or sent home early because of a delay, shortage or other reason beyond his control. This payment will not be made in the case of general or departmental shutdowns caused by power interruptions, fire, flood, or other conditions beyond the control of the Company.

2. No regular workday will be scheduled for less than four (4) hours.

3. Hourly employees who are called in for emergency work after they have left for the day, or during their scheduled day off, will be paid not less than two (2) hours work.

4. When an hourly employee works less than his regular scheduled hours for the day due to conditions within his own control, he will be paid only for the time worked.

5. Schedules of work hours will be made up each week for the following week.

E. Planned Overtime

1. Planned overtime payments are made to an exempt salary employee when he works assigned Saturday or Sunday hours. Such payments will be made when the employee's salary base rate is between $395 and $838 per month; when he is classified as an executive, professional, or administrative employee; and when he is not a member of the Sylvania Executive Compensation Plan. No planned overtime will be paid if the Saturday or Sunday work is a part of the employee's regular 40-hour schedule.

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2. Planned overtime of $10.50 per week will be paid for any week in which the exempt employee is told to work an extra half day on Saturday or Sunday. Absence, for any reason, earlier in the week will not take away his planned overtime. If he is absent for the half day assigned on Saturday or Sunday, it will not be paid. A half day is a work period of more than 2 but less than 6 hours.

Planned overtime of $21.00 per week will be paid for any week in which the exempt employee is told to work an extra full day on Saturday or Sunday. Absence, for any reason, earlier in the week will not take away his planned overtime. If he is absent for the full day assigned on Saturday or Sunday, it will not be paid. A full day is one of 6 or more hours.

3. Planned overtime of $31.50 per week or $42.00 per week will be paid to an exempt employee if he is told to work an extra 1½ or 2 days on Saturday and Sunday.

4. Planned overtime of $10.50 or $21.00 will be paid to an exempt employee when he works a half day or a full day on a holiday that is a paid holiday for hourly employees at his location.

5. Planned overtime payments on a similar basis may be worked out for employees regularly assigned to exceptionally heavy work schedules during the normal 5-day week, Monday through Friday.

6. The planned overtime payment amount each week will be adjusted so that the total pay for the week, exclusive of night shift premium, does not exceed $193.50.

Travel time on Saturday or Sunday will be considered for purposes of planned overtime to the extent that it falls within the period of the employee's regularly scheduled hours on other days of the week.

F. Night Shift Premium

1. Any employee assigned to a second or third shift will be paid a premium of 10% of his straight time and overtime earnings for all work performed while assigned to such shift.

2. When an employee works overtime before or after his regularly scheduled shift it will be considered as part of that shift for the purposes of calculating shift premium.

3. Whenever, for any reason, an employee's shift assignment is changed during his workweek, his shift premium for that workweek will be computed on a daily basis.

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G. Vacations

1. Hourly employees on the payroll at the beginning of the vacation period, who have or will have on July 1 of the current year the following record of continuous service, will be paid vacation pay at their current hourly base rate as indicated:

a. Six months but less than one year:	20 hours' pay
b. One year but less than three years:	40 hours' pay
c. Three years but less than fifteen years:	80 hours' pay
d. Fifteen years or more:	120 hours' pay

Salary employees on the payroll at the beginning of the vacation period, who have or will have on July 1 of the current year the following records of continuous service, will be paid vacation pay at their current salary base rate for a 40-hour week, as indicated:

a. Six months but less than one year:	1 week's pay
b. One year but less than fifteen years:	2 weeks' pay
c. Fifteen years or more:	3 weeks' pay

2. Employees who leave the Company after July 1, and who have not received the vacation pay to which they are entitled, will receive such pay at the time of separation.

3. Employees who leave the Company at any time will be paid the accrued vacation pay to which their continuous service as of the time of leaving would entitle them under the applicable schedule.

4. In the event the majority of the employees have actually worked on a schedule averaging 48 hours a week for the first 6 months of the year, vacation payments provided above will be on a 48 hour week straight time pay basis so that each amount specified above will be increased by 20%.

H. Overtime Pay

1. Time and a half will be paid to hourly and non-exempt salary employees for all hours worked in excess of eight hours in any 24-hour period after the employee actually starts work.

2. The 24-hour period on consecutive days starts on the same hour as that which the employee reports for work on the first day of the week, except that if for any reason an employee reports for work at a later hour some later day in the week, the 24-hour period on the following days of that workweek will begin at such later hour.

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3. Time and a half will be paid to hourly and non-exempt salary employees for all hours worked:

a. In excess of 40 in any one work week.
b. During the Saturday work day.

4. Double time will be paid to hourly and non-exempt salary employees for all hours worked:

a. During the Sunday work day.
b. During the work day and on holidays listed in O.

5. Overtime for work during the Saturday and Sunday work days as such will not be paid to employees on continuous operations (such as watchmen, firemen, tending gas house, etc.) but instead such an employee will be paid:

a. One and one-half his regular straight time rate of pay for all work performed during the work day of his first scheduled day off for that work week; and

b. Twice his regular straight time rate of pay for all work performed during the work day of his second scheduled day off for that work week.

Overtime for work during the holiday work day as such will be paid to employees on continuous operations for the holidays listed in O.

6. Overtime rates will not be pyramided where more than one rate applies. Only the highest single rate will be paid.

* I. Savings and Retirement Plan

The company contributions to the plan are reimbursable as follows:

a. A pro rata share of the actual normal contribution which is required to cover the currently accruing cost of benefits to be provided from contribution of the Company other than profit distributions.

b. A pro rata share of the profit contribution up to but not to exceed five percent (5%) of direct labor cost.

The details of the plan are contained in a booklet which is on file in the Organization and Personnel Division.

*Rewording of Savings and Retirement Plan. Effective dates: 366 - 7/1/50
RA #13 for 366 RA #1 for 1293 1293 - 12/10/51

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J. Separation Pay

1. Any hourly employee with six or more months continuous service who is laid off or discharged without prejudice by the Company will be given one week's notice or one week's separation pay at straight time for his regularly scheduled work week but not to exceed 40 hours.

2. Any salary employee with six or more months continuous service who is laid off or discharged without prejudice by the Company will be given two weeks' separation pay at his basic 40 hour week rate.

K. Travel Time (Hourly and Non-Exempt Salary Employees)

1. Time spent by an employee during regular working hours in traveling at the Company's instructions should be treated as hours worked. If the Company requests an employee to do a job during regular working hours which requires the employee to leave the place of business, the traveling time of the employee should be included in hours worked whether or not the particular job is within the employee's regular duties.

2. Travel time outside of regular working hours should be treated as hours worked when there is a continuation or extension of the employee's normal working day.

3. If an employee is told to report to work at a designated place other than his regular work location, but within the normal commuting area at a specified hour, or told to go directly home from such a location after completing his day's work, he will be paid for the time actually spent on the job but not for traveling time, unless the time spent going to and from such designated place of work is unreasonably disproportionate to the normal traveling time required in reporting for work at the usual work location. Normally, additional travel time in excess of one hour will be considered unreasonably disproportionate.

4. If an employee is told to report for work at a distant location requiring overnight travel by public transportation, or outside the normal commuting area, the hours spent in such travel outside of his regular working hours will not be treated as hours worked, provided that the employee is given adequate accommodations for sleep and relaxation, but the Company will pay for the costs of meals, room and transportation required in accordance with the travel policy shown in Q. If the employee chooses to use his own car instead of available public or company provided transportation, travel time in such cases will not be counted as work time unless it falls within his regular working hours.

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5. If an employee is required to travel continuously for more than a full working day during which time he is not engaged in actual work for the Company, the time spent traveling during the regular working hours should be considered hours worked. The time outside of regular working hours need not ordinarily be considered hours worked except that if the employee is required to travel on Saturdays, Sundays and holidays, he should be considered as working on these days for the number of traveling hours between his established starting and stopping time on other days of the week.

6. In any case when an employee traveling for the Company is required to do any work at all, such as guarding materials, driving a car or truck or acting as a helper or relief man on a truck, such hours must be treated as hours worked.

L. Time Off For Marriage

1. When an hourly employee elects to be married at a time other than his scheduled vacation he will, upon request, be granted a week's time off without pay. If it is necessary to allow additional time for travel such additional time will also be without pay.

2. When a non-exempt salary employee elects to be married at a time other than his scheduled vacation he will, upon request, be granted a week's time off with 40 hours pay. If additional time is allowed for travel such additional time will be without pay.

3. When an exempt key or technical salary employee elects to be married at a time other than his scheduled vacation and requests time off, he will be allowed up to 2 weeks with pay.

4. If an employee is married either immediately before or immediately after his scheduled vacation, such extra time off as limited above will be in addition to his scheduled vacation.

M. Jury Duty

1. Whenever employees are called for jury duty and must therefore be absent from work, they will be given time off for the duration of their service as jurors. Employees will be paid as follows during this time.

   a. Exempt employees - Continue at full pay. These employees are expected to carry on their regular duties for the Company during this period so far as it is possible.

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b. Hourly and non-exempt employees - The difference between their fees as jurors and their regular week's pay based on forty hours or their regularly scheduled hours, whichever is less.

N. Rest Periods

1. It has long been the practice of the Company to provide sufficient utility operators to relieve hourly employees on machine operations as necessary. Provision has also been made for relief of employees on non-machine operations.

2. In addition to the above, a ten minute rest period will be provided for factory employees at approximately the middle of each of the two work periods in any work day of eight or more hours. In shorter work days, a ten minute rest period will be provided at approximately the middle of any work period of four but less than six hours, and a fifteen minute rest period will be provided at approximately the middle of any work period of six but less than eight hours.

3. Because the work of supervisory, office and engineering employees does not permit the scheduling of a specific rest period, other provisions must be made for such employees.

O. Paid Holidays

New Year's Day	Good Friday
Decoration Day	Independence Day
Labor Day	*Columbus Day
Election Day	Thanksgiving
Christmas	

*Salary employees only.

P. Pay for Workmen's Compensation Waiting Period

1. When an employee receives compensation for disability under a state Workmen's Compensation law which does not cover the one week's waiting period, the Company will pay him for that week's waiting period at the Workmen's Compensation rate, less tax deductions. The Company will make no payments under this policy when the time lost is seven calendar days or less.

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2. In some states Workmen's Compensation is paid from the first day of injury if absence as a result of that injury extends beyond a specified period of time (five weeks in New York). In such states the Company will make no payment for the first week of absence where absence extends beyond these periods of time and Workmen's Compensation is paid from the first day of injury.

Q. Travel Policy

Travel on official business in the interest of this contract will be reimbursed as follows:

Actual transportation expense, plus pullman in the event travel is by rail. Transportation expense via private automobile at the rate of 7¢ per mile, plus ferry, bridge, tunnel or toll road charges and parking fees. Actual expense for lodging and an allowance of six dollars per day to cover other subsistence expenses during period of travel. Other allowable expenses include official telegrams, and telephone calls; streetcar and bus fares; taxi fares when public transportation is not practical; checking and handling of baggage.

R. Attendance at Meetings

When it is in the interest of the contract for an employee to attend professional meetings, he will be reimbursed in accordance with the Travel Policy as shown in Q.

S. Standards For Administration

1. In Excess of Maximum Rate

Wages or salaries in excess of the maximum rate approved for a classification will not be reimbursed.

2. Below the Minimum Rate

Wages or salaries below the minimum rate approved for a classification may be paid during probationary or training periods. That portion of an increase necessary to bring the wage or salary to the minimum of the range will not be subject to the fifteen per cent limitation on merit increases.

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3. Merit Increases

Merit increases may be granted up to an amount equal to fifteen per cent of the base rate for the classification during each twelve-month period. The first twelve-month period will begin on the date the employee is assigned to the classification.

4. Promotions

Promotions to higher-rated jobs may be accompanied by a wage or salary increase of not more than fifteen per cent above the present wage or salary or the minimum rate of the new classification, whichever is greater.

5. Salary Actions Above $8,000

The approval of AEC will not be required for employment, merit increase, promotion, or other wage or salary actions through $8,000 per year, if such actions are within the limitations of other wage and salary controls. All salary actions in excess of $8,000 and all exceptions to other wage and salary controls will require prior approval of AEC. Requests will be made on AEC Form 37.

T. Stabilization Regulations

All actions are subject to compliance with the regulations of appropriate wage or salary stabilization authorities. Approvals by AEC presuppose such compliance.

NARA II
RG 326
Accession 4NN 326-87-007
AEC Fund Materials Div Corr. 1947 1954
Box 1

4

[redacted] Th[illegible] document c[illegible]sts of / pages
No. / [illegible] Series [illegible]

Responsive Record 27

Appendix 'B'

SR 848

Contract AT(30-1)-1293

Dated: December 10, 1951

Scope of Work:

A. Design and construct a pilot plant capable of producing 100-200 slugs per 8 hour day and evaluate results metallurgically and production-wise. By February 1, 1953 the above should be accomplished for uncanned uranium slugs pressed from uranium hydride. By April 1, 1953 the above should be accomplished for slugs pressed from uranium powder.

B. Design, construct and demonstrate the feasibility of a pilot line for pressure canning slugs. This applies to metal powder slugs as well as beta heat treated and machined slugs and should be accomplished by April 1, 1953.

C. Design, construct and demonstrate the feasibility of a pilot line for 8" slugs with test quantities only and evaluate results. The above should be accomplished by June 30, 1953.

D. Begin the mechanization of the pilot plant using technical advancements and simplifications gained in the performance of A and B above. This should be done concurrently with the progress on A, B and C.

E. Attempt to demonstrate the feasibility of a simultaneous pressing and canning technique for uranium slugs. This should be started by February 1, 1953.

Accepted as of 10 December 1951

Sylvania Electric Products, Inc.

By: W E Kingston

RECEIVED
FEB 9 1953
SYLVANIA
MET. LAB.
999142

WSRC DECLASSIFICATION REVIEW
1st Review Date: 4/28/04
Authority: ☐ ADC ☒ ADD
Name: [illegible]
2nd Review Date: 4/28/04
Authority: ADD
Name: [illegible]
Determination (Circle Number)
1. Classification Unchanged
2. Classification Changed To:
3. Classification Cancelled
4. Other: [illegible] 9/00

[redacted]

Encl. 1

SROO Response to
FOIA (SR) - 04-028

5

[redacted]

Responsive Record 24

This document consists of 1 pages.
No. 1 of 12 copies, Series A

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P.O. Box 30, Ansonia Station
New York 23, New York

SR 8154

GC:MM:is
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Modification No. 1
Dated: January 25, 1952

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: C6-AMP-2 9/00

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

Attention: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance the date "March 15, 1952" is substituted for the date "January 31, 1952" in paragraph 6(a) of said Letter Contract.

This letter, executed in triplicate on behalf of the United States, is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereof be executed on behalf of your company and such copies returned to this office as promptly as possible. Copy 3 is for your retention. Such acceptance will constitute this letter an amendment of said Letter Contract to the extent set forth herein.

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

J. C. Clarke

J. C. CLARKE
AUTHORIZED REPRESENTATIVE OF THE
U. S. ATOMIC ENERGY COMMISSION

Accepted: February 7, , 1952

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W E Kingston

Title: Director,
Atomic Energy Division

RECEIVED
JAN 31 1952
SYLVANIA
CENTER
MET. LAB.
#999194

[redacted]

SROO Response to
FOIA (SR) - 04-028

6

[redacted]

Responsive Record 23

This document consists of 4 pages.
No. 1 of 4 copies. Series a

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30 - Ansonia Station
New York 23, New York

SR 844

GC:IJL:krw
AT(30-1)-1293

LETTER CONTRACT No. AT(30-1)-1293
Modification No. 2
Dated: March 14, 1952

WSRC DECLASSIFICATION REVIEW

1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: R L Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: R. Wolfe	4. Other: E6-AMP-2 9/00

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, the date "April 15, 1952" is substituted for the date "March 15, 1952" in paragraph 6(a) of said Letter Contract as previously modified by Modification No. 1 thereto.

This Letter, executed in triplicate on behalf of the United States, is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereto be executed on behalf of your company and such copies returned to this office as promptly as possible. Copy 3 is for your retention. Such acceptance will constitute this Letter an amendment of said Letter Contract to the extent set forth herein.

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

J. C. Clarke

J. C. CLARKE
AUTHORIZED REPRESENTATIVE OF THE
U. S. ATOMIC ENERGY COMMISSION

Accepted: April 1, , 1952

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W E Kingston

Title: Director, Atomic Energy Division

RECEIVED MAR 27 1952 SYLVANIA CENTER MET. LAB. #998938

[redacted]

SROO Response to
FOIA (SR) - 04-028

[redacted]

Responsive Record 22

This document consists of 1 pages.
No. 1 of 1 copies. Series A.

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30 - Ansonia Station
New York 23, New York

SR 843

GC:IJL:krw
AT(30-1)-1293

LETTER CONTRACT No. AT(30-1)-1293
Modification No. 3
Dated: April 9, 1952

WSRC DECLASSIFICATION REVIEW

1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: CG-NMP-2 9/00

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, the date "May 15, 1952" is substituted for the date "April 15, 1952" in paragraph 6(a) of said Letter Contract as previously modified by Modifications Nos. 1 and 2 thereto.

This Letter, executed in triplicate on behalf of the United States, is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereof be executed on behalf of your company and such copies returned to this office as promptly as possible. Copy 3 is for your retention. Such acceptance will constitute this Letter an amendment of said Letter Contract to the extent set forth herein.

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

H. B. Fry

H. B. FRY
AUTHORIZED REPRESENTATIVE OF THE
U. S. ATOMIC ENERGY COMMISSION

Accepted: 4/29/, 1952

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W E Kingston

Title: Director,
Atomic Energy Division

RECEIVED
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SROO Response to
FOIA (SR) - 04-028

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Responsive Record 21

[redacted]

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UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30 - Ansonia Station
New York 23, New York

SR 842

GC:IJL:cc
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Modification No. 4
Dated: May 15, 1952

WSRC DECLASSIFICATION REVIEW

1st Review Date: 4/28/94	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To:
2nd Review Date: 4/28/94	3. Classification Cancelled
Authority: ADD	4. Other: C6-11 MP-2 9/10
Name:	

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, the date "June 30, 1952" is substituted for the date "May 15, 1952" in paragraph 6(a) of said Letter Contract as previously modified by Modification Nos. 1, 2 and 3 thereto.

This Letter, executed in triplicate on behalf of the United States, is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereof be executed on behalf of your company and such copies returned to this office as promptly as possible. Copy 3 is for your retention. Such acceptance will constitute this Letter an amendment of said Letter Contract to the extent set forth herein.

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

H. B. FRY
AUTHORIZED REPRESENTATIVE OF THE
U. S. ATOMIC ENERGY COMMISSION

Accepted: June 24, 1952

SYLVANIA ELECTRIC PRODUCTS, INC.

By: [signature]

Title: Treasurer

RECEIVED
JUN 18 1952
SYLVANIA
9985

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SROO Response to
FOIA (SR) - 04-028

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Responsive Record 20

This document consists [redacted] pages.
No. 1 of 11 [redacted] Series [redacted]

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30, Ansonia Station
New York 23, New York

SR 841

GC:IJL:sh
AT(30-1)-1293

LETTER CONTRACT No. AT(30-1)-1293
Modification No. 5
Dated: June 26, 1952

WORC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Colling	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [signature]	4. Other: CG-NMP-2

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, the date "August 31, 1952" is substituted for the date "June 30, 1952" in paragraph 6(a) of said Letter Contract and the amount "Two Million Dollars ($2,000,000.00)" is substituted for the amount "Eight Hundred Thousand Dollars ($800,000.00)" in paragraph 5 of said Letter Contract, as previously modified by Modifications Nos. 1, 2, 3, and 4 thereto.

This Letter, executed in triplicate on behalf of the United States, is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereof be executed on behalf of your company and such copies returned to this office as promptly as possible. Copy 3 is for your retention. Such acceptance will constitute this Letter an amendment of said Letter Contract to the extent set forth herein.

Very truly yours,

THE UNITED STATES OF AMERICA
By: UNITED STATES ATOMIC ENERGY COMMISSION

W. E. Kelley

W. E. KELLEY
MANAGER
NEW YORK OPERATIONS OFFICE

Accepted: 6/30, 1952
SYLVANIA ELECTRIC PRODUCTS, INC.
By: E Pinley Carter
Title: Vice President

RECEIVED
JUL 3 1952
SYLVANIA
CENTER
MET. LAB.
#998818

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SROO Response to
FOIA (SR) - 04-028

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Rec'd Aug. 28

Responsive Record 19

This document consists of 4 pages
No. 1 of 11 copies, Series A

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30, Ansonia Station
New York 23, New York

SR 840

GC:IJL:lm
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Modification No. 6
Dated: August 11, 1952

WSRO DECLASSIFICATION REVIEW	
1st Review Date: 4/27/04	Determination (Circle Number)
Authority: ☒ ADC ☐ ADD	1. Classification Unchanged
Name: R Collins	2. Classification Changed To:
2nd Review Date: 4/13/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: [illegible]

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, said Letter Contract, as previously modified, is hereby modified further, but only in the following particulars:

1. The date "September 30, 1952" is substituted for the date "August 31, 1952" in paragraph 6(a) of said Letter Contract.

2. Paragraph 5 of said Letter Contract is renumbered paragraph 5(a) and the following is inserted in said Letter Contract as paragraph 5(b):

"(b). i. The Government shall advance to the Contractor such interest-free sum or sums, for use as hereinafter in this paragraph 5(b) provided, as the Commission and the Contractor may mutually agree upon from time to time in writing without the execution of an amendment of this Letter Contract. The aggregate sum theretofore so advanced, less the portions thereof theretofore credited to, or repaid by, the Contractor, or otherwise recouped by the Government, at any given time, is hereinafter referred to as the 'advance payment'.

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RECEIVED
AUG 26 1952
SYLVANIA CENTER MET. LAB.
#998902

SROO Response to
FOIA (SR) - 04-028

Encl 2

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ii. The terms of this Letter Contract shall be considered adequate security for the advance payment; provided, however, that as a condition precedent to the making of any advance under this paragraph 5(b), the Contractor shall furnish to the Government such additional security as the Commission may prescribe; and provided, further, that if at any time the Commission deems the then security inadequate, the Contractor shall furnish to the Government such additional security, in the form of a surety bond or bonds, as is satisfactory to the Commission.

iii. From time to time the Contractor may make repayments on account of the advance payment. The advance payment, together with payments received pursuant to paragraph 5(a) above, shall at no time exceed the limiting amount set forth in said paragraph 5(a), and any such excess shall be immediately repaid by the Contractor to the Government, or, if any payment is due from the Government to the Contractor, shall be deducted therefrom. Moreover, if at any time, in the opinion of the Commission, the unliquidated balance of the advance payment exceeds the amount necessary for the current needs of the Contractor, the amount of such excess shall, upon demand by the Commission, be promptly repaid to the Government.

iv. Until the advance payment is fully liquidated, all funds received as advances under this Letter Contract, together with all funds received pursuant to paragraph 5(a) hereof, which cover expenditures made from the advance payment, shall be deposited in a special bank account or accounts at a member bank or banks of the Federal Reserve System or any 'Insured' bank within the meaning of the Act creating the Federal Deposit Insurance Corporation (Act of August 23, 1935; 49 Stat. 684) as amended (12 U. S.C. 264) separate from other funds. Such special bank account or accounts shall be designated so as to indicate clearly to the bank their special character and purpose, and the balance in such account or accounts shall be used by the Contractor exclusively as a revolving fund for performing its undertakings under this Letter Contract and not for any other business of the Contractor. Any balances from time to time in such special account or accounts shall at all times secure the repayment of the advance payment, and the Government shall have a lien upon such balances to secure the repayment of such advance payment, which lien shall be superior to any other lien upon such account or accounts; provided, that the bank shall be under no liability to any party hereto for the withdrawal of any funds from said special accounts upon checks, properly indorsed and signed by the Contractor, except that after the receipt by the bank of written directions from the Commission the bank shall act thereon and be under no liability to any party hereto for any action taken in accordance with the said written directions. Any instructions or written directions received by the bank in due course upon U. S. Atomic Energy Commission stationery and purporting to be signed by, in behalf, or at the direction of, the Commission

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or its duly authorized representative shall, insofar as the rights, duties, and liabilities of the bank are concerned, be conclusively deemed to have liabilities of the bank are concerned, be conclusively deemed to have been properly issued and filed with the bank by the Commission.

v. Subject to the approval of the Commission, the Contractor may make sub-advances to subcontractors and materialmen. The subcontractors or materialmen to whom such advances are made shall furnish adequate security therefor. Unless other security approved and required by the Commission is furnished, covenants in subcontracts or purchase agreements expressly made for the benefit of the Government, providing for a sub-special account with Government lien thereon and for a Government lien on or title to property, tangible or intangible, purchased from the special account, and imposing upon the subcontractor or materialman substantially the same rights as are provided herein between the Government and the Contractor, shall be deemed minimum adequate security for such sub-advances.

vi. The Contractor shall, at all reasonable times, afford to the Commission proper facilities for the inspection and audit of the Contractor's pertinent accounts, and the Contractor hereby agrees that the Commission may, so far as the Contractor's rights are concerned, during business hours, inspect and make copies of any entries in the books and records of the bank or banks relating to the said special account or accounts.

vii. Any assignment of monies due or to become due under this Letter Contract shall be subordinate to the rights or claims of the Government arising under this Letter Contract by virtue of the advance payment or otherwise.

viii. If upon termination of this Letter Contract, pursuant to either paragraph 6(a) or paragraph 6(b) hereof, the advance payment has not been fully liquidated, the unliquidated balance of the advance payment shall be deducted from any payments otherwise due the Contractor under this Letter Contract; and if the sum or sums due the Contractor be insufficient to cover such balance, the deficiency shall be paid by the Contractor in cash forthwith after demand and final audit by the Commission of all accounts respecting this Letter Contract; provided, however, that such deduction shall not be made prior to such final audit unless, and then only to the extent that, the Commission determines that such action is reasonably required in order to secure the eventual repayment in full to the Government of the unliquidated advance payment. If any demand made in accordance with this subparagraph viii. is not met upon receipt of such demand by the Contractor, the amount demanded will bear interest at the rate of six per cent (6%) per annum from the date of the receipt of the damand until payment is made; provided, however, that such payment of interest is hereby waived as to any sum repaid by the Contractor within fifteen (15)

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days after the amount becomes due. If and when the advance payment has been fully liquidated, any money remaining in the special bank account or accounts shall be free and clear of any lien under this paragraph 5(b) and the bank or banks concerned shall have authority to pay same to the Contractor."

3. The following provision is added to said Letter Contract as paragraph 16 thereof:

"16. (a) The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this Letter Contract, have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this Letter Contract.

(b) The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this Letter Contract with the Government, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract. The term subcontract as used herein does not include (i) purchase orders not exceeding $500, or (ii) contracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

(c) Nothing in this Letter Contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this Letter Contract."

This Letter executed in triplicate on behalf of the United States is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereof be executed on behalf of your company and such copies returned to this office as promptly as possible. Copy 3 is for your retention. Such acceptance will constitute this Letter an amendment of said Letter to the extent set forth herein.

Accepted:

SYLVANIA ELECTRIC PRODUCTS, INC.

By: E. Finley Carter

Title: Vice President

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

H. B. FRY

AUTHORIZED REPRESENTATIVE OF THE U.S. ATOMIC ENERGY COMMISSION

[redacted]

11

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Responsive Record 18

This [redacted] Series A.

SR 839

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30, Ansonia Station
New York 23, New York

GC:LJL:cc
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Modification No. 7
Dated: September 30, 1952

WSRC DECLASSIFICATION REVIEW

1st Review Date: 9/22/09	Determination (Circle Number)
Authority: ☒ ADC ☐ ADD	1. Classification Unchanged
Name: R. Collins	2. Classification Changed To:
2nd Review Date: 9/28/09	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: C6-NMP-2

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, said Letter Contract, as previously modified, is hereby modified further, but only in the following particular:

1. The date "October 31, 1952" is substituted for "September 30, 1952" in paragraph 6(a) of said Letter Contract.

This Letter executed in triplicate on behalf of the United States is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on copies 1 and 2 hereof be executed on behalf of your company and such copies returned to this office as promptly as possible. Copy 3 is for your retention. Such acceptance will constitute this Letter an amendment of said Letter Contract to the extent set forth herein.

RECEIVED OCT 7 1952 SYLVANIA ATOMIC ENERGY MET. LAB. #998950

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

F. M. Belmore

F. M. Belmore, Acting Manager

Accepted: September 30, 1952.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: E. Hardy Carter

Title: Vice President

[redacted]

SROO Response to
FOIA (SR) - 04-028

12

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Responsive Record 17

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Th[redacted]cument consi[redacted] pages.
[redacted]. 1 of [redacted]s, Series [redacted]

SR 838

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30, Ansonia Station
New York 23, New York

GC:IJL:be
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Modification No. 8
Dated: October 31, 1952

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RT Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: C 6 AMR 2 9/00

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, said Letter Contract, as previously modified, hereby is modified further, but only in the following particular:

1. The date "November 30, 1952" is substituted for "October 31, 1952" in paragraph 6 (a) of said Letter Contract.

If this modification is acceptable to you, please sign and return two copies thereof to this office as soon as possible.

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

H H Fry

H. H. FRY
AUTHORIZED REPRESENTATIVE OF THE
U. S. ATOMIC ENERGY COMMISSION
6 1952

Accepted: October 31, 1952

SYLVANIA ELECTRIC PRODUCTS, INC.

By: E Hinley Carter

Title: Vice President

[redacted]

#998843

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SROO Response to
FOIA (SR) 04-028

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Responsive Record 16

This do[redacted]t consis[redacted] pages.
No. / [redacted] Series[redacted]

SR 837

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
P. O. Box 30, Ansonia Station
New York 23, New York

GC:IJL:cc
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Modification No. 9
Dated: November 30, 1952

WSRC DECLASSIFICATION REVIEW

1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: CG-NMP-2 9/2

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Dr. W. E. Kingston

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, said Letter Contract, as previously modified, is modified further, but only in the following particular:

1. The date "January 31, 1953" is substituted for "November 30, 1952" in paragraph 6(a) of said Letter Contract.

If this modification is acceptable to you, please sign and return two copies thereof to this office as soon as possible.

Very truly yours,

Accepted: November 30, 1952.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: [signature]

Title: Vice President

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

[signature]

W. E. KELLEY
MANAGER
NEW YORK OPERATIONS OFFICE

RECEIVED
JAN 2 1953
SYLVANIA
CENTER
MET. LAB.
99912

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Encl 1

SROO Response to
FOIA (SR) - 04-028

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Responsive Record 15

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UNITED STATES
ATOMIC ENERGY COMMISSION
P. O. Box 30, Ansonia Station
New York 23, New York

SR 886

GC:IJL:cc
AT(30-1)-1293

LETTER CONTRACT NO. AT(30-1)-1293
Modification No. 10
Dated: January 13, 1953

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [signature]	4. Other: CG-AMP-2 9/00

Sylvania Electric Products, Inc.
P. O. Box 6
Bayside, Long Island, New York

ATTENTION: Mr. E. Finley Carter, Vice President

Gentlemen:

Reference is made to Letter Contract No. AT(30-1)-1293, dated December 10, 1951, whereby you undertook to conduct certain studies, experimental investigations, and other research and development work.

Subject to your written acceptance, said Letter Contract, as previously modified, is modified further, but only in the following particulars:

1. The date "February 28, 1953" is substituted for "January 31, 1953" in paragraph 6(a) of said Letter Contract.

2. The amount "Two Million Five Hundred Thousand Dollars ($2,500,000.00)" is substituted for "Two Million Dollars ($2,000,000.00)" in paragraph 5(a) of said Letter Contract.

If this modification is acceptable to you, please sign and return two copies thereof to this office as soon as possible.

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

H. B. Fry
Acting Manager
New York Operations Office

Accepted: January 19, 1953.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: E. Finley Carter

Title: Vice President

[redacted]

JAN 20 1953
998763

SROO Response to
FOIA (SR) - 04-028

This document consists of pages.
No. 2 of 12 copies. Series A.

CONTRACT No. AT(30-1)-1293.

AMENDMENT No. 5

CONTRACTOR AND ADDRESS:	SYLVANIA ELECTRIC PRODUCTS, INC., 1740 Broadway, New York, New York.
AMENDMENT FOR:	EXTENSION OF TERM TO JUNE 30, 1954.
LIMIT OF GOVERNMENT LIABILITY:	$4,272,000.00 ($1,000,000.00 Being For the Fiscal 1954 Work).

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CONTRACT No. AT(30-1)-1293, Amendment No. 5.

THIS AMENDMENT, entered into as of the 1st day of July, 1953, by and between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to amend said Contract, as heretofore amended, as hereinafter provided; and

WHEREAS, this Amendment is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore amended, is hereby amended further in the following respects:

1. In paragraph 1 of Article I, the concluding sentence (beginning with the clause "Between July 1, 1953 and December 31, 1953") is deleted. The text of said paragraph 1 is hereby designated as subdivision a of paragraph 1 of Article I. The following new subdivision b is added to paragraph 1 of Article I:

> "b. Between July 1, 1953 and June 30, 1954 the Contractor shall conduct studies, experimental investigations and other research and development work for the Government, the scope of which is set forth in the classified document captioned "Amendment No. 1 to Appendix "B"; a copy of said Amendment No. 1 to Appendix "B" signed by the Contractor is on file in the offices of the Commission and said Amendment is incorporated herein by reference and made a part hereof."

2. The following is added at the end of the present text of paragraph 4 of Article II:

> "Notwithstanding any other provision of this Contract, the Commission may, to the extent and upon such terms and conditions as it considers advisable and provides for in said writing, permit the Contractor, by written authorization, to engage at any such principal site in activities other than those incident to the work provided for above in this Contract."

3. In paragraph 1 of Article III, "December 31, 1953" is changed to "June 30, 1954".

4. Subdivision a of paragraph 1 of Article IV is changed to read as follows:

"a. A fixed fee of One Hundred Twenty Thousand Dollars ($120,000.00) with respect to all of the work and services provided for in subdivision a of paragraph 1 of Article I, and a fixed fee of Fifty-Two Thousand One Hundred Fifty Dollars ($52,150.00) with respect to all of the work and services provided for in subdivision b of paragraph 1 of Article I."

5. In subdivision a of paragraph 5 of Article IV, "of the fixed fee" is changed to "of each of the fixed fees".

6. Subdivision b of paragraph 6 of Article IV is changed to read as follows:

"b. (1) The Commission has obligated for this Contract, from obligational authority available to it, the sum of Three Million Two Hundred Seventy-Two Thousand Dollars ($3,272,000.00) with respect to the work provided for in subdivision a of paragraph 1 of Article I, and the sum of One Million Dollars ($1,000,000.00) with respect to work provided for in subdivision b of paragraph 1 of Article I. Each of said amounts may be increased by the Commission in its discretion, by written notice, from time to time.

(2) From time to time the Commission may notify the Contractor in writing (which writing may or may not be captioned "Financial Plans") of certain dollar ceilings to be applicable to all or various specified segments of the Contractor's activities under this Contract. Downward adjustments of dollar ceilings previously authorized under this subdivision (2) shall be promptly implemented by the Contractor, provided, however, that neither this provision nor subdivision (4) below shall preclude the Contractor from being compensated for work performed and related to Contractor costs and expenses incurred and commitments made, in good faith, in accordance with the previous notifications under this subdivision (2) and prior to its receipt and subsequent notification effecting the downward adjustments.

(3) The Contractor shall promptly notify the Commission in writing whenever it believes that any then monetary ceiling applicable pursuant to (1) or (2) above is insufficient, and its notice shall contain its reasons for its belief and its estimate of such insufficiency.

(4) If and when the total of amounts paid and then payable under this Contract to the Contractor excluding any fixed fee or fees, but including the Contractor's reasonable estimate of the total reimbursable costs involved in closing out and settling

(all of its pertinent outstanding commitments) shall equal any then dollar limitation applicable to subdivision (2) above, the Contractor shall promptly notify the Commission accordingly in writing and shall not incur any further expenses nor perform further in connection with the item or items covered by the ceilings unless it receives a further written notice under said subdivision (2) which increases said ceilings.

(5) If and when the total of amounts paid and then payable under this Contract to the Contractor (including the portion of the pertinent fee or fees reasonably estimated by the Contractor to have been earned to that time, and including the Contractor's reasonable estimate of the total allowable costs involved in closing out and settling all of its pertinent outstanding commitments) shall equal any then dollar limitation applicable pursuant to subdivision (1) above, the Contractor shall promptly notify the Commission accordingly in writing and shall not incur any further expenses nor perform further in connection with the work covered by the ceiling unless it receives the further notice under said subdivision (1) above which increases said ceiling.

(6) Subject to the provision in subdivision (2) above, the total liability of the Government under this Contract shall accord with the pertinent monetary ceilings as established from time to time pursuant to subdivision (2) above.

(7) Notwithstanding any other provisions of this Contract, the total liability of the Government under this Contract shall be limited to the pertinent obligations applicable pursuant to subdivision (1) above."

7. In the third sentence of paragraph 2 of Article XIII, the concluding clause is deleted: "by the Act of April 5, 1952, Public Law 298, 82nd Congress, 66 Stat. 43."

IN WITNESS WHEREOF, the parties have executed this Amendment as of the day and year first above written.

THE UNITED STATES OF AMERICA

Witnesses to execution by the Contractor:

Janice K. Brouthers
30-14 153rd St., Flushing, N.Y.

Beatrice E. Kalmus
199-04 24 Road, Bayside N.Y.

By: UNITED STATES ATOMIC ENERGY COMMISSION

H. B. FRY
MANAGER
NEW YORK OPERATIONS OFFICE

SYLVANIA ELECTRIC PRODUCTS, INC.

By:

Title: General Manager, Atomic Energy Divisic

I, William F. Rieger, certify that I am the Assistant Secretary of the corporation named as Contractor herein; that W. F. Kingston who signed this Amendment on behalf of the Contractor was then Gen. Mgr. Atomic Energy Div. of said corporation; that said Amendment was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

William F. Rieger

(Corporate Seal)

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No. 2 of 11 [illegible]pies. Series A.

CONTRACT No. AT(30-1)-1293

AMENDMENT No. 1

CONTRACTOR AND ADDRESS:	SYLVANIA ELECTRIC PRODUCTS, INC., 1740 Broadway, New York, New York.
AMENDMENT FOR:	EXTENSION OF TERM TO SEPTEMBER 30, 1953.
LIMIT OF GOVERNMENT LIABILITY:	As provided for in 6b of Article IV, the total being $3,990,000.00
PAYMENT TO BE MADE BY:	Division of Disbursement, United States Treasury Department, New York, New York. Submit invoices to: United States Atomic Energy Commission, P. O. Box 30 - Ansonia Station, New York 23, New York.

CONTRACT No. AT(30-1, -1293, Amend. No. 1.

THIS AMENDMENT, entered into the 19th day of June, 1953, by and between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties hereto desire to amend said Contract, as hereinafter provided; and

WHEREAS, this Amendment is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293 is hereby amended, but only in the following respects:

1. The following is added at the end of the present text of paragraph 1 of Article I:

> "Between July 1, 1953 and September 30, 1953, however, the Contractor shall conduct under this Contract only such studies, experimental investigations and other research and development work as the Contractor and the Commission mutually agree upon in advance in writing, which writings may or may not be in the form of formal amendment or amendments to this Contract."

2. In paragraph 1 of Article III, "June 30, 1953" is changed to "September 30, 1953".

3. The punctuation mark at the end of the present text of 1a of Article IV is deleted and the following is added immediately thereafter:

> "with respect to all of the work and services provided for in this Contract other than those added by Amendment No. 1 to this Contract, plus such sum with respect to the work and services added to this Contract by Amendment No. 1 to this Contract as the parties mutually agree upon in writing as reasonable or, failing such agreement, as is determined pursuant to Article XIV."

4. The following is added at the end of the present text of 5a of Article IV:

"Until the added sum provided for in 1a of this Article is so determined, the preceding sentence shall be deemed to refer only to the initial fee of One Hundred Twenty Thousand Dollars ($120,000.00)."

5. The text of 6b of Article IV is changed to read as follows:

"b. Obligations. The Commission has obligated for this Contract, from obligational authority available to it, the sum of Three Million Nine Hundred Ninety Thousand Dollars ($3,990,000.00). Said amount may be increased by the Commission, in its discretion, from time to time. Notwithstanding any other provisions of this Contract:

(i) The Contractor shall promptly notify the Commission in writing whenever it believes that the sum of Three Million Two Hundred Seventy-Two Thousand Dollars ($3,272,000.00), or such increased sum as the Commission may in its discretion specify in writing at any time or times, is insufficient with respect to all of the work and services under this Contract other than those added to this Contract by Amendment No. 1 to this Contract, and its notice shall contain its estimate of the amount of such insufficiency;

(ii) The Contractor shall promptly notify the Commission in writing whenever it believes that the sum of Seven Hundred Eighteen Thousand Dollars ($718,000.00), or such increased sum as the Commission in its discretion may specify in writing at any time or times, is insufficient with respect to the work and services added to this Contract by Amendment No. 1 to this Contract, and its notice shall contain its estimate of the amount of its insufficiency;

(iii) If and when the total amount paid and payable to the Contractor under this Contract (including the initial fixed fee of One Hundred Twenty Thousand Dollars ($120,000.00), and the actual or estimated amounts unpaid by the Contractor on all pertinent subcontracts and other pertinent commitments on the assumption that they will be completed), in

connection with the work and services referred to in (i) above, shall equal the sum of Three Million Two Hundred Seventy-Two Thousand Dollars ($3,272,000.00), or such increased sum as the Commission may in its discretion specify at any time or times, the Contractor shall not be expected to incur further expenses in connection with said work and services nor to perform further in connection therewith unless the Commission agrees in writing to increase said sum by an amount sufficient to cover additional work or services;

(iv) If and when the total amount paid and payable to the Contractor under this Contract (including the actual or estimated amounts unpaid by the Contractor on all pertinent subcontracts and other pertinent commitments on the assumption that they will be completed, and including the sum to be added to the fixed fee as provided for in 1a of Article IV or if said sum shall not yet have been determined including such estimate thereof as the Contractor makes in good faith), in connection with the work and services referred to in (ii) above, shall equal the sum of Seven Hundred Eighteen Thousand Dollars ($718,000.00), or such increased sum as the Commission may in its discretion specify at any time or times, the Contractor shall not be expected to incur further expenses in connection with said work and services nor to perform further in connection therewith unless the Commission agrees in writing to increase said sum by an amount sufficient to cover additional work or services;

(v) The Contractor shall perform the work and services referred to in (ii) above at monetary levels not in excess of those fixed by the Commission in pertinent written notices to the Contractor, and the Contractor shall promptly notify the Commission in writing whenever it believes that any of the latter levels may be insufficient; and

(vi) The liability of the Government under this Contract shall be limited to the respective monetary ceilings provided for in the first sentence of this subparagraph b and in (i) through (v) above, as same may be increased by the Commission in its discretion in writing."

IN WITNESS WHEREOF, the parties hereto have executed this Amendment the day and year first above written.

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

Witnesses to execution by the Contractor:

Junie K. Brauthers

80-14 153rd. - Flushing, N.Y.
(Address)

Beatrice E. Kalmus

199-04 24 Road, Bayside, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W E Kingston

Title: General Manager, Atomic Energy Division

I, J Shearoyd, certify that I am the Secretary of the corporation named as Contractor herein; that W. E. Kingston who signed this Amendment on behalf of the Contractor was then General Manager - Atomic Energy Division of said corporation; that said Amendment was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

J Shearoyd
Secretary

(Corporate Seal)

This document consists of 7 pages.
No. 2 of 12 copies. Series A.

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office

Address reply to:

Manager of Operations
U. S. Atomic Energy Commission
P. O. Box 30 - Ansonia Station
New York 23, New York

Effective as of September 1, 1953

and refer to: GC:JR

Sylvania Electric Products, Inc.
P. O. Box 59
Bayside, New York

Attention: Mr. W. E. Kingston, Director
Atomic Energy Division

Subject: CONTRACT No. AT(30-1)-1293

Gentlemen:

Reference is made to paragraph 4 of Article II of Contract No. AT(30-1)-1293.

You are hereby given permission by the Commission to utilize the Hicksville premises and the items of Government-owned property situated in the Engineering, Drafting, and Machine Shop Departments at Hicksville, and the Government-owned furniture and office equipment in the Hicksville premises, and the personnel at Hicksville, for the purpose of conducting business at those premises other than in furtherance of the work provided for in Contract No. AT(30-1)-1293. This permission relates only to such work, other than that provided for in Contract No. AT(30-1)-1293, as is not otherwise to be performed for the Commission or for Commission contractors or subcontractors in furtherance of their Commission-connected agreements. The work covered by this permission is hereinafter in this Letter referred to as "outside work". You are hereafter in this Letter referred to as the "Contractor".

The following terms and conditions are part of this permission:

1. This permission is terminable by the Commission in whole or in part at any time or times by written notice to the Contractor.

2. These terms and conditions may be supplemented or otherwise amended in any respects by the Commission at any time or times by written notice to the Contractor.

3. The work under Contract No. AT(30-1)-1293 shall at all times, and without any qualification or limitation whatsoever, have the absolute priority in time, effort, and in all other significant respects, over any outside work.

3/

4. The Contractor shall make such reports to the Commission as the Commission may request, and shall otherwise cooperate fully with the Commission, in connection with such analyses or other examinations that the Commission may make to ascertain whether to continue this permission in whole or in part or to amend these terms and conditions in any respects.

5. Except as the Commission may otherwise specifically approve in writing, only the personnel in the Engineering, Drafting, and Machine Shop Departments may be utilized as direct labor for any outside work. There shall be no personnel changes in any of those three departments, nor shall there be any personnel changes in any of the other departments at Hicksville by reason of outside work, excluding dismissal or resignation actions, without specific written approval of the Commission.

6. Beginning with the month of December, 1953, the Contractor shall furnish the Commission each month, on or about the 15th day of each month, a statement containing an itemization and brief description (including estimated completion date) of the outside work that in its estimation, arrived at in good faith, it expects to engage in at any time during the monthly period ending on the 15th day of the following month. Beginning with the statement to be submitted on or about January 15, 1954, each statement shall also itemize and describe briefly all of the outside work in which the Contractor was actually engaged during the monthly period ending on the due date of the report, and shall explain the differences (and the reasons therefor) between the Contractor's estimate of its outside work for the ensuing monthly period given in its previous monthly statement and the actual outside work in which the Contractor was engaged during that monthly period.

7. Prior to beginning any outside work the Contractor shall in each case, in manner and form acceptable to the Commission, record in good faith the nature of the work and its reasonable estimate of (i) the amount of time of the various Hicksville direct labor personnel entailed in the performance, (ii) the costs for said direct labor, (iii) the amount of time of the various Hicksville supervisory personnel entailed in the performance, (iv) the Government-owned equipment to be utilized, and (v) the amount of time of utilization of each item of such equipment. As the outside work progresses the Contractor shall record and evidence, in manner and form acceptable to the Commission, the actual time spent on outside work by the direct labor personnel, and such other data respecting the utilization of personnel, Government-owned equipment, or the Hicksville premises as the Commission may require from time to time. The Contractor shall make such reports to the Commission concerning the estimates or data referred to in this paragraph as the Commission may require. All of the records, reports, and statements referred to in this permission shall be Government-owned and fully covered by the provisions of Contract No. AT(30-1)-1293 pertaining to Government-owned records, reports, and data.

8. It is understood that the outside work is not, among other things, "work under this contract" as referred to in the Patent provisions of Contract No. AT(30-1)-1293. It is further understood that the Contractor shall be liable, and shall account promptly therefor to the satisfaction of the Commission, for all loss or destruction of or damage to Government-owned property in the Contractor's possession or custody by reason of Contract No. AT(30-1)-1293 which occurs by reason of or in connection with any outside work and results from any fault or negligence of the Contractor, its officers, agents, or employees, or others whose fault or negligence is attributable to the Contractor.

9. The Contractor shall, of course, pay directly to whomsoever may be involved, as a matter wholly unrelated to the work and the costs provided for in Contract No. AT(30-1)-1293, for all freight charges and for all materials and supplies connected with its outside work, as well as for all other items of non-Government-owned property which the Contractor desires to use in connection with its outside work. It is understood, however, that nothing in this permission shall be deemed to preclude in any respect the implementation of subdivision (ii) of paragraph 8 of Article V of Contract No. AT(30-1)-1293. It is further understood that the Contractor shall not, without the specific written approval of the Commission, install in the Hicksville premises for its use for any outside work any non-Government-owned equipment.

10. By application of the following system, and at times and in manner approved by the Commission, the Contractor shall pay or credit the Government under Contract No. AT(30-1)-1293 the sums determined as hereinafter provided:

a. The following categories of cost for the operation, maintenance, and administration of the entire Hicksville facility are to be distributed as follows:

(1) Expense labor costs are to be distributed to each of the Operations, Quality, Engineering Overhead, Administrative and General Overhead, and Security Departments based on the respective numbers of expense labor personnel assigned to the said Departments.

(2) Payroll costs are to be distributed to each of the Operations*, Quality*, Engineering*, Drafting*, Machine Shop*, Engineering Overhead*, Administrative and General Overhead*, and Security* Departments based on the total wages and salaries (including expense labor) for each of the said Departments.

(3) Occupancy costs are to be distributed on the basis of the square footage occupied by each of the Operations, Quality, Engineering, Drafting, Machine Shop, and Administrative and General Overhead Departments.

(4) Utilities costs are to be distributed as follows: Telephone costs entirely to the Administrative and General Overhead Department, power and light costs 70% to the Operations Department, 20% to the Machine Shop Department, and 10% to the Administrative and General Overhead Dpartment, and water costs 90% to the Operations Department and 10% to the Administrative and General Overhead Department.

(5) Division Prorate costs, consisting of the management, accounting, procurement and other administrative, functions at Bayside pertinent to the Hicksville operation, are to be distributed entirely to the Administrative and General Overhead Department.

(6) General Plant costs consisting of the following items are to be distributed as follows:

(i) Transportation: To be distributed entirely to the Operations Department.

(ii) Freight on SF Material: To be distributed entirely to the Operations Department.

(iii) Miscellaneous: To be distributed entirely to the Administrative and General Overhead Department.

(iv) Travel: To be distributed to the particular Department in which the employee-traveler is employed.

(v) Postage and Messenger Service: To be distributed entirely to the Administrative and General Overhead Department.

(vi) Moving and Installation: To be distributed to the Department in which the work is performed.

(vii) Rental of Equipment: To be distributed to the Department using the equipment.

(viii) Other General Items: To be distributed entirely to the Administrative and General Overhead Department.

(7) Depreciation costs consisting of the following items are to be distributed as follows:

(i) Process Equipment: The fixed monthly depreciation charge is $7,632.00 and is to be distributed entirely to the Operations Department.

(ii) Laboratory Equipment: The fixed monthly depreciation charge is $5,115.00 and is to be distributed entirely to the Quality Department.

(iii) Shop Equipment: The fixed monthly depreciation charge is $6,691.00 and is to be distributed entirely to the Machine Shop Department.

(iv) Medical Equipment: The fixed monthly depreciation charge is $3.00 and is to be distributed entirely to the Administrative and General Overhead Department.

(v) Motor Vehicles: The fixed monthly depreciation charge is $51.00 and is to be distributed entirely to the Administrative and General Overhead Department.

(vi) Security and Protection: The fixed monthly depreciation charge is $27.00 and is to be distributed entirely to the Operations Department.

(vii) Improvements to Property: The fixed monthly depreciation charge is $943.00 and is to be distributed entirely to the Administrative and General Overhead Department.

(viii) Miscellaneous Equipment: The fixed monthly depreciation charge is $159.00 and is to be distributed entirely to the Administrative and General Overhead Department.

(ix) Furniture and Fixtures: The fixed monthly depreciation charge is $654.00 and is to be distributed entirely to the Administrative and General Overhead Department.

(8) Indirect Materials costs are to be distributed to the Department using the material.

(* These are all of the Departments.)

b. The total of the Engineering Overhead Department costs, consisting of the expense labor and the other various items of cost allocated to that Department pursuant to a. above, is to be ascertained and distributed entirely to the Engineering, Drafting, and Machine Shop Departments on the basis of the respective total, for each of those Departments, of all the labor costs (not referred to in a. above) therefo

c. The total of the Administrative and General Overhead Department costs, consisting of the expense labor and the various items of cost allocated to that Department pursuant to a. above, is to be ascertained and distributed entirely to the Operations, Quality, Engineering, Drafting, Machine Shop, and Security Departments based on the respective total, for each of those Departments, of all the labor costs therefo (that is, those referred to and those not referred to in a. above) plus the other various items of cost allocated to said Department pursuant to a. above plus (with respect to the Engineering, Drafting,

and Machine Shop Departments) the items of cost allocated to said Department pursuant to b. above.

d. With respect to each of the Engineering, Drafting, and Machine Shop Departments, the total of the costs allocated to said Department, consisting of all the labor costs (not referred to in a. above) plus all of the costs allocated pursuant to a. through c. above, is to be ascertained; from that total the total amount of the Department's direct labor salaries and wages is to be subtracted.

e. With respect to each of the Engineering, Drafting, and Machine Shop Departments, the amount last determined pursuant to d. above is to be multiplied by a fraction the numerator of which is the total of the Department's direct labor wages and salaries allocated for the time of said labor spent on outside work and the denominator of which is the total of the Department's direct labor wages and salaries. The three resulting amounts, plus the direct labor wages and salaries allocated for the time of said labor, in each of the three said Departments, spent on outside work, are the sums to be due from the Contractor.

f. All distributions and allocations referred to in this permission shall, of course, be subject to the approval of the Commission.

g. All amounts to be paid or credited to the Government pursuant to this permission shall be so paid or credited as and when determined by the Commission. Pending the ascertainment and determination of the actual sums due under this permission, which shall be effected at time or times set by the Commission, the Contractor shall pay or credit the Government, as requested by the Commission, on the basis of provisional rates or sums established by the Commission for the purpose; all such provisional rates or sums shall subsequently be promptly adjusted to accord with the actual sums due.

h. The Contractor shall pay directly, or pay or credit the Government, as the Commission requests, for all long distance telephone calls, telegrams, and travel of personnel, relating to the outside work, and for such other items of expense relating to outside work as the Commission may find should properly be covered by this subdivision h. Among other things, the Contractor shall, under this subdivision h., pay, or credit the Government with, all expenses relating to Workmen's Compensation Insurance which are over and above those which would have been incurred or paid, and reimbursable under Contract No. AT(30-1)-1293 if this permission had not been granted.

i. All disputes under or in connection with this permission shall be resolved pursuant to the provisions of Article XIV of Contract No. AT(30-1)-1293.

Copies 1 and 2 of this Letter are for your execution and prompt return to this Office; Copy 3 is for your retention.

Very truly yours,

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

H. B. FRY
MANAGER
NEW YORK OPERATIONS OFFICE

Agreed:

SYLVANIA ELECTRIC PRODUCTS, INC.

By: [signature]

Title: General Manager,
Atomic Energy Division

This document consists of 3 pages.
No. 2 of 12 copies. Series A.

CONTRACT No. AT(30-1)-1293.

AMENDMENT No. 2

CONTRACTOR AND ADDRESS: SYLVANIA ELECTRIC PRODUCTS, INC.,
1740 Broadway,
New York, New York.

AMENDMENT FOR: EXTENSION OF TERM TO OCTOBER 31, 1953.

CONTRACT No. AT(30-1)-1293, Amendment No. 2.

THIS AMENDMENT, entered into the 29th day of September, 1953, by and between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to amend said Contract, as heretofore amended, as hereinafter provided; and

WHEREAS, this Amendment is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore amended, is hereby amended further in the following respects:

1. In paragraph 1 of Article I, "September 30, 1953" is changed to "October 31, 1953".

2. In paragraph 1 of Article III, "September 30, 1953" is changed to "October 31, 1953".

3. In 1a of Article IV, "Amendment No. 1", appearing in two places, is changed to "Amendments Nos. 1 and 2".

4. In 6b of Article IV, "Amendment No. 1", wherever it appears, is changed to "Amendments Nos. 1 and 2".

IN WITNESS WHEREOF, the parties have executed this Amendment the day and year first above written.

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

Frederick M. Belmore

PROCUREMENT DIVISION
Contracting Officer

Witnesses to execution by the Contractor:

Jeanne L. Brouthers
30-14 152 St. Flushing, N.Y.

Beatrice E. Kalmus
199-04 2nd Road
Bayside, N.Y.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: J. B. Merrill

Title: Vice Pres

I, William F. Rueger, certify that I am the Assistant Secretary of the corporation named as Contractor herein; that J. B. Nerdlinger who signed this Amendment on behalf of the Contractor was then Vice President of said corporation; that said Amendment was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

William F. Rueger

(Corporate Seal)

This document sts of < pages.
No. 2 of 11 copies. Series A.

CONTRACT No. AT(30-1)-1293.

AMENDMENT No. 3

CONTRACTOR AND ADDRESS: SYLVANIA ELECTRIC PRODUCTS, INC.
1740 Broadway,
New York, New York.

AMENDMENT FOR: EXTENSION OF TERM TO NOVEMBER 30, 1953.

+121

CONTRACT No. AT(30-[illegible]93, Amend[illegible]t No. 3.

THIS AMENDMENT, entered into the 29th day of October, 1953, by and between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to amend said Contract, as heretofore amended, as hereinafter provided; and

WHEREAS, this Amendment is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore amended, is hereby amended further in the following respects:

1. In paragraph 1 of Article I, "October 31, 1953" is changed to "November 30, 1953".

2. In paragraph 1 of Article III, "October 31, 1953" is changed to "November 30, 1953".

3. In 1a of Article IV, delete "Amendments Nos. 1 and 2", appearing in two places, and substitute therefor "Amendments Nos. 1, 2, and 3".

4. In 6b of Article IV, delete "Amendments Nos. 1 and 2", wherever it appears, and substitute therefor "Amendments Nos. 1, 2, and 3".

IN WITNESS WHEREOF, the parties have executed this Amendment the day and year first above written.

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

Frederick M. Belmore

FREDERICK M. BELMORE
Contracting Officer

Witnesses to execution by the Contractor:

Jeanie K. Brouthers
30-14 153 St. - Flushing, N.Y.

Beatrice E. Kelmus
199-04 24 Rd. Bayside

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. R. Angstadt

Title: General Manager, Atomic Energy Division

I, William F. Rueger, certify that I am the Assistant Secretary of the corporation named as Contractor herein; that W. C. Kingdon who signed this Amendment on behalf of the Contractor was then Gen Mgr. Atomic Energy Division of said corporation; that said Amendment was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

William F. Rueger

(Corporate Seal)

This document consists of 3 pages.
No. 2 of // copies. Series A.

CONTRACT No. AT(30-1)-1293.

AMENDMENT No. 4

CONTRACTOR AND ADDRESS: SYLVANIA ELECTRIC PRODUCTS, INC.,
1740 Broadway,
New York, New York.

AMENDMENT FOR: EXTENSION OF TERM TO DECEMBER 31, 1953.

E 152

CONTRACT No. AT(30-1)-1293, Amendment No. 4.

THIS AMENDMENT, entered into the 25th day of November, 1953, by and between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to amend said Contract, as heretofore amended, as hereinafter provided; and

WHEREAS, this Amendment is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore amended, is hereby amended further in the following respects:

1. In paragraph 1 of Article I, "November 30, 1953" is changed to "December 31, 1953".

2. In paragraph 1 of Article III, "November 30, 1953" is changed to "December 31, 1953".

3. In 1a of Article IV, delete "Amendments Nos. 1, 2, and 3", appearing in two places, and substitute therefor "Amendments Nos. 1, 2, 3, and 4"

4. In 6b of Article IV, delete "Amendments Nos. 1, 2, and 3", wherever it appears, and substitute therefor "Amendments Nos. 1, 2, 3, and 4".

IN WITNESS WHEREOF, the parties have executed this Amendment the day and year first above written.

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

Frederick M. Belmore

FREDERICK M. BELMORE
Contracting Officer

Witnesses to execution by the Contractor:

Jeanne K. Brouthers
30-14 153 St - Flushing, N.Y.

Beatrice E. Kalmus
199-04 24 Rd. Bayside N.Y.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: O E Kissgater

Title: General Manager, Atomic Energy Division

I, William F. Krueger, certify that I am the Assistant Secretary of the corporation named as Contractor herein; that W. C. Kingston who signed this Amendment on behalf of the Contractor was then Gen. Mgr. Atomic Energy Div. of said corporation; that said Amendment was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

William F. Krueger

(Corporate Seal)

[redacted]

Responsive Record 26

This document consists of 1 pages.
No. 1 of 7 copies. Series A.

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☒ ADC ☐ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: CG-NMP-2 9/20

SR 84

AMENDMENT No. 1 TO APPENDIX "B",
DATED: DECEMBER 7, 1953,
TO CONTRACT No. AT(30-1)-1293
DATED DECEMBER 10, 1951.

This Amendment No. 1 describes the scope of work under Contract No. AT(30-1)-1293 for the period July 1, 1953 through June 30, 1954. Said scope of work follows:

A. Produce the balance of 5,000 slugs for Hanford evaluation (about 1,000 slugs were produced for this purpose during fiscal year 1953).

✓ B. Demonstrate that the powder metallurgy process can be controlled by improving and sustaining the yield to over 95% with the existing facilities.

✓ C. Determine the amount and origin of nitrogen in each step of the process and investigate the means of maintaining nitrogen content of finished slugs within specifications.

✓ D. Accumulate, correlate and report data gained in performing work described in Items A, B and C to establish optimum conditions for producing powder metallurgy slugs with a high yield.

✓ E. On the basis of satisfactory performance of Items A to D, inclusive, at Hicksville and successful experimental work at Bayside, investigate the means and techniques necessary to produce other shapes by powder metallurgy process.

Accepted: W. R. Ringler

SYLVANIA ELECTRIC PRODUCTS, INC.

By: Date: January 13, 1954

Title: General Manager
Atomic Energy Division

[redacted]

[redacted]

SROO Response to
FOIA (SR) - 04-028

Those Listed Below October 22, 1962

R. A. McFeely, Chief of Contracts
Contracts and Procurement Branch
Administrative Division
APPENDIX "A" - CONTRACT AT(30-1)-1293 WITH SYLVANIA ELECTRIC PRODUCTS INC.

AC:PS

Attached for your information and file is a copy of Appendix "A" Contract AT(30-1)-1293 with Sylvania Electric Products Inc.

Attachment:
As stated

Addressees:
E&F Division (4 cys.)
Engineering Division (1 cy.)
Security Division (1 cy.)
T&P Division (2 cys.)
Office of Chief Counsel (1 cy.)
Patent Branch, OCC (1 cy.)
Audit Branch, E&F (1 cy.)
Procurement, C&P Branch, Adm. Div. (1 cy.)

USDOE 017239

This document consists of 3 pages.
No. 9 of 16 copies. Series A.

MODIFICATION No. 6
SUPPLEMENTAL AGREEMENT TO
CONTRACT No. AT(30-1)-1293

MODIFICATION No. 6

CONTRACTOR AND ADDRESS:	SYLVANIA ELECTRIC PRODUCTS, INC., 1740 Broadway, New York, New York.
SUPPLEMENTAL AGREEMENT TO:	COVER CONTRACTOR COSTS FOR PROCUREMENT AND ACCOUNTING SERVICES AND FOR MANAGEMENT SERVICES AT BAYSIDE.

MODIFICATION No. 6
SUPPLEMENTAL AGREEMENT TO
CONTRACT No. AT(30-1)-1293

THIS SUPPLEMENTAL AGREEMENT, entered into the 17th day of March, 1954, by and between THE UNITED STATESOF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to modify said Contract, as heretofore modified, as hereinafter provided; and

WHEREAS, this Supplemental Agreement is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore modified, is hereby modified further in the following respect:

Effective December 10, 1951, the present text of subdivision s. of paragraph 3 of Article IV is redesignated subdivision t. and the following new subdivision s. is added to said paragraph 3:

"s. Sums which the parties mutually agree in writing represent the Contractor's cost for procurement and accounting services fairly allocable to the work under this Contract with respect to periods subsequent to June 30, 1952, and sums which the parties mutually agree in writing represent the Contractor's cost for management services at Bayside, Long Island fairly allocable to the work under this Contract."

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement the day and year first above written.

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSI(

Frederick M. Bellmore

FREDERICK M. [illegible]
Contracting [illegible]

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W E Kingston

Title: W. E. Kingston
General Manager
Atomic Energy Division

Witnesses to execution by the Contractor:

Jeanne L. Brouthers
30-14 153 St.
Flushing, N.Y.

Beatrice E. Kalmus
199-04 24 Rd. Bayside

I, William F. Rueger, certify that I am the Assistant Secretary of the corporation named as Contractor herein; that W. E. Lingston who signed this Supplemental Agreement on behalf of the Contractor was then General Manager, Atomic Energy of said corporation; that said Supplemental Agreement was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

William F. Rueger

(Corporate Seal)

This document consists of 4 pages.
No. 2 of 16 copies. Series A.

MODIFICATION No. 7
SUPPLEMENTAL AGREEMENT TO
CONTRACT No. AT(30-1)-1293

MODIFICATION No. 7

CONTRACTOR AND ADDRESS:	SYLVANIA ELECTRIC PRODUCTS, INC., P. O. Box 59, Bayside, New York.
SUPPLEMENTAL AGREEMENT TO:	EXTEND THE TERM TO JULY 31, 1954.

Increase cost 99,500

CONTRACT No. AT(30-1)-1293, Mod. No. 7.

THIS SUPPLEMENTAL AGREEMENT, entered into the 8th day of June, 1954, by and between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to modify said Contract, as heretofore modified, as hereinafter provided; and

WHEREAS, this Supplemental Agreement is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore modified, is hereby modified further in the following respects:

1. The following new subdivision c is added to paragraph 1 of Article I:

> "c. Promptly upon the execution of Modification No. 7 to this Contract, the Contractor shall take all practical steps toward conclusion of its performance of the work provided for in subdivision b above and toward commencement of the work referred to in the sentence next following. Beginning as soon as is reasonably possible, and in any event by July 1, 1954, and continuing until the end of July, 1954, the Contractor shall conduct under this Contract only such studies, experimental investigations and other research and development work as is authorized in writing by the Commission; said writings may or may not be in the form of formal modifications to this Contract."

2. In paragraph 1 of Article III, "June 30, 1954" is changed to "July 31, 1954".

3. In subdivision a of paragraph 1 of Article IV, the punctuation mark at the end of the present text is deleted and the following is added immediately thereafter: ", and such fixed fee with respect to the additional work and services provided for in subdivision c of paragraph 1 of Article I as the Contractor and the Commission mutually agree upon in writing prior to July 10, 1954, or, failing such agreement, as is determined pursuant to Article XIV."

4. In subdivision b(1) of paragraph 6 of Article IV, "One Million Ninety-Nine Thousand Five Hundred Dollars ($1,099,500.00)" is substituted for "One Million Dollars ($1,000,000.00)", and "subdivisions b and c of paragraph 1 of Article I" is substituted for "subdivision b of paragraph 1 of Article I."

5. Article XXXIX is deleted and the following is substituted:

"ARTICLE XXXIX - EXAMINATION OF RECORDS

1. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to this Contract until the expiration of three (3) years after final payment under this Contract unless the Commission authorizes their prior disposition.

2. The Contractor further agrees to include in all subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract until the expiration of three (3) years after final payment under the subcontract. The term subcontract as used herein means any purchase order or agreement to perform all or any part of the work or to make or furnish any materials required for the performance of this Contract, but does not include (i) purchase orders not exceeding One Thousand Dollars ($1,000.00), (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public, or (iii) subcontracts or purchase orders for general inventory items not specifically identifiable with the work under this Contract.

3. Nothing in this Contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this Contract."

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement the day and year first above written.

Witnesses to execution by the Contractor:

Jeanne K. Brouthers
30-14 153 St. - Flushing, N.Y.

Beatrice E. Kalmus
199-04 24 Rd, Bayside, N.Y.

THE UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

U. C. CLARKE
Contracting Officer

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. E. Kingston

Title: General Manager, Atomic Energy Divisi

I, William F. Rieger Jr. certify that I am the Assistant Secretary of the corporation named as Contractor herein; that W. O. Kingston who signed this Supplemental Agreement on behalf of the Contractor was then General Manager, Atomic Energy Division of said corporation; that said Supplemental Agreement was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

William F. Rieger

(Corporate Seal)

Modification No. 8
Supplemental Agreement to
Contract No. AT(30-1)-1293

Modification No. 8

CONTRACTOR:	Sylvania Electric Products, Inc. Bayside, Long Island, New York
SUPPLEMENTAL AGREEMENT TO:	Increase Scope of Work to include Canning of Uranium Alloy Slugs for Savannah River Operations Office and to extend term to May 31, 1955

Recapitulation

Previous Direct Cost	$ 4,199,350
This Modification	562,463
New Direct Cost	4,761,813
Previous Fixed Fee	172,150
This Modification	37,190
New Fixed Fee	209,340
TOTAL OBLIGATION	$ 4,971,153

Contract No. AT(30-1)-1293
Modification No. 8

This supplemental agreement, entered into as of the first day of July, 1954, by and between the United States of America (hereinafter referred to as the "Government"), as represented by the United States Atomic Energy Commission (hereinafter referred to as the "Commission"), and Sylvania Electric Products, Inc. (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to modify said Contract, as heretofore modified, as hereinafter provided; and

WHEREAS, this supplemental agreement is authorized by law, including the Atomic Energy Act of 1946, as amended;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore modified, is hereby modified further in the following respects:

1. the following new subdivision d is added to paragraph 1 of Article I:

"d. (i) Promptly upon the execution of Modification No. 8 to this contract, the Contractor shall take all practical steps toward conclusion of the work as authorized by subdivision c above and toward the commencement of the work referred to next following. Beginning as soon as reasonably possible and continuing until the work herein described is completed, the Contractor, in accordance with the letter of award, dated July 6, 1954, from C. A. Nelson, Manager, Savannah River Operations Office, United States Atomic Energy Commission, addressed to E. S. Norris, Manager of Control Department of the Contractor, as herein modified, shall undertake the procurement and fabrication of the necessary equipment, the construction of security fences, alarm systems and vaults, and the canning of uranium alloy slugs, all in accordance with the schedule applicable to Proposal C contained in the Contractor's letter dated June 17, 1954, addressed to C. A. Nelson, Manager, Savannah River Operations Office, United States Atomic Energy Commission, and signed by E. S. Norris on behalf of the Contractor, using the pressure bonding technique developed at the Hicksville, Long Island, New York, Plant of the Contractor and improved modifications which may be realized in the course of the work, including the manufacturing, testing, inspection and delivery of the slugs, canned in aluminum in accordance with the specifications referred to in the aforementioned letter from C. A. Nelson, dated July 6, 1954, or as modified by mutual agreement. The aforementioned letters, addressed respectively to E. S. Norris and C. A. Nelson, are made a part hereof by reference.

"(ii) The necessary aluminum cans, caps and alloy slugs will be furnished to the Contractor by the Commission without cost to the Contractor."

2. In paragraph 1 of Article III, "July 31, 1954," is changed to "May 31, 1955".

3. Subdivision a of paragraph 1 of Article IV is changed to read as follows:

"a. A fixed fee of one hundred seventy-two thousand one hundred fifty dollars ($172,150) with respect to all of the work and services provided for prior to the work authorized in modification Nos. 7 and 8, and a fixed fee of thirty-seven thousand one hundred ninety dollars ($37,190) with respect to all of the work and services provided for in subdivisions c and d of paragraph 1 of Article I, as authorized in modification Nos. 7 and 8."

4. Effective July 1, 1954, subdivision s of paragraph 3 of Article IV is changed to read as follows:

"s. A provisional payment of $7,000 per month, beginning with the month of July 1954, for procurement, administrative, and accounting services (hereafter referred to as Division Prorate) fairly allocable to the work under this contract. The provisional payment shall be subject to adjustment to actual cost determined at the completion of the scope of work covered under Article I, or June 30, 1955, whichever shall occur earlier. The actual cost of Division Prorate shall be allocated to this contract in the following manner:

"(i) The total cost of work performed during the period of this contract (or the 12-month period ending June 30, 1955, whichever applies) divided by the total cost of all work performed by the Contractor's Atomic Energy Division for the same period equals the percentage this contract work bears to all Atomic Energy Division work.

"(ii) The percentage determined in (i) above times the actual cost of Division Prorate for the period equals the Division Prorate cost allocable to this contract.

"If the provisional payments exceed the actual cost of Division Prorate as determined above, the excess of such payments over actual cost shall be refunded to the Commission. If actual cost exceeds the provisional payments, an additional payment for such excess shall be made to the Contractor."

5. Effective July 1, 1954, delete subdivision r of paragraph 4 of Article IV and insert the following new subdivisions:

"r. Bad debts, including expenses of collection, and provision for bad debts arising out of the Contractor's own business.

"s. Bonuses, and similar compensation under any other name, which are not consistent with a practice so established as to constitute a condition of employment.

"t. General research, except as specifically provided for in this contract.

"u. Legal, accounting, and consulting services, and related expenses incurred in connection with organization or reorganization, prosecution of patent infringement litigation, defense of anti-trust suits, and the prosecution of claims against the United States.

"v. Depreciation or depletion in excess of that based on expected useful life and cost of acquisition of the related fixed assets less estimated salvage value at the end of the expected useful life. Amortization or depreciation of unrealized appreciation of values of assets or of assets fully amortized or depreciated on the Contractor's books of account is unallowable. In respect to emergency facilities covered by Certificates of Necessity, acceleration of depreciation in excess of that based on their reasonable economic life is unallowable.

"w. Maintenance, depreciation, and other costs incidental to the Contractor's excess facilities (including machinery and equipment) other than reasonable standby facilities.

"x. Premiums for insurance on the lives of directors, officers, proprietors, or other persons, where the Contractor is the beneficiary directly or indirectly.

"y. Selling and distribution activities and related expenses not applicable to the contract products or services.

"z. Taxes and expenses in connection with financing, refinancing, or refunding operations, including the listing of securities on exchanges."

6. Effective July 1, 1954, subdivision a of paragraph 5 of Article IV is changed to read as follows:

"a. Payment of the Fixed Fee. Payment of ninety per cent (90%) of the fixed fee of one hundred seventy-two thousand one hundred fifty dollars ($172,150) set forth in subdivision a of paragraph 1 of this Article shall be made by the Government monthly in amounts based on the percentage

of the completion of the work hereunder, as determined from estimates submitted to and approved by the Commission. Payment of the fixed fee of thirty-seven thousand one hundred ninety dollars ($37,190) set forth in subdivision a of paragraph 1 of this Article shall be made in monthly installments as follows: ninety per cent (90%) of the monthly fixed fee (determined as one-eleventh of the fixed fee of thirty-seven thousand one hundred ninety dollars ($37,190)) shall become due and payable on the last day of each month beginning July 1954.

7. Effective July 1, 1954, change subdivision b of paragraph 5 of Article IV to read as follows:

"b. (i) Monthly Payments. The Government will make reimbursement payments for the allowable costs set forth in paragraph 3 of this Article monthly, or at the discretion of the Commission, at more frequent intervals.

"(ii) Review and Approval of Costs Incurred. The Contractor shall prepare and submit annually, or for such other periods designated by the Contracting Officer, a certified voucher for the total of net expenditures accrued for the period covered by the voucher, and the Commission, after audit and appropriate adjustment, will approve such voucher. This approval by the Commission will constitute an acknowledgment by the Commission that the net costs incurred were allowable under the contract and that they had been recorded in the accounts maintained by the Contractor in accordance with Commission accounting policies, but will not relieve the Contractor of responsibility for the Commission's assets in its care, for appropriate subsequent adjustments, or for errors later becoming known to the Commission."

8. In subdivision b(1) of paragraph 6 of Article IV "one million six hundred ninety-nine thousand one hundred fifty-three dollars ($1,699,153)" is substituted for "one million ninety-nine thousand five hundred dollars ($1,099,500)" and "subdivisions b, c and d" are substituted for "subdivisions b and c."

9. Article XIV of said Contract is deleted and a new Article XIV to read as follows is substituted therefor:

"ARTICLE XIV - DISPUTES"

"Except as otherwise specifically provided in this contract, any dispute concerning a question of fact arising under or in connection with this contract shall be submitted in writing to and shall be decided by the Manager of the Commission's Savannah River Operations Office, or his duly authorized representative, who shall reduce his decision to writing and mail a copy of said decision to the Contractor; said decision shall be final and conclusive on the parties hereto, subject to the right of the Contractor to appeal, as provided for in the sentence next following. Within thirty days from the mailing of said decision, the Contractor may appeal, in writing,

to the Commission, whose written decision thereon, or that of its duly authorized representative, representatives, or Board (but not including the Commission representative mentioned in the first sentence of this Article), duly authorized to determine such an appeal, shall be final and conclusive on the parties hereto, unless such decision is determined by a court of competent jurisdiction to have been fraudulent, capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith, or not to be supported by substantial evidence. In the meantime, the Contractor shall diligently proceed with the work unless otherwise directed by the Contracting Officer."

10. The words "Article XXXIX" as they presently appear in this contract and in paragraph 5 of Modification No. 7 of this contract are deleted and the words "Article XXXIV" are substituted therefor.

11. Immediately following Article XXXVIII add a new Article XXXIX to read as follows:

"ARTICLE XXXIX - INSPECTION AND ACCEPTANCE"

"Final inspection and acceptance by the Commission of all uranium alloy slugs, canned by the Contractor pursuant to subdivision d of paragraph 1 of Article I, shall be performed by E. I. du Pont de Nemours and Company as the Commission's authorized representative, at the Commission's Savannah River Plant."

12. Immediately following Article XXXIX add a new Article XL to read as follows:

"ARTICLE XL - CHANGES"

"(a) Changes and Adjustment of Fee. The Contracting Officer may at any time and without notice to the sureties, if any, issue written direction requiring additions to the work covered by this contract or directing the omission of or variations in such work. If any such direction results in a material increase or decrease in the scope of the work described in Article I, paragraph 1, subdivision c and d, an equitable adjustment of the fixed fee shall be agreed upon by the parties and the contract shall be modified accordingly in writing. Any claim by the Contractor for an adjustment under this Article must be asserted in writing within thirty (30) days from the date of receipt by the Contractor of the notification of change unless the Contracting Officer grants a further period of time. A failure to agree on an equitable adjustment under this Article shall be deemed to be a dispute within the meaning of the Article entitled "Disputes."

"(b) Work to Continue. Nothing contained in this Article shall excuse the Contractor from proceeding with the prosecution of the work in accordance with the requirements of any direction hereunder."

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement the day and year first above written:

UNITED STATES OF AMERICA

BY _____

Manager, Savannah River Operations Office
(Title)

United States Atomic Energy Commission

Witnesses as to signature of Contractor

Janice K. Brouthers
30-14 153 St.
Flushing, N.Y.
(Address)

Beatrice E. Kalmus
199-04 24 Road
Bayside 57, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

By _____

General Manager, Atomic Energy Division
(Title)

I, J. M. Porter, certify that I am the Asst. Secretary of the corporation named as Contractor herein; that W. E. Kingston who signed this Supplemental Agreement on behalf of the Contractor was then Gen Mgr. Atomic Energy Div of said corporation; that said Supplemental Agreement was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and seal of said corporation.

(Corporate Seal)

J. M. Porter

Modification No. 9
Supplemental Agreement to
Contract No. AT(30-1)-1293

Modification No. 9

CONTRACTOR: Sylvania Electric Products, Inc.
Bayside, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Increase the scope of work, extend the term of the contract, amend the fee payment and provide for patent and general indemnity.

	Total	Portion Applicable to Savannah River Operations Office
Previous Direct Cost	$ 4,761,813	$ 661,963
This Modification	1,450,795	1,450,795
New Direct Cost	$ 6,212,608	$ 2,112,758
Previous Fixed Fee	$ 209,340	$ 37,190
This Modification	84,028	84,028
New Fixed Fee	$ 293,368	$ 121,218
Total	$ 6,505,976	$ 2,233,976
Total Obligated February 2, 1955	$ 5,909,700	$ 1,637,700

SROO Response to
FOIA (SR) - 04-028

Modification No. 9
Supplemental Agreement to
Contract No. AT(30-1)-1293

THIS SUPPLEMENTAL AGREEMENT, effective as of 12:01 o'clock A.M., November 15, 1954, except as otherwise specifically expressed herein, by and between the United States of America (hereinafter referred to as the Government), as represented by the United States Atomic Energy Commission (hereinafter referred to as the Commission), and Sylvania Electric Products, Inc. (hereinafter referred to as the Contractor);

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to modify said Contract, as heretofore modified, as hereinafter provided; and

WHEREAS, this supplemental agreement is authorized by the Atomic Energy Act of 1954;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore modified, is hereby modified further in the following respects:

1. The following new subdivision e is added to paragraph 1 of Article I - SCOPE OF THE WORK:

> "e. Effective November 15, 1954, the Contractor shall proceed with the manufacture, testing, inspection and delivery of metal and alloy slugs in accordance with the Contractor's proposal #2 as contained in his letters of November 8 and November 17, 1954, to Hood Worthington, E. I. du Pont de Nemours & Company, Inc. and as further modified by the Contractor's proposal DCF #5527 dated January 11, 1955, accepted by the Commission's letter dated January 14, 1955, from Curtis A. Nelson to E. S. Norris. The aforementioned proposals and letters are made a part hereof by reference."

2. In paragraph 1 of Article III - TERM, EXPIRATION AND TERMINATION, "May 31, 1955" is changed to "June 30, 1956".

3. Paragraph 1 of Article IV - CONSIDERATION is changed to read as follows:

> "a. A fixed fee of one hundred seventy-two thousand one hundred fifty dollars ($172,150) with respect to all of the work and services provided for in subdivisions a and b of paragraph 1 of Article I as authorized in Modification No. 5.

b. A fixed fee of one hundred twenty-one thousand two hundred eighteen dollars ($121,218) with respect to all of the work and services provided for in subdivisions c, d and e of paragraph 1 of Article I as authorized in Modification Nos. 7, 8 and 9.

c. Payment for allowable costs as hereinafter provided."

4. Subdivision t of paragraph 3 of Article IV - CONSIDERATION is renumbered subdivision u, and the following new subdivision t is added:

"t. All costs involved in the identification, segregation, preparation, and microfilming or dispersal of records determined to be vital under the program outlined in AEC Manual Chapter 0236."

5. Subdivision a of paragraph 5 of Article IV - CONSIDERATION is changed to read as follows:

"a. Payment of the Fixed Fees.

(i) Payment of 90% of the fixed fee of $172,150 set forth in subdivision a of paragraph 1 of this Article IV shall be made by the Government monthly in amounts based on the percentage of the completion of the work hereunder, as determined from estimates submitted to and approved by the Commission.

(ii) Payment of the fixed fee of $121,218 set forth in subdivision b of paragraph 1 of this Article IV shall be made in monthly installments as follows:

(a) 90% of a monthly fixed fee of $3,381 (determined as one-eleventh of $37,190) shall become due and payable on the last day of each month for the 6½ month period beginning July 1954 and ending January 14, 1955.

(b) 90% of a monthly fixed fee of $5,671 (determined by prorating $99,241 over 17½ months) shall become due and payable on the last day of each month for the 17½ month period beginning January 15, 1955 and ending June 1956."

6. Article IV - CONSIDERATION paragraph 5 c is amended by deleting the period at the end of the paragraph and adding the following:

"; provided, however, that the portion of the fixed fee of $172,150 withheld for work performed under subparagraphs a and b of paragraph 1 of Article I shall be paid to the Contractor upon completion of the work applicable to such fee."

7. Article IV - CONSIDERATION paragraph 6 b (1) is changed to read as follows:

"b (1) The Commission has obligated for this Contract, from obligational authority available to it, the following amounts which may be increased from time to time by the Commission in its discretion by written notice:

(i) $4,272,000 with respect to the work provided for in subdivisions a and b of paragraph 1 of Article I.

(ii) $1,637,700 with respect to the work provided for in subdivisions c, d and e of paragraph 1 of Article I."

8. The last line of Article IV - CONSIDERATION paragraph 6 b (4) is amended by substituting "subdivision (2)" for "subdivision d".

9. Subdivision (7) of paragraph 6 b of Article IV - CONSIDERATION is changed to read as follows:

"Except as set forth in Article VII, paragraph 6, and Article XLI, the liability of the Government shall be limited to the Commission's obligation specified in subdivision (1) above, as may be increased by the Commission by notice to the Contractor in writing."

10. The following changes are made in Article VII - PATENTS:

a. Paragraph 1, line 12, substitute "special nuclear" for "fissionable".

b. Paragraph 2, line 2, substitute "Atomic Energy Acts of 1946 and 1954" for "Atomic Energy Act of 1946".

c. Paragraph 5, line 9, substitute "special nuclear" for "fissionable".

d. Paragraph 5, line 10, substitute "special nuclear" for "fissionable".

e. The following new paragraph is added:

"6. (a) Except as otherwise stipulated in writing by the Commission, or as provided in paragraphs (b) and (e) below, the Contractor agrees to indemnify the Government, its officers, agents, servants and employees against liability (including but not limited to reasonable costs and expenses incurred) arising from the infringement or the alleged infringement of any Letters Patent (not including liability arising pursuant to Section 183, Title 35 (1952) U. S. Code, prior to issuance of Letters Patent)

occurring in the performance of this contract, or arising by reason of sale to, or purchase by, or disposal by, or for the account of the Government of items manufactured or supplied under this contract.

(b.) With respect to infringement or alleged infringement necessarily resulting from the Contractor's compliance with written specifications or provisions given by the Commission for components which are not standard commercial products of the Contractor or resulting from specific written instructions given by the Commission for the purpose of directing a manner of performance of the contract not normally utilized by the Contractor, the Government agrees to hold the Contractor harmless from liability arising from such infringement or alleged infringement of any United States Letters Patent in view of the following facts:

(1) The Contractor has not made an investigation as to the possibility of patent infringement,

(2) The Government and the Contractor desire to avoid the delay incident to a patent investigation, and

(3) The Contractor has not included in its price any provision for the settlement of possible patent claims;

provided, however, that with respect to procurements undertaken on or after the date of actual execution of this Modification, except as otherwise directed by the Commission, the Contractor will secure indemnification from suppliers or vendors of standard commercial products. The Contractor, to the extent that it can extend such aforesaid indemnification from suppliers or vendors, agrees to so extend this indemnification to the Government.

(c) Except as otherwise directed by the Commission in writing, the Contractor, with respect to claims and actions involving liabilities against which it is held harmless by the Commission, shall give prompt notice in writing to the Commission of any such claims and actions of which it has notice and shall furnish promptly to the Commission copies of all pertinent papers received by the Contractor with respect to any such action or claim. If required by the Commission, the Contractor shall with respect to such actions or claims (at the Government's expense, by proper arrangement) assist the Government in the settlement or defense of such action or claim and shall furnish such evidence in its possession as may be required by the Government in the settlement or defense of such action or claim.

(d) The obligation of the Commission to the Contractor on claims or actions involving liability against which the Commission

is indemnified by the Contractor under the terms of this contract shall be identical with the obligations of the Contractor to the Commission under subparagraph (c) above with respect to claims or actions involving liability against which the Contractor is held harmless by the Commission. In such situations, the Contractor shall be given full opportunity to participate in the defense against such claims and actions.

(e) However, anything to the contrary notwithstanding, the Contractor assumes no liability consequential or otherwise for, and the Government agrees to hold the Contractor harmless against liability (including but not limited to reasonable costs and expenses incurred) for infringement or alleged infringement by reason of the use of the completed product in combination with other items or materials or in the operation of any process."

11. Article XIII is deleted and the following is substituted:

"ARTICLE XIII - DISCLOSURE OF INFORMATION

1. Contractor's Duty to Safeguard Restricted Data. In the performance of the work under this contract the Contractor shall, in accordance with the Commission's security regulations and requirements, be responsible for safeguarding Restricted Data and other classified matter and protecting against sabotage, espionage, loss and theft, the classified documents, materials, equipment, processes, etc., as well as such other material of high intrinsic or strategic value as may be in the Contractor's possession in connection with performance of work under the contract. Except as otherwise expressly provided in the specifications the Contractor shall upon completion or termination of this contract transmit to the Commission any classified matter in the possession of the Contractor or any person under the Contractor's control in connection with performance of this contract.

2. Regulations. The Contractor agrees to conform to all security regulations and requirements of the Commission.

3. Definition of Restricted Data. The term "Restricted Data" as used in this Article, means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material, or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data catagory pursuant to Section 142 of the Atomic Energy Act of 1954.

4. Security Clearance of Personnel. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1954, the Contractor shall not permit any individual to have access to Restricted Data until the designated investigating agency shall have made an investigation and report to the Commission on the

character, associations, and loyalty of such individual and the Commission shall have determined that permitting such person to have access to Restricted Data will not endanger the common defense or security. As used in this paragraph the term 'designated investigating agency' means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1954.

5. Criminal Liability. It is understood that disclosure of information relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any Restricted Data or any top secret, secret, or confidential matter that may come to the Contractor or any person under the Contractor's control in connection with work under this contract, may subject the Contractor, his agents, employees, and subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, 68 Stat. 919), (See also Executive Order 10104 of February 1, 1950, 15 F. R. 597.)

6. Subcontracts and Purchase Orders. Except as otherwise authorized in writing by the Contracting Officer, the Contractor shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this contract.

12. Article XXI is deleted and the following is substituted:

"ARTICLE XXI - NONDISCRIMINATION IN EMPLOYMENT

In connection with the performance of work under this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of the nondiscrimination clause. The Contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

13. ARTICLE XXVIII - DOMESTIC ARTICLES is deleted and the following is substituted:

"ARTICLE XXVIII - BUY AMERICAN ACT

The Contractor agrees that there will be delivered under this contract only such unmanufactured articles, materials and supplies

(which term 'tic[illegible], aterials and supplies" is h[illegible]after referred to in this clause as "supplies") as have been mined or produced in the United States, and only such manufactured supplies as have been manufactured in the United States substantially all from supplies mined, produced, or manufactured, as the case may be, in the United States. The foregoing provisions shall not apply (i) with respect to supplies exempted by the Commission from the application of the Buy American Act (41 U.S.C. 10a-d), (ii) with respect to supplies for use outside the United States, or (iii) with respect to the supplies to be delivered under this contract which are of a class or kind determined by the Commission not to be mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality, or (iv) with respect to such supplies, from which the supplies to be delivered under this contract are manufactured, as are of a class or kind determined by the Commission not to be mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality, provided that this exception (iv) shall not permit delivery of supplies manufactured outside the United States if such supplies are manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality."

14. Effective July 1, 1954, immediately following Article XL add a new Article XLI to read as follows:

"ARTICLE XLI - INDEMNITY

Notwithstanding any other provisions of this contract, it is agreed that the Contractor shall not be liable for, and the Government shall, subject to the availability of funds, indemnify and hold the Contractor harmless against, any and all loss or damage (including but not limited to personal injury, disease or death of persons, or damage to property), and any and all expense in connection therewith or in connection with alleged loss or damage (including but not limited to the expense of litigation), arising out of, based on, or caused by radioactive, toxic, explosive or other hazardous properties of source, special nuclear, or radioactive materials, or products or by-products therefrom, which the Contractor may use, possess or otherwise handle under or in connection with this contract, whether or not any director, officer, employee, or agent of the company is responsible therefor; provided, however, that this obligation of the Government shall apply only in those instances where loss or damage, and expense in connection therewith or in connection with alleged loss or damage, is not due to or caused by gross negligence or bad faith on the part of any officer of the Contractor, or on the part of any representative or employee of the Contractor exercising the powers, responsibilities and duties normally exercised by the plant manager having direction or supervision of the work

by the due to

undertaken by Contractor hereunder, nor [illegible], nor caused by wilful or grossly negligent failure to follow procedures and standards approved and transmitted to the Contractor by the Commission for the use, possession or other handling of source, special nuclear, or radioactive materials, or products or by-products therefrom, on the part of any of the aforedescribed Contractor personnel. The obligations of the Government under this Article shall apply only to the extent that the Contractor is not covered and made whole by insurance; provided, however, that said obligations shall not apply to any loss or damage, or any expense in connection therewith or in connection with alleged loss or damage, if, and to the extent that, the Contractor is covered by insurance with regard to such loss or damage, or such expense in connection therewith or in connection with alleged loss or damage, but is not so made whole by said insurance because of some intentional misrepresentation by the Contractor in the obtainment of said insurance or by some breach by the Contractor of the terms and/or conditions of said insurance or of some other act or failure to act on the part of the Contractor as respects said insurance. The Contractor represents that it is presently maintaining, and the extent of the liability of the Government under this Article is limited in any event to the excess over, the following insurance coverage, as such coverage has been reduced by loss or damage, and expense in connection therewith or in connection with alleged loss or damage, prior to the date of loss or damage, or expense in connection therewith or in connection with alleged loss or damage, indemnified against hereunder, where such reduction has not been reinstated in accordance with the Contractor's normal insurance practice, all of the foregoing being on the basis of the aforesaid coverage being embraced in and covered by the allowance provided for in subparagraph j of paragraph 3 of Article IV hereof, to wit:

1. Fire, smoke, storm, and hail insurance, and similar property insurance policies on the Contractor's Hicksville Plant and on all property of the Contractor therein, in dollar amounts sufficient to provide at least actual cash value coverage at all times.

2. Public liability insurance against damages to persons and properties of employees of the Contractor (except for workmen's compensation insurance) or of third persons, at the Contractor's Hicksville Plant or resulting from the Contractor's operations therein, in these dollar amounts: One Million Dollars ($1,000,000) per person and per accident respecting personal injuries and One Million Dollars ($1,000,000) respecting property damage.

3. Insurance against damages to motor vehicles, not Government-owned, used by the Contractor in connection with the work provided for in Article I of this contract and against damages to persons and property resulting from operation by the Contractor and its employees of motor vehicles in connection with said work, in these dollar amounts; One Million Dollars ($1,000,000) per person and per accident respecting personal injuries and One Million Dollars ($1,000,000) respecting property damage.

4. The parties agree that a minimum of the insurance covered by subparagraphs 1, 2 and 3 of this Article XLI was in force prior to this modification to this contract and that the cost thereof is included in the rental charge for the use of the Contractor's Hicksville Plant as provided for in subparagraph j of paragraph 3 of Article IV. The parties further agree that the Contractor shall be reimbursed by the Commission for any additional cost of such insurance over and above the cost of such insurance at the date of this modification, including but not limited to the cost of obtaining additional insurance to reinstate, in accordance with the Contractor's normal insurance practice, the minimum coverages provided for in subparagraphs 1, 2 and 3 above if any of such minimum coverages has been reduced by loss or damage, or expense in connection therewith or in connection with alleged loss or damage, arising from, based on, or caused by work under or in connection with this contract. However, such additional cost as is due to increase in premiums for reasons other than reinstatement of the aforedescribed minimum coverages shall be reimbursed only to the extent that such additional cost is occasioned solely as a result of the use, possession, or other handling of source, special nuclear, or radioactive materials, or products or by-products therefrom, that may be involved in the performance of the work under this modification to this contract.

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement.

Witnesses as to signature of Contractor:

Jeanne K. Brouthers
30-14 153 St. - Flushing, N.Y.
(Address)

Beatrice E. Kalmus
199-04 24 Road Bayside N.Y.
(Address)

UNITED STATES OF AMERICA

By _____

Manager
(Title)

United States Atomic Energy Commission

Date: May 12, 1955

SYLVANIA ELECTRIC PRODUCTS, INC.

By _____

W. E. Kingston
General Manager, Atomic Energy Division
(Title)

Date: April 29, 1955

I, _____, certify that I am the _____ Secretary of the corporation named as Contractor herein; that W. E. Kingston who signed this modification on behalf of the Contractor was then Gen. Mgr. Atomic Energy Div of said corporation; that said modification was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and seal of said corporation.

_____

(Corporate Seal)

SYLVANIA ELECTRIC PRODUCTS, INC.
CONTRACT NO. AT(30-1)-1293
(As amended by Modifications 1 thru 8
and as proposed in Modification No. 9)

ARTICLE I - SCOPE OF THE WORK

Mod. 6

1. a. The Contractor shall conduct studies, experimental investigations and other research and development work for the Government, the details of which research and development work are set forth in the classified Appendix 'B' to this contract. A copy of said Appendix 'B' signed by the Contractor is on file in the offices of the Commission and said Appendix 'B' is incorporated herein by reference and made a part hereof.

Mod. 5

b. Between July 1, 1953, and June 30, 1954 the Contractor shall conduct studies, experimental investigations and other research and development work for the Government, the scope of which is set forth in the classified document captioned 'Amendment No. 1 to Appendix "B"; a copy of said Amendment No. 1 to Appendix 'B' signed by the Contractor is on file in the offices of the Commission and said Amendment is incorporated herein by reference and made a part hereof.

Mod. 7

c. Promptly upon the execution of Modification No. 7 to this Contract, the Contractor shall take all practical steps toward conclusion of its performance of the work provided for in subdivision b above and toward commencement of the work referred to in the sentence next following. Beginning as soon as is reasonably possible, and in any event by July 1, 1954, and continuing until the end of July, 1954, the Contractor shall conduct under this Contract only such studies, experimental investigations and other research and development work as is authorized in writing by the Commission; said writings may or may not be in the form of formal modifications to this Contract.

Mod. 8

d. (i) Promptly upon the execution of Modification No. 8 to this contract, the Contractor shall take all practical steps toward conclusion of the work as authorized by subdivision c above and toward the commencement of the work referred to next following. Beginning as soon as reasonably possible and continuing until the work herein described is completed, the Contractor, in accordance with the letter of award, dated July 6, 1954, from C. A. Nelson, Manager, Savannah River Operations Office, United States Atomic Energy Commission, addressed to E. S. Norris, Manager of Control Department of the Contractor, as herein modified, shall undertake the procurement and fabrication of the necessary equipment, the construction of security fences, alarm systems and vaults, and the canning of uranium alloy slugs, all in accordance with the schedule applicable to Proposal C contained in the Contractor's letter

dated June 17, 1954, addressed to C. A. Nelson, Manager, Savannah River Operations Office, United States Atomic Energy Commission, and signed by E. S. Norris on behalf of the Contractor, using the pressure bonding technique developed at the Hicksville, Long Island, New York, Plant of the Contractor and improved modifications which may be realized in the course of the work, including the manufacturing, testing, inspection and delivery of the slugs, canned in aluminum in accordance with the specifications referred to in the aforementioned letter from C. A. Nelson, dated July 6, 1954, or as modified by mutual agreement. The aforementioned letters, addressed respectively to E. S. Norris and C. A. Nelson, are made a part hereof by reference.

(ii) The necessary aluminum cans, caps and alloy slugs will be furnished to the Contractor by the Commission without cost to the Contractor.

Mod 9 e
10
1-4

2. (See original contract)

ARTICLE II - SITE OF THE WORK

1. (See Original contract) Principal site

2. (See Original contract) alteration at Site

3. (See original contract) Transfer of site

4. Non-Contract Activities

Mod. 5

The Contractor shall not engage in or permit others to engage in activities other than activities in performance of the work of this contract at any principal site of the work referred to in paragraph 1 above, without the approval of the Commission. Notwithstanding any other provision of this Contract, the Commission may, to the extent and upon such terms and conditions as it considers advisable and provides for ~~in~~ said writing, permit the Contractor, by written authorization, to engage in any such principal site in activities other than those incident to the work provided for above in this Contract.

5. (See original contract) Request for approval

ARTICLE III - TERM, EXPIRATION AND TERMINATION

Mod. 8
Mod 10

1. The period of performance of the work under this contract shall commence on December 10, 1951, and, subject to the provisions of this Article, shall end on ~~May 31, 1955~~ Dec 31, 1956 Dec 31, 1951

Mod 11 - 2/28/55

2. (See original contract) Termination

a. (See original contract) For default
b. (See original contract) For the convenience of the Government

c. (See original contract) Notice of Termination

d. (See original contract) Entry by Government after default

e. (See oringial contract) Terms of settlement

3. (See original contract) Expiration

4. (See original contract) Claims in favor of the Government

5. (See original contract) Settlement upon Termination or Expiration

ARTICLE IV - CONSIDERATION

1. Compensation for Contractor's Services.

As full consideration for the performance by the Contractor of the work of this contract (including (i) profit on all items and for all work, and (ii) reimbursement for all costs and expenses listed hereunder as unallowable costs or otherwise not allowable under the terms of this contract) the Contractor shall receive from the Government:

Mod 8 Mod 9 Mod 10

a. A fixed fee of one hundred seventy-two thousand one hundred fifty dollars ($172,150) with respect to all of the work and services provide for prior to the work authorized in modification Nos.7&8, and a fixed fee of thirty-seven thousand one hundred ninety dollars ($37,190) with respect to all of the work and services provided for in subdivisions c and d of paragraph 1 of Article I, as authorized in modification Nos. 7 and 8.

b. Payment for allowable costs as hereinafter provided.

2. (See original contract) Basis for determining allowable costs.

3. (See original contract) Completion allowable costs

a. (See original contract)

b. (See original contract)

c. (See original contract)

d. (See original contract)

e. (See original contract)

f. (See original contract)

g. (See original contract)

h. (See original contract)

i. (See original contract)

j. (See original contract)

k. (See original contract)

l. (See original contract)

m. (See original contract)

n. (See original contract)

o. (See original contract)

p. (See original contract)

q. (See original contract)

r. (See original contract)

Mod 8

Mod 11

s. A provisional payment of $7,000 per month, beginning with the month of July 1954, for procurement, administrative, and accounting services (hereafter referred to as Division Prorate) fairly allocable to the work under this contract. The provisional payment shall be subject to adjustment to actual cost determined at the completion of the scope of work covered under Article I, or June 30, 1955, whichever shall occur earlier. The actual cost of Division Prorate shall be allocated to this contract in the following manner:

(i) The total cost of work performed during the period of this contract (or the 12-month period ending June 30, 1955, whichever applies) divided by the total cost of all work performed by the Contractor's Atomic Energy Division for the same period equals the percentage this contract work bears to all Atomic Energy Division work.

(ii) The percentage determined in (i) above times the actual cost of Division Prorate for the period equals the Division Prorate cost allocable to this contract,

If the provisional payments exceed the actual cost of Division Prorate as determined above, the excess of such payments over actual cost shall be refunded to the Commission. If actual cost exceeds the provisional payments, an additional payment for such excess shall be made to the Contractor.

Mod. 6
Mod 9

t

u t. Items of cost which are not expressly excluded by other provisions of this contract and which are specifically certified in writing by the Commission as allowable costs hereunder.

4. (See original contract) Examples of Unallowable Costs

a. (See original contract)
b. (See original contract)
c. (See original contract)
d. (See original contract)
e. (See original contract)
f. (See original contract)
G. (See original contract)
h. (See original contract)
i. (See original contract)
j. (See original contract)
k. (See original contract)
l. (See original contract)
m. (See original contract)
n. (See original contract)
o. (See original contract)
p. (See original contract)
q. (See original contract)

Mod. 8

r. Bad debts, including expenses of collection, and provision for bad debts arising out of the Contractor's own business.

s. Bonuses, and similar compensation under any other name, which are not consistent with a practice so established as to constitute a condition of employment.

t. General research, except as specifically provided for in this contract.

u. Legal, accounting, and consulting services, and related expenses incurred in connection with organization or reorganization, prosecution of patent infringement litigation, defense of anti-trust suits, and the prosecution of claims against the United States.

v. Depreciation or depletion in excess of that based on expected useful life and cost of acquisition of the related fixed assets less estimated salvage value at the end of the expected useful life. Amortization or depreciation of unrealized appreciation of values of assets or of assets fully amortized or depreciated on the Contractor's books of account is unallowable. In respect to emergency facilities covered by Certificates of Necessity, acceleration of depreciation in excess of that based on their reasonable economic life is unallowable.

w. Maintenance, depreciation, and other costs incidental to the Contractor's excess, facilities (including machinery and equipment) other than reasonable standby facilities.

x. Premiums for insurance on the lives of directors, officers, proprietors, or other persons, where the Contractor is the beneficiary directly or indirectly.

y. Selling and distribution activities and related expenses not applicable to the contract products or services.

z. Taxes and expenses in connection with financing, refinancing, or refunding operations, including the listing of securities on exchanges.

5. Payment:

Mod 8
Mod 9

a. Payment of the Fixed Fee. Payment of ninety per cent (90%) of the fixed fee of one hundred seventy-two thousand one hundred fifty dollars ($172,150) set forth in subdivision a of paragraph 1 of this Article shall be made by the Government monthly in amounts based on the percentage of the completion of the work hereunder, as determined from estimates submitted to and approved by the Commission. Payment of the fixed fee of thirty-seven thousand one hundred ninety dollars ($37,190) set forth in subdivision a of paragraph 1 of this Article shall be made in monthly installments as follows: ninety per cent (90%) of the monthly fixed fee (determined as one-eleventh of the fixed fee of thirty-seven thousand one hundred ninety dollars ($37,190) shall become due and payable on the last day of each month beginning July 1954.

Mod 8

b. (i) Monthly Payments. The Government will make reimbursement payments for the allowable costs set forth in paragrpph 3 of this Article monthly, or at the discretion of the Commission, at more frequent intervals.

Mod 11

(ii) Review and Approval of Costs Incurred. The Contractor shall prepare and submit annually, or for such other periods designated by the Contracting Officer, a certified voucher for the total of net expenditures accrued for the period covered by the voucher, and the Commission, after audit and appropriate adjustment, will approve such voucher. This approval by the Commission will constitute an acknowledgment by the Commission that the net costs incurred were allowable under the contract and that they had been recorded in the accounts maintained by the Contractor in accordance with Commission accounting policies, but will not relieve the Contractor of responsibility for the Commission's assets in its care, for appropriate subsequent adjustment or for errors later becoming known to the Commission.

c. Upon (i) the expiration of the period of performance of the work of the contract, (ii) completion of the work required by paragraph 3 of Article III, TERM, TERMINATION AND EXPIRATION, and (iii) the furnishing by the Contractor of a release in such form and with such exception as may be approved by the Commission of all claims against the Government under or arising out of this contract, accompanied by any accounting for Government-owned property required by Article V, GOVERNMENT PROPERTY, the Government shall promptly pay to the Contractor the unpaid balance of the consideration set forth in paragraph 1 of this Article (including any portion of the fixed fee withheld or not yet paid pursuant to subparagraph a. above) less deductions due under the terms of this contract and any sum required to settle any unsettled claim which the Government may have against the Contractor; provided, however, that the portion of the fixed fee of one hundred seventy-two thousand one hundred fifty dollars ($172,150) withheld for work performed under subparagraphs a and b of paragraph 1 of Article I shall be paid to the Contractor upon completion of the work applicable to such fee.

Mod. 9

d. (See original contract)

e. (See original contract)

f. (See original contract)

g. (See original contract)

6. Limit of Government Liability.

a. Estimates. The (initially) estimated cost of the work under this contract, including the fixed fee set forth in subparagraph~~xxx~~ a of paragraph 1 of this Article, is Three Million Two Hundred Fifty-Three Thousand Eight Hundred Ninety-Seven Dollars ($3,253,897.00). It is understood that neither the Government nor the Contractor guarantees the correctness of the initial estimate of cost or any revision thereof, and that there shall be no adjustment in the amount of the Contractor's fixed fee by reason of any errors in the computation of estimated costs or revised estimated costs, or any difference between any estimated cost or revisions thereof and the actual cost of the work.

Mod. 5, 8, 9

b. ~~Obligation~~ (1) The Commission has obligated for this Contract, from obligational authority available to it, the sum of Three Million Two Hundred Seventy-Two Thousand Dollars ($3,272,000.00) with respect to the ~~x~~ work provided for in subdivision a of paragraph 1 of Article I, and the sum of one million six hundred ninety-nine thousand one hundred fifty-three dollars ($1,699,153) with respect to work provided for in subdivision b, c, and d of paragraph 1 of Article ~~II~~ I. Each of said amounts may be increased by the Commission in its discretion, by written notice, from time to time.

Mod 11

(2) From time to time the Commission may notify the Contractor in writing (which writing may or may not be captioned "Financial Plans") of certain dollar ceilings to be applicable to all or various specified segments of the Contractor's activities under this Contract. Downward adjustments of dollar ceilings previously authorized under this subdivision (2) shall be proptly implemented by the Contractor, provided, however, that neither this provision nor subdivision (4) below shall preclude the Contractor from being compensated for work performed and related to Contractor costs and expenses incurred and commitments made, in good faith, in accordance with the previous notifications under this subdivision (2) and prior to its receipt and subsequent notification effecting the downward adjustments.

(3) The Contractor shall promptly notify the Commission in writing whenever it believes that any then monetary ceiling applicable pursuant to (1) or (2) above is unsufficient, and its notice shall contain its reasons for its belief and its estimate of such insufficiency.

(4) If and when the total amounts paid and then payable under this Contract to the Contractor excluding any fixed fee or fees, but including the Contractor's reasonable estimate of the total reimbursable costs involved in closing out and settling (all of its pertinent outstanding commitments) shall equal any then dollar limitation applicable to subdivision (2) above, the Contractor shall promptly notify the Commission accordingly in writing and shall not incur any further expenses nor perform further in connection with the item or items covered by the ceilings unless it receives a further written notice under said subdivision (2) which increases said ceilings.

(5) If and when the total of amounts paid and then payable under this Contract to the Contractor (including the portion of the pertinent fee or fees reasonably estimated by the Contractor to have been earned to that time, and including the Contractor's reasonable estimate of the total allowable costs involved in closing out and settling all of its pertinent outstanding commitments) shall equal any then dollar limitation applicable pursuant to subdivision (1) above, the Contractor shall promptly notify the Commission accordingly in writing and shall not incur any further expenses nor perform further in connection with the work covered by the ceiling unless it receives the further notice under said subdivision (1) above which increases said ceiling.

(6) Subject to the provision in subdivision (2) above, the total liability of the Government under this Contract shall accord with the pertinent monetary ceilings as established from time to time pursuant to subdivision (2) above.

Mod. 9

(7) Except as set forth in Article ~~XII~~ VII, paragraphs b, and article XIV, the liability of the Government shall be limited to the Commission obligation specified in ~~this subparagraph~~ (1)(a), as may be increased by the Commission by notice to the Contractor in writing.

ARTICLE V - GOVERNMENT PROPERTY

1. (See original contract)
   a. (See original contract) b. (See original contract)
2. (See Original contract)
3. (" " ")
4. (" " ")
5. (" " ")
6. (" " ")
7. (" " ")
8. (" " ")
9. (" " ")
10. (" " ")

a. (See original contract)

b. " " "

c. " " "

d. " " "

ARTICLE VI - OPTION IN THE GOVERNMENT

(See original contract)

Mod. 9

ARTICLE VII - PATENTS

1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of any of the work under this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title and rights under any application or patent that may result; provided, however,

that the Contractor, in any event, shall retain at least a non-exclusive, irrevocable, royalty-free license under said invention, discovery, application, or patent, such license being limited to the manufacture, use, and sale for purposes other than use in the production or utilization of special nuclear material or atomic energy. Subject to the license retained by the Contractor, as provided in this Article, the judgment of the Commission on these matters shall be accepted as final; and the Contractor for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all ~~thakxthe~~ things necessary or proper to carry out the ~~judment~~ judgment of the Commission.

2. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Acts of 1946 and 1954 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of any of the work under this contract.

3. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs 1 and 2 of this Article from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.

4. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions making this Article applicable to the subcontractor and its employees.

5. The Contractor shall grant to the Government, to practice or have practiced, an irrevocable, non-exclusive license in and to any inventions (whether patented or not), secret processes, technical information and techniques of production, research and plant operation, which are directly utilized by the Contractor in the performance of the work of this contract. Such license shall apply to the manufacture, use and disposition of any article and material and to the use of any method or process. Such license shall be limited to governmental purposes related to (i) production of special nuclear material, (ii) utilization of special nuclear material, and (iii) utilization of atomic energy; provided, however, that the foregoing shall not limit the Government's right to sell, or cause to be sold, all products or by-products not used by or for the Government which result or remain from the use of any invention, process, information or technique to which such license applies.

HERE (SEE PAGE 10-a) Para. 6 HERE

ARTICLE VIII - RECORDS AND ACCOUNTS

1. (See original contract)

2. (" " ")

3 3. (" " ")

ARTICLE VII - PATENTS (Continued)

Mod 9 6. The Contractor agrees to indemnify the Government, its officers, agents, servants and employees against liability (including costs and expenses incurred) arising from infringement or alleged infringement of any United States Letters Patent (not including liability, arising pursuant to Section 183, Title 35, (1952) U. S. Code, prior to the issuance of Letters Patent) occurring in the performance of this contract or arising by reason of the use of disposal by or for the account of the Government of items manufactured or supplied under this contract, except, however, infringement necessarily resulting from the Contractor's compliance with written specifications or provisions for other than standard parts or components manufactured or supplied by the Contractor or resulting from specific written instructions given by the Commission for the purpose of directing a manner of performance of the contract not normally utilized by the Contractor, provided that in the event of suit or claim for patent infringement, the Contractor shall be promptly notified and given full opportunity to participate in the defense against such suit or claim.

ARTICLE IX - PROCUREMENT AND SUBCONTRACTS

1. (See orig inal contract)

a. (See original contract)

b. (" " ")

c. (" " ")

2. (See original contract)

3. (" " ")

ARTICLE X - CONDUCT OF THE WORK, INSPECTION AND REPORTS

1. (See original contract)

2. (" " ")

3. (" " ")

4. (" " ")

ARTICLE XI - CONSTRUCTION, ALTERATION OR REPAIR WORK

1. (See original contract)

2. (" " ")

a. (See original contract)

b. (See original contract)

c. (See original contract)

d. (" " ")

e. (" " ")

f. (" " ")

g. (" " ")

ARTICLE XII - EIGHT-HOUR LAW

(See original contract)

ARTICLE XIII - DISCLOSURE OF INFORMATION

Mod. 9

1. Contractor's Duty to Safeguard Restricted Data. In the performance of the work under this contract the Contractor shall, in accordance with the Commission's security regulations and requirements,

be responsible for safeguarding Restricted Data and other classified matter and protecting against sabotage, espionage, loss and theft, the classified documents, materials, equipment, processes, etc., as well as other such material of high intrinsic or strategic value as may be in the Contractor's possession in connection with performance of work under the contract.

2. Regulations. The contractor agrees to conform to all security regulations and requirements of the Commission.

3. Definition of Restricted Data. The term "Restricted Data" as used in this Article, means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material, or (3) the use of special nuclear material in the production of energy, but it shall not include data declassified or removed from the Restricted Data catagory pursuant to Section 142 of the Atomic Energy Act of 1954.

4. Security Clearance of Personnel. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1946, as amended, including the Atomic Energy Act of 1954, the Contractor shall not permit any individual to have access to Restricted Data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual and the Commission shall have determined that permitting such person to to have access to Restricted Data will not endanger the common defense or security. As used in this paragraph the term "designated investigating agency" means the United Stated Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1946, as amended, including the Atomic Energy Act of 1954.

5. Criminal Liability. It is understood that disclosure of information relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any restricted data or any "top secret", "Secret", or "confidential" matter that may come to the Contractor or any person under the Contractor's control in connection with work under this contract, any subject the Contractor, its agents, employees, or subcontractors to criminal liability under the laws of the United. States. (See the Atomic Energy Act of 1946, 60 Stat. 755, as amended, including the Atomic Energy Act of 1954, Public Law 703, 83rd Congress, 2nd Session, Title 42, U.S.C. Sec. 1801 et. seq. See also Title 18, U.S.C. Sec 791-798 and Executive Order 10104 of February 1, 1950, 15 F.R. 597.

6. Subcontracts and Purchase Orders. Except as otherwise authorized in writing by the Contracting Officer, the Contractor shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this contract.

Mod. 8

ARTICLE XIV - DISPUTES

Except as otherwise specifically provided in this contract, any dispute concerning a question of fact arising under or in connection with this contract shall be submitted in writing to and shall be decided by the Manager of the Commission's Savannah River Operations Office, or his duly authorized representative, who shall reduce his decision to writing and mail a copy of said decision to the Contractor; said decision shall be final and conclusive on the parties hereto, subject to the right of the Contractor to appeal, as provided for in the sentence next following. Within thirty days from the mailing of said decision, the Contractor may appeal, in writing, to the Commission, whose written decision thereon, or that of its duly authorized representative, representatives, or Board (but not including the Commission representative mentioned in the first sentence of this Article), duly authorized to determine subh an appeal, shall be final and conclusive on the parties hereto, unless such decision is determined by a court of competent jurisdiction to have been fraudulent, capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith, or not to be supported by substantial evidence. In the meantime, the Contractor shall diligently proceed with the work unless otherwise directed by the Contracting Officer.

ARTICLE XV - SECURITY ACTION (See original contract)

ARTICLE XVI - SCIENTIFIC AND TECHNICAL DATA (See original contract)

ARTICLE XVII - SOURCE AND FISSIONABLE MATERIALS (See original contract)

ARTICLE XVIII - GUARD AND FIRE FIGHTING FORCES (See original contract)

ARTICLE XIX - BONDS AND INSURANCE

1. (See original contract)

2. (" " ")

ARTICLE XX - STATE AND LOCAL TAXES AND FEES (See original contract)

ARTICLE XXI - NON-DISCRIMINATION IN EMPLOYMENT (See original contract)

ARTICLE XXII - TECHNICAL AND PROFESSIONAL ASSISTANCE (See original contract)

ARTICLE XXIII - ASSIGNMENT (See original contract)

ARTICLE XXIV - LABOR DISPUTES (See original contract)

ARTICLE XXV - COVENANT AGAINST CONTINGENT FEES (See original contract)

ARTICLE XXVI - CONVICT LABOR (See original contract)

ARTICLE XXVII - WALSH-HEALEY ACT (See original contract)

ARTICLE XXVIII - DOMESTIC ARTICLES

1. (See original contract)

2. (" " ")

ARTICLE XXIX - OFFICIALS NOT TO BENEFIT (See original contract)

ARTICLE XXX - RENEGOTIATION (See original contract)

1. (See original contract)

2. (" " ")

ARTICLE XXXI - SAFETY AND ACCIDENT PREVENTION (See original contract)

ARTICLE XXXII - COMPLIANCE WITH LAWS (See original contract)

ARTICLE XXXIII - APPENDIX "A" (See original contract)

Mod. 7, 8

ARTICLE XXXIV - EXAMINATION OF RECORDS

1. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to this Contract until ;the expiration of three (3) years after final payment under this Contract unless the Commission authorizes their prior disposition.

2. The Contractor further agrees to include in all subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract until the expiration of three (3) years after final payment under the subcontract. The term subcontract as used herein means any purchase order or agreement to perform all or any part of the work or to make or furnish any materials required for the performance of this Contract, but does not include (i) purchase orders not exceeding One Thousand Dollars ($1,000.0 (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public, or (iii) subcontracts or purchase orders for general inventory items not specifically identifiable with the work under this Contract.

3. Nothing in this Contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this Contract.

ARTICLE XXXV - CLAIMS AND LITIGATIONS

1. (See original contract)

2. (See original contract)

3. (" " ")

4. (" " ")

5. (" " ")

ARTICLE XXXVI - LETTER CONTRACT NO. AT(30-1)-1293 (See original contract)

ARTICLE XXXVII - CONTRACT APPROVAL (See original contract)

ARTICLE XXXVIII - DEFINITIONS (See original contract)

1. (See original contract)

2. (" " ")

mod-8

ARTICLE XXXIX - INSPECTION AND ACCEPTANCE

Final inspection and acceptance by the Commission of all uranium alloy slugs, canned by the Contractor pursuant to subdivision d of paragraph 1 of Article I, shall be performed by E. I. du Pont de Nemours and Company as the Commission's authorized representative, at the Commission's Savannah River Plant.

mod-8

ARTICLE XL - CHANGES

(a) Changes and Adjustment of Fee. The Contracting Officer may at any time and without notice to the sureties, if any, issue written direction requiring additions to the work covered by this contract or directing the omission of or variations in such work. If any such direction results in a material increase or decrease in the scope of the work described in Article I, paragraph 1, subdivision c and d, an equitable adjustment of the fixed fee shall be agreed upon by the parties and the contract shall be modified accordingly in writing. Any claim by the Contractor for an adjustment under this Article must be asserted in writing within thirty (30) days from the date of receipt by the Contractor of the notification of change unless the Contracting Officer grants a further period of time. A failure to agree on an equitable adjustment under this Article shall be deemed to be a dispute within the meaning of the Article entitled "Disputes."

(b) Work to Continue. Nothing contained in this Article shall excuse the Contractor from proceeding with the prosecution of the work in accordance with the requirements of any direction hereunder.

mod-9

ARTICLE XLI - INDEMNITY

Notwithstanding any other provision of this contract, it is agreed that the Contractor shall not be liable for, and the Commission shall, subject to the availability of funds, indemnify and hold the Contractor harmless against any loss, expense (including expense of litigation) or damage (including personal injury, disease, or death of persons, or damage to property) arising out of, based

on or caused by the radioactivity or fission or both of radioactive materials, products or by-products therefrom that may be involved in the performance of the work under this agreement. This obligation of the Commission shall apply only in those instances where the loss, expense or damage is not due to or caused by, in whole or in part, the negligence or bad faith on the part of any officer of the Contractor, or on the part of any representative or employee of the Contractor having direction or supervision of the whole or any part of the work undertaken by the Contractor hereunder, nor for wilful or negligent failure to follow procedures and standards approved and transmitted to the Contractor by the Commission for the handling and use of radioactive materials on the part of any of the aforementioned officers; further the obligation of the Commission shall apply only to the extent that the Contractor is not protected and made whole by insurance, it being understood that this obligation shall not be operative or applicable if, and to the extent, the Contractor is covered by insurance in respect of any such loss, expenses or damage and is not made whole thereby because of some breach by the Contractor of the terms or conditions of the insurance.

Responsive Record 1 Box 4

Modification No. 10
Supplemental Agreement to
Contract No. AT(30-1)-1293

Modification No. 10

CONTRACTOR: Sylvania Electric Products, Inc.
Bayside, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Revise the scope of work, change the term of the contract, and amend the fee payment provision

	Total	Portion Applicable to Savannah River Operations Office
Previous Direct Cost	$6,212,608	$2,112,758
This Modification (decrease)	765,114	765,114
New Direct Cost	$5,447,494	$1,347,644
Previous Fixed Fee	$ 293,368	$ 121,218
This Modification (decrease)	57,146	57,146
New Fixed Fee	$ 236,222	$ 64,072
Total Obligated as of July 1, 1955	$5,683,716	$1,411,716

UNCLASSIFIED
DOES NOT CONTAIN
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION
ADC & Reviewing Official: [illegible] 4/28/04
(Name and Title)
Date: All pages included. Documents were never classified.

Sylvania 129

SROO Response to
FOIA (SR) - 04-028

Modification No. 10
Supplemental Agreement to
Contract No. AT(30-1)-1293

THIS SUPPLEMENTAL AGREEMENT, effective as of 12:01 A.M., July 1, 1955, except as otherwise specifically expressed herein, by and between the United States of America (hereinafter referred to as the Government), as represented by the United States Atomic Energy Commission (hereinafter referred to as the Commission), and Sylvania Electric Products, Inc. (hereinafter referred to as the Contractor);

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to modify said Contract, as heretofore modified, as hereinafter provided; and

WHEREAS, this supplemental agreement is authorized by the Atomic Energy Act of 1954;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore modified, is hereby modified further in the following respects:

1. Article I - SCOPE OF THE WORK paragraph 1 e is changed to read as follows:

> "e. Effective November 15, 1954, the Contractor shall proceed with the manufacture, testing, inspection and delivery of metal and alloy slugs in accordance with the Contractor's proposal #2 as contained in his letters of November 8 and November 17, 1954, to Hood Worthington, E. I. du Pont de Nemours & Company, Inc., and as modified by the Contractor's proposal DCF #5527 dated January 11, 1955, accepted by the Commission's letter dated January 14, 1955, from Curtis A. Nelson to E. S. Norris and as further modified by the Commission's letters of June 30, 1955, and August 5, 1955, to Walter E. Kingston, and the Contractor's proposal dated August 13, 1955. The aforementioned proposals and letters are made a part hereof by reference."

2. In paragraph 1 of Article III - TERM, EXPIRATION AND TERMINATION, "June 30, 1956" is changed to "December 31, 1955".

3. Subdivision b of paragraph 1 of Article IV - CONSIDERATION, is changed to read as follows:

"b. A fixed fee of sixty-four thousand, seventy-two dollars ($64,072) with respect to all of the work and services provided for in subdivisions c, d, and e of paragraph 1 of Article I as authorized in Modification Nos. 7, 8, 9 and 10."

4. Subdivision (ii) of paragraph 5 a of Article IV - CONSIDERATION, is changed to read as follows:

"(ii) Payment of the fixed fee of $64,072 set forth in subdivision b of paragraph 1 of this Article IV shall be made in monthly installments as follows:

(a) For the period July 1, 1954, through June 30, 1955, 90% of the following monthly fixed fees shall become due and payable on the last day of each month as follows:

July through December - $3,381 per month
January - $4,525
February through June - $5,671 per month

(b) For the period July 1, 1955, through October 31, 1955, 90% of a monthly fixed fee of $2,726.50 shall become due and payable on the last day of each month. During November and December, 1955, no fee shall be paid the Contractor under the present scope of work."

5. Subdivision 1 (ii) of paragraph 6 b of Article IV - CONSIDERATION, is changed to read as follows:

"(ii) $1,411,716 with respect to the work provided for in subdivisions c, d and e of paragraph 1 of Article I."

IN WITNESS WHEREOF, the parties have executed this supplemental agreement.

UNITED STATES OF AMERICA

By _____

Manager, SROO
(Title)
United States Atomic Energy Commission

Date Oct. 19, 1955

Witnesses as to signature of Contractor:

Janice K. Brothers
RFD #5, Merriwood Ct.
Huntington, W. V.
(Address)

Gloria Bucherati
15 Sheridan Ct.
Plainview, L. I.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

By _____
W. E. Kingston, General Manager
Atomic Energy Division
(Title)

Date October 11, 1955

I, J. M. Porter, certify that I am the Asst. Secretary of the corporation named as Contractor herein; that W. E. Kingston who signed this modification on behalf of the Contractor was then Manager, Atomic Energy Div. of said corporation; that said modification was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and seal of said corporation.

_____

(Corporate Seal)

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Modification No. 12
Supplemental Agreement to
Contract No. AT(30-1)-1293

Modification No. 12

CONTRACTOR: Sylvania Electric Products, Inc.
Bayside, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend the contract to provide for work for other Commission offices or their cost-type Contractors, by means of an Appendix "C" Agreement.

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AEC Feed Materials Div Corr. 1947-1967
Box 38

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Modification No. 12
Supplemental Agreement to
Contract No. AT(30-1)-1293

THIS SUPPLEMENTAL AGREEMENT, effective as of 12:01 a.m., November 1, 1955, by and between the United States of America (hereinafter referred to as the Government), as represented by the United States Atomic Energy Commission (hereinafter referred to as the Commission), and Sylvania Electric Products, Inc., (hereinafter referred to as the Contractor);

WITNESSETH THAT:

WHEREAS, the Government and the Contractor, as of the 10th day of December, 1951, entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain research and development work; and

WHEREAS, the parties desire to modify said contract, as heretofore modified, as hereinafter provided; and

WHEREAS, this supplemental agreement is authorized by the Atomic Energy Act of 1954;

NOW, THEREFORE, Contract No. AT(30-1)-1293, as heretofore modified, is hereby modified further in the following respects only:

1. Paragraph 2 of Article I - SCOPE OF THE WORK, is renumbered paragraph 3. The following new paragraph 2 is added to Article I.

"2. a. The work provided for in paragraph 1, above, is under the jurisdiction of the Commission's Savannah River Operations Office. This paragraph 2 is concerned only with such other cost-type work (if any) to be performed in the Hicksville plant, whether or not of the same type or character, as provided for in paragraph 1, above, as is agreed to by the Contractor and the Commission, or by the Contractor and a Sponsor (defined as a cost-type contractor of the Commission) with the written approval of the Commission, by execution of the document provided for in Appendix "C". Except to the extent otherwise specifically provided for in this contract, including the documents provided for in Appendix "C", all of the provisions of this contract shall be applicable with respect to work under this paragraph 2.

"b. Except as otherwise authorized by the Commission, it is understood that Commission or Sponsor agreements referred to in this paragraph 2 are the only vehicles whereby the Contractor may perform work as described in a, above, in the Hicksville plant.

"c. Prior to formal initiation of an Appendix "C" agreement with a Sponsor or Commission office, the Contractor shall notify the Commission's Savannah River Operations Office, in writing, of the scope of work and terms of the intended agreement."

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RG 326
Accession # NN 326-87-002
AEC Food Materials Div Corr. 1947
Box 38

2. Subparagraph c of paragraph 1 of Article IV - CONSIDERATION, which reads,

"Payment for allowable costs as hereinafter provided.", is redesignated subparagraph d of said paragraph, and the following new subparagraph c is added to paragraph 1:

"c. With respect to the work provided for in each agreement adding work under paragraph 2 of Article I, the Contractor shall be paid the respective fixed fee stipulated in said agreement."

3. Add the following subparagraph to paragraph 5 of Article IV - CONSIDERATION:

"h. Payment of all costs and fixed fee under any Appendix "C" agreement shall be made to the Contractor by the Commission office or Sponsor executing the agreement in accordance with the provisions of said agreement."

4. Add the following subparagraph to paragraph 6 of Article IV - CONSIDERATION:

"c. The above provisions of this paragraph 6 establishing estimates and obligating funds do not include any work added under paragraph 2 of Article I. In connection with each agreement adding work under paragraph 2 of Article I, the Commission in the case of a Commission agreement, and the Sponsor in the case of a Sponsor agreement, will obligate (if the Commission) or allocate (if a Sponsor) in regard to the work provided for in the said agreement, the sum therein specified."

5. Paragraph 1 of Article VII - PATENTS is amended to read as follows:

"1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of, in connection with, or under the terms of this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title and rights under any application or patent that may result; provided, however, that with respect to such inventions or discoveries made or conceived in the course of, in connection with, or under the terms of paragraph 1 of Article I, the Contractor, in any event, shall retain at lease a nonexclusive, irrevocable, royalty-free license under said invention, discovery, application, or patent, such license being limited to the manufacture, use and sale for purposes other than use in the production or utilization of special nuclear material or atomic energy. Subject to the license retained by the Contractor, as provided in this Article, the judgment of the Commission on these matters shall be accepted as final; and the Contractor for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

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IN WITNESS WHEREOF, the parties hereto have executed this Supplemental Agreement as of the day and year first above written:

UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

/s/ R. C. Blair

Witnesses:

/s/ Jennie K. Brouthers

RFD 5 - Huntington, N. Y.
(Address)

/s/ Beatrice E. Kalmus

199-04 24 Road, Bayside, N. Y.

SILVANIA ELECTRIC PRODUCTS, INC.

By: /s/ W. E. Kingston
W. E. Kingston, General Manager

Title: Atomic Energy Division

I, William F. Rueger, certify that I am the Ass't. Secretary of the corporation named as Contractor herein; that W. E. Kingston who signed this contract on behalf of the Contractor was then General Manager Atomic Energy Div. of said corporation; that said contract was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed by hand and the seal of said corporation.

/s/ William F. Rueger

(Corporate Seal)

NARA II
EG 326
Accession # NN 326-87-00
AEC Food Materials Div Corr.
Box 39

Re: Re-assignments

Modification No. 26
Supplemental Agreement to
Contract No. AT-30-1-GEN-366

Modification No. 16
Supplemental Agreement to
Contract No. AT(30-1)-1293

THIS SUPPLEMENTAL AGREEMENT, entered into as of April 1, 1957 (hereinafter referred to as "the effective date"), by and between Sylvania Electric Products Inc., a corporation duly organized and existing under the laws of the State of Massachusetts, with its principal offices in the City of New York, New York (hereinafter referred to as the "Transferor"); The Sylvania-Corning Nuclear Corporation, a corporation organized and existing under the laws of the State of Delaware, with its principal offices in the City of New York, New York (hereinafter referred to as the "Transferee"); and the United States of America (hereinafter referred to as the "Government"), acting through the United States Atomic Energy Commission;

WITNESSETH THAT:

WHEREAS, the Government, represented by various contracting officers of the United States Atomic Energy Commission, has entered into certain contracts with the Transferor, namely, Contract AT-30-1-GEN-366 and Contract AT(30-1)-1293, and the term "Contracts" as hereinafter used means the above contracts, including without limitation all amendments and supplements and change orders thereto, heretofore made by the Government, represented by various contracting officers of the United States Atomic Energy Commission, or by Sponsors, as defined in said contracts, and the Transferor (whether or not performance and payment have been completed and releases executed, if the Government, Sponsor, or Transferor has any remaining rights, duties or obligations thereto), and including amendments, supplements and change orders thereto hereafter made between the Government and the Transferee, or the Sponsor and the Transferee;

WHEREAS, as of the effective date, the Transferor has assigned, conveyed and transferred to the Transferee all of the property described in Exhibit "A" attached hereto as a part hereof;

WHEREAS, the Transferee, by virtue of said assignment, conveyance and transfer, has acquired all the assets and liabilities of the Transferor relating to the performance of the Contracts;

WHEREAS, by virtue of said assignment, conveyance and transfer, the Transferee has assumed all the duties, obligations and liabilities of the Transferor under the Contracts;

WHEREAS, the Transferee is in a position fully to perform the Contracts, and such duties and obligations as may exist under the Contracts;

WHEREAS, it is consistent with the Government's interest to recognize the Transferee as the successor party to the Contracts; and

WHEREAS, there has been filed with the Government, through the Savannah River Operations Office of the Atomic Energy Commission, evidence of said assignment, conveyance and transfer, as is more fully described in Exhibit "B", which is attached hereto as a part hereof;

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and undertakings contained herein, the parties hereto agree as follows:

1. The Transferor hereby confirms said assignment, conveyance and transfer to the Transferee as of the effective date, and does hereby for itself alone, release and discharge the Government from, and does hereby waive any claims, demands, and rights against the Government and/or Sponsor(s), as defined in the Contracts, which it has as of the effective date or may thereafter have under, or in connection with, the Contracts; provided, however, that nothing in this paragraph 1 shall be deemed to preclude the Transferee from exercising, making and/or enforcing, on and after the effective date, any of such claims, demands or rights which the Transferor would have been entitled to exercise, make and/or enforce but for the provisions of this paragraph 1.

2. The Transferee hereby assumes, agrees to be bound by, and undertakes to perform each and every one of the terms, covenants, and conditions contained in the Contracts. The Transferee further assumes all obligations and liabilities of, and all claims and demands against, the Transferor under the Contracts, in all respects as if the Transferee were the original party to the Contracts.

3. The Transferee hereby ratifies and confirms all actions heretofore taken by the Transferor with respect to the Contracts with the same force and effect as if the action had been taken by the Transferee.

4. The Government hereby recognizes the Transferee as the Transferor's successor in interest in and to the Contracts. The Transferee hereby becomes entitled to all right, title and interest of the Transferor in and to the Contracts

in all respects, including without limitation all claims, demands and rights thereunder or in connection therewith, as if the Transferee were the original party to the Contracts. The term "Contractor" as used in the Contracts shall be deemed to refer to the Transferee rather than the Transferor.

5. Nothing in this agreement shall be construed as a waiver of any rights of the Government or the Sponsor(s), in case of a sponsor agreement, against the Transferor in connection with the Contracts.

6. Notwithstanding the foregoing provisions, all payments and reimbursements heretofore made by the Government or the Sponsor(s), in case of a sponsor agreement, to the Transferor and all other action heretofore taken by the Government, pursuant to its obligations under any of the Contracts, shall be deemed to have discharged pro tanto the Government's or, as the case may be, the Sponsor's obligations under the Contracts. All payments and reimbursements made by the Government or the Sponsor, in the case of a sponsor agreement, on or after the effective date of this agreement in the name of or to the Transferor shall have the same force and effect as if made to said Transferee and shall constitute a complete discharge of the Government's or, in the case of a sponsor agreement, the Sponsor's obligation under the Contracts to the extent of the amounts so paid and reimbursed.

7. The Transferor and Transferee hereby agree that no claim for payment by, or reimbursement from, the Government shall be made by either or both of them with respect to any costs, increased taxes or other expenses arising directly out of or attributable directly to (i) said assignment, conveyance, and transfer, or (ii) this agreement, other than those which the Government, or the Sponsor, in the case of a sponsor agreement, would have been obligated to pay or reimburse under the terms of the Contracts in effect prior to the effective date of this agreement.

8. The Transferor hereby unconditionally and irrevocably guarantees payment of all liabilities and the performance of all obligations which the Transferee assumes under this agreement, or may hereafter undertake under the Contracts; provided, however, that this guarantee shall not apply with respect to ~~any contract term or period of performance~~ subsequent to March 31, 1959; provided further that the Transferor hereby irrevocably waives notice of any and all intervening amendments, supplements and/or change orders to the Contracts or either of them.

9. Except as herein modified, the Contracts shall remain in full force and effect.

IN WITNESS WHEREOF, each of the parties hereto have executed this Supplemental Agreement as of the date and year first above written.

UNITED STATES OF AMERICA
By: UNITED STATES ATOMIC ENERGY COMMISSION

_____

Title: _____
(Representing Contract No. AT-30-1-GEN-366)

_____

Title: _____
(Representing Contract No. AT(30-1)-1293)

WITNESSES:

SYLVANIA ELECTRIC PRODUCTS INC.

_____ By: _____

_____ Title: _____

_____ SYLVANIA-CORNING NUCLEAR CORPORATION

_____ By: _____

Title: _____

CERTIFICATE

I, _____, certify that I am Secretary of Sylvania Electric Products Inc., named above; that _____, who signed this agreement on behalf of said corporation, was then _____ of said corporation; and that this agreement was duly signed for

and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

Witness my hand and seal of said corporation this _____ day of _____, 1957.

_____

(Corporate Seal)

CERTIFICATE

I, _____, certify that I am Secretary of Sylvania-Corning Nuclear Corporation, named above; that _____, who signed this agreement on behalf of said corporation, was then _____ of said corporation; and that this agreement was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

Witness my hand and seal of said corporation this _____ day of _____, 1957.

_____

(Corporate Seal)

3868

SPONSORED TASK NO. CH-4
MODIFICATION NO. 1

CONTRACT AT(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

This Modification entered into as of the 11th day of September, 1959, effective August 17, 1959 except as otherwise specifically provided herein, by and between SYLVANIA-CORNING NUCLEAR CORPORATION (the "Contractor"), and the UNITED STATES ATOMIC ENERGY COMMISSION (the "Commission").

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into a certain agreement known and designated a Sponsored Task CH-4 (hereinafter called the Agreement), such Agreement having been entered into on July 1, 1959, and

WHEREAS, the parties hereto desire to modify said Agreement, as herein provided;

NOW THEREFORE, the Contractor and the Sponsor do mutually agree as follows:

1. The following new subparagraph is added to paragraph 1 - Description of Work:

   Effective August 17, 1959, the Contractor shall proceed on final machining of semi-finished Mark VII-A cores at full capacity in accordance with authorization from Mr. C. L. Karl, Manager of the Commission's Fernald Area Office.

2. The fixed fee specified in paragraph 3 is increased by $12,985. as a result of the work added hereby.

3. The completion date of the work stated in paragraph 4 is changed to December 31, 1959.

4. The amount obligated by paragraph 5 is increased by $229,197. as a result of the work added hereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Basic Agreement	$77,090.-	$4,625.-	$81,715.-
This Modification No. 1	216,212.-	12,985.-	229,197.-
Revised Total	293,302.-	17,610.-	310,912.-

CONTRACTS

CERTIFIED A TRUE COPY
BY Alice Brown

NARA II
RG 326
Accession 4NN 326-87-007
AEC Feed Mat'ls Div Corr 1947
Box 44

NARA 001285

3868

Except as otherwise provided in this Modification, all the provisions of the agreement as heretofore modified or supplemented shall remain in full force and effect.

SYLVANIA-CORNING NUCLEAR CORPORATION

By: /s/ Garth W. Edwards
Garth W. Edwards
Title: Treasurer

U. S. ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

By: /s/ John R. Moore
John R. Moore
Title: Director, Contract Division, OROO

Alice Brown

NARA II
RG 326
Accession 4NN 326-87-007
AEC Feed Materials Div. Corr. 1947-1964
Box 69

NARA 001286

SPONSORED TASK NO. CH-4
MODIFICATION NO. 2

CONTRACT AT(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

14th December, 1959

This Modification entered into as of the ~~14th~~ day of ~~January, 1960~~, effective January 1, 1960 except as otherwise specifically provided herein, by and between SYLVANIA-CORNING NUCLEAR CORPORATION (the 'Contractor'), and the UNITED STATES ATOMIC ENERGY COMMISSION (the 'Commission'),

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the Agreement), such Agreement having been entered into on July 1, 1958, and

WHEREAS, the parties hereto desire to modify said Agreement, as herein provided;

NOW THEREFORE, the Contractor and the Sponsor do mutually agree as follows:

1. The following new subparagraph is added to paragraph 1 - Description of Work:

   During the period January 1, 1960 through March 31, 1960, the Contractor shall proceed with the final machining of semi-finished Mark VII-A cores at full capacity.

2. The fixed fee specified in paragraph 3 is increased by $9,500.- as a result of the work added hereby.

3. The completion date of the work stated in paragraph 4 is changed to March 31, 1960.

4. The amount obligated by paragraph 5 is increased by $133,100.- as a result of the work added hereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated Thru Mod. #1	$293,302.-	$17,610.-	$310,912.-
This Mod. #2	123,600.-	9,500.-	133,100.-
	416,902.-	27,110.-	444,012.-

NARA - SE
Series 12 - Oak Ridge Contract Files
Box H-178-18

Except as otherwise provided in this Modification, all the provisions of the agreement as heretofore modified or supplemented shall remain in full force and effect.

SYLVANIA-CORNING NUCLEAR CORPORATION

By: Garth W. Edwards

Garth W. Edwards

Title: Treasurer

U. S. ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

By: R. G. Humphries

R. G. Humphries, Director
Contract Division, ORO

Title:

SPONSORED TASK NO. CH-4
MODIFICATION NO. 3

CONTRACT AT(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

This Modification entered into as of the 18th day of March, 1960 by and between SYLVANIA-CORNING NUCLEAR CORPORATION (the 'Contractor'), and the UNITED STATES ATOMIC ENERGY COMMISSION (the 'Commission'),

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the Agreement), such Agreement having been entered into on July 1, 1959, and

WHEREAS, said Agreement has been modified heretofore in a number of respects, and the parties hereto desire to modify said Agreement further, as herein provided;

NOW THEREFORE, the Contractor and the Sponsor do mutually agree as follows:

1. The following new subparagraph is added to paragraph 1 - Description of Work:

   During the period April 1, 1960 through June 30, 1960, the Contractor shall proceed with the final machining of semi-finished Mark VIII-A cores in the quantities specified by a confidential letter dated March 4, 1960 from C. L. Karl, Manager of the Commission's Fernald Area Office to the Contractor and which letter is incorporated herein by reference.

2. The fixed fee specified in paragraph 3 is increased by $5,020.- as a result of the work added hereby.

3. The completion date of the work stated in paragraph 4 is changed to June 30, 1960.

4. The amount obligated by paragraph 5 is increased by $88,810.- as a result of the work added hereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated Thru Mod. #2	$416,902.	$27,110.	$444,012.
This Mod. #3	83,790.	5,020.	88,810.
	$500,692.	$32,130.	$532,822.

NARA - SE
Series 16 - Oak Ridge Contract Files
Box H-17 B-13

USDOE 013695

Except as otherwise provided in this Modification, all the provisions of the agreement as heretofore modified or supplemented shall remain in full force and effect.

SYLVANIA-CORNING NUCLEAR CORP.

By: Garth W. Edwards
Garth W. Edwards

Title Treasurer

U. S. ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

By: [signature]

Title: OAK RIDGE OPERATIONS

USDOE 013696

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R. O. Humphries, Director
Contract Division

March 30, 1960

John W. Ruch, Director
Feed Materials Division

SYLCOR CONTRACT EXTENSION

Sylcor, Hazelton

We concur with Mr. Ruch that the Sylcor Contract AT(30-1)-1193, for finish machining of Mark VII-A SCM type fuel elements, should be extended through June 30, 1960.

In checking Fernald's estimates of costs, some differences are encountered between theirs and ours, which are at this point unresolved. However, they are not of controlling importance.

A study shows that existing capability for slug manufacture, now on-stream, (including Sylcor) is barely adequate to meet reactor requirements during the remainder of the fiscal year. In view of the definite need for the Sylcor service, we recommend the contract extension.

John W. Ruch

cc: R. C. Armstrong

CONTRACTS

OFFICE ▶	Feed Materials Division					
SURNAME ▶	Hardison:mf	Kiser	Ruch			
DATE ▶	3/30/60					

AEC-318 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—62701-0

NARA II
EG 326
Accession 4NN 326-87-007
AEC Feed Materials D.V. Corr. 1947-1964
Box 63
F Contracts - Sylvania

USDOE 022357

SPONSORED TASK NO. CH-4
MODIFICATION NO. 4

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

This Modification entered into as of the 30th day of June, 1960, by and between SYLVANIA-CORNING NUCLEAR CORPORATION (the "Contractor"), and the UNITED STATES ATOMIC ENERGY COMMISSION (the "Commission");

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such Agreement having been entered into on July 1, 1959; and

WHEREAS, said Agreement has been modified heretofore in a number of respects, and the parties hereto desire to modify said Agreement further, as herein provided;

NOW, THEREFORE, the Contractor and the Sponsor do mutually agree as follows:

1. The following new subparagraph is added to Paragraph 1. - Description of Work:

> During the period July 1, 1960, through September 30, 1960, the Contractor shall proceed at full capacity with the final machining of semi-finished Mark VII-A cores as heretofore provided in the contract and in accordance with the confidential letter dated June 7, 1960, from C. L. Karl, Manager of the Commission's Fernald Area Office to the Contractor, which letter is hereby incorporated herein by reference.

2. The fixed fee specified in Paragraph 3. is hereby increased by $3,490 as a result of the work added hereby; provided, however, that if the Contractor is not successful in producing briquettes and reverts to oxidation of scrap during the period of this extension, the parties agree to negotiate in good faith an appropriate reduction of the fixed fee.

3. The completion date of the work stated in Paragraph 4. is changed to September 30, 1960.

4. The amount obligated by Paragraph 5. is increased by $61,640.- as a result of the work added hereby. The revised amount of the Agreement is now as follows:

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Box H-178-18

USDOE 013697

	Estimated Cost	Fixed Fee	Total
Obligated thru Mod. #3	$500,692 58,150	$32,130	$532,822 61,640
This Mod. #4	~~[illegible]~~	3,490	~~[illegible]~~
	~~[illegible]~~ $558,842	$35,620	~~[illegible]~~ $594,462

Except as otherwise provided in this Modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

SYLVANIA-CORNING NUCLEAR CORPORATION

BY: Garth W. Edwards

Garth W. Edwards

TITLE: Treasurer

U. S. ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: Ralph Elson

Ralph Elson

TITLE: Acting Director, Contract Division

USDOE 013698

SPONSORED TASK NO. CH-4
MODIFICATION NO. 5

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

This Modification entered into as of the 30th day of September 1960, by and between SYLVANIA-CORNING NUCLEAR CORPORATION (the "Contractor"), and the UNITED STATES ATOMIC ENERGY COMMISSION (the "Commission");

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such Agreement having been entered into on July 1, 1959; and

WHEREAS, said Agreement has been modified heretofore in a number of respects, and the parties hereto desire to modify said Agreement further, as herein provided;

NOW, THEREFORE, the Contractor and the Sponsor do mutually agree as follows:

1. The following new subparagraph is added to Paragraph 1. - Description of Work:

> During the period October 1, 1960, through March 31, 1961, the Contractor shall proceed at full capacity with the final machining of semi-finished Mark VII-A cores as heretofore provided in the contract and in accordance with the classified letter dated September 9, 1960, from C. L. Karl, Manager of the Commission's Fernald Area Office to the Contractor, which letter is hereby incorporated herein by reference.

2. The fixed fee specified in Paragraph 3. is hereby increased by $8,900 as a result of the work added hereby.

3. The completion date of the work stated in Paragraph 4. is changed to March 31, 1961.

NARA-SE
Series 16 - Oak Ridge Contract Files
Box H-178-18

NARA 001827

4. The amount obligated by Paragraph 5. is increased by $157,200 as a result of the work added hereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated thru Mod. #4	$558,842	$35,620	$594,462
This Mod. #5	148,300	8,900	157,200
	$707,142	$44,520	$751,662

Except as otherwise provided in this Modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

SYLVANIA-CORNING NUCLEAR CORPORATION

BY: Leo K. Davenport

TITLE: PRESIDENT

U. S. ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: R. G. Humphries

TITLE: Director, Contract Division, ORO

NARA 001828

491

SPONSORED TASK NO. CH-4
MODIFICATION NO. 6

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

THIS MODIFICATION, entered into as of the 8th day of February, 1961, by and among the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), SYLVANIA-CORNING NUCLEAR CORPORATION (hereinafter called the "Original Contractor"), and SYLVANIA ELECTRIC PRODUCTS, INC., SYLCOR DIVISION (hereinafter called the "Successor Contractor" or the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Original Contractor entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such Agreement having been entered into on July 1, 1959, and having been modified heretofore by Modifications 1 through 5; and

WHEREAS, at a meeting of the Board of Directors of the Original Contractor held on December 20, 1960, official action was taken to dissolve the corporate structure of the Original Contractor and to establish the Original Contractor as a division of Sylvania Electric Products, Inc., effective January 1, 1961; and

WHEREAS, the Successor Contractor has acquired all of the assets of the Original Contractor and has assumed all of the liabilities and obligations of the Original Contractor; and

WHEREAS, the parties hereto desire to modify said Agreement further, to provide for the continued performance thereof by the Successor Contractor, and to provide additional changes as hereinafter set forth;

NOW, THEREFORE, the parties hereto agree that the Agreement, as heretofore modified, is hereby modified further in the following particulars, but in no others:

1. Effective January 1, 1961, wherever the word "Contractor" appears in this Agreement, it shall be deemed to mean Sylvania Electric Products, Inc., Sylcor Division.

CONTRACTS

Alice Brown

NARA II
EG 326
Accession 4NN 326-87-0017
AEC Food Materials Div Corr. 1947-1967
Box 61

SYL00051294

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2. The Successor Contractor shall perform all obligations and assume all liabilities of the Original Contractor as set forth in said Agreement, as amended, which have not been previously performed and satisfied. The Successor Contractor hereby ratifies and confirms all actions heretofore taken by the Original Contractor with respect to said Agreement with the same force and effect as if the action had been taken by the Successor Contractor.

3. The Original Contractor hereby confirms the assignment, conveyance and transfer of the Agreement to the Successor Contractor, and does hereby release and discharge the Government and the Commission from, and does hereby waive, any and all claims, demands, and rights against the Government and/or the Commission which the Original Contractor now has or may hereafter have in connection with said Agreement.

4. The Government hereby recognizes the Successor Contractor as the Original Contractor's successor in interest in and to the Agreement. The Successor Contractor hereby becomes entitled to all right, title, and interest of the Original Contractor in and to said Agreement in all respects as if the Successor Contractor were the original party to said Agreement.

5. Except as expressly provided herein, nothing in this Agreement shall be construed as a waiver of any rights of the Government and/or Commission against the Original Contractor.

6. Notwithstanding the foregoing provisions, all payments and reimbursements heretofore made by the Government to the Original Contractor or to the Successor Contractor, and all other action heretofore taken by the Government and/or the Commission, pursuant to its and/or their obligations under the Agreement, shall be deemed to have discharged pro tanto the obligations of the Government and/or the Commission under said Agreement. All payments and reimbursements made by the Government after the date of this Agreement in the name of or to the Original Contractor shall have the same force and effect as if made to the Successor Contractor and shall constitute a complete discharge of the obligations of the Government and/or the Commission under said Agreement, to the extent of the amounts so paid or reimbursed.

7. Delete the subparagraph added to Paragraph 1. - Description of Work by Modification No. 5 to the Agreement and substitute therefor the following:

> "During the period October 1, 1960, through March 31, 1961, the Contractor shall proceed with the final machining of semi-finished Mark VII-A cores as heretofore provided in the Agreement and in accordance with the classified letters dated September 9, 1960, and December 21, 1960, from C. L. Karl, Manager of the

NASA II
IG 326
Accession 4NN 326-57-007
ALC Food Materials D.V. Corr. 1947-1964
Box 69

SYL00051295

Commission's Fernald Area Office, to the Contractor and Contractor's letter dated January 5, 1961, to Mr. Karl, which letters are hereby incorporated herein by reference."

8. The fixed fee specified in Paragraph 3. is hereby increased by $494.00, reflecting adjustments in fee resulting from the changes in the scope of work referred to in 7. above and a reduction in fee of $266.00 for the period July 1, 1960, through September 30, 1960, agreed by the parties as provided in Paragraph 2. of Modification No. 4.

9. The amount obligated by Paragraph 5. is increased by $13,194.00 as a result of the changes in work and adjustments made herein. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated thru Modification No. 5	$707,142.00	$44,520.00	$751,662.00
This Modification No. 6	12,700.00	494.00	13,194.00
	$719,842.00	$45,014.00	$764,856.00

Except as otherwise provided in this modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: /s/ R. O. Humphries

TITLE: R. O. Humphries
Director, Contract Division, OROO

SYLVANIA-CORNING NUCLEAR CORPORATION

BY: /s/ Lee L. Davenport

TITLE: President

SYLVANIA ELECTRIC PRODUCTS, INC.

BY: /s/ Lee L. Davenport

TITLE: General Manager

WITNESSES:

/s/ M. C. Cullen
Hicksville, New York
(Address)

/s/ Grace Golden
Hicksville, New York
(Address)

NARA II
RG 326
Accession 4NN 326-87-007
AEC Fond Materials Div Corr. 1949-1950
Box 69

SPONSORED TASK NO. CH-4
MODIFICATION NO. 7

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

THIS MODIFICATION, entered into as of the 28th day of April, 1961, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC., SYLCOR DIVISION (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such agreement having been entered into on July 1, 1959, and having been modified heretofore by Modifications 1 - 6; and

WHEREAS, the parties hereto desire to modify said agreement further as herein provided;

NOW, THEREFORE, the parties hereto agree that the Agreement, as heretofore modified, is hereby modified further in the following particulars, but in no others:

1. The following new subparagraph is added to Paragraph 1., Description of Work:

> "During the period April 1, 1961, through September 30, 1961, the Contractor shall proceed with the final machining of semi-finished Mark VII-A cores as heretofore provided in the Agreement and in accordance with the classified letter dated March 16, 1961, from C. L. Karl, Manager of the Commission's Fernald Area Office, to the Contractor and Contractor's letter dated March 27, 1961, which letters are hereby incorporated herein by reference."

2. The fixed fee specified in Paragraph 3. is hereby increased by $7,670.00 as a result of the work added hereby.

3. The completion date of the work stated in Paragraph 4 is changed to September 30, 1961.

NARA - SE
Series 16 - Oak Ridge
Contract Files
Box H-178-13

NARA 001806

4. The amount obligated by Paragraph 5. is increased by $135,460.00 as a result of the work added hereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated thru Modification No. 6	$719,842.00	$45,014.00	$764,856.00
This Modification No. 7	127,790.00	7,670.00	135,460.00
	$847,632.00	$52,684.00	$900,316.00

Except as otherwise provided in this modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: _____
R. G. Humphries

TITLE: Director, Contract Division, OROO

WITNESSES:

M. C. Cullen
Hicksville, N.Y.
(Address)

G. Golden
Hicksville, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.
SYLCOR DIVISION

BY: _____
D. B. Metz

TITLE: Manufacturing Manager

NARA 001807

[redacted]

Responsive Record 2

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Contract AT-30-1-1293

Slpag

Modification No. 29
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR	Sylvania Electric Products Inc. Hicksville, Long Island, New York
SUPPLEMENTAL AGREEMENT TO	Amend the scope of work, extend the contract period through September 30, 1962, revise the estimated cost and fixed fee, and completely restate the terms and conditions in one docum
EFFECTIVE DATE	October 1, 1961

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION (U)

	SROO	NYOO	TOTAL
[redacted]			
Previous Direct Cost (Modification No. 28)	$15,944,989	$3,951,805	$19,896,794
This Modification (Net Increase)	1,761,056	-0-	1,761,056
New Total Direct Cost	$17,706,045	$3,951,805	$21,657,850
Previous Fixed Fee (Modification No. 28)	$ 918,489	$ 172,150	$ 1,090,639
This Modification (Net Increase)	101,460	-0-	101,460
New Total Fixed Fee	$ 1,019,949	$ 172,150	$ 1,192,099
New Total Estimated Cost Through March 31, 1962	$18,725,994	$4,123,955	$22,849,949
Total Amount Obligated As of October 1, 1961	$18,725,994	$4,123,955	$22,849,949

WSRC DECLASSIFICATION REVIEW

1st Review Date: 4/28/04
Authority: ☐ ADC ☒ ADD
Name: R.L. Collins
2nd Review Date: 4/29/04
Authority: ADD
Name: [signature]

Determination (Circle number)
1. Classification Upheld
2. Classification Changed To:
3. Classification Cancelled
4. Other: Co-UNCLASSIFIED

A.E.C. FILE COPY

[redacted]

SROO Response to
FOIA (SR) - 04-028

Modification No. 29
Supplemental Agreement to Contract No. AT(30-1)-1293
with
SYLVANIA ELECTRIC PRODUCTS INC.

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Modification No. 29
Supplemental Agreement to
Contract No. AT(30-1)-1293

THIS SUPPLEMENTAL AGREEMENT, entered into this 11th day of January, 1962, effective 12:01 a.m. October 1, 1961, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor").

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Government and the Contractor entered into Contract No. AT(30-1)-1293 for the performance by the Contractor of certain work for the Government involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties hereto desire to further amend said Contract and to consolidate into one document all of said amendments which may be applicable to work to be performed by the Contractor after the date of this amendment; and

WHEREAS, the parties desire to modify said Contract as heretofore modified to provide for the performance by the Contractor of an additional scope of work as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW THEREFORE, in consideration of the mutual covenants and agreements hereinafter set forth, Contract AT(30-1)-1293, as heretofore amended, is hereby modified to read as follows:

(a) On and after the effective date hereof, all rights, duties and activities of the parties with respect to the work hereinafter described shall be governed by the provisions of this Agreement;

(b) The rights and obligations of the parties which have been incurred, or which have accrued or matured under the provisions of the Contract as amended prior to the effective date of this Agreement, shall in no wise be impaired, limited, enlarged or affected by reasons of provisions hereof except to the extent that any specific provision of this Agreement is expressly stated to be retroactive in its application.

ARTICLE I - SCOPE OF THE WORK

1. Beginning October 1, 1961, the Contractor shall proceed with the machining, manufacture, canning, testing, inspection, and delivery of metal and alloy slugs to the Commission and perform other services as required by the Commission, all in accordance with the classified Appendix "B" to this Agreement.

2. (a) The work to be provided for in paragraph 1 above is under the jurisdiction of the Commission's Savannah River Operations Office. This paragraph 2 is concerned only with such other cost-type work (if any) to be performed at Site A (as defined in Article II below), whether or not of the same type or character as provided in paragraph 1 above, as may be agreed to by the Contractor and the Commission or by the Contractor and the Sponsor (defined as a cost-type Contractor of the Commission) with the written approval of the Commission, by execution of the document provided for in Appendix "C" attached hereto and made a part hereof. Except to the extent otherwise specifically provided for in this Agreement, including the documents provided for in Appendix "C", all provisions of this Agreement shall be applicable with respect to work under this paragraph 2.

(b) Except as otherwise authorized by the Commission, it is understood that the Commission or Sponsor Agreements referred to in this paragraph 2 are the only vehicles whereby the Contractor may perform work as provided in subparagraph (a) above at Site A.

(c) Prior to formal initiation of each Appendix "C" agreement with the Sponsor or Commission office, as hereinabove provided, the Contractor shall notify the Commission's Savannah River Operations Office in writing of the scope of work and terms of the intended Agreement.

3. The Contractor shall furnish all materials, equipment, facilities, and premises, and all other properties and services requisite to the proper performance of work under this Agreement and shall be reimbursed therefor in accordance with this Agreement, except to the extent that the Government, or, in the case of an Appendix "C" agreement, the Sponsor, or the Commission may elect or may otherwise be expressly obligated to furnish such properties or services.

ARTICLE II - SITE OF THE WORK

1. Principal Site. Unless the Commission approves a substitute site in writing and until the date approved by the Commission for such substitution, the principal site for the work under this Agreement shall be referred to as Site A and shall be the land and buildings of the Contractor on Cantiague Road, Hicksville, Long Island, New York, described in the attached drawings marked Appendix "D", revised October 1, 1961, excluding therefrom the space identified in said Appendix "D" and designated as Site B, Site B to include also reasonable rights of ingress and egress.

2. Alteration at Site A. The Contractor shall alter the plant and other facilities at Site A to the extent that the Commission considers such alteration necessary to the proper performance of the work.

3. Transfer of Site. The Contractor agrees not to sell, lease, license, or otherwise transfer ownership or occupancy of any part of its land, buildings, or facilities on (1) Site A, or (2) the areas, together with buildings or facilities thereon, marked in red crosshatch in Appendix "D" of this Agreement without expressly making such sale, lease, license, or other transfer subject to the provisions of subparagraph (d) of paragraph 2. of Article III - TERM, EXPIRATION AND TERMINATION, of this Agreement. The Contractor further agrees that in the event it sells, leases, licenses, or otherwise transfers ownership, occupancy, or possession of any part of its land, buildings, or facilities referred to in this paragraph, it will hold the Government harmless from any and all damage that may result to the Government from such sale, lease, license, or transfer.

4. Non-Contract Activities. The Contractor shall not engage in or permit others to engage in activities at Site A other than activities in the performance of work under this Agreement without the approval of the Commission.

ARTICLE III - TERM, EXPIRATION AND TERMINATION

1. Term. Subject to the provisions of this Article, the period of performance of the work under this Agreement shall end on September 30, 1962; provided, however, that the Government, in its sole discretion, shall have the unilateral right from time to time to extend the period of performance under this Agreement for a consecutive period or periods through September 30, 1964, upon written notice or notices to the Contractor of its intention to extend the Contract for such period or periods. Each such written notice shall identify to the Contractor the scope of work to be performed by the Contractor during the period in which the Contract is to be extended. The amount of fixed fee for each Contract extension shall be mutually agreed upon, and failure to agree thereon shall be deemed to be a dispute as to a question of fact and shall be determined in accordance with the General Provision entitled DISPUTES, hereof. The rights and remedies of the Government for any failure of the Contractor, for reasons beyond its control and which did not result from any act(s) or omission(s) on its part, to agree to any extension of the period or periods of performance provided for in this paragraph shall be limited to the provisions of subparagraph (d) of paragraph 2. of Article III - TERM, EXPIRATION AND TERMINATION.

2. Termination.

(a) For Default. The performance of the work under paragraph 1 of Article I and under any or all of the agreements under paragraph 2 of Article I may be terminated by the Commission in whole or in part by reason of the breach by the Contractor of any of the provisions of this Agreement. The performance of the work under any Sponsor Agreement may

be terminated by the Sponsor in whole or in part by reason of the breach by the Contractor in regard to said work of any of the provisions of this Agreement. Where both reasonable and practicable, in the light of the nature of the breach and its effect on the other party, the Commission, or the Sponsor in the case of a Sponsor Agreement, will give the Contractor written notice of the breach and of its intent to terminate by reasons thereof and the opportunity to cure the default promptly.

(b) For the Convenience of the Government. The performance of the work under Article I of this Agreement or any part of said work may be terminated by the Commission for the convenience of the Government. The performance of the work under any Sponsor Agreement may be terminated by the Sponsor with the approval of the Commission for the convenience of the Government.

(c) Notice of Termination. Termination, under this paragraph, shall be effected by delivery to the Contractor of a written notice of termination, which notice (i) shall specify a date upon which said termination shall become effective, which date shall be at least sixty (60) days after the delivery of said notice; (ii) in the event of a termination in part, shall specify the portion or portions of the work so terminated and the period or periods during which said termination shall be effective; and (iii) shall specify whether said termination is for the default of the Contractor or for the convenience of the Government. Upon receipt of said notice of termination, the Contractor promptly, except as the notice may direct otherwise, shall (i) discontinue all terminated work as soon as is reasonably practicable, if the notice so directs, and in any event by the date specified in said notice of termination; (ii) cease all placing of orders for property or services in connection with the performance of the terminated work; (iii) proceed to the best of its ability to terminate all orders and subcontracts to the extent that they relate to the terminated work; (iv) assign to the Government, in the manner and to the extent directed by the Commission, all the right, title and interest of the Contractor under the terminated portion of the orders and subcontracts so terminated; (v) settle, with the approval of the Commission, or the Sponsor in the case of a Sponsor Agreement, all subcontracts, obligations, commitments and claims related to the terminated work, the cost of which would be allowable in accordance with the provisions of this Agreement; (vi) continue performance of such part of the Agreement work, if any, as shall not have been terminated; and (vii) take such other action with respect to the terminated work as may be required under other articles of this Agreement and, subject to the approval of the Commission, as may be otherwise appropriate including but not limited to action for the protection and preservation of Government property.

(d) Entry by Government After Default.

(i) If, prior to September 30, 1964, performance of all of the work under this Agreement is terminated for the default of the Contractor or the Contractor refuses to agree to any extension of

the period of performance as provided in paragraph 1. of Article III - TERM, EXPIRATION AND TERMINATION, the Government may enter upon and occupy Site A exclusively for such period of time as it may deem desirable from a time no later than thirty (30) days after the date of such default or after the date of expiration following such refusal through September 30, 1964, but not after September 30, 1964, by paying to the Contractor, for each month of such occupancy of Site A, a monthly charge in full satisfaction of all claims of the Contractor against the Government arising out of said entry, including the Contractor's loss of use of said facilities, (except as otherwise provided in paragraph 1. of Article XIX - INDEMNITY) and the fair rental value of said premises and facilities but excluding all other claims arising out of the Government's use and occupancy of said premises and facilities. Said monthly charge shall be 1/12 of the actual annual costs and expenses attributable to Site A, including but not limited to such items as taxes, insurance except workmen's compensation insurance, and such other costs as may be approved by the Commission.

(ii) After termination for the default of the Contractor and the exercise of the right conferred upon the Government to occupy the premises, as provided in (i) above, the Government may (a) enter upon and have exclusive occupancy of Site A; (b) take possession of all Government property in Site A and, for the period of said occupancy, take possession of all materials, tools, machinery, and appliances in Site A which may be owned by or in possession of the Contractor and used solely in connection with the work under this Agreement; (c) exercise during said occupancy, in its own name and for its own account, all options, privileges and rights belonging to or exercisable by the Contractor in connection with said premises and facilities; and (d) for its own account and for its own use, fabricate, process, and complete, or employ others to fabricate, process, or complete, therein research and development and production work on fuel elements.

(iii) In addition, the Commission shall, within the limits of its authority, indemnify and hold the Contractor harmless against any damages finally awarded by a court, agency, or board of competent jurisdiction, or settlements made with the consent of the Commission, and against reasonably necessary expenses incident to any action before such court, agency, or board, or to settlement, where such awards and settlements are based on claims by third parties against the Contractor arising out of the Government's use and occupancy of said premises or facilities, or the exercise by the Government of any of the rights or privileges belonging to the Contractor pursuant to this subparagraph (d). Moreover, except as provided in subparagraph (i) above, and except for reasonable wear and tear to such property, the Commission shall also, within the limits of its authority, indemnify and hold the Contractor harmless against physical damage to or physical loss of the Contractor's own property which may arise out of the Government's use and occupancy of said premises and facilities.

(e) Terms of Settlement. Upon a termination of all or part of the work under this Agreement, full and complete settlement of all claims of the Contractor with respect to the work of this Agreement so terminated shall be made as follows:

(i) Assumption of Contractor's Obligations. The Government may, at the discretion of the Commission, assume and become liable for all obligations, commitments, and claims that the Contractor may have theretofore in good faith undertaken or incurred in connection with the terminated work, the cost of which would be allowable in accordance with the provisions of this Agreement; and the Contractor shall, as a condition of receiving the payments mentioned in this Article, execute and deliver all such papers and take all such steps as the Commission may require for the purpose of fully vesting in the Government all the rights and benefits of the Contractor under such obligations or commitments.

(ii) Payment for Allowable Costs. The Government, or the Sponsor in the case of a Sponsor Agreement, shall reimburse the Contractor or allow credit for all allowable costs incurred in the performance of the terminated work and not previously reimbursed or otherwise discharged.

(iii) Payment for Close-Out Expense. The Government, or the Sponsor in the case of a Sponsor Agreement, shall reimburse the Contractor (a) for such close-out expenses, (b) for such further expenditures as are made after the date of termination for the protection of the Government property, and (c) for such legal and accounting services in connection with settlement, as are required or approved by the Commission, or the Sponsor in the case of a Sponsor Agreement.

(iv) Payment on Account of Fixed Fees.

(a) If the performance of the work under paragraph 1 of Article I or any Appendix "C" Agreement under paragraph 2 of said Article of this Agreement is terminated in whole for the default of the Contractor, no further payment shall be made of fixed fee for any uncompleted part of the work under such paragraph, nor shall any further part of the 10% of the fixed fee for the work under such paragraph, withheld in accordance with Article VI, be paid; provided, however, that the Contractor shall be paid with respect to the terminated work under such paragraph 90% of a sum determined by applying a percentage to the total fee applicable to such work, such percentage to be determined by dividing the amount of work completed under such paragraph (including without limitation preparation and development work thereunder after October 1, 1961) by the total amount of work provided for under such paragraph; provided further that the Contractor shall refund to the Commission,

or Sponsor if applicable, any fixed fee received for work under such paragraph which is in excess of the amount determined under the preceding formula.

(b) If the performance of the work under this Agreement is terminated in whole for the convenience of the Government, the Contractor shall be paid that portion of the fixed fee applicable to the work under paragraph 1 of Article I and to each Appendix "C" Agreement under paragraph 2 of said Article, respectively, which the work actually completed under each such paragraph and Agreement, respectively, as determined by the Commission, bears to the entire work under each such paragraph and Agreement, respectively, less payments previously made on account of each such applicable fixed fee.

(c) If the performance of the work under paragraph 1 of Article I of this Agreement or under any Appendix "C" Agreement under paragraph 2 of Article I of this Agreement, is terminated in part for the convenience of the Government, the Contractor and the Commission, or the Sponsor if applicable, shall promptly negotiate and agree upon an equitable adjustment of the fixed fee applicable to the terminated portion of the work, and the agreement reached shall be evidenced by a written executed supplemental agreement to this Agreement or the appropriate Appendix "C" Agreement, if applicable. If the Contractor and the Commission, or the Sponsor if applicable, fail to so agree upon such fee adjustment within a reasonable time after such partial termination, failure to agree shall be disposed of in accordance with the General Provision entitled DISPUTES, hereof.

3. Expiration. In the event of expiration of the period of work performance hereunder without prior termination hereof, the Contractor shall (i) discontinue the agreement work under this Agreement at the end of the day of expiration and (ii) take such other action as may be required under other provisions of this Agreement and, subject to the approval or ratification of the Commission, as may be otherwise appropriate, including but not limited to action for the protection and preservation of Government property.

4. Claims in Favor of the Government. The obligation of the Government to make any of the payments required by this Article shall be subject to any unsettled claims in connection with this Agreement which the Government may have against the Contractor. Nothing contained in this Article shall be construed to limit or affect any other remedies which the Government may have as a result of a default by the Contractor.

5. Settlement upon Termination or Expiration. Any other provisions of this Agreement to the contrary notwithstanding, the Contractor and the Commission, or the Sponsor if applicable, may agree upon the whole or any part of the

amount or amounts which the Contractor is to receive upon and in connection with (i) any termination pursuant to this Article or (ii) expiration of the term of this Contract without prior termination thereof. Any agreement so reached shall be evidenced by a written supplemental agreement to this Contract, or Appendix "C" Agreement if applicable, which shall be final and binding upon the parties with regard to their respective claims against each other except as therein otherwise expressly provided.

ARTICLE IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE

1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $21,657,850 exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2, Article V of this Contract, is $1,192,099. The estimated cost of the work, as described in paragraph 1 of the Article entitled SCOPE OF THE WORK, for the period October 1, 1961, to March 31, 1962, is $2,044,840, exclusive of the Contractor's fixed fee of $101,460.

2. Obligation of Funds. The amount presently obligated by the Government with respect to this Contract is $22,849,949. The amount of obligation under this Contract may be increased unilaterally by the Commission by written notice to the Contractor and may be decreased by written agreement of the parties (whether or not by formal modification of this Contract).

3. Revised Estimate of Cost and Fixed Fee. The presently estimated cost of the work and fixed fee under this Contract may be increased or decreased by written agreement of the parties (whether or not by formal modification of this Contract) and such revised estimate plus the fixed fee shall be deemed substituted in paragraph 1, above.

4. Limitation of Obligation. Payments on account of costs shall not in the aggregate at any time exceed the amount of funds presently obligated hereunder less the Contractor's fixed fee.

5. Notice of Costs Approaching Funds Obligated--Contractor Excused Pending Increase When Obligation is Reached. Whenever the Contractor has reason to believe that the total cost of the work under this Contract (exclusive of the Contractor's fixed fee) will be substantially greater or less than the presently estimated cost of the work the Contractor shall promptly notify the Contracting Officer in writing. The Contractor shall also notify the Contracting Officer in writing when the aggregate of expenditures and outstanding commitments allowable under this Contract, including the Contractor's fixed fee, is equal to ninety per cent (90%) (or such other percentage as the Contracting Officer may from time to time establish by notice to the Contractor) of the amount of funds presently obligated hereunder. When such expenditures and outstanding commitments, including the Contractor's fixed fee, equal one hundred per cent (100%) of such amount the Contractor shall make no further commitments or expenditures (except to meet existing commitments) and shall be excused from further performance of the work unless and until the Contracting Officer thereafter shall increase the funds obligated with respect to this Contract.

6. Government's Right to Terminate Not Affected. The giving of any notice by either party under this Article shall not be construed to waive or impair any right of the Government to terminate the Contract under the provisions of the Article entitled TERM, EXPIRATION AND TERMINATION.

7. Cost Information. The Contractor shall maintain current cost information adequate to reflect the cost of performing the work under this Contract at all times while the work is in progress, and shall prepare and furnish to the Government such written estimates of cost and information in support thereof as the Contracting Officer may request.

8. Correctness of Estimates Not Guaranteed. Neither the Government nor the Contractor guarantees the correctness of any estimate of cost for performance of the work under this Contract, and there shall be no adjustment in the amount of the Contractor's fixed fee by reason of errors in the computation of estimates or differences between such estimates and the actual cost for performance of the work.

9. Appendix "C" Obligation. The foregoing provisions of this Article establishing estimates and obligating funds do not include any work added under paragraph 2 of Article I. In connection with any agreement adding work under paragraph 2 of Article I, the Commission, in the case of a Commission Agreement, and the Sponsor in case of a Sponsor Agreement, will obligate (if the Commission) or allocate (if the Sponsor) in regard to the work provided for in said Agreement the sum therein specified. However, the provisions of paragraph 1 through 8 of this Article shall be otherwise applicable to all Appendix "C" Agreements except that in the case of Sponsor Agreements, the word "Sponsor" shall apply wherever the word "Commission" appears.

ARTICLE V - ALLOWABLE COSTS AND FIXED FEE

1. Compensation for Contractor's Services. Payment for the allowable cost as hereinafter defined, and of the fixed fee, if any, as hereinafter provided shall constitute full and complete compensation for the performance of the work under this Contract.

2. Fixed Fee.

(a) The fixed fee payable to the Contractor for the performance of the work under this Contract prior to October 1, 1961, is $1,090,639.

(b) The fixed fee applicable to the work performed during the period October 1, 1961, through March 31, 1962, is $101,460.

3. Allowable Cost. The allowable cost of performing the work under this Contract shall be the costs and expenses (less applicable income and other credits) that are actually incurred by the Contractor, are applicable and properly chargeable, either as directly incident or as

allocable through appropriate distribution or apportionment, to the performance of the contract work in accordance with its terms and are determined to be allowable pursuant to this paragraph 3. The determination of the allowableness of cost hereunder shall be based on: (1) reasonableness, including the exercise of prudent business judgment, (2) consistent application of generally accepted accounting principles and practices that result in equitable charges to the contract work, and (3) recognition of all exclusions and limitations set forth in this Article or elsewhere in this Contract as to types or amounts of items of cost. Allowable cost shall not include cost of any item described as "unallowable" in paragraph 5 of this Article, except as indicated therein. Failure to mention an item of cost specifically in paragraph 4 or 5 shall not imply either that it is allowable or that it is unallowable.

4. Items of Allowable Cost. Subject to the other provisions of this Article, the following items of cost of work under this Contract shall be allowable to the extent indicated:

(a) Bonds and Insurance (including self-insurance) as provided in the General Provision entitled REQUIRED BONDS AND INSURANCE.

(b) Communication Costs including telephone services, local and long distance telephone calls, telegrams, cablegrams, radiograms, postage and similar items.

(c) Consulting Services, (including legal and accounting) and related expenses, as provided in the Article entitled TECHNICAL AND PROFESSIONAL ASSISTANCE and to the extent approved by the Contracting Officer.

(d) Litigation Expenses, including reasonable counsel fees, incurred in accordance with the General Provision of this Contract entitled LITIGATION AND CLAIMS.

(e) Losses and Expenses (including settlements made with the consent of the Contracting Officer) sustained by the Contractor in the performance of this Contract and certified in writing by the Contracting Officer to be just and reasonable, except the losses and expenses expressly made unallowable under other provisions of this Contract.

(f) Materials and Supplies (including those withdrawn from common stores costed in accordance with any generally recognized method that is consistently applied by the Contractor and productive of equitable results).

(g) Patents, Purchased Design, and Royalty Payments to the extent expressly provided for under other provisions in this Contract or as approved by the Contracting Officer; and preparation of invention disclosures, reports and related documents, and searching the art to the extent necessary to make such invention disclosures in accordance with the Patent Article of this Contract.

(h) Personnel Costs and Related Expenses incurred in accordance with Appendix A, or amendments thereto, such as:

(i) salaries and wages; overtime, shift differential, holiday and other premium pay for time worked; non-work time including vacations, holidays, sick, funeral, military, jury, witness, and voting leave; salaries and wages to employees in their capacity as union stewards and committeemen for time spent in handling grievances, negotiating agreements with the Contractor, or serving on labor-management (contractor) committees; bonuses and incentive compensation subject to the approval of the Contracting Officer if charged directly;

(ii) legally required contributions to old age and survivors' insurance, unemployment compensation plans and workmen's compensation plans (whether or not covered by insurance); voluntary or agreed upon plans providing benefits for retirement, separation, life insurance, hospitalization, medical-surgical and unemployment (whether or not such plans are covered by insurance);

(iii) travel (except foreign travel which requires specific approval by the Contracting Officer on a case by case basis); incidental subsistence and other allowances of Contractor employees, in connection with performance of work under this Contract (including new employees reporting for work and transfer of employees, the transfer of their household goods and effects and the travel and subsistence of their dependents);

(iv) employee relations, welfare, morale, etc., programs, including incentive or suggestion awards, employee counseling services, health or first-aid clinics and house or employee publications;

(v) personnel training (except special education and training courses and research assignments calling for attendance at educational institutions which require specific approval by the Contracting Officer on a case by case basis) including apprenticeship training programs designed to improve efficiency and productivity of contract operations, to develop needed skills and to develop scientific and technical personnel in specialized fields required in the contract work;

(vi) recruitment of personnel (including help-wanted advertisement) including services of employment agencies at rates not in excess of standard commercial rates, employment office, travel of prospective employees at the request of the Contractor for employment interviews; and

(vii) net cost of operating plant-site cafeterias, dining rooms and canteens attributable to the performance of the Contract.

Appendix A may be modified from time to time, in writing, without execution of an amendment to this Contract for the purposes of effecting any changes in or additions to Appendix A as may be agreed upon by the parties.

(i) Rentals and Leases of land, buildings and equipment owned by third parties where such items are used in the performance of the Contract except that such rentals and leases directly chargeable to the Contract shall be subject to approval by the Contracting Officer.

(j) Repairs, Maintenance, Inspection, replacement and disposal of Government-owned property to the extent directed or approved by the Contracting Officer.

(k) Repairs, Maintenance and Inspection of Contractor-owned property used in connection with the performance of this Contract to the extent provided in the Article entitled CONSTRUCTION, ALTERATION OR REPAIR WORK.

(l) Special Tooling, including jigs, dies, fixtures, molds, patterns, designs and drawings, tools, and equipment of a specialized nature generally useful to the Contractor only in the performance of this Contract.

(m) Subcontracts, Purchase Orders and purchases from Contractor controlled sources, subject to approvals required by other provisions of this Contract.

(n) Subscriptions to trade, business, technical, and professional periodicals, as approved by the Contracting Officer when charged directly to the Contract.

(o) Taxes, Fees and Charges levied by public agencies which the Contractor is required by law to pay, except those which are expressly made unallowable under other provisions of this Contract.

(p) Utility Services including electricity, gas, water, steam and sewerage.

(q) The costs of preparing bids and proposals to the extent approved by the Contracting Officer, but not to exceed 1% of the direct material and direct labor costs of the contract work.

5. Items of Unallowable Costs. The following items of cost are unallowable under this Contract to the extent indicated:

(a) Advertising, except (i) help-wanted advertising, and (ii) other advertising such as participation in exhibits approved by the Contracting Officer as clearly in furtherance of work performed under the Contract.

(b) Bad Debts, (including expenses of collection) and provisions for bad debts not arising out of the performance of this Contract.

(c) Bonuses, and similar compensation under any other name, which (i) are not pursuant to an agreement between the Contractor and employee prior to the rendering of the services or an established plan consistently followed by the Contractor; (ii) are in excess of those costs which are allowable by the Internal Revenue Code and regulations thereunder, or (iii) provide total compensation to an employee in excess of reasonable compensation for the services rendered.

(d) Commissions, Bonuses and Fees (under whatever name) in connection with obtaining or negotiating for a Government contract or a modification thereto.

(e) Contingency Reserves, provisions for, (except provisions for reserves under a self-insurance program to the extent that the type, coverage, rates and premiums would be allowable if commercial insurance were purchased to cover the same risk, as approved by the Contracting Officer.)

(f) Contributions and Donations.

(g) Depreciation in excess of that calculated by application of methods approved for use by the Internal Revenue Service under the Internal Revenue Code of 1954, as amended, including the straight-line, declining balance (using a rate not exceeding twice the rate which would have been used had the depreciation been computed under the straight-line method), or sum-of-the-years-digits method, on the basis of expected useful life, to the cost of acquisition of the related fixed assets less estimated salvage or residual value at the end of the expected useful life. Amortization or depreciation of unrealized appreciation of values of assets or of assets fully amortized or depreciated on the Contractor's books of account is unallowable.

(h) Dividend Provisions or Payments and, in the case of sole proprietors and partners, distributions of profit.

(i) Entertainment Costs, except the costs of such recreational activities for on-site employees as may be approved by the Contracting Officer or provided for elsewhere in this Contract.

(j) Fines and Penalties, including assessed interest, resulting from violations of, or failure of the Contractor to comply with Federal, State, or local laws or regulations, except when incurred in accordance with written approval of the Contracting Officer or as a result of compliance with the provisions of this Contract.

(k) Government-Furnished Property, except to the extent that cash payment therefor is required pursuant to procedures of the Commission applicable to transfers of such property to the Contractor from others.

(l) Insurance (including any provision of a self-insurance reserve) covering business interruption or use and occupancy, insurance on any person where the Contractor under the insurance policy is the beneficiary directly or indirectly, and insurance against loss of or damage to Government property as defined in the Article of this Contract entitled GOVERNMENT PROPERTY.

(m) Interest, however represented, except interest incurred in compliance with the General Provision entitled STATE AND LOCAL TAXES, bond discounts and expenses, and costs of financing and refinancing operations.

(n) Legal, Accounting, and Consulting Services, and related costs incurred in connection with the preparation of prospectuses, preparation and issuance of stock rights, organization or reorganization, prosecution or defense of antitrust suits, prosecution of claims against the United States, contesting actions or proposed actions of the United States, and prosecution or defense of patent-infringement litigation.

(o) Losses (including litigation expenses, counsel fees, and settlements) on, or arising from the sale, exchange, or abandonment of capital assets, including investments; losses on other contracts, including the Contractor's contributed portion under cost-sharing contracts; losses in connection with price reduction to and discount purchases by employees and others from any source; and losses where such losses or expenses--

(i) are compensated for by insurance or otherwise, or which would have been compensated by insurance required by law or by written direction of the Contracting Officer but which the Contractor failed to procure or maintain through its own fault or negligence, or which could have been covered by permissible insurance in keeping with ordinary business practice but which the Contractor failed to secure or maintain;

(ii) result from wilful misconduct or lack of good faith on the part of any of the Contractor's directors, corporate officers, or a supervising representative of the Contractor;

(iii) represent liabilities to third persons for which the Contractor has expressly accepted responsibility under other terms of this Contract.

(p) Maintenance, Depreciation, and Other Costs incidental to the Contractor's idle or excess facilities (including machinery and equipment) other than reasonable standby facilities.

(q) Membership in trade, business, and professional organizations except as approved by the Contracting Officer.

(r) Precontract Costs, except as expressly made allowable under other provisions in this Contract.

(s) Reconversion, Alteration, Restoration, or Rehabilitation of the Contractor's facilities, except as expressly provided elsewhere in this Contract.

(t) Research and Development Costs, unless specifically provided for elsewhere in this Contract.

(u) Selling and Distribution Activities and related expenses not applicable to the performance of this Contract.

(v) Storage of Records pertaining to this Contract after completion of operations under this Contract irrespective of contractual or statutory requirement of the preservation of records.

(w) Taxes, Fees and Charges in connection with financing, refinancing, or refunding operations, including the listing of securities on exchanges; taxes which are paid contrary to the General Provision entitled STATE AND LOCAL TAXES; Federal taxes on net income and excess profits; and special assessments on land which represent capital improvement.

(x) The cost to the Contractor for compliance at Site B with health, safety, and security standards and regulations of the Commission, and the cost incurred with respect to health, safety and security measures at Site A occasioned solely by its proximity to Site B.

6. General and Administrative Expenses. General and administrative expenses to be applied to the Contract will consist of two G&A pools, known as the Sylcor Division (hereinafter referred to as the "Division") G&A and the Home Office G&A.

(a) The Division G&A pool will consist of the Accounting Department, Purchasing Department, Contract Administration, and charges from the data processing center at Camillus, New York, for the cost of machine accounting, payroll, auditing, and communications service. This pool will be allocated on the basis of salaries and wages, as follows:

(i) For each calendar year, the Division G&A expense factor will be the ratio of the total Division G&A expenses to the total Division plant and laboratory salaries and wages (exclusive of overtime premium).

(ii) The Division G&A expense factor, as determined in (i), above, applied to the total plant and laboratory salaries and wages (exclusive of overtime premium) reimbursable for work under this Contract for that period, shall determine the amount of Division G&A expenses reimbursable to the Contractor for such calendar year.

(iii) Monthly payments of Division G&A expense shall be based upon a provisional Division G&A expense factor applied to reimbursable plant and laboratory salaries and wages (exclusive of overtime premium) for the month. The provisional Division G&A expense factor shall be mutually agreed upon by the parties in writing, but without executing a formal amendment to this Contract.

(iv) Annually, as soon after December 31 as practicable, the Contractor shall determine its actual Division G&A expenses reimbursable hereunder, which shall be subject to audit and approval by the Commission.

(v) Based upon the determination made as provided in (iv), above, any excess Division G&A expenses paid to the Contractor under (iii), above, shall be refunded to the Commission and any deficit in such payments shall be paid by the Commission to the Contractor.

(b) The Home Office G&A pool covers expenses incurred by the Central Executive Department made up of the company officers and their staff, legal expense, patent expense to the extent approved by the Contracting Officer, controller's department expense, tax department, purchasing and insurance expense. The details within each group are made up of salaries, fringe benefits, occupancy expense, and the usual administrative type expenditures.

(i) The Home Office G&A rate to be applied during the year represents the relationship between the estimated input base (cost of sales, including labor, materials and overhead, but excluding Divisional G&A) for the company and the estimated allowable portion of the Home Office expense. This rate is a provisional billing rate and is reviewed and approved by the cognizant DOD audit.

(ii) A provisional billing rate of two per cent (2%) for Home Office G&A will be applied to total cost (exclusive of Division G&A expense) during the year 1961.

(iii) Periodically, the DOD audit will check the validity of the provisional billing rate and make any necessary adjustments.

(iv) Upon determination of the actual Home Office G&A rate, as determined by audit and approved by the Commission, the amounts billed on a provisional basis will be adjusted to actual and the difference will be billed or refunded to the Commission, as appropriate.

ARTICLE VI - PAYMENTS

1. Payments on Account of Allowable Costs. Once each month (or at more frequent intervals, if approved by the Contracting Officer) the Contractor may submit to the Contracting Officer, in such form and reasonable detail as he may require, an invoice or voucher supported by a statement of costs incurred by the Contractor in the performance of this Contract and claimed to constitute allowable costs. Promptly after receipt of each invoice or voucher, the Government shall, subject to the provisions of paragraph 3, below, make payment thereon as approved by the Contracting Officer.

2. Payment of Fixed Fee. Ninety per cent (90%) of the fixed fee, if any, shall become due and payable in periodic installments in amounts as shown below and the balance upon completion and acceptance of each scope of work under this Contract; provided, however, that the Contracting Officer may at any time that the amount of the retained fixed fee equals ten per cent (10%) of the total fixed fee or equals one hundred thousand dollars ($100,000), whichever is less, make payments of any of the remaining periodic installments of the fixed fee in full.

(a) Payment of the fixed fee of $1,090,639 applicable to the cost of the work performed prior to October 1, 1961, shall be made by the Government in accordance with applicable contract provisions in effect prior to October 1, 1961.

(b) For the period October 1, 1961, through March 31, 1962, ninety per cent (90%) of the fixed fee of $101,460 shall become due and payable in monthly installments of $15,219.

3. Audit Adjustments. At any time or times prior to settlement under this Contract, the Contracting Officer may have invoices or vouchers and statements of cost audited. Each payment theretofore made shall be subject to reduction for amounts included in the related invoice or voucher which are found by the Contracting Officer, on the basis of such audit, not to constitute allowable cost. Any payment may be reduced for over-payments, or increased for under-payments, on preceding invoices or vouchers.

4. Review and Approval of Costs. The Contractor shall prepare and submit annually as of June 30, or for other such periods designated by the Contracting Officer, a voucher for the total of net expenditures accrued (i.e., net costs incurred) for the period covered by the voucher, and the Commission after audit and appropriate adjustment will approve such voucher. This approval by the Commission will constitute an acknowledgment by the Commission that the net costs incurred are allowable under the Contract and that they have been recorded in the accounts maintained by the Contractor in accordance with the Commission accounting policies, but will not relieve the Contractor of responsibility for the Commission's assets in its case, for appropriate subsequent adjustments, or for errors later becoming known to the Commission.

5. Completion Voucher. On receipt and approval of the invoice or voucher designated by the Contractor as the "completion invoice" or "completion voucher" and upon compliance by the Contractor with all the provisions of this Contract (including, without limitation, the provisions relating to patents and provisions of paragraph 7 below) the Government shall promptly pay to the Contractor any balance of allowable cost and any part of the fixed fee which has been withheld pursuant to paragraph 2 above or otherwise not paid to the Contractor. The completion invoice or voucher shall be submitted by the Contractor promptly following the completion of the

work under this Contract but in no event later than one (1) year (unless within the year the Contracting Officer grants a further specific period of time) from the date of such completion.

6. Applicable Credits. The Contractor agrees that any refunds, rebates, credits, or other amounts (including any interest thereon) accruing to or received by the Contractor or any assignee under this Contract shall be paid by the Contractor to the Government, to the extent that they are properly allocable to costs for which the Contractor has been reimbursed by the Government under this Contract. Reasonable expenses incurred by the Contractor for the purpose of securing such refunds, rebates, credits, or other amounts shall be allowable costs hereunder when approved by the Contracting Officer.

7. Financial Settlement. Prior to final payment under this Contract, the Contractor and each assignee under this Contract whose assignment is in effect at the time of final payment under this Contract shall execute and deliver:

(a) an assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits or other amounts (including any interest thereon) properly allocable to costs for which the Contractor has been reimbursed by the Government under this Contract; and

(b) a release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this Contract, subject only to the following exceptions:

(i) specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor;

(ii) claims, together with reasonable expenses incidental thereto, based upon liabilities of the Contractor to third parties arising out of performance of this Contract; provided that such claims are not known to the Contractor on the date of the execution of the release; and provided further that the Contractor gives notice of such claims in writing to the Contracting Officer not more than six (6) years after the date of the release or the date of any notice to the Contractor that the Government is prepared to make final payment, whichever is earlier; and

(iii) claims for reimbursement of costs (other than expenses of the Contractor by reason of any indemnification of the Government against patent liability), including reasonable expenses incidental thereto, incurred by the Contractor under the provisions of this Contract relating to patents.

8. Claims. Claims for payment shall be accompanied by such supporting documents and justification as the Contracting Officer shall prescribe.

9. Discounts. The Contractor shall take and afford the Government the advantage of all known and available cash and trade discounts, rebates, allowances, credit, salvage, and commissions unless the Contracting Officer finds that such action is not in the best interest of the Government.

10. Revenues. All revenues other than the Contractor's fixed fee or fees, if any, accruing to the Contractor in connection with the work under this Contract shall be applied in reduction of allowable costs.

11. Direct Payments of Charges - Deductions. The Government reserves the right, upon ten (10) days written notice from the Contracting Officer to the Contractor, to pay directly to the persons concerned, all amounts due which otherwise would be allowable under this Contract. Any payment so made shall discharge the Government of all liability to the Contractor therefor.

12. Payments Under Appendix "C" Agreements. Payment of all costs and fixed fee under any Appendix "C" Agreement shall be made to the Contractor by the Commission office or Sponsor executing the Agreement in accordance with the procedures established by said Agreement.

ARTICLE VII - GOVERNMENT PROPERTY

1. Except as otherwise specifically agreed upon in writing by the Contractor and the Commission and except as otherwise specifically provided herein:

(a) Title to all property especially purchased by the Contractor for this Agreement, for which the Contractor is entitled to direct reimbursement under the provisions of this Contract, shall pass directly from the vendor to the Government; and

(b) Title to all property utilized in the work of this Agreement, provided by the Contractor from Contractor-owned stores or manufactured by the Contractor in the ordinary course of its commercial business, for which the Contractor is entitled to reimbursement under the provisions of this Contract, shall pass to the Government at the time of such utilization.

2. The Government reserves the right to furnish any property or services required for or useful in the performance of the work under this Agreement. Title to all property so furnished shall remain in the Government.

3. The Government shall retain title to all products, by-products, wastage, salvage, work-in-process, residues and scrap resulting from property to which the Government has or had title pursuant to paragraphs 1 and 2 above.

4. All items of Government-owned property referred to above are hereafter collectively referred to in this Article as "Government Property."

To the extent practicable, the Contractor shall cause all nonexpendable items of Government property to be suitably marked with an identifying mark or symbol indicating that the items are the property of the Government. The Contractor shall maintain, at all times and in a manner satisfactory to the Commission, records showing the disposition and use of Government property. Such records shall be subject to Commission inspection at all reasonable times. It is understood that the Commission shall at all reasonable times have access to the premises wherein any items of Government property are located.

5. The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property (but not of any consumption of materials or supplies in the performance of its undertakings hereunder). Except as otherwise specifically provided in this Agreement, the Contractor shall not be liable for loss or destruction of or damage to Government property (in the possession or custody of the Contractor in connection with this Agreement) unless such loss, destruction or damage is due to gross negligence or wilful misconduct attributable to the Contractor's corporate officers or its supervisory employees.

6. Except as otherwise authorized in writing by the Commission, items of Government property referred to above shall not be used by the Contractor except in the performance of its obligations under this Agreement.

7. In the event of loss or destruction of or damage to Government property, the Contractor shall take such steps to subserve the Government's interest as the Commission authorizes or approves. If the Contractor is liable for loss or destruction of or damage to any items of Government property, it shall promptly account therefor to the satisfaction of the Commission; if the Contractor is not liable therefor, and is indemnified, reimbursed, or otherwise compensated for such loss, destruction or damage (other than by the Government under this Agreement), the Contractor shall promptly account to the Government for an equitable share of such indemnification, reimbursement, or other compensation; in any event, the Contractor shall do nothing to prejudice the Government's rights to recover against third parties for any such loss, destruction or damage, and, upon request of the Commission, shall furnish the Government all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery.

8. The Contractor may, with the approval of the Commission, (a) transfer or otherwise dispose of items of Government property to such parties and upon such terms and conditions as so approved, or (b) itself acquire title to items of property at prices mutually agreed upon by the Commission and the Contractor without the necessity of execution of an amendment to this Agreement. The proceeds of any such transfer or disposition, and the agreed price of any such Contractor acquisition, shall be applied in reduction of any payments or reimbursement to be made by the Government to the Contractor under this Contract or shall otherwise be paid in such manner as the Commission may direct.

9. The Contractor shall conform to all regulations and requirements of the Commission concerning the management, inventory control, storing and disposal of Government property. The Contractor agrees to prepare and submit to the Commission for review, within sixty (60) days after the execution of this Agreement, a written statement of the methods to be used and of the procedures to be followed by the Contractor in regard to management, inventory control, storing and disposal of Government property. The Contractor shall not use any method or procedure in this regard which the Commission has advised the Contractor is contrary to Commission policy or which is otherwise prohibited by this Agreement.

10. With respect to each item of Government property located at Site A not sold or otherwise disposed of by the Contractor or acquired by the Contractor pursuant to paragraph 8 above, the Government, within one hundred twenty (120) days following the termination or expiration of the period of performance of this Contract, or any extension thereof, shall abandon or remove it, without incurring any further liability to the Contractor.

(a) In the event the Government occupies Site A pursuant to subparagraph d(i) of paragraph 2 of Article III - TERM, EXPIRATION AND TERMINATION, the rights in the Government to abandon or remove, as set forth in this paragraph, shall be suspended during the period of such occupancy and the one hundred twenty (120) day period during which the Government must either abandon or remove such property shall not commence to run until the end of such occupancy.

(b) Prior to determination by the Government to abandon or remove any item of Government property, the Contractor agrees, if the Government so requests, to negotiate with the Government in good faith to purchase such item or items at a price mutually agreed upon, it being understood, however, that the Contractor shall not be required to negotiate any price in excess of the value to the Contractor of said item or items.

(c) There shall be no charge to the Government by the Contractor for the storage of such property (i) for one hundred twenty (120) days after termination or expiration of this Contract; (ii) for one hundred twenty (120) days after (a) September 30, 1964, or (b) such earlier date as the Government may voluntarily terminate its right of occupancy as hereinabove provided; or (iii) during the period of the close-out of this Contract.

ARTICLE VIII - SETTLEMENT OF GOVERNMENT INVESTMENT IN IMPROVEMENTS

1. Definitions. As used in this Article:

(a) The term "improvements" shall mean any and all renovations, alterations, improvements, or additions, including but not limited to all materials, supplies, and other property purchased at the expense of the Government and incorporated into such improvements, made at the expense of the Government to and incorporated as part of the land or buildings of the Contractor on

Cantiague Road in Hicksville, Long Island, New York, designated as Sites A and B, as is more specifically provided in Article II - SITE OF THE WORK, hereof. It is understood and agreed by way of example but not limitation that there will be excluded from the meaning of the term "improvements" any manufacturing equipment, including associated wiring, duct works, controls, etc., which can be severed from the property without necessitating structural repairs (including but not limited to any breaking or repairing of walls or ceilings) to the buildings. All other items incorporated into said land or buildings, except manufacturing equipment and associated wiring, duct works, controls, etc., referred to in the preceding sentence, shall be deemed to be improvements. It is further understood and agreed that upon payment therefor by the Contractor to the Government, as provided in this Article, the Contractor shall have sole and exclusive title as against the Government to all improvements in Sites A and B.

(b) The term "appraised value in place" shall mean the value of the improvements in their existing condition, as determined by the appraiser(s), as of the date of the appraisal.

(c) The term "appraised net salvage value" shall mean the estimated salvage value, as determined by the appraiser(s), of the improvements less the estimated costs, as determined by the appraiser(s), of (i) the removal of such improvements, and (ii) the restoration of the Contractor's land and buildings at Sites A and B to substantially the same condition, except for reasonable wear and tear, existing immediately prior to the incorporation therein of such improvements.

2. Upon termination or expiration of this Agreement, the appraised value in place and the appraised net salvage value of the improvements shall be determined by a person or persons mutually acceptable to the Government and the Contractor. Promptly following receipt of such appraisals, the Contractor shall in good faith negotiate with and pay to the Government an amount equal to the mutually agreed value of such improvements. The mutually agreed value shall be determined after giving full consideration to the appraised value in place and the current value to the Contractor of such improvements. In no event shall the mutually agreed value be less than the appraised net salvage value of any improvement. Failure to agree upon either an acceptable appraiser(s) or the mutually agreed value pursuant to the foregoing provision of this Article shall be considered a dispute to be settled in accordance with the General Provision of this Contract entitled DISPUTES.

ARTICLE IX - PATENTS

1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of, in connection with, or under the terms of this Agreement, the Contractor shall furnish the Commission with complete

information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title and rights under any application or patent that may result; provided, however, that with respect to such inventions or discoveries made or conceived in the course of, in connection with, or under, the terms of paragraph 1 of Article I, the Contractor, in any event, shall retain at least a nonexclusive, irrevocable, royalty-free license under said invention, discovery, application, or patent, such license being limited to the manufacture, use and sale for purposes other than use in the production or utilization of special nuclear material or atomic energy. Subject to the license retained by the Contractor, as provided in this Article, the judgment of the Commission on these matters shall be accepted as final; and the Contractor, for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

2. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Acts of 1946 and 1954 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of any of the work under this Agreement.

3. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs 1 and 2 of this Article from all persons who perform any part of the work under this Agreement, except such clerical and manual labor personnel as will not have access to technical data.

4. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions making this Article applicable to the subcontractor and its employees.

5. The Contractor shall grant to the Government, to practice or have practiced, an irrevocable, non-exclusive license in and to any inventions (whether patented or not), secret processes, technical information and techniques of production, research and plant operation, which are directly utilized by the Contractor in the performance of the work of this Agreement. Such license shall apply to the manufacture, use and disposition of any article and material and to the use of any method or process. Such license shall be limited to governmental purposes related to (a) production of special nuclear material, (b) utilization of special nuclear material, and (c) utilization of atomic energy; provided, however, that the foregoing shall not limit the Government's right to sell, or cause to be sold, all products or by-products not used by or for the Government which result or remain from the use of any invention, process, information or technique to which such license applies.

6. (a) Except as otherwise stipulated in writing by the Commission, or as provided in paragraphs (b) and (e) below, the Contractor agrees to

indemnify the Government, its officers, agents, servants and employees against liability (including but not limited to reasonable costs and expenses incurred) arising from the infringement or the alleged infringement of any Letters Patent (not including liability arising pursuant to Section 183, Title 35 (1952) U. S. Code, prior to issuance of Letters Patent) occurring in the performance of this Agreement, or arising by reason of sale to, or purchase by, or disposal by, or for the account of the Government of items manufactured or supplied under this Agreement.

(b) With respect to infringement or alleged infringement necessarily resulting from the Contractor's compliance with written specifications or provisions given by the Commission for components which are not standard commercial products of the Contractor or resulting from specific written instructions given by the Commission for the purpose of directing a manner of performance of the Contract not normally utilized by the Contractor, the Government agrees to hold the Contractor harmless from liability arising from such infringement or alleged infringement of any United States Letters Patent in view of the following facts:

(i) the Contractor has not made an investigation as to the possibility of patent infringement,

(ii) the Government and the Contractor desire to avoid the delay incident to a patent investigation, and

(iii) the Contractor has not included in its price any provision for the settlement of possible patent claims.

Provided, however, that with respect to procurements undertaken on or after the date of actual execution of Modification No. 9, except as otherwise directed by the Commission, the Contractor will secure indemnification from suppliers or vendors of standard commercial products. The Contractor, to the extent that it can extend such aforesaid indemnification from suppliers or vendors, agrees to so extend this indemnification to the Government.

(c) Except as otherwise directed by the Commission in writing, the Contractor, with respect to claims and actions involving liabilities against which it is held harmless by the Commission, shall give prompt notice in writing to the Commission, of any such claims and actions of which it has notice and shall furnish promptly to the Commission copies of all pertinent papers received by the Contractor with respect to any such action or claim. If required by the Commission, the Contractor shall with respect to such actions or claims (at the Government's expense, by proper arrangement) assist the Government in the settlement or defense of such action or claim and shall furnish such evidence in its possession as may be required by the Government in the settlement or defense of such action or claim.

(d) The obligation of the Commission to the Contractor on claims or actions involving liability against which the Commission is indemnified

by the Contractor under the terms of this Agreement shall be identical with the obligations of the Contractor to the Commission under subparagraph (c), above, with respect to claims or actions involving liability against which the Contractor is held harmless by the Commission. In such situations, the Contractor shall be given full opportunity to participate in the defense against such claims and actions.

(e) However, anything to the contrary notwithstanding, the Contractor assumes no liability consequential or otherwise for, and the Government agrees to hold the Contractor harmless against liability (including but not limited to reasonable costs and expenses incurred) for infringement or alleged infringement by reason of the use of the completed product in combination with other items or materials or in the operation of any process.

ARTICLE X - PUBLICATIONS - PATENT CLEARANCE

The Commission recognizes that, during the course of work hereunder, or subsequent thereto, Sylvania Electric Products Inc., its employees or its subcontractors may from time to time desire to publish within the limits of security requirements information regarding technical or scientific developments arising in the course of the Contract. In order that the public disclosure of such information will not adversely affect the patent interests of the Commission and industry, patent approval for the release within the limits of security requirements shall be secured from the Commission prior to such publication, provided that Commission approval shall not be withheld solely for patent purposes for a period longer than six months after a written request for such patent approval is made and accompanied by full technical details (by setting forth in extenso and/or by specific reference to particular written information earlier furnished) relating to the information sufficient for the preparation of appropriate patent applications, and provided further that Sylvania Electric Products Inc., or its employees or its subcontractors, shall be free of such patent restrictions with respect to publication, within the limits of security requirements, of a particular item of such information if at least ten days prior to such publication the party desiring to publish certifies in writing to the Commission that such item of information contains no patentable subject matter, or alternatively, that U. S. patent application(s) on any patentable subject matter therein contained has or have been filed.

ARTICLE XI - PROCUREMENT AND SUBCONTRACTS

1. Approvals.

(a) The Contractor shall not enter into any subcontract without the written approval of the Commission, or Sponsor if applicable, of its terms and conditions. For the purposes of this paragraph, a subcontract is defined as any contractual arrangement (whether or not in the form commonly referred to as a "purchase order") with a third party for the

performance of a specific part of the work to be performed under this Agreement, which arrangement is specifically made for such performance and the cost of which is, apart from the provisions of this paragraph, an allowable cost under this Agreement, except, however, arrangements covering (i) the furnishing of a basic raw material, (ii) the furnishing of a standard commercial or catalog item, or (iii) the employer-employee relation.

(b) The Commission, or the Sponsor in the case of a Sponsor Agreement, reserves the right, from time to time, by written notice from the Commission, or Sponsor if applicable, to the Contractor (i) to make any or all other commitments or classes of commitments hereunder (other than the contractual arrangements referred to in (a) above) subject to, and to require their submission for, Commission, or Sponsor if applicable, approval, and (ii) to make any or all methods, practices, and procedures used or proposed to be used in effecting all arrangements and commitments hereunder subject to, and to require their submission for Commission, or Sponsor if applicable, approval. In this regard, the Contractor agrees to prepare and submit to the Commission, or the Sponsor if applicable, for review, within thirty (30) days after the execution of this Agreement (or any extension thereof approved in writing by the Commission), written statements of the daily procurement practices and procedures to be used and of the objectives intended to be accomplished by such practices and procedures. The Contractor will not use any procurement procedures prohibited by this Agreement or which the Commission has advised the Contractor are contrary to Commission policy.

(c) The Contractor shall obtain the prior written approval of the Commission before (i) purchasing motor vehicles, airplanes, typewriters, printing equipment, helium, or alcohol, (ii) leasing, purchasing, or otherwise acquiring real property, (iii) procuring any item or service on a cost, cost-plus-fee, or time-and-materials basis, (iv) purchasing any item which the Commission specifies is to be obtained from indicated Government sources, and (v) purchasing any item at a cost in excess of $5,000, where payment for the cost of any action specified in (i) through (v) will be claimed hereunder.

2. Terms. The Contractor shall reduce to writing, unless this provision is waived in writing by the Commission, every subcontract or other commitment in excess of One Hundred Dollars ($100.00) made by it for the purpose of its undertakings hereunder, except contracts covering the employer-employee relation (but not excepting contracts with consultants); insert therein a provision that such commitment is assignable to the Government; insert therein all other provisions required by law or expressly required by the provisions of this Agreement; and make all such commitments in its own name and not bind or purport to bind the Government or the Commission thereunder.

ARTICLE XII - CONDUCT OF THE WORK, INSPECTION AND REPORTS

1. In performing the work called for under this Agreement, the Contractor shall (a) utilize its best efforts, know-how and ability, (b) utilize its best efforts to have the work executed in the most workmanlike manner by qualified, careful and efficient workers in strict conformity with the best standard practices (subject to the directions of the Commission), (c) utilize its best efforts to provide sufficient technical, supervisory, administrative and other personnel to insure the prosecution of the work in accordance with pertinent production or other progress schedules, (d) if in the opinion of the Commission the Contractor falls behind any pertinent production or other progress schedule, use its best efforts to take such steps to improve its progress as the Commission may direct, and (e) if in the opinion of the Commission the Contractor's personnel or other reimbursable costs are excessive for the proper performance of this Contract, make such prospective reductions thereof as the Commission may direct.

2. The work of this Agreement is subject to (a) the general supervision of the Commission, and (b) the Commission authorizations, approvals and directions otherwise provided for in this Agreement. The Contractor shall proceed in the performance of this Agreement and shall place emphasis (or relative emphasis) on the various phases of the work of said Agreement, as and to the extent requested by the Commission from time to time. The Commission shall have the right to inspect in such manner and at such times as it deems appropriate, all activities of the Contractor in, or related to the course of the work under this Agreement.

3. The Contractor shall keep the Commission, or the Sponsor if applicable, fully advised of its progress hereunder and of the difficulties, if any, which it experiences and shall prepare and submit to the Commission, or Sponsor if applicable, in such quantity and form as may be directed by the Commission (a) monthly progress reports, (b) interim technical reports on completion of specific phases of the work, (c) production schedules, financial and cost reports, construction completion reports and such other special reports as may be requested by the Commission from time to time, and (d) a final report summarizing its activities, findings, and conclusions.

4. The Contractor shall appoint from its staff an over-all director of the work of this Agreement. The selection and continued assignment to said work of this director shall be subject to the approval of the Commission, or Sponsor if applicable.

ARTICLE XIII - CONSTRUCTION, ALTERATION OR REPAIR WORK

1. The Contractor shall not perform or have performed under this Agreement any construction, alteration or repair work in excess of One Thousand Dollars ($1,000.00), including painting and decorating, without the prior written approval of the Commission.

2. In the event that the Contractor, under this Agreement, performs or has performed, construction, alteration or repair work, including painting and decorating, which work is within the scope of the Davis-Bacon Act (Act of March 3, 1931, c. 411, Sec. 1, 46 Stat. 1494, as amended; 40 U. S. Code 276 (a) et seq), the following provisions shall apply to such work:

(a) (i) All mechanics and laborers employed or working directly upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Copeland Act (Anti-Kickback) Regulations (29CFR, Part 3) the full amounts due at the time of payment, computed at wage rates not less than those contained in the wage determination decision of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor or Subcontractor and such laborers and mechanics; and a copy of the wage determination decision shall be kept posted by the Contractor at the site of the work in a prominent place where it can be easily seen by the workers.

(ii) In the event it is found by the Contracting Officer that any laborer or mechanic employed by the Contractor or any subcontractor directly on the site of the work covered by this Contract has been or is being paid at a rate of wages less than the rate of wages required by paragraph (a) of this Article, the Contracting Officer may (a) by written notice to the Government prime Contractor terminate his right to proceed with the work, or such part of the work as to which there has been a failure to pay said required wages, and (b) prosecute the work to completion by Contract or otherwise, whereupon such Contractor and his sureties shall be liable to the Government for any excess costs occasioned the Government thereby.

(b) Apprentices. Apprentices will be permitted to work only under a bona fide apprenticeship program registered with a State Apprenticeship Council which is recognized by the Federal Committee on Apprenticeship, U. S. Department of Labor; or if no such recognized Council exists in a State, under a program registered with the Bureau of Apprenticeship, U. S. Department of Labor.

(c) Payroll Records and Payrolls.

(i) Payroll records will be maintained during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records will contain the name and address of each such employee, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made and actual wages paid. The Contractor will make his employment records available for inspection by authorized

representatives of the Contracting Officer and the U. S. Department of Labor, and will permit such representatives to interview employees during working hours on the job.

(ii) A certified copy of all payrolls will be submitted weekly to the Contracting Officer. The Government prime Contractor will be responsible for the submission of certified copies of the payrolls of all subcontractors. The certification will affirm that the payrolls are correct and complete, that the wage rates contained therein are not less than the applicable rates contained in the wage determination decision of the Secretary of Labor attached to this Contract, and that the classifications set forth for each laborer or mechanic conform with the work he performed.

(d) Copeland (Anti-Kickback) Act--Nonrebate of Wages. The regulations of the Secretary of Labor applicable to contractors and subcontractors (29 CFR, Part 3), made pursuant to the Copeland Act, as amended (40 U.S.C. 276c) and to aid in the enforcement of the Anti-Kickback Act (18 U.S.C. 874) are made a part of this Contract by reference. The Contractor will comply with these regulations and any amendments or modifications thereof and the Government prime Contractor will be responsible for the submission of affidavits required of subcontractors thereunder. The foregoing shall apply except as the Secretary of Labor may specifically provide for reasonable limitations, variations, tolerances, and exemptions.

(e) Withholding of Funds to Assure Wage Payment. There may be withheld from the Contractor so much of accrued payments or advances as may be considered necessary to pay laborers and mechanics employed by the Contractor or any subcontractor the full amount of wages required by this Agreement. In the event of failure to pay any laborer or mechanic all or part of the wages required by this Agreement, the Contracting Officer may take such action as may be necessary to cause the suspension, until such violations have ceased, of any further payment, advance, or guarantee of funds to or for the Government prime Contractor.

(f) Subcontracts--Termination. The Contractor agrees to insert subparagraphs (a) through (f) hereof in all subcontracts and further agrees that a breach of any of the requirements of these articles may be grounds for termination of this Agreement. The term "Contractor" as used in such articles in any subcontract shall be deemed to refer to the subcontractor except in the phrase "Government prime Contractor."

ARTICLE XIV - DRAWINGS, DESIGNS, SPECIFICATIONS

All drawings, sketches, designs, design data, specifications, notebooks, technical and scientific data, and all photographs, negatives, reports, findings, recommendations, data and memoranda of every description relating thereto, as well as all copies of the foregoing relating to the work or any part thereof, shall be subject to inspection by the Commission at all reasonable times (for which inspection the proper facilities shall be afforded the Commission by the Contractor and its subcontractors), shall be the property of the Government, and

may be used by the Government for any purpose whatsoever without any claim on the part of the Contractor and its subcontractors and vendors for additional compensation and shall, subject to the right of the Contractor to retain a copy of said material for its own use, be delivered to the Government, or otherwise disposed of by the Contractor either as the Contracting Officer may from time to time direct during the progress of the work or in any event as the Contracting Officer shall direct upon completion or termination of this Contract. The Contractor's right of retention and use shall be subject to the security and patent provisions, if any, of this Contract.

ARTICLE XV - SOURCE AND SPECIAL NUCLEAR MATERIALS

The Contractor agrees to conform to all regulations and requirements of the Commission with respect to accounting for source and special nuclear materials (defined in the Atomic Energy Act of 1954).

ARTICLE XVI - GUARD AND FIRE FIGHTING FORCES

In connection with its work under this Agreement, the Contractor shall provide such guard or fire fighting forces, with such uniforms and equipment, as the Commission may from time to time require or approve. The cost thereof shall be deemed to be allowable costs.

ARTICLE XVII - TECHNICAL AND PROFESSIONAL ASSISTANCE

When, in the judgment of the Contractor, the complexity and nature of the Contract undertakings are such as to require supplemental expert technical or professional assistance, services or advice in connection with special phases of a technical character, the Contractor may with the written approval of the Commission engage or otherwise obtain such supplemental services. Compensation and reimbursement to any consultant engaged pursuant to this Article shall be governed by the provisions of Appendix "A" attached hereto except as may otherwise be specifically stated in the Contract with such consultants approved by the Commission.

ARTICLE XVIII - FINAL INSPECTION AND ACCEPTANCE

Final inspection and acceptance by the Commission of work under paragraph 1 of Article I of this Agreement shall be performed by the Commission or such other representative as may be designated by the Commission in writing at the Commission's Savannah River Operations Office. Final inspection and acceptance of work under any Appendix "C" Agreement shall be as provided therein.

ARTICLE XIX - INDEMNITY

1. Notwithstanding any other provisions of this Agreement, it is agreed that the Contractor shall not be liable for, and the Government shall, subject to the availability of funds, indemnify and hold the Contractor harmless against any and all losses or damages (including but not limited to

personal injury, disease, or death of persons, or damage to or loss of use of property) and any and all expense in connection therewith, or in connection with alleged loss or damage (including but not limited to the expense of litigation), arising out of, based on, or caused by radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or radioactive materials, or products or by-products therefrom, which the Contractor, or the Government in the case it occupies the premises as provided in Article III - TERM, EXPIRATION AND TERMINATION, may use, possess, or otherwise handle under or in connection with this Agreement, whether or not any director, officer, employee, or agent of the company is responsible therefor; provided, however, that this obligation of the Government shall apply only in those instances where loss or damage, and expense in connection therewith or in connection with alleged loss or damage, is not due to or caused by gross negligence or bad faith on the part of any officer of the Contractor, or on the part of any representative or employee of the Contractor exercising the powers, responsibilities, and duties normally exercised by the plant manager having direction or supervision of the work undertaken by the Contractor hereunder, nor due to nor caused by wilful or grossly negligent failure to follow procedures and standards approved and transmitted to the Contractor by the Commission for the use, possession, or other handling of source, special nuclear, or radioactive materials, or products or by-products therefrom, on the part of any of the aforedescribed Contractor personnel. The obligations of the Government under this Article shall apply only to the extent that the Contractor is not covered and made whole by insurance; provided, however, that said obligations shall not apply to any loss or damage, or any expense in connection therewith or in connection with alleged loss or damage, if, and to the extent that, the Contractor is covered by insurance with regard to such loss or damage, or such expense in connection therewith or in connection with alleged loss or damage, but is not so made whole by said insurance because of some intentional misrepresentation by the Contractor in the obtainment of said insurance or by some breach by the Contractor of the terms and/or conditions of said insurance or of some other act or failure to act on the part of the Contractor as respects said insurance. The Contractor represents that it is presently maintaining, and the extent of the liability of the Government under this Article is limited in any event to the excess over, the insurance coverage, as such coverage has been reduced by loss or damage, and expense in connection therewith or in connection with alleged loss or damage, prior to the date of loss or damage, or expense in connection therewith or in connection with alleged loss or damage, indemnified against hereunder, where such reduction has not been reinstated in accordance with the Contractor's normal insurance practice, all of the foregoing being on the basis of the insurance coverage specifically approved by the Commission pursuant to General Provision 15 of the Contract entitled REQUIRED BONDS AND INSURANCE - EXCLUSIVE OF GOVERNMENT PROPERTY.

2. In view of the proximity of Site B to Site A, and notwithstanding any other provisions of this Agreement, the Government shall not be liable for, and the Contractor shall indemnify and hold the Government harmless against, any and all loss or damage to persons or property in Site A (including but not limited to personal injury, disease, or death of persons, or loss or damage to property) arising out of, based on, or in connection with the use by the Contractor of Site B, including, but not limited to, the use by the Contractor of any and all means of ingress or egress through Site A to or from all or any portion of Site B, in connection with activities other than those directly associated with the scope of work being performed in Site A under the Contract, regardless of whether such loss or damage to persons or property was caused by negligence of the Contractor or any director, officer, employee, or agent of the Contractor; provided, however, that nothing contained herein shall be construed to give any person, firm, or corporation not a party to this Agreement any right against the Contractor or the Government to which such person, firm, or corporation would not otherwise be entitled in law or in equity; and provided further that the Government's right of indemnity hereunder shall not extend to loss or damage to persons or property resulting from the Contractor's compliance with the Commission's rules and regulations or other instructions or caused solely by the negligence of any officer or employee of the Commission engaged in the performance of his or her official duties under and in connection with this Agreement.

ARTICLE XX - KEY PERSONNEL

It having been determined that the employees whose names appear below, or persons approved by the Contracting Officer as persons of substantially equal abilities and qualifications, are necessary for the successful performance of this Contract, the Contractor agrees to assign such employees or persons to the performance of the work under this Contract and shall not reassign or remove any of them without the consent of the Contracting Officer. Whenever, for any reason, one or more of the aforementioned employees is unavailable for assignment for work under the Contract, the Contractor shall, with the approval of the Contracting Officer, replace such employee with an employee of substantially equal abilities and qualifications.

1. Boyd Metz
2. W. Mandaro
3. H. Watts
4. E. Meyer
5. A. Andersen
6. R. Johnson

Length of Service	Hourly Employee	Salary Employee
6 months but less than 1 year	20 hours	1 week
1 year but less than 3 years	40 hours	2 weeks
3 years but less than 10 years	80 hours	2 weeks
10 years but less than 25 years	120 hours	3 weeks
25 years or more	160 hours	4 weeks

A week's pay in lieu of one week's vacation may be granted to employees who are eligible for three or four weeks' vacation.

Additional prorated vacation payments may be made to employees eligible for vacation pay based on the following lengths of service:

Hourly Employees

More than 26 weeks but less than 52 weeks	1/26 of 20 hours for each week above 26
More than 2 years 12 weeks but less than 3 years	1 hour for each week above 2 years 12 weeks

Salaried Employees

More than 26 weeks but less than 52 weeks	1/26 of 1 week's pay for each week above 26

The above vacation allowances are non-cumulative and shall be taken prior to December 31 of the current vacation year or forfeited.

Shift premium if applicable, may be included in vacation payments. If the majority of the employees have actually worked on a schedule averaging 48 hours or more per week for the first six months of a calendar year, vacation payments may be based on a 48-hour per week straight time basis.

An extra day's vacation is allowed for each paid holiday falling within the vacation period. Payment for such holiday may be granted to hourly or non-exempt salaried employees.

Employees who leave the Company prior to July 1 of the current year may receive a vacation accrual equal to the number of weeks on the payroll since last July 1, divided by 52, multiplied by the normal vacation pay for an employee with their record of continuous service. Employees who leave the Company after July 1 who have not received the vacation pay to which they are eligible as of July 1, will receive such payments at the time of separation.

C. Sick Leave

1. Salaried Employees

Leave with pay may be granted to employees who are absent from work because of personal illness or injury. The amount of such leave granted shall be in accordance with established practices consistently applied throughout the Contractor's organization based upon the following schedule:

Employee's Service	Cumulative Time Off in Any 12-Month Period
Less than 6 months	1 week
6 months to 1 year	2 weeks
1 year to 2 years	4 weeks
2 years to 25 years	4 weeks plus 2 weeks for each full year of continuous service beyond 2 years up to maximum of 50 weeks
More than 25 years	50 weeks

No reimbursement shall be made for unused sick leave to employees upon termination of employment.

2. Hourly Employees

Excused leave with pay may be granted full-time employees who are absent from work for reasons of personal illness, injury, or disability based upon the following provisions:

Full-time employees with one or more years of continuous service who are on the payroll as of January 1 of any calendar year shall be credited with 40 hours of sick leave allowance for that calendar year.

Full-time employees who are not on the payroll as of January 1 but who return to work from layoff or leave of absence subsequent to January 1 shall be credited for the balance of the calendar year with an amount of sick leave allowance equal to the number of full calendar months remaining in the calendar year times 3-1/3 hours.

Full-time employees who complete their first year of continuous service subsequent to January 1 shall be credited for the balance of the calendar year with an

amount of sick leave allowance equal to the number of full calendar months remaining in the calendar year times 3-1/3 hours.

Full-time employees who complete their first year of continous services on or before the 15th day of the month will be credited with a full 3-1/3 hours of sick leave allowance for that month. Allowances for regular, part-time employees will be reduced proportionately, provided they are employed to work a minimum weekly work schedule of 20 hours or more.

Unused sick leave will be accumulated from year to year up to a maximum of 480 hours. In no case will unused sick leave pay be reimbursed to employees, including separation from the company, for any reason.

Sick leave pay shall be computed at the employee's straight-time hourly rate in effect on the first full or partial day of absence. Shift premium may be added to such straight-time sick leave for employees who, if they worked, would have been assigned to a premium shift.

Employees receiving sick leave pay will not be entitled to Non-Occupational Insurance Benefits for the same period of absence. The number of weeks of Non-Occupational Disability Insurance Benefits to which an employee is entitled shall be reduced by the equivalent number of consecutive 40-hour increments (or fractional portion thereof) of sick leave pay received. Non-Occupational Disability Insurance Benefits will commence at the termination of sick pay if the employee is still unable to return to work due to personal illness or injury and has been disabled for more than seven (7) consecutive calendar days.

Payments received under Workmen's Compensation, cost reimbursed in whole or in part by the Commission, shall be deducted from the sick leave pay received by an employee during any period such payments are received. Sick leave pay will be the difference between the weekly Workmen's Compensation payment and the employee's weekly straight-time wage in effect at the time an occupational disability occurs. Where such partial sick leave payments are made, the number of hours to be charged against an employee's sick leave allowance will be determined by dividing the employee's straight-time earnings into the appropriate amount of weekly sick leave pay to be granted.

D. Other Absences

1. Court Duty

Employees may be allowed time off without loss of straight-time pay for required jury duty or for required appearance at a court trial.

a. Hourly and Non-Exempt Salaried Employees will receive the difference between fees received from the court and their normal pay for an eight-hour day.

b. Exempt Salaried Employees will be paid their normal salary in addition to court fees.

2. Marriage

When an employee elects to be married, he may be granted time off as follows:

a. Hourly Employees: Up to one week off without pay.

b. Salaried Employees: Less than 6 months service: Up to one week off without pay. Six months service or more: Up to one week with pay.

3 Death in the Immediate Family

Any employee may be granted up to three working days off with pay because of the death of the employee's spouse, father, mother, son, daughter, brother or sister, mother-in-law or father-in-law.

4. Required Military Duty

Time off for required military reserve duty, not to exceed two weeks during any twelve-month period may be granted to:

Hourly Employees - without pay

Salaried Employees

(a) Less than six (6) months service - without pay.

(b) With more than (6) months service, the difference, if any between their salary base rate and their military pay for the period.

All employees with six (6) months or more of continuous service who are ordered to active duty for periods of not less than six (6) months duration may receive the equivalent of one (1) month's pay upon release from employment to perform such duty unless he enlists while on an approved occupational deferment.

5. Required Selective Service Examination

Time off with pay may be granted to employees required to visit military examination centers for the purpose of taking preliminary or final type examinations. The amount paid to non-exempt employees shall not exceed eight (8) hours of straight-time pay, including shift premium, if any.

6. Personal Reasons

Time off may be granted to employees absent for personal reasons, such as illness in the family, travel, etc.

Time off for personal reasons may be granted to hourly employees only on a non-pay basis. Salaried employees with six or more months of continuous service may be paid for time off not to exceed five days per year. Time off with pay shall be paid at the salary base rate plus shift premium based on the normal work day, or part thereof, not to exceed eight (8) hours. When such time off exceeds two (2) weeks, additional time off shall come under provisions of II.D.7., below.

7. Leave of Absence

A leave of absence without pay may be granted to employees who are absent for two or more weeks but not to exceed 18 months. Seniority or other benefits shall not be accrued during leaves of absences granted under this section.

III. WAGE AND SALARY ADMINISTRATION

A. Salary Schedules

Employees whose wages or salaries are cost-reimbursed under the Contract shall be employed in the job classification, grade and salary ranges approved under Schedules I and II attached hereto. Current organization charts, job descriptions and appropriate wage and salary data will be filed with the Commission in support of approved job classifications, grades and wage and salary ranges. Cost of living and general wage and salary adjustments require the prior approval of the Commission.

B. Increases and Promotions

1. Salaried Employees

It is the policy of the Contractor to base the employee's salary on his production and accomplishments in terms of the requirements of his job classification and the rate range for the classification. Reclassification, promotions and merit

raises may be made at the discretion of the Contractor in accordance with established practices and procedures. Salaried employees may be considered for merit increases in accordance with the following schedule.

Employee's Place in Rate Range	Interval Between Merit Increases Salaried Employees	
	Non-Exempt	Exempt
Below mid-point of salary range	6 months	12 months
Above mid-point, not immediately promotable	12-18 months	18-24 months
Above mid-point, immediately promotable	6 months	12 months

A non-exempt salaried employee's job performance shall be reviewed semi-annually and he may receive an increase of up to 5% of his base rate at each semi-annual review. Merit increases for exempt salaried employees shall not be granted less than one year from the preceding merit or promotional increase except in unusual cases, and in no case shall they exceed 10% per year. Exceptions may be granted only with the prior approval of the Commission. No merit increase shall be given in excess of the established maximum rate for the position of the exempt or non-exempt salaried employee.

2. Hourly Employees

Merit raises within the appropriate labor grade may be given once every three calendar months. In unusual circumstances a merit raise may be given after two calendar months have elapsed after a previous merit increase. New hires may receive a merit increase at the conclusion of a 45-day probationary period. New hires with trainee classification may be promoted to their regular classification and brought to their first step of the appropriate labor grade at the conclusion of a 45-day probationary period.

C. Leadman Premium (Hourly Employees)

An employee officially designated as a "Leadman" may be paid a 10% premium in addition to his hourly rate.

D. Shift Differential

Premium pay of 10% of straight time and overtime earnings will be paid for work on shifts commencing outside the hours of 7:00 a.m. to 9:00 a.m.

E. Compensation for Premium Time - Overtime and Holiday Work

As deemed essential to the performance of Contract work, the Contractor may authorize occasional overtime. Work weeks in excess of 40 hours scheduled for more than four consecutive weeks shall require prior approval of the Commission. Payments for overtime work shall be in accordance with the Federal Wage and Hour Law and the Contractor's established pay practices.

Regular employees may receive their regular straight time pay, not to exceed eight hours (including shift premium if applicable) for unworked official holidays.

If a non-exempt employee is required to work on an official holiday, he will be compensated for the hours worked at one and one-half times his normal rate of pay including shift differential in addition to the basic eight hours holiday pay.

F. Report-in Pay

An employee who reports to work for his scheduled hours will receive full pay from such hours (not to exceed 8) for that day even though idle or sent home early because of delay or shortage or other reasons beyond his control, except that no such pay shall be made in cases where the Company's failure to provide work is due to power failure, fire, flood, weather conditions, or other conditions beyond the Company's control.

G. Call-in Pay (Non-exempt Salaried and Hourly Employees)

Employees who are called in for emergency work outside their regularly scheduled hours may be paid at overtime rates for such hours worked for a minimum of four hours straight time, whichever is greater.

H. Separation Pay

1. Separation Pay in Lieu of Notice

Employees with six (6) months or more of continuous service who are permanently and involuntarily separated without prejudice will receive notice or separation pay in lieu of notice as indicated below:

a. Hourly Employees - One (1) week's notice or one (1) week's pay at base rate, not to exceed 40 hours.

Should an hourly paid employee be separated because of lack of work while assigned to commercial work at the Hicksville Plant and "bump" through seniority rules an employee on Contract work, it is agreed the Commission shall not be liable for separation pay to the separated employee. Where an employee engaged on Contract work at the Hicksville Plant "bumps" a less senior employee assigned to commercial work, the Commission shall reimburse the Company, if required, for separation payments to the employee thus separated. In all instances where the Commission reimburses for separation pay to employees not engaged on its work at time of separation, payments must be approved by the Commission.

b. Non-exempt Salaried Employees - Two (2) weeks' pay and as much notice as possible. An additional one week's pay may be granted to employees having five (5) or more years of continuous service.

Separation pay to eligible employees whose total Company service has been divided between the Contractor's commercial activities and work under this Contract shall be prorated according to length of service on Contract work and the Company's commercial activities.

c. Exempt Salaried Employees - Four (4) weeks pay or until the employee secures new employment for employees with up to five (5) years continuous service. An additional one (1) week's pay for each year, or portion thereof, of continuous service in excess of 5 years service or until the employee secures new employment except that in no instance shall the employee receive more than 15 weeks separation pay. Separation pay to eligible employees whose total Company service has been divided between the Contractor's commercial activities and work under this Contract shall be prorated according to length of service on Contract work and the Company's commercial activities.

2. Severance Pay - Hicksville Site Closing

Reimbursement will be made to the Company for severance payments only in the event that the Hicksville site is closed because of termination or expiration of this Contract. Severance payments made to employees whose total service has been divided between the Contractor's commercial work and work under this Contract shall be prorated according to the length of service on Contract work and commercial work. Employees whose employment is terminated because of the closing of the Hicksville site may receive severance pay in accordance with the following schedule:

1 day's pay for each of the employee's first 5 years of continuous service.

1 week's pay for each of the employee's years of continuous service over 5 years.

IV. EMPLOYEE BENEFITS

A. Educational Benefits

When an employee is assigned to an educational course as part of his work under this Contract, the Contractor may pay the cost of the course, including books and required travel expenses.

Employees who elect to take educational courses may be reimbursed by the Contractor as outlined below.

1. The employee must obtain approval of the Plant Manager prior to enrolling in the course.

2. Upon completion of the course and before reimbursement for any part of the course cost is made, the employee shall provide acceptable evidence of successful completion and appropriate properly receipted bills.

3. If the course is directly related to the performance of Contract work, 100% tuition will be refunded upon satisfactory completion of the course.

4. If the course is not directly related to the employee's present work but is related to the employee's development for higher level work in which there is a reasonable probability that he may be engaged under the Contract, 50% of the tuition may be refunded upon satisfactory completion of the course.

5. If the course is not directly related to Contract work but part of the requirement for a degree in a field directly related to the Contract work in which the employee is engaged, 50% of the tuition may be refunded upon satisfactory completion of the course.

In addition to the benefits outlined above, up to six hours time off per week with pay may be granted to employees who take approved graduate-level courses related to this Contract.

B. Group Insurance

The Contractor maintains group insurance program for all eligible and retired employees including: 1) life insurance, 2) accidental death and dismemberment insurance, 3) insurance for company travel, 4) hospital-surgical-medical insurance, 5) major medical insurance, and 6) non-occupational disability insurance, the details of which are on file and approved by the

Commission. The Contractor's contribution to the cost of the program is reimbursable on a pro rata share basis as approved by the Commission. A proper share of dividends, premium refunds, and other credits accrued to the approved group insurance program will be credited to the cost of Contract work. The following group insurance programs are provided by the Contractor.

1. Life Insurance is provided for all regular employees at no cost to the employee after one month of Company service. The amount of insurance is determined by the employee's base rate of pay. The face value of the life insurance per eligible employee will be a minimum of $3,000 and a maximum of $225,000. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

2. Accidental Death and Dismemberment Insurance is provided for all regular employees at no cost to the employee after one month of Company service. The amount of insurance is determined by the employee's base rate of pay, with a minimum of $3,000 and a maximum of $20,000 for any one accident. Insurance coverage may be extended up to one year during the period an employee is totally disabled.

3. Insurance for Company Travel is provided at no cost to the employee to cover death while an employee is traveling on, and as a result of, Company business. The amount of death insurance will be two times the employee's base annual salary, subject to a minimum of $25,000 and a maximum of $150,000.

4. Hospital-Surgical-Medical Insurance is provided for regular employees at no cost to the employee after one month of Company service. The insurance covers the employee and his dependents. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

5. Major Medical Insurance is provided for all regular employees at no cost to the employee after one month of Company service. Major Medical Insurance is in addition to the basic Hospital-Surgical-Medical Insurance. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

6. Non-Occupational Disability Insurance is provided to all employees at no cost to the employee immediately upon employment if the employee was a covered employee working for a covered employer within the preceding six months or after 28 calendar days of

employment. Benefits under this plan begin eight (8) days after a non-occupational illness or injury. Payments under this policy are made in lieu of salary or wages in an amount equal to one-half of the normal weekly pay, but not to exceed $65 per week. Benefits under this policy for any one accident or illness may not be paid for more than 26 weeks.

C. Pension Plan

A non-contributory Pension Plan is provided all employees of the Contractor, the details of which are filed with and approved by the Commission.

D. Savings and Security Plan

Regular employees with one year of continuous service may participate in a voluntary Savings and Security Plan as filed and approved by the Commission. Under the Plan participating employees contribute 3% of their earnings by payroll deductions and the Contractor contributes 6% of its net profits before Federal tax based on income for each year but not to exceed an amount equal to the total amount contributed by the members and not withdrawn during the year.

V. TRAVEL, TRANSPORTATION, SUBSISTENCE, AND MOVING EXPENSES

A. Travel, Transportation and Subsistence

Travel incurred by employees, consultants and prospective employees in connection with the performance of contract work may be reimbursed as follows:

1. The actual cost of transportation by common carrier, or $.08 per mile plus highway, bridge, ferry and tunnel tolls when travel by private passenger vehicle is authorized.

2. The reasonable actual cost of lodging in accordance with prevailing locality rates plus an allowance not in excess of $7.50 per day for subsistence.

3. The actual cost of necessary telephone calls, telegrams, and incidential transportation and personal expenses.

B. Moving and Relocation Expenses

Key scientific, technical and professional employees moving and relocation expenses to plants operated in connection with the performance of contract work may be reimbursed as follows:

1. Transportation expenses for an employee and dependents as in A. 1., above.

2. The reasonable actual cost of lodging plus a subsistence allowance not in excess of $7.50 per employee, $6.00 for each dependent over 12 years of age and $4.00 for each dependent 12 years of age and under while enroute from place of permanent residence to transferred location.

3. A living expense allowance not to exceed $9.00 per day for thirty (30) days to cover additional living expenses of an employee where family remains at principal place of permanent residence at time of transfer. In addition, the incurred cost of two (2) round trips from place of work to principal place of permanent residence during this period.

4. Reasonable travel expenses incurred by an employee's wife in making visits not in excess of two round trips to new location prior to transfer of residence with such expenses reimbursed in accordance with A.1., 2., and 3. above; or, if traveling with husband, in accordance with B.1., and 2. above.

5. Reasonable brokerage fees not to exceed 5% of sale price plus legal and other necessary closing fees in connection with the sale of principal place of permanent residence at the old location; or, a reasonable cancellation fee not to exceed the equivalent of three (3) months' rental in connection with the breaking of a lease on a rented house or apartment.

6. Legal fees and other unavoidable expenses not to exceed 3% of the purchase price in connection with the purchase of a residence at the new location.

7. The cost of real estate taxes, fire insurance, and interest on the mortgage on the old house not in excess of the equivalent of one month's payment when it is necessary for an employee to take title to a house in the new location without completing the sale and transfer of title to his house at the old location.

8. The reasonable cost of transportation of household goods and effects including packing, crating, insurance, unpacking, disconnecting and connecting equipment and for temporary storage of household goods and effects not in excess of thirty (30) days.

9. Incidental relocation expenses not to exceed 50% of one (1) month's base salary for an employee who owns and transfers household goods to the new location.

C. New Hires - Key Scientific, Technical and Professional Employees

Travel and moving expenses incurred by new hires in connection with Contract work may be reimbursed as follows:

1. Transportation and moving expenses for an employee and dependents as in V.A.1., B.2., and B.8.

2. Reasonable cost of room and board for two weeks and reasonable travel expenses incurred by an employee or his wife in making visits not to exceed two round trips between new location and former residence if the new employee relocates before moving his family.

VI. MISCELLANEOUS EXPENSES AND ALLOWANCES

A. Pre-Employment Physical Examination

Reimbursements may be made for the expense of pre-employment physical examinations performed by a non-company physician when such examinations are necessary for the placement of an individual on Contract work. Such reimbursements will not exceed $35 for any one individual.

B. In-Plant Training Courses

The reasonable costs of in-plant training courses deemed essential and of benefit to the performance of Contract work are approved as allowable Contract costs.

C. Outside Training and Meetings

When it is in the interest of the Contract for an employee to participate in outside training at the request of the Contractor or attend scientific, technical, or professional meetings, the cost of such training or attendance is an allowable cost under the Contract. Participation in outside training or attendance at meetings for a period of five (5) working days or more and all foreign travel incurred in connection therewith, will require the prior approval of the Commission.

D. Licenses, Professional Society Memberships, and Magazine Subscriptions

1. When professional licenses are considered essential to the performance of Contract work or where an employee is the official representative of the Contractor or attends meetings of engineering, management or professional societies as part of his work, reimbursement may be made for the actual costs of such licenses, dues or memberships, and magazine subscriptions.

2. Where employee subscriptions to technical magazines, professional licenses, or memberships in scientific, engineering or professional societies are considered of benefit to the performance of Contract work, reimbursements may be made up to one-half the costs of such subscriptions, licenses or memberships.

E. Publication Awards

Employees may receive token awards not to exceed $50 for publications of technical papers in technical journals which are of interest to the Contract and for which no compensation has been received from the publisher.

F. Employee Social and Recreational Activities

Costs incurred as Contractor contributions to employee social and recreational activities may be made in an amount not exceeding the equivalent of 9 cents per week per employee.

G. Supper Money

Reasonable supper money allowances may be paid to exempt employees when they are not receiving overtime pay and work 2½ hours or more past the end of their standard shift. Non-exempt salaried and hourly employees, who receive overtime wages, will not receive supper money.

H. Employment Agency Fees

When employment agency services are required to secure properly qualified personnel for the performance of Contract work, agency fees for such services may be reimbursed in an amount not exceeding 10% of an employee's base annual wage or salary.

I. Printed Material

A pro rata share of the cost of printed material which is distributed to employees for training, information and indoctrination under the Contract is reimbursable.

J. Clothing Loss

Damage to or loss of employee clothing and personal property as the result of the performance of Contract work and not attributable to the employee's carelessness or negligence will be reimbursed. The amount of reimbursement will be based on replacement cost minus a fair depreciation estimate.

K. Personal Protective Equipment

The Contractor will be reimbursed for the cost of providing employees with required personal protective equipment or clothing in accordance with the Contractor's established policies and practices.

L. Patent Awards

The Contractor may be cost-reimbursed in amounts not to exceed $50 per employee under the Contractor's Patent Award Program for patents granted and assigned to the Commission. Where the invention or discovery is of particular importance or value to the Commission, additional awards may be granted with prior written Commission approval.

M. Suggestion Awards

The Contractor may be reimbursed on a pro rata share basis for the reasonable cost of a Suggestion Awards Program. Hourly and non-exempt salaried employees on jobs which require working out improvements, developments, or new ideas shall be eligible for awards for only those suggestions which apply outside the scope of their own responsibility, duties, or assignments. Exempt employees shall not be eligible for suggestion awards. The minimum award is $7.50. The maximum award is $25,000. Reimbursement of any award in excess of $250 for any one employee or $500 for any employee group shall be subject to the approval of the Commission. The Contractor will provide the Commission with such data as may from time to time be required for appraisal and substantiation of costs incurred under the program.

O. Family Day

The Contractor may be reimbursed on a pro rata share basis for the reasonable cost of holding an annual "Family Day - Open House" program. Reimbursement shall be subject to prior approval of the Commission.

VII. EXECUTIVE COMPENSATION

Executive compensation including bonuses and other remunerations will, for cost-reimbursement purposes, not exceed a pro rata share of the equivalent of $30,000 per annum for any one executive. The determination of allowable related costs based on compensations paid will also be determined on the basis of the foregoing limitation. In addition, prior Commission approval shall be obtained on the establishment or adjustment of single rates or rate ranges which exceed $20,000 per year and on any individual salary action which involves a total compensation of $20,000 or more per year.

Responsive Record 3.2

Contract No. AT(30-1)-1293 with
Sylvania Electric Products Inc.,
Sylcor Division
Appendix "A"

SCHEDULE I

SALARIED EMPLOYEES

Exempt

Job Classification	Grade	Monthly Salary Range
Manufacturing Manager	13 J	$1123 - $1865
Engineering Manager "B"	12 J	996 - 1670
Engineering Specialist Plant Manager "C" Section Head	11 J	912 - 1520
Manufacturing Superintendent Supervisor of Product Engineering Advanced New Product Development Engineer-Sylcor	10 J	830 - 1375
Advanced Research (or Development) Engineer Engineer-in-Charge Supervisor of Quality Control "A"	9 J	740 - 1230
Equipment Design Specialist General Foreman Project Engineer Research (or Development) Engineer Supervisor of Cost Control "A"	8 J	671 - 1115
Safety Engineer, Sylcor Research Metallographer Senior Engineer "A" Supervisor, Production Control Supervisor, Quality Control "B" Supervisor of Personnel "B"	7 J	612 - 1015

Revised August 13, 1962

SROO Response to
FOIA (SR) - 04-028

SCHEDULE I

SALARIED EMPLOYEES

Exempt

Job Classification	Grade	Monthly Salary Range
Contract Administrator Equipment Designer, Sr. Purchasing Agent "A" Senior Engineer "B" Supervisor of Security and Administrative Service Supervisor of Maintenance "B" Toolroom Foreman Foreman Class I Tool Coordinator	6 J	$ 567 - $940
Buyer Cost Analyst & Statistician Supervisor of An Accounting Department Section	5 K	544 - 870
Engineer Foreman, Nuclear Products Industrial Engineer Accountant, Senior Technical Foreman II Personnel Assistant Systems and Procedures Analyst, Jr. Equipment Designer	4 K	497 - 795
Cost Accountant	3 K	452 - 725

General Wage Increase - Effective August 13, 1962, raised maximum of monthly salary ranges

SCHEDULE I

SALARIED EMPLOYEES

Non-Exempt

Job Classification	Grade	Weekly Salary Range
Master Craftsman	65	$ 132 - $ 198
Technical Associate	64	123 - 185
Design-Draftsman	63	115 - 172
Material Requirements Clerk Production Supervisor I Maintenance Supervisor I Technician, Senior Production Scheduling Clerk	62	106 - 162
Draftsman Accountant, Junior Production Supervisor II Safety Inspector Supervisor of Plant Protection	60	95 - 144
Employment Interviewer & Counselor Buyer, Junior Nurse, Senior Technician Stock Clerk Production Control Clerk	59	89 - 135
Payroll Accountant Purchasing Clerk Secretary, Senior	58	84 - 127

SCHEDULE I

SALARIED EMPLOYEES

Non-Exempt

Job Classification	Grade	Weekly Salary Range
Draftsman, Junior Nurse Production Section Leader	57	$ 80 - $ 120
Production Control Clerk, Junior Technician, Junior Secretary Accounting Clerk, Senior Stock Clerk, Junior Statistical Clerk, Senior	56	75 - 111
Clerk, Senior	55	72 - 103
Accounting Clerk, Junior Statistical (Technical) Clerk Telephone Operator II	54	69 - 96
Clerk-Typist	52	69 - 84

General Wage Increase - Effective September 3, 1962
and Change from Monthly to Weekly Salary Ranges

SCHEDULE II

HOURLY EMPLOYEES

Non-Exempt

Job Classification	Grade	Hourly Salary Range
Tool, Die & Model Maker "A"	LG 12	$2.97 - $3.56
Machinist "A" Electrician Specialist Inspector "A" Sheet Metal Specialist	LG 11	2.81 - 3.39
Mechanic "A" Welder "A" Sheet Metal Worker "A" Electrician "A" Welder I Machinist I	LG 10	2.65 - 3.19
Machinist "B" Carpenter Inspector "B"	LG 9	2.50 - 3.00
Mechanic "B" Process & Equipment Checker Assembly & Furnace Brazing Rolling Mill Operator Melter Guard Sergeant Fluoroscope Operator & X-Ray Inspector	LG 8	2.36 - 2.84

SCHEDULE II

HOURLY EMPLOYEES

Non-Exempt

Job Classification	Grade	Hourly Salary Range
Armed Guard Armed Courier Storekeeper Machinist "C" Inspector "C" Chemical Room Operator Machining Operator-CPP Sodium Loading Dry Box Operator Briquetting Operator Heat Treatment Operator Hot Pressing Operator-VB Welding Operator Machining Operator-VB Fluoroscope Operator Hot Press Operator Finishing Operator Maintain Chemical Solutions	LG 7	$2.21 - $2.66
Materials Stock Clerk Mechanic "C" Maintain Chemical Solutions Canning-Hot Press Operator Canning-Assembler Die Processing Operator Machining Operator-AEC Plating Machine Operator Fabrication Operator Rack Maintenance Man	LG 6	2.09 - 2.50
Groundskeeper Trainee, Production	LG 5	1.97 - 2.35
Maintenance Apprentice	LG 4	1.86 - 2.21
Cafeteria-Dishwasher, Porter Janitor-Porter	LG 3	1.76 - 2.08

General Wage Increase - Effective
September 3, 1962

Responsive Record 3

[redacted]

[redacted]

[redacted]

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To: A
2nd Review Date: 4/28/04	3. Classification Cancelled
Authority: ADD	
Name:	

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
DATED: OCTOBER 1, 1961

CG-NMP-2 9/00

As provided for in paragraph 1 of Article I of Modification 29 of Contract AT(30-1)-1293, this Appendix "B" describes the scope of work to be performed by the Contractor for the period October 1, 1961, through March 31, 1962.

1. Mark VII-A - Mark V-B (Inner-Fuel)

a. The Contractor shall manufacture and furnish to the Commission Mark VII-A and Mark V-B slugs at monthly tonnage rates as follows:

PERIOD	MARK VII-A	MARK V-B (Integral Rib)
October	80	8
November	80	8
December	80	8
January	40	17
February	40	17
March	40	17

b. Mark V-B (Inner Ribless)

The Contractor shall manufacture and furnish to the Commission a total of 680 irradiated quality Mark V-B inner ribless pieces in accordance with the following:

October, 1961 - 220 pieces
November, 1961 - 220 pieces
December, 1961 - 240 pieces

2. Mark V-B (Outer-Fuel)

The Contractor shall maintain its Mark V-B outer-fuel element facilities in ready standby which shall include such minimum token operation as required to maintain capability. It is understood that minimum token operation will not exceed an average production of approximately 100 pieces per month.

3. Thorium

The Contractor shall conduct a thorium program, using its best efforts, toward the manufacture and canning of 1320 throium slugs (560 physics test pieces and 760 reactor acceptable) approximately 6.5 inches long

[redacted]

ap. 4A + 10A destroyed 7/27/66

[redacted]

SROO Response to
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and of the Mark VII-A cross section. The program shall include the preparation of specifications and operating procedures for canning thorium elements and the preparation of the core materials including all necessary research, development, machining, canning, and data accumulation.

4. Program Development

The Contractor shall conduct the following process improvement and development programs:

a. Mark V-B Element Development

The Contractor shall conduct a Mark V-B fuel element development program for the purposes of achieving costs savings in the manufacture of Mark V-B elements. The program shall include necessary tooling and equipment to produce Mark V-B elements using new techniques, variations of fin and finless pieces and necessary development to assure that new elements meet required specifications.

b. Nondestructive Testing

In connection with the above programs, the Contractor shall conduct a development and testing program on nondestructive testing equipment. The program shall include development of a process and equipment capable of properly determining and classifying grain size, developments to determine sub-surface nickel eutetic by either eddy current or ultrasonics, and the development of techniques necessary to prove out nondestructive testing equipment.

5. Du Pont Tooling

The Contractor shall perform work in connection with the Du Pont Tooling Program as authorized by the Contracting Officer in accordance with the Commission's letter to the Contractor of April 4, 1961, attached hereto as Exhibit I.

B

On or before March 31, 1962, the Commission shall notify the Contractor in writing of the scope of work to be performed by the Contractor during the period April 1, 1962, through September 30, 1962. The amount of fixed fee for such scope of work shall be mutually agreed upon, and failure to agree thereon shall be deemed to be a dispute as to a question of fact and shall be determined in accordance with the General Provision of this Agreement entitled DISPUTES.

Responsive Record 3.1

EXHIBIT I
APPENDIX "B"
CONTRACT AT(30-1)-1293

April 4, 1961

Mr. D. B. Metz
Manufacturing Manager
Sylcor Division
Sylvania Electric Products Inc.
Post Office Box 35
Hicksville, Long Island, New York

Dear Mr. Metz:

For several years Sylcor has been fabricating tooling items needed by Du Pont in establishing canning lines at the Savannah River Plant. In the past, these tooling orders have been treated as scope changes to Contract AT(30-1)-1293.

The SRP program has now reached the point where the orders for tooling consist mainly of small items and of relatively small dollar value. In order to minimize the administrative burdens associated with processing these orders, discussions have been held between members of our respective staffs and it has been agreed that with respect to all tooling orders placed by the Savannah River Operations Office in the future, Sylcor will fabricate the items required upon receipt of authorization from SROO, under and in accordance with the terms and provisions of Contract AT(30-1)-1293. Such orders will be performed within the limits of existing financial plans and on a no-additional-fee basis. It is understood, however, that it is not the intention of the Commission or Sylcor to include hereunder tooling orders which would require an increase in Sylcor's work forces or adversely affect the other work programs approved under the contract.

If this letter correctly states your understanding of the matter, please signify your acceptance by signing in the space provided and return two signed copies to this office.

Sincerely yours,

/s/ R. C. Blair

R. C. Blair
Manager

ACCEPTED

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.

By: /s/ D. B. Metz

Title: Manufacturing Manager

Date: April 21, 1961

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Responsive Record 3.3

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT(30-1)-1293
BETWEEN THE UNITED STATES OF AMERICA
AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION
[OR NAME OF SPONSOR, IF APPLICABLE]
AND SYLVANIA ELECTRIC PRODUCTS INC.

1. This Agreement between Sylvania Electric Products Inc. (the "Contractor"), and the United States Atomic Energy Commission represented by _____ (the "Commission"), [or name of Sponsor, if applicable], adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

2. The fixed fee for the work added hereby is $_____, payable as follows:

3. $_____ has been obligated [allocated, in case of Sponsor] for the work added hereby. Payment of all costs and the fixed fee shall be made by _____.

4. Except as follows, all of the provisions of said Contract are applicable with respect to the work added hereby provided that any exceptions set forth below shall be binding upon the Commission as well as the Contractor and the Sponsor as if the exceptions were specifically incorporated in Contract No. AT(30-1)-1293.

5. This Agreement is effective as of _____.

UNITED STATES ATOMIC ENERGY COMMISSION
[or name of Sponsor, if applicable]

BY _____

TITLE _____

SYLVANIA ELECTRIC PRODUCTS INC.

BY _____

TITLE _____

[In case of Sponsor Agreement, use following Approval]

APPROVED:

_____
Name

_____
Title

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Responsive Record 3.4

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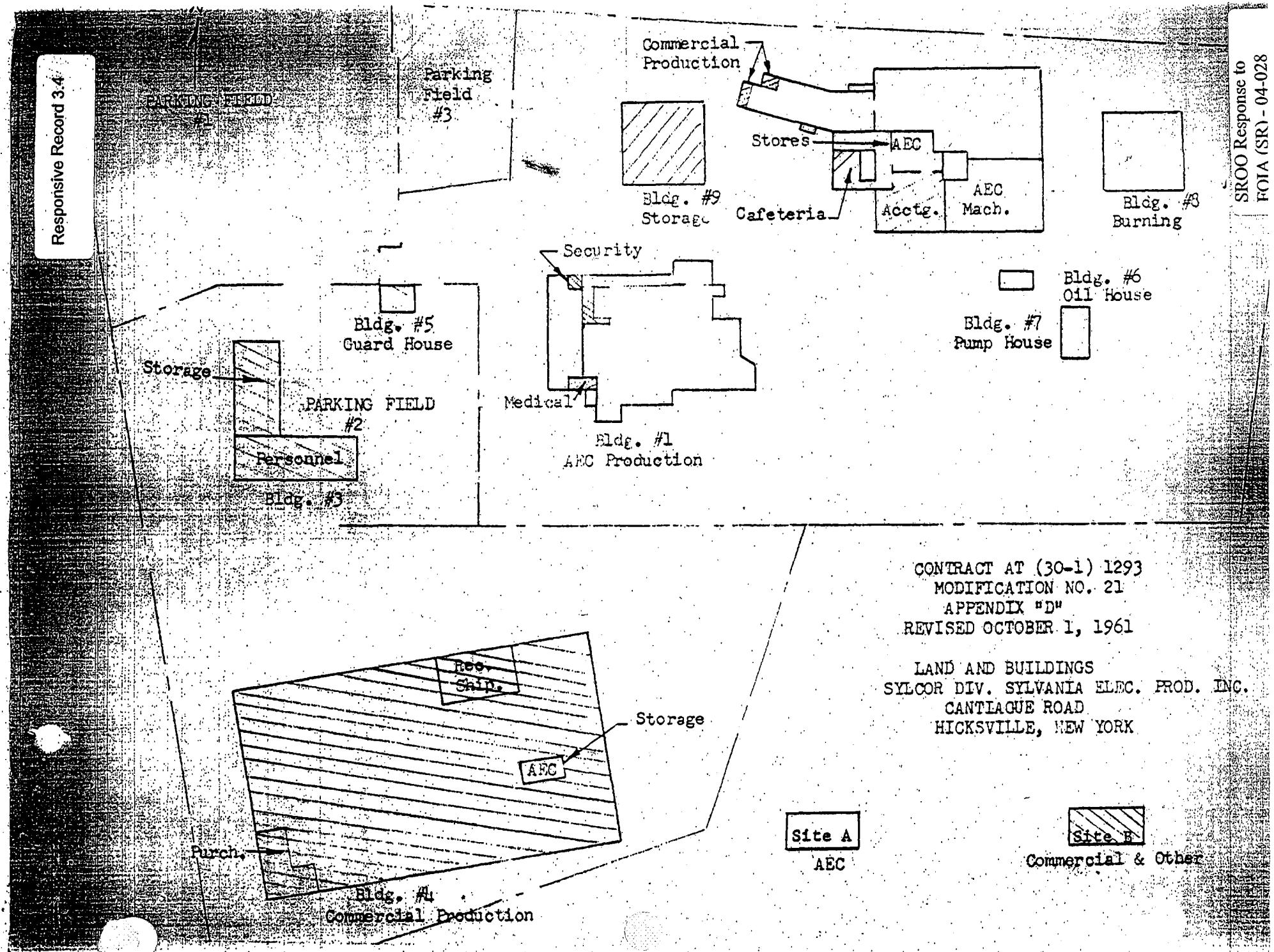

Responsive Record 3.5

APPENDIX "E"

GENERAL PROVISIONS FOR CONTRACT AT(30-1)-1293

BETWEEN

SYLVANIA ELECTRIC PRODUCTS INC.,
AND THE U. S. ATOMIC ENERGY COMMISSION

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U. S. ATOMIC ENERGY COMMISSION
SAVANNAH RIVER OPERATIONS OFFICE

APPENDIX "E"

GENERAL PROVISIONS FOR CONTRACT AT(30-1)-1293
BETWEEN
SYLVANIA ELECTRIC PRODUCTS, INC.,
AND THE U. S. ATOMIC ENERGY COMMISSION

1. DEFINITIONS

As used in this Contract:

(a) The term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof, including the Contracting Officer except for the purpose of deciding an appeal under the General Provision entitled "Disputes."

(b) The term "Contracting Officer" means the person executing this Contract on behalf of the Government, and includes, except as otherwise provided in this Contract, the authorized representative of a Contracting Officer acting within the limits of his authority.

2. ACCOUNTS, RECORDS, AND INSPECTION

(a) Accounts. The Contractor shall maintain a separate and distinct set of accounts, records, documents, and other evidence showing and supporting all allowable costs incurred, revenues or other applicable credits, fixed fee accruals, and the receipt, use, and disposition of all Government property coming into the possession of the Contractor under this Contract. The system of accounts employed by the Contractor shall be satisfactory to the Commission and in accordance with generally accepted accounting principles consistently applied.

(b) Inspection and Audit of Accounts and Records. All books of account and records relating to this Contract shall be subject to inspection and audit by the Commission at all reasonable times, before and during the period of retention provided for in (d) below, and the Contractor shall afford the Commission proper facilities for such inspection and audit.

(c) Audit of Subcontractors' Records. The Contractor also agrees, with respect to any subcontracts (including lump-sum or unit-price subcontracts or purchase orders) where, under the terms of the subcontract, costs incurred are a factor in determining the amount payable to the subcontractor of any tier, to conduct an audit of the costs of the subcontractor in a manner satisfactory to the Commission or to have the audit conducted by the next higher tier subcontractor in a manner satisfactory to the Contractor and the Commission, except when the Commission elects to waive such audit or approves other arrangements for the conduct of the audit.

(d) Disposition of Records. Except as agreed upon by the Government and the Contractor, all financial and cost reports, books of account and supporting documents, and other data evidencing costs allowable and revenues and other applicable credits under this Contract, shall be the property of the Government, and shall be delivered to the Government or otherwise disposed of by the Contractor either as the Contracting Officer may from time to time direct during the progress of the work or in any event as the Contracting Officer shall direct upon completion or termination of this Contract and final audit of all accounts hereunder. All other records in the possession of the Contractor relating to this Contract shall be preserved by the Contractor for a period of six (6) years after settlement of the Contract or otherwise disposed of in such manner as may be agreed upon by the Government and the Contractor.

(e) Reports. The Contractor shall furnish such progress reports and schedules, financial and cost reports, and other reports concerning the work under this Contract as the Contracting Officer may from time to time require.

(f) Inspections. The Commission shall have the right to inspect the work and activities of the Contractor under this Contract at such times and in such manner as it shall deem appropriate.

(g) Subcontracts. The Contractor further agrees to require the inclusion of provisions similar to those in Paragraphs (a) through this Paragraph (g) of this clause in all subcontracts (including lump-sum or unit-price subcontracts or purchase orders) of any tier entered into hereunder where, under the terms of the subcontract, costs incurred are a factor in determining the amount payable to the subcontractor.

3. ASSIGNMENT

Neither this Contract nor any interest therein nor claim thereunder shall be assigned or transferred by the Contractor except as expressly authorized in writing by the Contracting Officer.

4. BUY AMERICAN ACT

(a) In acquiring end products, the Buy American Act (41 U. S. Code 10a-d) provides that the Government give preference to domestic source end products. For the purpose of this clause:

(i) "Components" means those articles, materials, and supplies, which are directly incorporated in the end products;

(ii) "End products" means those articles, materials, and supplies, which are to be acquired under this Contract for public use; and

(iii) A "domestic source end product" means (a) an unmanufactured end product which has been mined or produced in the United States and (b) an end product manufactured in the United States if the cost of the components thereof which are mined, produced, or manufactured in the United States exceeds 50 per cent of the costs of all its components. For the purposes of this Paragraph 4. (a)(iii)(b), components of foreign origin of the same type or kind as the products referred to in Paragraph b (ii) or (iii) of this clause shall be treated as components mined, produced, or manufactured in the United States.

(b) The Contractor agrees that there will be used under this Contract (by the Contractor, subcontractor, materialmen, and suppliers) only domestic source end products, except end products

(i) Which are for use outside the United States;

(ii) Which the Government determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality;

(iii) As to which the Commission determines the domestic preference to be inconsistent with the public interest; or

(iv) As to which the Commission determines the cost to the Government to be unreasonable.

5. CHANGES

(a) Changes and Adjustment of Fee. The Contracting Officer may at any time and without notice to the sureties, if any, issue written directions requiring additional work within the general scope of this Contract or directing the omission of or variation in work covered by this Contract. If any such direction results in a material change in the amount or character of the work described in the Article entitled "Scope of Work," an equitable adjustment of the fixed fee shall be made in accordance with the agreement of the parties and the Contract shall be modified in writing accordingly. Any claim by the Contractor for an adjustment under this General Provision must be asserted in writing within thirty (30) days from the date of receipt by the Contractor of the notification of change unless the Contracting Officer grants a further specific period of time for asserting the claim. A failure to agree on an equitable adjustment under this General Provision shall be deemed to be a dispute within the meaning of the General Provision entitled "Disputes."

(b) Work to Continue. Nothing contained in this clause shall excuse the Contractor from proceeding with the prosecution of the work in accordance with the requirements of any direction hereunder.

6. CLASSIFICATION

In the performance of the work under this Contract, the Contractor shall assign classifications to all documents, material, and equipment originated or generated by the Contractor in accordance with classification guidance furnished to the Contractor by the Commission. Every subcontract and purchase order issued hereunder involving the origination or generation of classified documents, material or equipment, shall include a provision to the effect that in the performance of such subcontract or purchase order the subcontractor or supplier shall assign classifications to all such documents, material and equipment in accordance with classification guidance furnished to such subcontractor or supplied by the Contractor.

7. CONTRACTOR'S ORGANIZATION

(a) Organization Chart. As promptly as possible after the execution of this Contract, the Contractor shall furnish to the Contracting Officer a chart showing the names, duties, and organization of key personnel to be employed in connection with the work, and shall furnish from time to time supplementary information reflecting changes therein.

(b) Supervising representative of contractor. A competent full time resident supervising representative of the Contractor satisfactory to the Contracting Officer shall be in charge of the work at all times.

(c) Control of employees. The Contractor shall be responsible for maintaining satisfactory standards of employee competency, conduct and integrity and shall be responsible for taking such disciplinary action with respect to his employees as may be necessary. In the event the contractor fails to remove any employee from the Contract work whom the Commission deems incompetent, careless or insubordinate, or whose continued employment on the work is deemed by the Commission to be contrary to the public interest, the Government reserves the right to require the Contractor to remove the employee.

8. COVENANT AGAINST CONTINGENT FEES

(a) Warranty - Termination or Deduction for Breach. The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this Contract without liability or in its discretion to deduct from the Contract price or consideration,

or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

(b) Subcontracts and Purchase Orders. Unless otherwise authorized by the Contracting Officer in writing the Contractor shall cause provisions similar to the foregoing to be inserted in all subcontracts and purchase orders entered into under this Contract.

9. DISPUTES

(a) Except as otherwise provided in this Contract, any dispute concerning a question of fact arising under this Contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless within thirty (30) days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Commission. The decision of the Commission or its duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the Contracting Officer's decision.

(b) This "Disputes" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph (a) above: Provided, That nothing in this Contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

10. EXAMINATION OF RECORDS

(a) The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to this Contract until the expiration of three (3) years after final payment under this Contract unless the Commission authorizes their prior disposition.

(b) The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of

his duly authorized representatives shall, until the expiration of three (3) years after final payment under the subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract, unless the Commission authorizes their prior disposition. The term "subcontract" as used in this clause excludes (i) purchase orders not exceeding $2,500, and (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

(c) Nothing in this Contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

11. LABOR

(a) Eight-Hour Law of 1912 - Overtime Compensation. This Contract, to the extent that it is of a character specified in the Eight-Hour Law of 1912, as amended (40 U. S. Code 324-326) and is not covered by the Walsh-Healey Public Contracts Act (41 U. S. Code 35-45), is subject to the following provisions and exceptions of said Eight-Hour Law of 1912, as amended, and to all other provisions and exceptions of said Law:

No laborer or mechanic doing any part of the work contemplated by this Contract, in the employ of the Contractor or any subcontractor contracting for any part of said work contemplated, shall be required or permitted to work more than eight hours in any one calendar day upon such work, except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this clause. The wages of every laborer and mechanic employed by the Contractor or any subcontractor engaged in the performance of this Contract shall be computed on a basic day rate of eight hours per day; and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For each violation of the requirements of this clause a penalty of five dollars shall be imposed for each laborer or mechanic for every calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this clause, and all penalties thus imposed shall be withheld for the use and benefit of the Government.

(b) Walsh-Healey Public Contracts Act. If this Contract is for the manufacture or furnishing of materials, supplies, articles, or equipment in an amount which exceeds or may exceed $10,000 and is otherwise subject to the Walsh-Healey Public Contracts Act, as amended (41 U. S. Code 35-45), there are hereby incorporated by reference all representations and stipulations required by said Act and regulations

issued thereunder by the Secretary of Labor, such representations and stipulations being subject to all applicable rulings and interpretations of the Secretary of Labor which are now or may hereafter be in effect.

(c) Convict Labor. In connection with the performance of work under this Contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor.

(d) Nondiscrimination in Employment. In connection with the performance of work under this Contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Agency Contracting Officer, advising the said labor union of workers' representative of the Contractor's commitments under this nondiscrimination clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

(5) The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, and by the rules, regulations, and orders of the said Committee, or pursuant thereto,

and will permit access to his books, records, and accounts by the Contracting Agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's non-compliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be cancelled in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(7) The Contractor will include the provisions of the foregoing Paragraphs (1) through (6) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to Section 303 of Executive Order No. 10925 of March 6, 1961, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Contracting Agency may direct as a means of enforcing such provisions, including sanctions for non-compliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(e) Notice of Labor Disputes. Whenever an actual or potential labor dispute is delaying or threatens to delay the performance of the work, the Contractor shall immediately notify the Contracting Officer in writing. Such notice shall include all relevant information concerning the dispute and its background.

12. LITIGATION AND CLAIMS

(a) Initiation of Litigation. If the Government requires the Contractor to initiate litigation, including proceedings before administrative agencies, in connection with this contract, the Contractor shall proceed with the litigation in good faith as directed from time to time by the Contracting Officer.

(b) Defense and Settlement of Claims. The Contractor shall give the Contracting Officer immediate notice in writing (1) of any action, including any proceeding before an administrative agency, filed against the Contractor arising out of the performance of this Contract, and (2) of any claim against the Contractor the cost and expense of which is allowable under the Article entitled ALLOWABLE COSTS AND FIXED FEE. Except as otherwise directed by the Contracting Officer, in writing, the Contractor shall furnish immediately to the Contracting Officer copies of all pertinent papers received by the Contractor with respect to such action or claim. To the extent not in conflict with any applicable policy of insurance, the Contractor may with the Contracting Officer's approval settle any such action or claim, shall effect at the Contracting Officer's request an assignment and subrogation in favor of the Government of all the Contractor's rights and claims (except those against the Government) arising out of any such action or claim against the Contractor, and if required by the Contracting Officer, shall authorize representatives of the Government to settle or defend any such action or claim and to represent the Contractor in, or to take charge of, any action. If the settlement or defense of an action or claim against the Contractor is undertaken by the Government, the Contractor shall furnish all reasonable assistance in effecting a settlement or asserting a defense. Where an action against the Contractor is not covered by a policy of insurance, the Contractor shall, with the approval of the Contracting Officer, proceed with the defense of the action in good faith; and in such event the defense of the action shall be at the expense of the Government; provided, however, that the Government shall not be liable for such expense to the extent that it would have been compensated for by insurance which was required by law or by the written direction of the Contracting Officer, but which the Contractor failed to secure through its own fault or negligence.

13. OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this Contract, or to any benefit that may arise therefrom; but this clause shall not be construed to extend to this Contract if made with a corporation for its general benefit.

14. RENEGOTIATION

If this Contract is subject to the Renegotiation Act of 1951, as amended, the following provisions shall apply:

(a) This Contract is subject to the Renegotiation Act of 1951, as amended (P.L. 9, 82d Cong., 65 Stat. 7;P.L. 764, 83d Cong., 68 Stat. 1116; P.L. 216, 84th Cong., 69 Stat. 447; P.L. 870, 84th Cong., 70 Stat. 786; 86th Cong., 72 Stat. 1789; 86th Cong., 73 Stat. 210) and shall be deemed to contain all the provisions required by section 104 of said Act.

(b) The Contractor agrees to insert the provisions of this clause, including this paragraph (b), in all subcontracts, as that term is defined in section 103g of the Renegotiation Act of 1951.

15. REQUIRED BONDS AND INSURANCE - EXCLUSIVE OF GOVERNMENT PROPERTY

The Contractor shall procure and maintain such bonds and insurance as are required by law or by the written direction of the Contracting Officer. The terms of any such bond or insurance policy shall be submitted to the Contracting Officer for approval. In view of the provisions of the article entitled "Property" the Contractor shall not procure or maintain for its own protection any insurance (including self-insurance or reserves) covering loss or destruction of or damage to Government-owned property.

16. SAFETY, HEALTH AND FIRE PROTECTION

The Contractor shall take all reasonable precautions in the performance of the work under this Contract to protect the health and safety of employees and of members of the public and to minimize danger from all hazards to life and property, and shall comply with all health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission. In the event that the Contractor fails to comply with said regulations or requirements of the Commission, the Contracting Officer may, without prejudice to any other legal or contractual rights of the Commission, issue an order stopping all or any part of the work; thereafter a start order for resumption of work may be issued at the discretion of the Contracting Officer. The Contractor shall make no claim for an extension of time or for compensation or damages by reason of or in connection with such work stoppage. Where required by the Commission, due to the proximity of Site B, the Contractor's obligation hereunder shall apply to Site B to the extent that the Commission determines that the health and safety at Site A will be affected.

17. SECURITY

(a) Contractor's Duty to Safeguard Restricted Data and Other Classified Information. In the performance of the work under this Contract the Contractor shall, in accordance with the Commission's security regulations and requirements, be responsible for safeguarding restricted data and other classified matter and protecting against sabotage, espionage, loss and theft, the classified documents, materials, equipment, processes, etc., as well as such other material of high intrinsic or strategic value as may be in the Contractor's possession in connection with performance of work under this Contract. Except as otherwise expressly provided in the specifications the Contractor shall upon completion or termination of this Contract transmit to the Commission any classified matter in the possession of the Contractor or any person under the Contractor's control in connection with performance of this Contract.

(b) Regulations. The Contractor agrees to conform to all security regulations and requirements of the Commission, including without limitations such as may be necessary at Site B to the extent that the security of the work of Site A may be affected.

(c) Definition of Restricted Data. The term "Restricted Data", as used in this clause, means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to Section 142 of the Atomic Energy Act of 1954.

(d) Security Clearance of Personnel. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1954, the Contractor shall not permit any individual to have access to Restricted Data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual and the Commission shall have determined that permitting such person to have access to Restricted Data will not endanger the common defense and security. As used in this paragraph, the term "designated investigating agency" means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1954. Access to classified information other than Restricted Data shall not be granted unless the recipient possesses appropriate security clearance.

(e) Criminal Liability. It is understood that disclosure of information relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any Restricted Data or any Top Secret, Secret, or Confidential matter that may come to the Contractor or any person under the Contractor's control in connection with work under this Contract, may subject the Contractor, his agents, employees, and subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, 68 Stat. 919.) (See also Executive Order 10104 of February 1, 1950, 15 F. R. 597.)

(f) Subcontracts and Purchase Orders. Except as otherwise authorized in writing by the Contracting Officer, the Contractor shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this Contract.

18. STATE AND LOCAL TAXES

The Contractor agrees to notify the Contracting Officer of any tax, fee, or charge:

(a) From which exemption is granted by State or local law, or

(b) Which is invalid under any provision of the Constitution of the United States levied or purported to be levied on the Contractor in respect of this Contract and to refrain from paying any such tax, fee, or charge unless otherwise authorized by the Contracting Officer. The Contractor further agrees to take such steps as may be required by the Contracting Officer to cause any such tax, fee, or charge to be paid under protest and, if so directed by the Contracting Officer, to cause to be assigned to the Government or its designee any and all rights to the abatement or refund of any such tax, fee, or charge, or to permit the Government to join with the Contractor in any proceedings for the recovery thereof or to sue for recovery in the Contractor's name.

The Government shall save the Contractor harmless from penalties and interest incurred through compliance with this clause.

19. USE OF CONCERNS IN LABOR SURPLUS AREAS

It is the policy of the Government to place supply contracts with suppliers who will perform such contracts substantially in areas of current labor surplus where this can be done at prices no higher than are obtainable elsewhere. The Contractor agrees to use its best efforts to place its subcontracts in accordance with this policy to the extent consistent with the efficient performance of this Contract. In complying with the foregoing, the Contractor, in placing its subcontracts, shall observe the following order of preference:

(a) small business concerns located in labor surplus areas;

(b) other concerns located in labor surplus areas;

(c) small business concerns not located in labor surplus areas; and

(d) any other concerns.

20. UTILIZATION OF SMALL BUSINESS CONCERNS

(a) It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services for the Government be placed with small business concerns.

(b) The Contractor agrees to accomplish the maximum amount of subcontracting to small business concerns that the Contractor finds to be consistent with the efficient performance of this Contract.

21. PERMITS

Except as otherwise directed by the Contracting Officer, the Contractor shall procure all necessary permits or licenses and abide by all applicable laws, regulations, and ordinances of the United States and of the State, territory, and political subdivision in which the work under this Contract is performed.

22. PURCHASES FROM CONTRACTOR-CONTROLLED SOURCES

(a) All solicitation of competitive bids for equipment, materials, and supplies of the kind and character manufactured or sold by the divisions, departments, or affiliates of the Contractor, all evaluation thereof, and all awards shall be made solely by the Contracting Officer, unless otherwise authorized by the Contracting Officer. In all such cases in which the Contractor has design responsibility, the Contractor shall prepare proper specifications, drawings, and such other data as may be necessary, on a basis which will permit fair and open competition and orderly and timely procurement with relation to the work.

(b) The Contractor may procure on a negotiated basis, subject to the limitations in this paragraph and subparagraph (1) or (2) as applicable, materials, supplies, equipment, or services manufactured or sold by the Contractor's divisions, departments, or affiliates from such divisions, departments or affiliates; provided, however, that unless otherwise authorized by the Contracting Officer, no such procurement shall be made by the Contractor without prior written approval of the Contracting Officer.

(1) Standard commercial articles and standard supplies (of contractor-controlled sources, other than those manufactured or produced within the contracting component) which have published unit prices of less than one hundred dollars ($100), or such higher amount as may be approved by the Contracting Officer, may be transferred and charged at amounts not in excess of (i) the net sales price concurrently charged the most favored nonaffiliated customer for such articles in the same quantities, or (ii) the lowest net sales price at which equivalent articles are available from other sources, whichever is lower in price without further negotiation as to unit price. If the Contractor does not meet this requirement, any excess cost occasioned thereby is unallowable. The Contracting Officer may require use of the equivalent articles available from other sources at a lower price or the solicitation

of competitive bids from other suppliers of such articles. "Standard commercial articles" are those produced by the Contractor in the normal course of business, carried in stock or previously manufactured on a production basis, and having catalog item numbers and prices; "Standard supplies" are those carried in stock for use in normal operation.

(2) All other articles produced or services performed by contractor-controlled sources shall be provided on the basis of allowable cost without additional fee, and subject to the terms of this Contract; provided, however, that if mutually agreed, they may be furnished at fixed prices firmed at the outset; provided further, that any such fixed prices shall be negotiated on the basis of estimated allowable costs under this Contract, without profit.

Responsive Record 4

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APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED DECEMBER 1, 1961,
UNDER MODIFICATION NO. 30

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SR-A-126

[illegible] DECLA[illegible]ATION REVIEW	
[illegible] Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADD ☑ ADD	1. Classification Unchanged
Name: [illegible]	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: EO-NMP-2 9/00

A

As provided for in paragraph 1 of Article I of Modification 29 of Contract AT(30-1)-1293, this Appendix "B" describes the scope of work to be performed by the Contractor for the period October 1, 1961, through March 31, 1962.

1. Mark VII-A - Mark V-B (Inner-Fuel)

a. The Contractor shall manufacture and furnish to the Commission Mark VII-A and Mark V-B slugs at monthly tonnage rates as follows:

PERIOD	MARK VII-A	MARK V-B (Integral Rib)
October	80	8
November	80	8
December	80	8
January	80	10
February	105	10
March	105	10

b. Mark V-B (Inner Ribless)

(1) The Contractor shall manufacture and furnish to the Commission a total of 680 irradiated quality Mark V-B inner ribless pieces in accordance with the following:

October, 1961 - 220 pieces
November, 1961 - 220 pieces
December, 1961 - 240 pieces

(2) As part of the Mark V-B production tonnages established under 1.(a) above, the Contractor shall manufacture and furnish to the Commission Mark V-B ribless inner fuel pieces in accordance with the following schedule:

DATE REQUIRED	NO. OF RIBLESS PIECES REQUIRED FOR WASHER (SSK4-3-222)	FOR RIBBED OF (SSK4-3-225)
February 1, 1962	1500	[redacted]
March 1, 1962		

Cy. HA & IOA destroyed 7/27/65

[redacted]

[redacted]

SROO Response to
FOIA (SR) - 04-028

[redacted]

2. Mark V-B (Outer-Fuel)

The Contractor shall maintain its Mark V-B outer-fuel element facilities in ready standby which shall include such minimum token operation as required to maintain capability. It is understood that minimum token operation will not exceed an average production of approximately 100 pieces per month.

3. Thorium

The Contractor shall conduct a thorium program, using its best efforts, toward the manufacture and canning of 1,320 thorium slugs (560 physics test pieces and 760 reactor acceptable) approximately 6.5 inches long and of the Mark VII-A cross section. The program shall include the preparation of specifications and operating procedures for canning thorium elements and the preparation of the core materials including all necessary research, development, machining, canning, and data accumulation.

4. Program Development

The Contractor shall conduct the following process improvement and development programs:

a. Mark V-B Element Development

The Contractor shall conduct a Mark V-B fuel element development program for the purposes of achieving costs savings in the manufacture of Mark V-B elements. The program shall include necessary tooling and equipment to produce Mark V-B elements using new techniques, variations of fin and finless pieces and necessary development to assure that new elements meet required specifications.

b. Nondestructive Testing

In connection with the above programs, the Contractor shall conduct a development and testing program on nondestructive testing equipment. The program shall include development of a process and equipment capable of properly determining and classifying grain size, developments to determine sub-surface nickel eutetic by either eddy current or ultrasonics, and the development of techniques necessary to prove out nondestructive testing equipment.

5. Du Pont Tooling

The Contractor shall perform work in connection with the Du Pont Tooling Program as authorized by the Contracting Officer in accordance with the Commission's letter to the Contractor of April 4, 1961, attached hereto as Exhibit I.

[redacted]

[redacted]

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED DECEMBER 1, 1961,
UNDER MODIFICATION NO. 30

B

On or before March 31, 1962, the Commission shall notify the Contractor in writing of the scope of work to be performed by the Contractor during the period April 1, 1962, through September 30, 1962. The amount of fixed fee for such scope of work shall be mutually agreed upon, and failure to agree thereon shall be deemed to be a dispute as to a question of fact and shall be determined in accordance with the General Provision of this Agreement entitled DISPUTES.

[redacted]

3. Transfer of Site. The Contractor agrees not to sell, lease, license, or otherwise transfer ownership or occupancy of any part of its land, buildings, or facilities on (1) Site A, or (2) the areas, together with buildings or facilities thereon, marked in red crosshatch in Appendix "D" of this Agreement without expressly making such sale, lease, license, or other transfer subject to the provisions of subparagraph (d) of paragraph 2. of Article III - TERM, EXPIRATION AND TERMINATION, of this Agreement. The Contractor further agrees that in the event it sells, leases, licenses, or otherwise transfers ownership, occupancy, or possession of any part of its land, buildings, or facilities referred to in this paragraph, it will hold the Government harmless from any and all damage that may result to the Government from such sale, lease, license, or transfer.

4. Non-Contract Activities. The Contractor shall not engage in or permit others to engage in activities at Site A other than activities in the performance of work under this Agreement without the approval of the Commission.

ARTICLE III - TERM, EXPIRATION AND TERMINATION

1. Term. Subject to the provisions of this Article, the period of performance of the work under this Agreement shall end on September 30, 1962; provided, however, that the Government, in its sole discretion, shall have the unilateral right from time to time to extend the period of performance under this Agreement for a consecutive period or periods through September 30, 1964, upon written notice or notices to the Contractor of its intention to extend the Contract for such period or periods. Each such written notice shall identify to the Contractor the scope of work to be performed by the Contractor during the period in which the Contract is to be extended. The amount of fixed fee for each Contract extension shall be mutually agreed upon, and failure to agree thereon shall be deemed to be a dispute as to a question of fact and shall be determined in accordance with the General Provision entitled DISPUTES, hereof. The rights and remedies of the Government for any failure of the Contractor, for reasons beyond its control and which did not result from any act(s) or omission(s) on its part, to agree to any extension of the period or periods of performance provided for in this paragraph shall be limited to the provisions of subparagraph (d) of paragraph 2. of Article III - TERM, EXPIRATION AND TERMINATION.

2. Termination.

(a) For Default. The performance of the work under paragraph 1 of Article I and under any or all of the agreements under paragraph 2 of Article I may be terminated by the Commission in whole or in part by reason of the breach by the Contractor of any of the provisions of this Agreement. The performance of the work under any Sponsor Agreement may

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be terminated by the Sponsor in whole or in part by reason of the breach by the Contractor in regard to said work of any of the provisions of this Agreement. Where both reasonable and practicable, in the light of the nature of the breach and its effect on the other party, the Commission, or the Sponsor in the case of a Sponsor Agreement, will give the Contractor written notice of the breach and of its intent to terminate by reasons thereof and the opportunity to cure the default promptly.

(b) For the Convenience of the Government. The performance of the work under Article I of this Agreement or any part of said work may be terminated by the Commission for the convenience of the Government. The performance of the work under any Sponsor Agreement may be terminated by the Sponsor with the approval of the Commission for the convenience of the Government.

(a) Notice of Termination. Termination, under this paragraph, shall be effected by delivery to the Contractor of a written notice of termination, which notice (i) shall specify a date upon which said termination shall become effective, which date shall be at least sixty (60) days after the delivery of said notice; (ii) in the event of a termination in part, shall specify the portion or portions of the work so terminated and the period or periods during which said termination shall be effective; and (iii) shall specify whether said termination is for the default of the Contractor or for the convenience of the Government. Upon receipt of said notice of termination, the Contractor promptly, except as the notice may direct otherwise, shall (i) discontinue all terminated work as soon as is reasonably practicable, if the notice so directs, and in any event by the date specified in said notice of termination; (ii) cease all placing of orders for property or services in connection with the performance of the terminated work; (iii) proceed to the best of its ability to terminate all orders and subcontracts to the extent that they relate to the terminated work; (iv) assign to the Government, in the manner and to the extent directed by the Commission, all the right, title and interest of the Contractor under the terminated portion of the orders and subcontracts so terminated; (v) settle, with the approval of the Commission, or the Sponsor in the case of a Sponsor Agreement, all subcontracts, obligations, commitments and claims related to the terminated work, the cost of which would be allowable in accordance with the provisions of this Agreement; (vi) continue performance of such part of the Agreement work, if any, as shall not have been terminated; and (vii) take such other action with respect to the terminated work as may be required under other Articles of this Agreement and, subject to the approval of the Commission, as may be otherwise appropriate including but not limited to action for the protection and preservation of Government property.

(d) Entry by Government After Default.

(1) If, prior to September 30, 1964, performance of all of the work under this Agreement is terminated for the default of the Contractor or the Contractor refuses to agree to any extension of

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the period of performance as provided in paragraph 1. of Article III - TERM, EXPIRATION AND TERMINATION, the Government may enter upon and occupy Site A exclusively for such period of time as it may deem desirable from a time no later than thirty (30) days after the date of such default or after the date of expiration following such refusal through September 30, 1964, but not after September 30, 1964, by paying to the Contractor, for each month of such occupancy of Site A, a monthly charge in full satisfaction of all claims of the Contractor against the Government arising out of said entry, including the Contractor's loss of use of said facilities, except as otherwise provided in paragraph 1. of Article XIX - INDEMNITY, and the fair rental value of said premises and facilities but excluding all other claims arising out of the Government's use and occupancy of said premises and facilities. Said monthly charge shall be 1/12 of the actual annual costs and expenses attributable to Site A, including but not limited to such items as taxes, insurance except workman's compensation insurance, and such other costs as may be approved by the Commission.

(ii) After termination for the default of the Contractor and the exercise of the right conferred upon the Government to occupy the premises, as provided in (i) above, the Government may (a) enter upon and have exclusive occupancy of Site A; (b) take possession of all Government property in Site A and, for the period of said occupancy, take possession of all materials, tools, machinery, and appliances in Site A which may be owned by or in possession of the Contractor and used solely in connection with the work under this Agreement; (c) exercise during said occupancy, in its own name and for its own account, all options, privileges and rights belonging to or exercisable by the Contractor in connection with said premises and facilities; and (d) for its own account and for its own use, fabricate, process, and complete, or employ others to fabricate, process, or complete, therein research and development and production work on fuel elements.

(iii) In addition, the Commission shall, within the limits of its authority, indemnify and hold the Contractor harmless against any damages finally awarded by a court, agency, or board of competent jurisdiction, or settlements made with the consent of the Commission, and against reasonably necessary expenses incident to any action before such court, agency, or board, or to settlement, where such awards and settlements are based on claims by third parties against the Contractor arising out of the Government's use and occupancy of said premises or facilities, or the exercise by the Government of any of the rights or privileges belonging to the Contractor pursuant to this subparagraph (d). Moreover, except as provided in subparagraph (i) above, and except for reasonable wear and tear to such property, the Commission shall also, within the limits of its authority, indemnify and hold the Contractor harmless against physical damage to or physical loss of the Contractor's own property which may arise out of the Government's use and occupancy of said premises and facilities.

(e) Terms of Settlement. Upon a termination of all or part of the work under this Agreement, full and complete settlement of all claims of the Contractor with respect to the work of this Agreement so terminated shall be made as follows:

(i) Assumption of Contractor's Obligations. The Government may, at the discretion of the Commission, assume and become liable for all obligations, commitments, and claims that the Contractor may have theretofore in good faith undertaken or incurred in connection with the terminated work, the cost of which would be allowable in accordance with the provisions of this Agreement; and the Contractor shall, as a condition of receiving the payments mentioned in this Article, execute and deliver all such papers and take all such steps as the Commission may require for the purpose of fully vesting in the Government all the rights and benefits of the Contractor under such obligations or commitments.

(ii) Payment for Allowable Costs. The Government, or the Sponsor in the case of a Sponsor Agreement, shall reimburse the Contractor or allow credit for all allowable costs incurred in the performance of the terminated work and not previously reimbursed or otherwise discharged.

(iii) Payment for Close-Out Expense. The Government, or the Sponsor in the case of a Sponsor Agreement, shall reimburse the Contractor (a) for such close-out expenses, (b) for such further expenditures as are made after the date of termination for the protection of the Government property, and (c) for such legal and accounting services in connection with settlement, as are required or approved by the Commission, or the Sponsor in the case of a Sponsor Agreement.

(iv) Payment on Account of Fixed Fees.

(a) If the performance of the work under paragraph 1 of Article I or any Appendix "C" Agreement under paragraph 2 of said Article of this Agreement is terminated in whole for the default of the Contractor, no further payment shall be made of fixed fee for any uncompleted part of the work under such paragraph, nor shall any further part of the 10% of the fixed fee for the work under such paragraph, withheld in accordance with Article VI, be paid; provided, however, that the Contractor shall be paid with respect to the terminated work under such paragraph 90% of a sum determined by applying a percentage to the total fee applicable to such work, such percentage to be determined by dividing the amount of work completed under such paragraph (including without limitation preparation and development work thereunder after October 1, 1961) by the total amount of work provided for under such paragraph; provided further, that the Contractor shall refund to the [illegible]

or Sponsor if applicable, any fixed fee received for work under such paragraph which is in excess of the amount determined under the preceding formula.

(b) If the performance of the work under this Agreement is terminated in whole for the convenience of the Government, the Contractor shall be paid that portion of the fixed fee applicable to the work under paragraph 1 of Article 1 and to each Appendix "C" Agreement under paragraph 2 of said Article, respectively, which the work actually completed under each such paragraph and Agreement, respectively, as determined by the Commission, bears to the entire work under each such paragraph and Agreement, respectively, less payments previously made on account of each such applicable fixed fee.

(c) If the performance of the work under paragraph 1 of Article I of this Agreement or under any Appendix "C" Agreement under paragraph 2 of Article I of this Agreement, is terminated in part for the convenience of the Government, the Contractor and the Commission, or the Sponsor if applicable, shall promptly negotiate and agree upon an equitable adjustment of the fixed fee applicable to the terminated portion of the work, and the agreement reached shall be evidenced by a written executed supplemental agreement to this Agreement or the appropriate Appendix "C" Agreement, if applicable. If the Contractor and the Commission, or the Sponsor if applicable, fail to so agree upon such fee adjustment within a reasonable time after such partial termination, failure to agree shall be disposed of in accordance with the General Provision entitled DISPUTES, hereof.

3. Expiration. In the event of expiration of the period of work performance hereunder without prior termination hereof, the Contractor shall (i) discontinue the agreement work under this Agreement at the end of the day of expiration and (ii) take such other action as may be required under other provisions of this Agreement and subject to the approval or ratification of the Commission, as may be otherwise appropriate, including but not limited to action for the protection and preservation of Government property.

4. Claims in Favor of the Government. The obligation of the Government to make any of the payments required by this Article shall be subject to any unsettled claims in connection with this Agreement which the Government may have against the Contractor. Nothing contained in this Article shall be construed to limit or affect any other remedies which the Government may have as a result of a default by the Contractor.

5. Settlement upon Termination or Expiration. Any other provisions of this Agreement to the contrary notwithstanding, the Contractor and the Commission, or the Sponsor if applicable, may agree upon the whole or any part of the

amount or amounts which the Contractor is to receive upon and in connection with (i) any termination pursuant to this Article or (ii) expiration of the term of this Contract without prior termination thereof. Any agreement so reached shall be evidenced by a written supplemental agreement to this Contract, or Appendix "C" Agreement if applicable, which shall be final and binding upon the parties with regard to their respective claims against each other except as therein otherwise expressly provided.

ARTICLE IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE

1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $[illegible],657,850 exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2, Article V of this Contract, is $[illegible],192,094. The estimated cost of the work, as described in paragraph 1 of the Article entitled SCOPE OF THE WORK, for the period October 1, 1961, to March 31, 1962, is $[illegible],044,850, exclusive of the Contractor's fixed fee of $[illegible],[illegible]53.

2. Obligation of Funds. The amount presently obligated by the Government with respect to this Contract is $22,8[illegible],949. The amount of obligation under this Contract may be increased unilaterally by the Commission by written notice to the Contractor and may be decreased by written agreement of the parties (whether or not by formal modification of this Contract).

3. Revised Estimate of Cost and Fixed Fee. The presently estimated cost of the work and fixed fee under this Contract may be increased or decreased by written agreement of the parties (whether or not by formal modification of this Contract) and such revised estimate plus the fixed fee shall be deemed substituted in paragraph 1, above.

4. Limitation of Obligation. Payments on account of costs shall not in the aggregate at any time exceed the amount of funds presently obligated hereunder less the Contractor's fixed fee.

5. Notice of Costs Approaching Funds Obligated--Contractor Excused Pending Increase When Obligation is Reached. Whenever the Contractor has reason to believe that the total cost of the work under this Contract (exclusive of the Contractor's fixed fee) will be substantially greater or less than the presently estimated cost of the work the Contractor shall promptly notify the Contracting Officer in writing. The Contractor shall also notify the Contracting Officer in writing when the aggregate of expenditures and outstanding commitments allowable under this Contract, including the Contractor's fixed fee, is equal to ninety per cent (90%) (or such other percentage as the Contracting Officer may from time to time establish by notice to the Contractor) of the amount of funds presently obligated hereunder. When such expenditures and outstanding commitments, including the Contractor's fixed fee, equal one hundred per cent (100%) of such amount the Contractor shall make no further commitments or expenditures (except to meet existing commitments) and shall be excused from further performance of the work unless and until the Contracting Officer thereafter shall increase the funds obligated with respect to this Contract.

work under this Contract but in no event later than one (1) year (unless within the year the Contracting Officer grants a further specific period of time) from the date of such completion.

6. Applicable Credits. The Contractor agrees that any refunds, rebates, credits, or other amounts (including any interest thereon) accruing to or received by the Contractor or any assignee under this Contract shall be paid by the Contractor to the Government to the extent that they are properly allocable to costs for which the Contractor has been reimbursed by the Government under this Contract. Reasonable expenses incurred by the Contractor for the purpose of securing such refunds, rebates, credits, or other amounts shall be allowable costs hereunder when approved by the Contracting Officer.

7. Financial Settlement. Prior to final payment under this Contract, the Contractor and each assignee under this Contract whose assignment is in effect at the time of final payment under this Contract shall execute and deliver:

(a) an assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits or other amounts (including any interest thereon) properly allocable to costs for which the Contractor has been reimbursed by the Government under this Contract; and

(b) a release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this Contract, subject only to the following exceptions:

(i) specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor,

(ii) claims, together with reasonable expenses incidental thereto, based upon liabilities of the Contractor to third parties arising out of performance of this Contract; provided that such claims are not known to the Contractor on the date of the execution of the release; and provided further that the Contractor gives notice of such claims in writing to the Contracting Officer not more than six (6) years after the date of the release or the date of any notice to the Contractor that the Government is prepared to make final payment, whichever is earlier; and

(iii) claims for reimbursement of costs (other than expenses of the Contractor by reason of any indemnification of the Government against patent liability), including reasonable expenses incidental thereto, incurred by the Contractor under the provisions of this Contract relating to patents.

8. Claims. Claims for payment shall be accompanied by such supporting documents and justification as the Contracting Officer shall prescribe.

9. Discounts. The Contractor shall take and afford the Government the advantage of all known and available cash and trade discounts, rebates, allowances, credit, salvage, and commissions unless the Contracting Officer finds that such action is not in the best interest of the Government.

10. Revenues. All revenues other than the Contractor's fixed fee or fees, if any, accruing to the Contractor in connection with the work under this Contract shall be applied in reduction of allowable costs.

11. Direct Payments of Charges - Deductions. The Government reserves the right, upon ten (10) days written notice from the Contracting Officer to the Contractor, to pay directly to the persons concerned, all amounts due which otherwise would be allowable under this Contract. Any payment so made shall discharge the Government of all liability to the Contractor therefor.

12. Payments Under Appendix "C" Agreements. Payment of all costs and fixed fee under any Appendix "C" Agreement shall be made to the Contractor by the Commission office or Sponsor executing the Agreement in accordance with the procedures established by said Agreement.

ARTICLE VII - GOVERNMENT PROPERTY

1. Except as otherwise specifically agreed upon in writing by the Contractor and the Commission and except as otherwise specifically provided herein:

(a) Title to all property especially purchased by the Contractor for this Agreement, for which the Contractor is entitled to direct reimbursement under the provisions of this Contract, shall pass directly from the vendor to the Government, and

(b) Title to all property utilized in the work of this Agreement, provided by the Contractor from Contractor-owned stores or manufactured by the Contractor in the ordinary course of its commercial business, for which the Contractor is entitled to reimbursement under the provisions of this Contract, shall pass to the Government at the time of such utilization.

2. The Government reserves the right to furnish any property or services required for or useful in the performance of the work under this Agreement. Title to all property so furnished shall remain in the Government.

3. The Government shall retain title to all products, by-products, wastage, salvage, work-in-process, residues and scrap resulting from property to which the Government has or had title pursuant to paragraphs 1 and 2 above.

4. All items of Government-owned property referred to above are hereafter collectively referred to in this Article as "Government Property."

To the extent practicable, the Contractor shall cause all nonexpendable items of Government property to be suitably marked with an identifying mark or symbol indicating that the items are the property of the Government. The Contractor shall maintain, at all times and in a manner satisfactory to the Commission, records showing the disposition and use of Government property. Such records shall be subject to Commission inspection at all reasonable times. It is understood that the Commission shall at all reasonable times have access to the premises wherein any items of Government property are located.

5. The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property (but not of any consumption of materials or supplies in the performance of its undertakings hereunder). Except as otherwise specifically provided in this Agreement, the Contractor shall not be liable for loss or destruction of or damage to Government property (in the possession or custody of the Contractor in connection with this Agreement) unless such loss, destruction or damage is due to gross negligence or wilful misconduct attributable to the Contractor's corporate officers or its supervisory employees.

6. Except as otherwise authorized in writing by the Commission, items of Government property referred to above shall not be used by the Contractor except in the performance of its obligations under this Agreement.

7. In the event of loss or destruction of or damage to Government property, the Contractor shall take such steps to subserve the Government's interest as the Commission authorizes or approves. If the Contractor is liable for loss or destruction of or damage to any items of Government property, it shall promptly account therefor to the satisfaction of the Commission; if the Contractor is not liable therefor, and is indemnified, reimbursed, or otherwise compensated for such loss, destruction or damage (other than by the Government under this Agreement), the Contractor shall promptly account to the Government for an equitable share of such indemnification, reimbursement, or other compensation; in any event, the Contractor shall do nothing to prejudice the Government's rights to recover against third parties for any such loss, destruction or damage, and, upon request of the Commission, shall furnish the Government all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery.

8. The Contractor may, with the approval of the Commission, (a) transfer or otherwise dispose of items of Government property to such parties and upon such terms and conditions as so approved, or (b) itself acquire title to items of property at prices mutually agreed upon by the Commission and the Contractor without the necessity of execution of an amendment to this Agreement. The proceeds of any such transfer or disposition, and the agreed price of any such Contractor acquisition, shall be applied in reduction of any payments or reimbursement to be made by the Government to the Contractor under this Contract or shall otherwise be paid in such manner as the Commission may direct.

9. The Contractor shall conform to all regulations and requirements of the Commission concerning the management, inventory control, storing and disposal of Government property. The Contractor agrees to prepare and submit to the Commission for review, within sixty (60) days after the execution of this Agreement, a written statement of the methods to be used and of the procedures to be followed by the Contractor in regard to management, inventory control, storing and disposal of Government property. The Contractor shall not use any method or procedure in this regard which the Commission has advised the Contractor is contrary to Commission policy or which is otherwise prohibited by this Agreement.

10. With respect to each item of Government property located at Site A not sold or otherwise disposed of by the Contractor or acquired by the Contractor pursuant to paragraph 8 above, the Government, within one hundred twenty (120) days following the termination or expiration of the period of performance of this Contract, or any extension thereof, shall abandon or remove it, without incurring any further liability to the Contractor.

(a) In the event the Government occupies Site A pursuant to subparagraph d(2) of paragraph 2 of Article III - TERM, EXPIRATION AND TERMINATION, the rights in the Government to abandon or remove, as set forth in this paragraph, shall be suspended during the period of such occupancy and the one hundred twenty (120) day period during which the Government must either abandon or remove such property shall not commence to run until the end of such occupancy.

(b) Prior to determination by the Government to abandon or remove any item of Government property, the Contractor agrees, if the Government so requests, to negotiate with the Government in good faith to purchase such item or items at a price mutually agreed upon, it being understood, however, that the Contractor shall not be required to negotiate any price in excess of the value to the Contractor of said item or items.

(c) There shall be no charge to the Government by the Contractor for the storage of such property (i) for one hundred twenty (120) days after termination or expiration of this Contract; (ii) for one hundred twenty (120) days after (a) September 30, 1964, or (b) such earlier date as the Government may voluntarily terminate its right of occupancy as hereinabove provided; or (iii) during the period of the close-out of this Contract.

ARTICLE VIII - SETTLEMENT OF GOVERNMENT INVESTMENT IN IMPROVEMENTS

1. Definitions. As used in this Article:

(a) The term "improvements" shall mean any and all renovations, alterations, improvements, or additions, including but not limited to all materials, supplies, and other property purchased at the expense of the Government and incorporated into such improvements, made at the expense of the Government to and incorporated as part of the land or buildings of the Contractor on

SYL00002154

Cantiague Road in Hicksville, Long Island, New York, designated as Sites A and B, as is more specifically provided in Article II - SITE OF THE WORK, hereof. It is understood and agreed by way of example but not limitation that there will be excluded from the meaning of the term "improvements" any manufacturing equipment, including associated wiring, duct works, controls, etc., which can be severed from the property without necessitating structural repairs (including but not limited to any breaking or repairing of walls or ceilings) to the buildings. All other items incorporated into said land or buildings, except manufacturing equipment and associated wiring, duct works, controls, etc., referred to in the preceding sentence, shall be deemed to be improvements. It is further understood and agreed that upon payment therefor by the Contractor to the Government, as provided in this Article, the Contractor shall have sole and exclusive title as against the Government to all improvements in Sites A and B.

(b) The term "appraised value in place" shall mean the value of the improvements in their existing condition, as determined by the appraiser(s), as of the date of the appraisal.

(c) The term "appraised net salvage value" shall mean the estimated salvage value, as determined by the appraiser(s), of the improvements less the estimated costs, as determined by the appraiser(s), of (i) the removal of such improvements, and (ii) the restoration of the Contractor's land and buildings at Sites A and B to substantially the same condition, except for reasonable wear and tear, existing immediately prior to the incorporation therein of such improvements.

2. Upon termination or expiration of this Agreement, the appraised value in place and the appraised net salvage value of the improvements shall be determined by a person or persons mutually acceptable to the Government and the Contractor. Promptly following receipt of such appraisals, the Contractor shall in good faith negotiate with and pay to the Government an amount equal to the mutually agreed value of such improvements. The mutually agreed value shall be determined after giving full consideration to the appraised value in place and the current value to the Contractor of such improvements. In no event shall the mutually agreed value be less than the appraised net salvage value of any improvement. Failure to agree upon either an acceptable appraiser(s) or the mutually agreed value pursuant to the foregoing provision of this Article shall be considered a dispute to be settled in accordance with the General Provision of this Contract entitled DISPUTES.

ARTICLE IX - PATENTS

1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of, in connection with, or under the terms of this Agreement, the Contractor shall furnish the Commission with complete

SYL00002155

ARTICLE VIII - SETTLEMENT OF GOVERNMENT INVESTMENT IN IMPROVEMENTS

1. Definitions. As used in this Article:

(a) The term "improvements" shall mean any and all renovations, alterations, improvements, or additions, including but not limited to all materials, supplies, and other property purchased at the expense of the Government and incorporated into such improvements, made at the expense of the Government to and incorporated as part of the land or buildings of the Contractor on Cantiague Road, in Hicksville, Long Island, New York, designated as Sites A and B, as is more specifically provided in Article II - SITE OF THE WORK, hereof. It is understood and agreed by way of example but not limitation that there will be excluded from the meaning of the term "improvements" any manufacturing equipment, including associated wiring, duct works, controls, etc., which can be severed from the property without necessitating structural repairs (including but not limited to any breaking or repairing of walls or ceilings) to the buildings. All other items incorporated into said land or buildings, except manufacturing equipment and associated wiring, duct works, controls, etc., referred to in the preceding sentence, shall be deemed to be improvements. It is further understood and agreed that upon payment therefor by the Contractor to the Government, as provided in this Article, the Contractor shall have sole and exclusive title as against the Government to all improvements in Sites A and B.

(b) The term "appraised value in place" shall mean the value of the improvements in their existing condition, as determined by the appraiser (s), as of the date of the appraisal.

(c) The term "appraised net salvage value" shall mean the estimated salvage value, as determined by the appraiser(s), of the improvements less the estimated costs, as determined by the appraiser(s), of (i) the removal of such improvements, and (ii) the restoration of the Contractor's land and buildings at Sites A and B to substantially the same condition, except for reasonable wear and tear, existing immediately prior to the incorporation therein of such improvements.

2. Upon termination or expiration of this Agreement, the appraised value in place and the appraised net salvage value of the improvements shall be determined by a person or persons mutually acceptable to the Government and the Contractor. Promptly following receipt of such appraisals, the Contractor shall in good faith negotiate with and pay to the Government an amount equal to the mutually agreed value of such improvements. The mutually agreed value shall be determined after giving full consideration to the appraised value in place and the current value to the Contractor of such improvements, In no event shall the mutually agreed value be less than the appraised net salvage value of any improvement. Failure to agree upon either an acceptable appraiser(s) or the mutually agreed value pursuant to the foregoing provision of this Article shall be considered a dispute to be settled in accordance with the General Provision of this Contract entitled DISPUTES.

4249

SPONSORED TASK NO. CH-4
MODIFICATION NO. 8

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

THIS MODIFICATION, entered into as of the 3rd day of October 1961, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC., SYLCOR DIVISION (hereinafter called the "Contractor").

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such agreement having been entered into on July 1, 1959, and having been modified heretofore by Modifications 1 - 7; and

WHEREAS, the parties hereto desire to modify said agreement further as herein provided;

NOW, THEREFORE, the parties hereto agree that the Agreement, as heretofore modified, is hereby modified further in the following particulars, but in no others:

1. The following new subparagraph is added to Paragraph 1., Description of Work:

> "During the period October 1, 1961, through March 31, 1962, the Contractor shall proceed with the final machining of semifinished Mark VII-A cores as heretofore provided in the Agreement and in accordance with the classified letter dated August 28, 1961, from C. L. Karl, Manager of the Commission's Cincinnati Area Office, to the Contractor and Contractor's letter dated September 13, 1961, which letters are hereby incorporated herein by reference."

2. The fixed fee specified in Paragraph 3. is hereby increased by $7,950.00 as a result of the work added hereby.

3. The completion date of the work stated in Paragraph 4. is changed to March 31, 1962.

CONTRACTS

CERTIFIED A TRUE COPY
BY Alice Brown

NARA II
RG 326
Accession 4NN 326-87-007
AEC Feed Materials D.V. Corr. 1947-1964
Box A9

NARA 001287

4. The amount obligated by Paragraph 5 is increased by $140,440.00 as a result of the work added hereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated thru Modification No. 7	$847,632.00	$52,684.00	$900,316.00
This Modification No. 8	132,490.00	7,950.00	140,440.00
	$980,122.00	$60,634.00	$1,040,756.00

Except as otherwise provided in this modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: /s/ R. C. Humphries
R. C. Humphries
TITLE: Director, Contract Division, OROO

WITNESSES:

/s/ Grace Golden
Grace Golden
Hicksville, New York
(Address)

/s/ Milton Ball
Milton Ball
Hicksville, New York
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.
SYLCOR DIVISION

BY: /s/ D. B. Mets
D. B. Mets
TITLE: Manufacturing Manager

NARA II
RG 326
Accession 4NN 326-87-007
AEC Feed Materials D.O. Corr. 1951
Box 19

NARA 001288

Responsive Record 5.1

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office
FINDINGS AND DETERMINATION

AUTHORIZATION FOR MODIFICATION OF COST-PLUS-FIXED-FEE CONTRACT

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.
Contract No. AT(30-1)-1293
Modification No. 30

The Atomic Energy Commission proposes to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc. to revise the scope of work to be performed by the Contractor during the period January 1, 1962, through March 31, 1962, and to provide an appropriate adjustment in estimated cost and fixed fee for work performed during the period October 1, 1961, through December 31, 1961. The total estimated cost of the work under the contract during this period is reduced by the amount of $182,616 and the total fixed fee is reduced by $3,000.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering an immediate unit-price arrangement.

2. Program requirements are subject to immediate change.

3. Continuous process development is required.

4. The adjustments in the estimated cost and fixed fee under this modification are considered to be reasonable.

5. The revised total fixed fee of $98,460 averages six per cent (6%) of the estimated cost fee base and is considered fair. The fee was arrived at as a result of negotiations between the parties and is within the AEC fee curve limits.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee Supplemental Agreement, and I hereby authorize the use of said Supplemental Agreement.

By: H. L. Kilburn
Title: Dep. Mgr., SROO
Date: 4-5-62

SROO Response to
FOIA (SR) - 04-028

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 30
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR	Sylvania Electric Products Inc. Hicksville, Long Island, New York
SUPPLEMENTAL AGREEMENT TO	Amend the scope of work and revise the estimated cost and fixed fee.
EFFECTIVE DATE	December 1, 1961

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 29)	$17,706,045	$3,951,805	$21,657,850
This Modification (Net Decrease)	(179,616)	-	(179,616)
New Total Direct Cost	$17,526,429	$3,951,805	$21,478,234
Previous Fixed Fee (Modification No. 29)	$ 1,019,949	$ 172,150	$ 1,192,099
This Modification (Net Decrease)	(3,000)	-	(3,000)
New Total Fixed Fee	$ 1,016,949	$ 172,150	$ 1,189,099
Total Revised Cost and Fee	$18,543,378	$4,123,955	$22,667,333
Total Obligated February 28, 1962	$18,543,378	$4,123,955	$22,667,333

A. E. C. FILE COPY

Responsive Record 4.2

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 30
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into this 5th day of April, 1962, effective December 1, 1962, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December, 1951, the Government and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Government involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended:

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Paragraph 1. of ARTICLE I - SCOPE OF WORK, is revised to read as follows:

"1. Beginning October 1, 1961, the Contract shall proceed with the machining, manufacture, canning, testing, inspection, and delivery of metal and alloy slugs to the Commission and perform other services as required by the Commission, all in accordance with the classified Appendix "B," as amended, attached hereto and made a part hereof."

2. Paragraph 1., Estimate of Cost and Fixed Fee, of ARTICLE IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

"1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $21,478,234 exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2., Article V, of the Contract is $1,189,099. The estimated cost of the work, as described in paragraph 1. of the article entitled, SCOPE OF THE WORK, for the period October 1, 1961, to March 31, 1962, is $1,865,224, exclusive of the Contractor's fixed fee of $98,460."

SROO Response to
FOIA (SR) - 04-028

Modification No. 30
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

3. In paragraph 2., Obligation of Funds, of ARTICLE IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, delete the figure "$22,849,949" and substitute therefor the figure "$22,667,333."

4. In subparagraph (b) of paragraph 2., Fixed Fee, of ARTICLE V - ALLOWABLE COST AND FIXED FEE, delete the figure "$101,460" and substitute therefor the figure "$98,460."

5. Subparagraph (b) of paragraph 2., Payment of Fixed Fee, of ARTICLE VI - PAYMENTS, is revised to read as follows:

   "(b) For the period October 1, 1961, through March 31, 1962, ninety percent (90%) of the fixed fee of $98,460 shall become due and payable in monthly installments of $15,219 for the period October through December, 1961, and $14,319 for the period January through March, 1962."

6. Appendix "B," Modification No. 29, Contract AT(30-1)-1293 is revised as of December 1, 1961, and is attached hereto and made a part hereof.

7. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: H. L. Kilburn

TITLE: H. L. Kilburn, Deputy Manager
Savannah River Operations Office

WITNESSES:

Grace Golden

Hicksville NY
(Address)

Barbara Ann Zito

Hicksville, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: D B Metz
D. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

Modification No. 30
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz, who signed this Agreement on behalf of said corporation, was then Mfg. Mgr Tucson Div. of said corporation; and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 29th day of March, 1962.

By: [signature]

CORPORATE SEAL

Responsive Record 4.1

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office
FINDINGS AND DETERMINATION

AUTHORIZATION FOR MODIFICATION OF COST-PLUS-FIXED-FEE CONTRACT

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.
Contract No. AT(30-1)-1293
Modification No. 29

The Atomic Energy Commission proposes to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc., to extend the term of the contract through September 30, 1962, define the scope of work to be performed during the period October 1, 1961, through March 31, 1962, and to consolidate into one document the applicable contractual provisions. The work programs to be performed are incorporated into proposed Modification No. 29 to the Contract. The total estimated cost for the additional work is $2,146,300 of which $101,460 represents fixed fee.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering an immediate unit-price arrangement.

2. Program requirements are subject to immediate change.

3. Continuous process development is required.

4. During the past ten years Sylcor Division has operated its Hicksville Plant under a cost-plus-fixed-fee type contract with the Commission for the primary performance of canning uranium slugs for the Savannah River Plant reactor use. Sylcor Division has successfully performed the work required by the Commission and is considered best qualified to perform the additional work required by this modification, since it is essentially a continuation of programs previously performed.

5. The estimated costs under this modification are considered to be reasonable.

6. The proposed fixed fee of $101,460 averages six per cent (6%) of the estimated cost fee base and is considered fair. The fee was arrived at as the result of negotiations between the parties and is within the AEC fee curve limits.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee Supplemental Agreement, and I hereby authorize the use of said Supplemental Agreement.

By: _____
R. C. Blair, Manager
Title: Savannah River Operations Office
Date: JAN 10 1962

AT(30-1)-1293

SROO Response to FOIA (SP)

SPONSORED TASK NO. CH-4
MODIFICATION NO. 9

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

THIS MODIFICATION, entered into as of the 26th day of February, 1962, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC., SYLCOR DIVISION (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such agreement having been entered into on July 1, 1959, and having been modified heretofore by Modifications 1 - 8; and

WHEREAS, the parties hereto desire to modify said agreement further as herein provided;

NOW, THEREFORE, the parties hereto agree that the Agreement, as heretofore modified, is hereby modified further in the following particulars, but in no others:

The subparagraph added to Paragraph 1, Description of Work, by Modification No. 8, is hereby modified as follows:

In the seventh line of said subparagraph, immediately following the date "September 13, 1961", insert the following words: "and in accordance with the classified letter dated February 1, 1962, from C. L. Karl, Manager of the Commission's Cincinnati Area Office, to the Contractor and Contractor's letter dated February 2, 1962."

NARA-SE
Series 16 - Oak Ridge Contract Files
Box H-178-18

Except as otherwise provided in this modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: R. G. Humphries
R. G. Humphries

TITLE: Director, Contract Division, OROO

WITNESSES:

Grace Gordon
Hicksville N.Y.
(Address)

Barbara Ann Zito
Hicksville, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.
SYLCOR DIVISION

BY: D B Metz
D. B. Metz

TITLE: Manufacturing Manager
SYLCOR DIVISION

SPONSORED TASK NO. CH-4
MODIFICATION NO. 10

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

THIS MODIFICATION, entered into as of the 28th day of March, 1962, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC., SYLCOR DIVISION (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such Agreement having been entered into on July 1, 1959, and having been modified heretofore by Modifications 1 - 9; and

WHEREAS, the parties hereto desire to modify said Agreement further as herein provided;

NOW, THEREFORE, the parties hereto agree that the Agreement, as heretofore modified, is hereby modified further in the following particulars, but in no others:

1. The following new subparagraph is added to Paragraph 1., Description of Work:

> "During the period April 1, 1962, through September 30, 1962, the Contractor shall proceed with the final machining of semi-finished Mark VII-A cores as heretofore provided in the Agreement and in accordance with the classified letter dated February 1, 1962, from C. L. Karl, Manager of the Commission's Cincinnati Area Office to the Contractor and Contractor's letter dated March 8, 1962, which letters are hereby incorporated herein by reference."

2. The fixed-fee specified in Paragraph 3. is hereby increased by $8,120.00 as a result of the work added hereby.

3. The completion date of the work stated in Paragraph 4. is changed to September 30, 1962.

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4. The amount obligated by Paragraph 5. is increased by $143,460.00 as a result of the work added thereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated thru Modification No. 9	$ 980,122.00	$60,634.00	$1,040,756.00
This Modification No. 10	135,340.00	8,120.00	143,460.00
	$1,115,462.00	$68,754.00	$1,184,216.00

Except as otherwise provided in this modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: R. G. Humphrie

TITLE: Director, Contract Division, OROO

WITNESSES:

M. Free
Hicksville Ny
(Address)

Grace Sweden
Hicksville Ny
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.
SYLCOR DIVISION

BY: D. B. Metz

D. B. Metz

TITLE: Manufacturing Manager

Responsive Record 5

[redacted]

3

This document consists of 2 pages.
No. 1 of 40 copies. Series A

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: R L Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: CG AMP-2 9/10

SR-A-129

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED APRIL 1, 1962, UNDER
MODIFICATION NO. 31

As provided for in paragraph 1 of Article I of Modification 29 of Contract At(30-1)-1293, this Appendix "B" describes the scope of work to be performed by the Contractor for the period April 1, 1962, through September 30, 1962.

1. Mark VII-A - Mark V-B (Inner Fuel)

a. The Contractor shall manufacture and furnish to the Commission Mark VII-A and Mark V-B slugs at monthly tonnages and/or piece rates as follows:

PERIOD	MARK VII-A (Tons)	MARK V-B (Pieces)	
		(Integral Rib)	(Ribless)
April	105	-	3,660
May	105	-	3,660
June	105	-	3,660
July	84	3,300	-
August	84	-	3,300
September	84	-	3,300

2. Mark V-B (Outer-Fuel)

The Contractor shall maintain its Mark V-B outer-fuel element facilities in ready standby which shall include such minimum token operation as required to maintain capability. It is understood that minimum token operation will not exceed an average production of approximately 100 pieces per month.

3. Thorium

The Contractor shall conduct a thorium program, using its best efforts, toward the manufacture and canning of 22 tons of Mark VII-T slugs, 14 tons of which are to be delivered to the Commission by September 1, 1962. The remaining eight tons shall be delivered as directed by the Commission. The program shall include the completion of specifications and operating procedures for canning thorium elements and the preparation of core materials including all necessary research, development, machining, canning and data accumulation.

[redacted]

Cy. 4 Ad 10A destroyed 7/27/66

SROO Response to
FOIA (SR) - 04-028

[redacted]

4. Program Development

a. The Contractor shall conduct a Mark V-B fuel element development program for the purposes of achieving cost savings in the manufacture of Mark V-B elements. The program shall include necessary tooling and equipment to produce Mark V-B elements using new techniques, variation of fin and finless pieces and necessary development to assure that new elements meet required specifications.

b. Nondestructive Testing

In connection with the above programs, the Contractor shall conduct a development and testing program on nondestructive testing equipment. The program shall include development of a process and equipment capable of properly determining and classifying grain size, developments to determine subsurface nickel eutetic by either eddy current or ultrasonics, and the development of techniques necessary to prove out nondestructive testing equipment.

5. Du Pont Tooling

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont Tooling Program.

[redacted]

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office
FINDINGS AND DETERMINATION

AUTHORIZATION FOR MODIFICATION OF COST-PLUS-FIXED-FEE CONTRACT

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.
Contract No. AT(30-1)-1293
Modification No. 31

The Atomic Energy Commission proposed to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc. to define the scope of work to be performed by the Contractor during the period April 1 through September 30, 1962. The total estimated cost of the work under the Contract during this period is $1,828,791 of which $101,691 represents the fixed fee.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering an immediate unit-price arrangement.

2. Program requirements are subject to immediate change.

3. Continuous process development is required.

4. The estimated costs under this modification are considered to be reasonable.

5. The proposed fixed fee of $101,691 averages six per cent of the estimated cost fee base, is within the AEC fee curve limits, and is considered fair and equitable.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee Supplemental Agreement, and I hereby authorize the use os said Supplemental Agreement.

By: _____
R. C. Blair, Manager
Title: Savannah River Operations Office

Date: MAY 1 0 1962

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 31
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR	Sylvania Electric Products Inc. Hicksville, Long Island, New York
SUPPLEMENTAL AGREEMENT TO	Amend the scope of work and revise the estimated cost and fixed fee.
EFFECTIVE DATE	April 1, 1962

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 30)	$17,526,429	$3,951,805	$21,478,234
This Modification (Net Increase)	1,717,918	-0-	1,717,918
New Total Direct Cost	$19,244,347	$3,951,805	$23,196,152
Previous Fixed Fee (Modification No. 30)	$ 1,016,949	$ 172,150	$ 1,189,099
This Modification (Net Increase)	101,691	-0-	101,691
New Total Fixed Fee	$ 1,118,640	$ 172,150	$ 1,290,790
Total Estimated Cost and Fixed Fee	$20,362,987	$4,123,955	$24,486,942
Total Amount Obligated as of April 1, 1962			$24,486,942

A. E. C. FILE COPY

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 31
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into this 31st day of May, 1962, effective April 1, 1962, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December, 1951, the Government and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Government involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and certain terms and conditions as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended:

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Appendix "B" Modification No. 29, Contract AT(30-1)-1293 is revised as of April 1, 1962, and is attached hereto and made a part hereof.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of ARTICLE IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $23,196,152, exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2., Article V, of the Contract is $1,290,790. The estimated cost of the work, as described in paragraph 1. of the Article, entitled, SCOPE OF WORK, for the period April 1, 1962, to September 30, 1962, is $1,727,100, exclusive of the Contractor's fixed fee of $101,691."

3. In paragraph 2., Obligation of Funds, of ARTICLE IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, delete the figure, "$22,667,333" and substitute therefor the figure "$24,486,942."

4. The following new subparagraph (c) is added to paragraph 2., Fixed Fee, of ARTICLE V - ALLOWABLE COST AND FIXED FEE:

"(c) The fixed fee applicable to work performed during the period April 1, 1962, to September 30, 1962, is $101,691."

5. The following new subparagraph (c) is added to paragraph 2., Payment of Fixed Fee, of ARTICLE VI - PAYMENTS:

"(c) For the period April 1, 1962, through September 30, 1962, ninety per cent (90%) of the fixed fee of $101,691 shall become due and payable in monthly installments of $15,254."

6. Paragraphs 1. and 2. of Article IX - PATENTS, are revised to read as follows:

"1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of or under this Agreement, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title and rights under any application or patent that may result; provided, however, that with respect to such inventions or discoveries made or conceived in the course of, or under, the terms of paragraph 1. of Article I, the Contractor, in any event, shall retain at least a nonexclusive, irrevocable, royalty-free license under said invention, discovery, application, or patent, such license being limited to the manufacture, use and sale for purposes other than use in the production or utilization of special nuclear material or atomic energy. Subject to the license retained by the Contractor, as provided in this Article, the judgment of the Commission on these matters shall be accepted as final; and the Contractor, for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

"2. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Acts of 1946 and 1954 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of or under this Agreement."

Modification No. 31
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

8. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____
R. C. Blair, Manager

TITLE: Savannah River Operations Office

WITNESSES:

_____
Hicksville NY
(Address)

_____
Hicksville N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: _____
D. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

I, _____, certify that I am _____ of Sylvania Electric Products Inc., named above; that _____ who signed this Agreement on behalf of said corporation, was then _____ of said corporation; and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 16 day of May, 1962.

By: _____

CORPORATE SEAL

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 32
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR	Sylvania Electric Products Inc. Hicksville, Long Island, New York
SUPPLEMENTAL AGREEMENT TO	Expand scope of work and amend other provisions of the Contract.
EFFECTIVE DATE	October 1, 1962

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 31)	$19,244,347	$3,951,805	$23,196,152
This Modification (Net Increase) a/	3,458,439	-0-	3,458,439
New Total Direct Cost	$22,702,786	$3,951,805	$26,654,591
Previous Fixed Fee (Modification No. 31)	$ 1,118,640	$ 172,150	$ 1,290,790
This Modification (Net Increase)	199,665	-0-	199,665
New Total Fixed Fee	$ 1,318,305	$ 172,150	$ 1,490,455
Total Estimated Cost and Fixed Fee	$24,021,091	$4,123,955	$28,145,046
Total Amount Obligated as of February 1, 1963			$28,145,046

C O N F O R M E D C O P Y

a/ Includes an adjustment for underruns through September 30, 1962, and for estimated changes in stores inventories and working capital in Fiscal Year 1963.

USDOE 017281

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 32
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into this 18th day of February, 1963, effective October 1, 1962, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December, 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and,

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to provide for the performance by the Contractor of an additional scope of work and to amend certain provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended:

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In paragraph 1., Principal Site, of Article II - SITE OF WORK, delete the date "October 1, 1961," appearing in the seventh line and substitute therefor the date "October 1, 1962."

2. In paragraph 1., Term, of Article III - TERM, EXPIRATION AND TERMINATION, delete the date "September 30, 1962," appearing in the second line and the date "September 30, 1964," appearing in the fifth and sixth lines, and substitute therefor the dates "September 30, 1963," and "September 30, 1967," respectively.

3. In subparagraph (d)(i) of paragraph 2., Termination, of Article III - TERM, EXPIRATION AND TERMINATION, substitute the date "September 30, 1967," for the date "September 30, 1964." Delete line 14 reading "except as otherwise provided in paragraph 1. of Article XIX - INDEMNITY," in its entirety.

4. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

"1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $26,654,591, exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2., Article V, of the Contract is $1,490,455. The estimated cost of the work, as described in paragraph 1. of the Article entitled SCOPE OF WORK for the period October 1, 1962, to September 30, 1963, is $3,496,200, exclusive of the Contractor's fixed fee of $199,665."

5. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, delete the figure "$24,486,942" and substitute therefor the figure "$28,145,046."

USDOE 017282

6. The following new subparagraph (d) is added to paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE:

"(d) The fixed fee applicable to work performed during the period October 1, 1962, to September 30, 1963, is $199,665."

7. The following new subparagraph (d) is added to paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS:

"(d) For the period October 1, 1962, through September 30, 1963, ninety per cent (90%) of the fixed fee of $199,665 shall become due and payable in monthly installments of $14,975."

8. In subparagraph (c) of paragraph 10., of Article VII - GOVERNMENT PROPERTY, delete the date "September 30, 1964," appearing in the fourth line and substitute therefor the date "September 30, 1967."

9. Article XIX - INDEMNITY is deleted in its entirety.

10. Article VII - EXECUTIVE COMPENSATION, of Appendix "A" of the Contract is amended to read as follows:

"VII. EXECUTIVE COMPENSATION

"Executive compensation including bonuses and other remunerations will, for cost-reimbursement purposes, not exceed a pro rata share of the equivalent of $30,000 per annum for any one executive. The determination of allowable related costs based on compensations paid will also be determined on the basis of the foregoing limitation. Prior Commission approval shall be obtained on the establishment or adjustment of single rates or rate ranges and on individual salary actions which would result in total annual compensation, including incentive compensation, of $25,000 or more."

11. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is further amended as of October 1, 1962, and is attached hereto and made a part hereof.

12. Appendix "E," General Provisions, to Contract AT(30-1)-1293 is amended to include the following new provisions:

"23. SMALL BUSINESS SUBCONTRACTING PROGRAM

"(a) The Contractor agrees to establish and conduct a small business subcontracting program which will enable small business concerns to be considered fairly as subcontractors and suppliers under this Contract. In this connection, the Contractor shall:

(1) Designate a liaison officer who will (i) maintain liaison with the Government on small business matters, (ii) supervise compliance with the Utilization of Small Business

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Concerns clause, and (iii) administer the Contractor's "Small Business Subcontracting Program."

(2) Provide adequate and timely consideration of the potentialities of small business concerns in all "make-or-buy" decisions.

(3) Assure that small business concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of small business concerns. Where the Contractor's lists of potential small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(4) Maintain records showing (i) whether each prospective subcontractor is a small business concern, (ii) procedures which have been adopted to comply with the policies set forth in this clause, and (iii) with respect to the letting of any subcontract (including purchase orders) exceeding $10,000, information substantially as follows:

(A) Whether the award went to large or small business.

(B) Whether less than three or more than two small business concerns were solicited.

(C) The reason for non-solicitation of small business if such was the case.

(D) The reason for small business failure to receive the award if such was the case when small business was solicited.

The records maintained in accordance with (iii) above may be in such form as the Contractor may determine, and the information shall be summarized quarterly and submitted by the purchasing department of each individual plant or division to the Contractor's cognizant small business liaison officer. Such quarterly summaries will be considered to be management records only and need not be submitted routinely to the Government; however, records maintained pursuant to this clause will be kept available for review.

(5) Notify the Contracting Officer before soliciting bids or quotations on any subcontract (including purchase orders) in excess of $10,000 if (i) no small business concern is to

USDOE 017284

be solicited, and (ii) the Contracting Officer's consent to the subcontract (or ratification) is required by a "Subcontracts" clause in this Contract. Such notice will state the Contractor's reasons for non-solicitation of small business concerns, and will be given as early in the procurement cycle as possible so that the Contracting Officer may give SBA timely notice to permit SBA a reasonable period to suggest potentially qualified small business concerns through the Contracting Officer. In no case will the procurement action be held up when to do so would, in the Contractor's judgment, delay performance under the Contract.

(6) Include the Utilization of Small Business Concerns clause in subcontracts which offer substantial small business subcontracting opportunities.

(7) Cooperate with the Contracting Officer in any studies and surveys of the Contractor's subcontracting procedures and practices that the Contracting Officer may from time to time conduct.

(8) Submit such information on subcontracting to small business concerns as is called for by the Contracting Officer.

(b) A "small business concern" is a concern that meets the pertinent criteria established by the Small Business Administration and set forth in Section 1-1.701 of the Federal Procurement Regulations.

(c) The Contractor agrees that, in the event he fails to comply with his contractual obligations concerning the small business subcontracting program, this Contract may be terminated, in whole or in part, for default.

(d) The Contractor further agrees to insert, in any subcontract hereunder which may exceed $500,000 and which contains the Utilization of Small Business Concerns clause, provisions which shall conform substantially to the language of this clause, including this paragraph (d), and to notify the Contracting Officer of the names of such subcontractors."

"24. LABOR SURPLUS AREA SUBCONTRACTING PROGRAM

"(a) The Contractor agrees to establish and conduct a program which will encourage labor surplus area concerns to compete for subcontracts within their capabilities. In this connection, the Contractor shall:

USDOE 017285

(1) Designate a liaison officer who will (i) maintain liaison with duly authorized representatives of the Government on labor surplus area matters, (ii) supervise compliance with the Utilization of Concerns in Labor Surplus Areas clause, and (iii) administer the Contractor's "Labor Surplus Area Subcontracting Program;"

(2) Provide adequate and timely consideration of the potentialities of labor surplus area concerns in all "make-or-buy" decisions;

(3) Assure that labor surplus area concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of labor surplus area concerns;

(4) Maintain records showing procedures which have been adopted to comply with the policies set forth in this clause; and

(5) Include the Utilization of Concerns in Labor Surplus Areas clause in subcontracts which offer substantial labor surplus area subcontracting opportunities.

(b) A "labor surplus area concern" is a concern which will perform, or cause to be performed, a substantial proportion of any contract awarded to it in "Areas of Substantial Labor Surplus" (also called "Areas of Substantial Unemployment"), as designated by the Department of Labor. A concern shall be deemed to perform a substantial proportion of a contract in a labor surplus area if the costs that the concern will incur on account of manufacturing or production performed in persistent or substantial labor surplus areas (by itself or its first-tier subcontractors) amount to more than 50 percent of the price of such contract.

(c) The Contractor further agrees to insert, in any subcontract hereunder which may exceed $500,000 and which contains the Utilization of Concerns in Labor Surplus Areas clause, provisions which shall conform substantially to the language of this clause, including this paragraph (c), and to notify the Contracting Officer of the names of such subcontractors."

10. All other terms and conditions of the Contract remain unchanged.

USDOE 017286

IN WITNESS WHEREOF the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, Savannah River Operations Office

WITNESSES:

/s/ Grace Golden

Hicksville, New York
(Address)

/s/ Milton Boll

Hicksville, New York
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ D. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

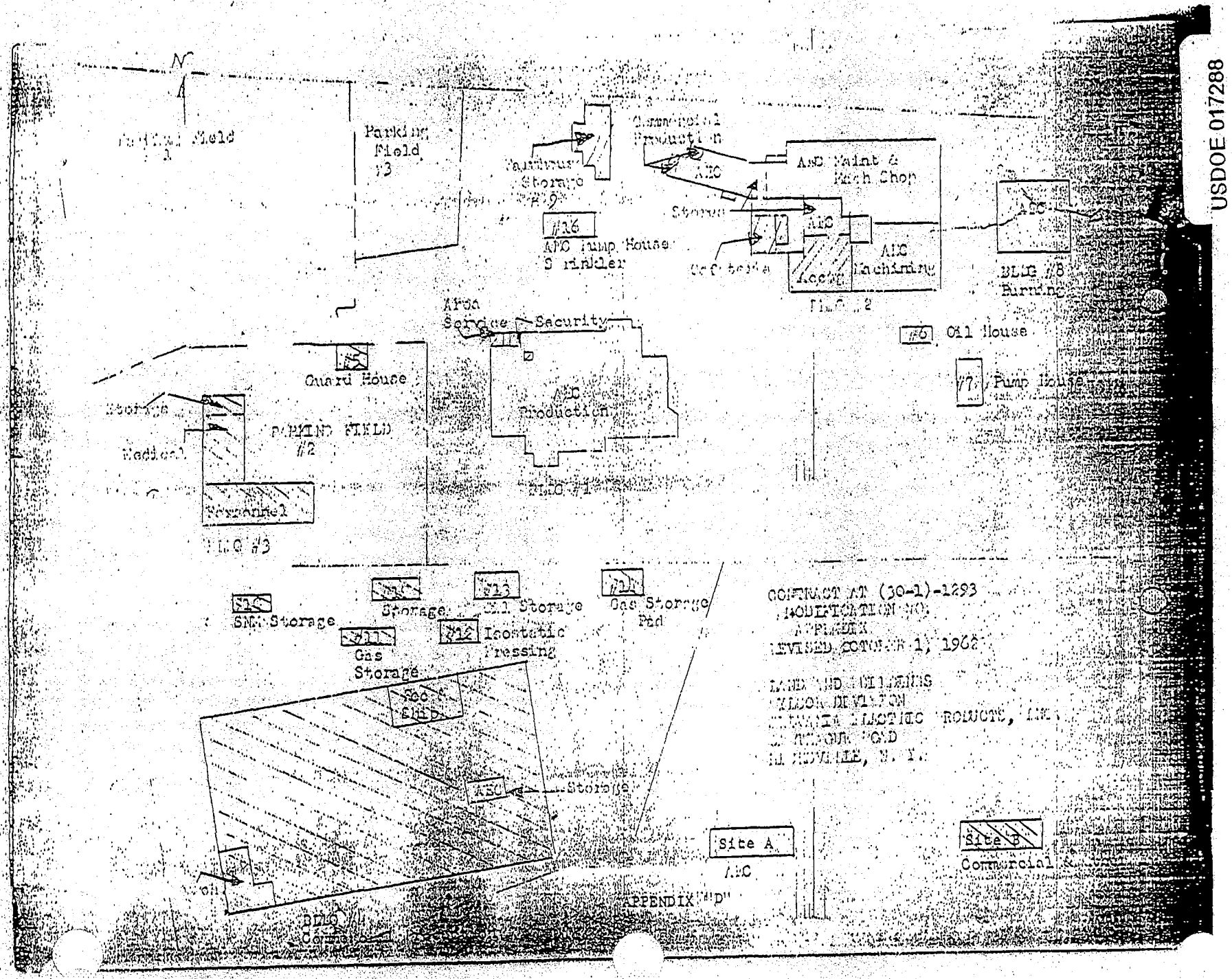
I, J. M. Tooher, certify that I am Assistant Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz who signed this Agreement on behalf of said corporation, was then Manufacturing Manager, Sylcor Division of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 4th day of February, 1963.

/s/ J. M. Tooher
Assistant Secretary

CORPORATE SEAL

USDOE 017287



USDOE 017288

OPTIONAL FORM NO. 10
5010-104

UNITED STATES GOVERNMENT

Memorandum

TO : Those Listed Below DATE: February 19, 1963

FROM : R. A. McFeely, Chief of Contracts
Contracts and Procurement Branch
Administrative Division

SUBJECT: MODIFICATION NO. 32 TO CONTRACT AT(30-1)-1293 WITH SYLVANIA ELECTRIC PRODUCTS INC.

AC:RAF:ps

Attached for your use are signed and/or conformed copies, as indicated, of the subject modification. Appendix "B" of the modification sets forth the scope of work to be followed and is classified. Therefore, this appendix has been detached from conformed copies for normal distribution purposes.

Attachments:
As stated

Addressees:
B&F Division (1 signed, 3 conformed)
O&P Division (1 conformed)
Engineering Division (1 conformed)
Security Division (1 conformed)
T&P Division (2 conformed - including Appendix "B" (1 cy.)
Office of Chief Counsel (1 conformed - including Appendix "B")
Patent Branch, OCC (1 conformed - including Appendix "B")
Audit Branch, B&F (1 conformed)
Procurement, C&P Branch, Adm. Division (1 conformed)

Document transmitted herewith contains
~~RESTRICTED DATA~~

When separated from enclosures handle this document as UNCLASSIFIED

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USDOE 017280

SPONSORED TASK NO. CH-4
MODIFICATION NO. 11

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

THIS MODIFICATION, entered into as of the 28th day of September, 1962, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC., SYLCOR DIVISION (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such Agreement having been entered into on July 1, 1959, and having been modified heretofore by Modifications 1 - 10; and

WHEREAS, the parties hereto desire to modify said Agreement further as herein provided;

NOW, THEREFORE, the parties hereto agree that the Agreement, as heretofore modified, is hereby modified further in the following particulars, but in no others:

1. The following new subparagraph is added to Paragraph 1, Description of Work:

> "During the period October 1, 1962, through December 31, 1962, the Contractor, in accordance with the letters dated August 7, 1962, and August 30, 1962, from C. L. Karl, Manager of the Commission's Cincinnati Area Office, to the Contractor, and the Contractor's letter dated September 11, 1962, which letters are hereby incorporated herein by reference, shall proceed with (1) the final machining of semi-finished Mark VII-A cores as heretofore provided in the Agreement and in said letters; (2) the nondestructive testing of the salt-oil heat treated cores supplied by the Contractor under Sponsored Task CH-4; and (3) the close-out activities required to complete Sponsored Task CH-4."

2. The fixed-fee specified in Paragraph 3. is hereby increased by $3,020.00 as a result of the work added thereby.

NARA-SE
Series 16 - Oak Ridge Contract Files
Box H178-18

3. The completion date of the work stated in Paragraph 4. is changed to December 31, 1962.

4. The amount obligated by Paragraph 5. is increased by $53,360.00 as a result of the work added thereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated thru Modification No. 10	$1,115,462.00	$68,754.00	$1,184,216.00
This Modification No. 11	50,340.00	3,020.00	53,360.00
	$1,165,802.00	$71,774.00	$1,237,576.00

Except as otherwise provided in this modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: _____
R. G. Humphries

TITLE: Director, Contract Division, ORO

WITNESSES:

_____
Hicksville NY
(Address)

_____
Hicksville NY
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.
SYLCOR DIVISION

BY: _____
D. B. Metz

TITLE: Manufacturing Manager

Responsive Record 6

JAN 28 1963

[redacted]

WSRC DECLASSIFICATION REVIEW
Review Date: 4/28/04
Authority: ☐ ADC ☑ ADD
Name: R L Calloway
2nd Review Date: 4/28/04
Authority: ADD
Name: [illegible]
Determination (Circle Number)
1. Classification Unchanged
2. Classification Changed To:
3. Classification Cancelled
4. Other: CG-NMP-2

This document consists of [redacted] pages
No. 1 of [redacted] Copies, Series A

SR-A-137

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED OCTOBER 1, 1962, UNDER
MODIFICATION NO. 32

As provided for in paragraph 1 of Article I of Modification No. 29 of Contract AT(30-1)-1293, this Appendix "B" describes the scope of work to be performed by the Contractor for the period October 1, 1962, through September 30, 1963.

1. MARK VII-A - MARK V-B (Inner-Fuel)

a. The Contractor shall manufacture and furnish to the Commission Mark VII-A and Mark V-B slugs at monthly tonnages as follows:

Period	Mark VII-A (Tons)	Mark V-B (Tons)	
		Integral Rib	Ribless
October 1962	70	10.2	0
November 1962	70	10.2	0
December 1962	70	10.2	6
January 1963	0	27.0	27
February 1963	0	38.0	27
March 1963	0	53.0	22
April 1963	0	71.0	0
May 1963	0	71.0	0
June 1963	0	71.0	0
July 1963	0	48.0	0
August 1963	0	71.0	0
September 1963	0	59.0	0

b. The Contractor shall produce by November 29, 1962, 50 Mark V-B IF ribbed dummy slugs according to Du Pont Drawing SSK 4-3-222 using unplated stainless steel as the core material rather than uranium.

2. MARK V-B (Outer-Fuel)

Maintain Mark V-B outer-fuel element facilities in ready standby which shall include such minimum token operation as required to maintain capability. It is understood that minimum token operation will not exceed an average production of approximately 100 pieces per month.

Cys 9A & 10A destroyed 7/27/66

[redacted]

SROO Response to
FOIA (SR) - 04-028

3. PROGRAM DEVELOPMENT

a. Mark V-E

Initiate development of a process for canning Mark V-E inner-fuel elements by the hot pressure bonding process. Contractor will conduct a program, using its best efforts, toward the preparation of approximately 1,750 flow test, qualification, and reactor test pieces by June 1, 1963.

The program shall include the preparation of specifications and operating procedures for canning Mark V-E inner fuel elements, including all necessary research development, canning and data accumulation. This program will also include the design of the necessary tooling and equipment for converting to a production program in either hot pressure bonding or hot die sizing process, whichever method is authorized by the Commission.

b. Hot Die Sizing

Continue investigation into the hot die sizing process of cladding Mark V-B inner fuel elements to determine the feasibility and economic advantages, if any, of this method as a production process. Contractor shall design, procure and fabricate such equipment and tooling as is necessary to prepare test pieces, and conduct experimental procedures.

Also, the Contractor shall prepare specifications and operating procedures for canning V-B and Mark V-E inner fuel elements in a production method, if possible. Further, Contractor shall design such tooling and equipment as is necessary to automate or mechanize the process evolved and to adapt this process to the Mark V-E fuel element when authorized by the Commission.

c. Nondestructive Testing

Investigate nondestructive techniques for the inspection of all fuel element cores and slugs processed at the Hicksville plant. The work under this program will consist of the following:

1. Continuation of work on the development of a method to detect the formation of a nickel-uranium eutectic in hot pressure bonded slugs.

2. Design of a positive nondestructive test for accurately distinguishing grain size and orientation of uranium after heat treatment and the incorporation of such test in the production line to permit inspection of 100 per cent of the cores processed.

3. Improvement of a test to measure nickel thickness on cores and the plating quality and the modification of the equipment so that it is applicable to Mark V-E size cores and can be incorporated into an automatic assembly operation.

4. Modification of bond testing equipment to cover Mark V-E size cores and the incorporation of bond testing into the planned automated inspection equipment.

5. Automation of recent developments in the field of nondestructive testing and the extension thereof to development and production programs on V-B, V-E, and hot die sizing.

4. DU PONT TOOLING

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont Tooling Program.

5. THORIUM

The Contractor shall complete the thorium program initiated under Modification No. 31 to the Contract.

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 32
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR	Sylvania Electric Products Inc. Hicksville, Long Island, New York
SUPPLEMENTAL AGREEMENT TO	Expand scope of work and amend other provisions of the Contract.
EFFECTIVE DATE	October 1, 1962

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 31)	$19,244,347	$3,951,805	$23,196,152
This Modification (Net Increase) a/	3,458,439	-0-	3,458,439
New Total Direct Cost	$22,702,786	$3,951,805	$26,654,591
Previous Fixed Fee (Modification No. 31)	$ 1,118,640	$ 172,150	$ 1,290,790
This Modification (Net Increase)	199,665	-0-	199,665
New Total Fixed Fee	$ 1,318,305	$ 172,150	$ 1,490,455
Total Estimated Cost and Fixed Fee	$24,021,091	$4,123,955	$28,145,046
Total Amount Obligated as of February 1, 1963			$28,145,046

a/ Includes an adjustment for underruns through September 30, 1962, and for estimated changes in stores inventories and working capital in Fiscal Year 1963.

A. E. C. FILE COPY

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 32
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into this 18th day of February, 1963, effective October 1, 1962, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December, 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and,

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to provide for the performance by the Contractor of an additional scope of work and to amend certain provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended:

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In paragraph 1., Principal Site, of Article II - SITE OF WORK, delete the date "October 1, 1961," appearing in the seventh line and substitute therefor the date "October 1, 1962."

2. In paragraph 1., Term, of Article III - TERM, EXPIRATION AND TERMINATION, delete the date "September 30, 1962," appearing in the second line and the date "September 30, 1964," appearing in the fifth and sixth lines, and substitute therefor the dates "September 30, 1963," and "September 30, 1967," respectively.

3. In subparagraph (d)(i) of paragraph 2., Termination, of Article III - TERM, EXPIRATION AND TERMINATION, substitute the date "September 30, 1967," for the date "September 30, 1964." Delete line 14 reading "except as otherwise provided in paragraph 1. of Article XIX - INDEMNITY," in its entirety.

4. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $26,654,591, exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2., Article V, of the Contract is $1,490,455. The estimated cost of the work, as described in paragraph 1. of the Article entitled SCOPE OF WORK for the period October 1, 1962, to September 30, 1963, is $3,496,200, exclusive of the Contractor's fixed fee of $199,665."

5. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, delete the figure "$24,486,942" and substitute therefor the figure "$28,145,046."

6. The following new subparagraph (d) is added to paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE:

"(d) The fixed fee applicable to work performed during the period October 1, 1962, to September 30, 1963, is $199,665."

7. The following new subparagraph (d) is added to paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS:

"(d) For the period October 1, 1962, through September 30, 1963, ninety per cent (90%) of the fixed fee of $199,665 shall become due and payable in monthly installments of $14,975."

8. In subparagraph (c) of paragraph 10., of Article VII - GOVERNMENT PROPERTY, delete the date "September 30, 1964," appearing in the fourth line and substitute therefor the date "September 30, 1967."

9. Article XIX - INDEMNITY is deleted in its entirety.

10. Article VII - EXECUTIVE COMPENSATION, of Appendix "A" of the Contract is amended to read as follows:

"VII. EXECUTIVE COMPENSATION

"Executive compensation including bonuses and other remunerations will, for cost-reimbursement purposes, not exceed a pro rata share of the equivalent of $30,000 per annum for any one executive. The determination of allowable related costs based on compensations paid will also be determined on the basis of the foregoing limitation. Prior Commission approval shall be obtained on the establishment or adjustment of single rates or rate ranges and on individual salary actions which would result in total annual compensation, including incentive compensation, of $25,000 or more."

11. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is further amended as of October 1, 1962, and is attached hereto and made a part hereof.

12. Appendix "E," General Provisions, to Contract AT(30-1)-1293 is amended to include the following new provisions:

"23. SMALL BUSINESS SUBCONTRACTING PROGRAM

"(a) The Contractor agrees to establish and conduct a small business subcontracting program which will enable small business concerns to be considered fairly as subcontractors and suppliers under this Contract. In this connection, the Contractor shall:

(1) Designate a liaison officer who will (i) maintain liaison with the Government on small business matters, (ii) supervise compliance with the Utilization of Small Business

Concerns clause, and (iii) administer the Contractor's "Small Business Subcontracting Program."

(2) Provide adequate and timely consideration of the potentialities of small business concerns in all "make-or-buy" decisions.

(3) Assure that small business concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of small business concerns. Where the Contractor's lists of potential small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(4) Maintain records showing (i) whether each prospective subcontractor is a small business concern, (ii) procedures which have been adopted to comply with the policies set forth in this clause, and (iii) with respect to the letting of any subcontract (including purchase orders) exceeding $10,000, information substantially as follows:

(A) Whether the award went to large or small business.

(B) Whether less than three or more than two small business concerns were solicited.

(C) The reason for non-solicitation of small business if such was the case.

(D) The reason for small business failure to receive the award if such was the case when small business was solicited.

The records maintained in accordance with (iii) above may be in such form as the Contractor may determine, and the information shall be summarized quarterly and submitted by the purchasing department of each individual plant or division to the Contractor's cognizant small business liaison officer. Such quarterly summaries will be considered to be management records only and need not be submitted routinely to the Government; however, records maintained pursuant to this clause will be kept available for review.

(5) Notify the Contracting Officer before soliciting bids or quotations on any subcontract (including purchase orders) in excess of $10,000 if (i) no small business concern is to

be solicited, and (ii) the Contracting Officer's consent to the subcontract (or ratification) is required by a "Subcontracts" clause in this Contract. Such notice will state the Contractor's reasons for non-solicitation of small business concerns, and will be given as early in the procurement cycle as possible so that the Contracting Officer may give SBA timely notice to permit SBA a reasonable period to suggest potentially qualified small business concerns through the Contracting Officer. In no case will the procurement action be held up when to do so would, in the Contractor's judgment, delay performance under the Contract.

(6) Include the Utilization of Small Business Concerns clause in subcontracts which offer substantial small business subcontracting opportunities.

(7) Cooperate with the Contracting Officer in any studies and surveys of the Contractor's subcontracting procedures and practices that the Contracting Officer may from time to time conduct.

(8) Submit such information on subcontracting to small business concerns as is called for by the Contracting Officer.

(b) A "small business concern" is a concern that meets the pertinent criteria established by the Small Business Administration and set forth in Section 1-1.701 of the Federal Procurement Regulations.

(c) The Contractor agrees that, in the event he fails to comply with his contractual obligations concerning the small business subcontracting program, this Contract may be terminated, in whole or in part, for default.

(d) The Contractor further agrees to insert, in any subcontract hereunder which may exceed $500,000 and which contains the Utilization of Small Business Concerns clause, provisions which shall conform substantially to the language of this clause, including this paragraph (d), and to notify the Contracting Officer of the names of such subcontractors."

"24. LABOR SURPLUS AREA SUBCONTRACTING PROGRAM

"(a) The Contractor agrees to establish and conduct a program which will encourage labor surplus area concerns to compete for subcontracts within their capabilities. In this connection, the Contractor shall:

(1) Designate a liaison officer who will (i) maintain liaison with duly authorized representatives of the Government on labor surplus area matters, (ii) supervise compliance with the Utilization of Concerns in Labor Surplus Areas clause, and (iii) administer the Contractor's "Labor Surplus Area Subcontracting Program;"

(2) Provide adequate and timely consideration of the potentialities of labor surplus area concerns in all "make-or-buy" decisions;

(3) Assure that labor surplus area concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of labor surplus area concerns;

(4) Maintain records showing procedures which have been adopted to comply with the policies set forth in this clause; and

(5) Include the Utilization of Concerns in Labor Surplus Areas clause in subcontracts which offer substantial labor surplus area subcontracting opportunities.

(b) A "labor surplus area concern" is a concern which will perform, or cause to be performed, a substantial proportion of any contract awarded to it in "Areas of Substantial Labor Surplus" (also called "Areas of Substantial Unemployment"), as designated by the Department of Labor. A concern shall be deemed to perform a substantial proportion of a contract in a labor surplus area if the costs that the concern will incur on account of manufacturing or production performed in persistent or substantial labor surplus areas (by itself or its first-tier subcontractors) amount to more than 50 percent of the price of such contract.

(c) The Contractor further agrees to insert, in any subcontract hereunder which may exceed $500,000 and which contains the Utilization of Concerns in Labor Surplus Areas clause, provisions which shall conform substantially to the language of this clause, including this paragraph (c), and to notify the Contracting Officer of the names of such subcontractors."

10. All other terms and conditions of the Contract remain unchanged.

Modification No. 32
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____
R. C. Blair, Manager

TITLE: Savannah River Operations Office

WITNESSES:

_____
Hicksville NY
(Address)

_____
Hicksville NY
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: _____
D. B. Metz

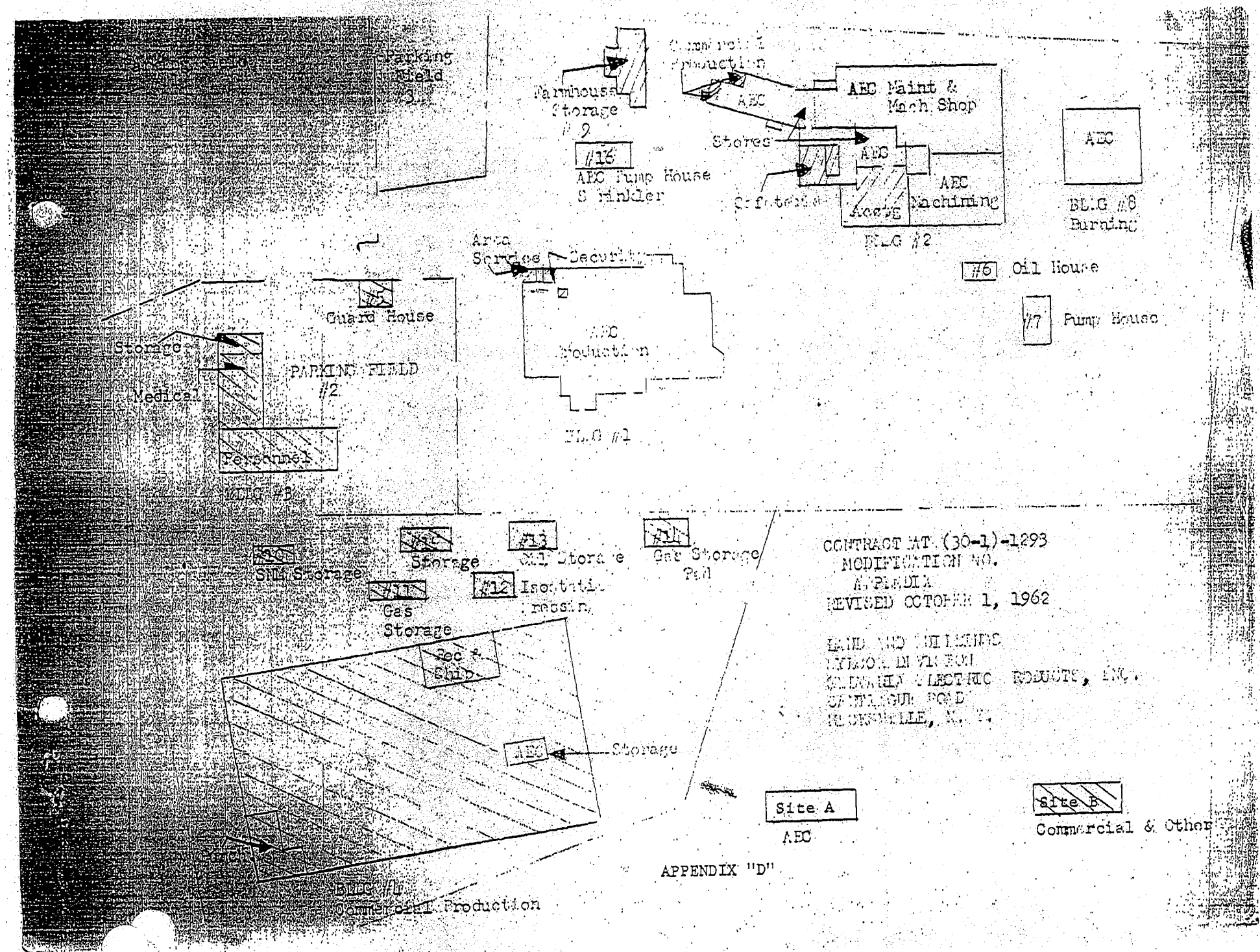
TITLE: Manufacturing Manager
Sylcor Division

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz who signed this Agreement on behalf of said corporation, was then Mfg. Mgr. - Sylcor Div. of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 4 day of Feb, 1963.

_____
J. M. Tooher
Assistant Secretary

CORPORATE SEAL


Parking Field #3
Farmhouse Storage #9
#16
AEC Pump House Sprinkler
Commercial Production
AEC
AEC Maint & Mach Shop
Stores
AEC
AEC Machining
Acctg
BLDG #2
AEC
BLDG #8 Burning
#6 Oil House
#7 Pump House
Area Service
Security
AEC Production
BLDG #1
Guard House
Storage
Medical
PARKING FIELD #2
Personnel
BLDG #3
#10 SNM Storage
Storage
#13 Oil Storage
#14 Gas Storage Pad
#11 Gas Storage
#12 Isostatic Pressing
Rec & Ship
AEC
Storage
Porch
BLDG #4 Commercial Production
Site A
AEC
Site B
Commercial & Other
CONTRACT AT (30-1)-1293
MODIFICATION NO.
APPENDIX
REVISED OCTOBER 1, 1962
LAND AND BUILDINGS
SYLVANIA ELECTRIC PRODUCTS, INC.
CANTIAGUE ROAD
RICKSVILLE, N. Y.

APPENDIX "D"

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 32
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a/ Includes an adjustment for underruns through September 30, 1962, and for estimated changes in stores inventories and working capital in Fiscal Year 1963.

A. E. C. FILE COPY

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Savannah River Operations Office

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Supplemental Agreement to
Contract No. AT(30-1)-1293
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WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to provide for the performance by the Contractor of an additional scope of work and to amend certain provisions of the Contract as hereinafter set forth; and

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(1) Designate a liaison officer who will (i) maintain liaison with the Government on small business matters, (ii) supervise compliance with the Utilization of Small Business

Concerns clause, and (iii) administer the Contractor's "Small Business Subcontracting Program."

(2) Provide adequate and timely consideration of the potentialities of small business concerns in all "make-or-buy" decisions.

(3) Assure that small business concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of small business concerns. Where the Contractor's lists of potential small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(4) Maintain records showing (i) whether each prospective subcontractor is a small business concern, (ii) procedures which have been adopted to comply with the policies set forth in this clause, and (iii) with respect to the letting of any subcontract (including purchase orders) exceeding $10,000, information substantially as follows:

(A) Whether the award went to large or small business.

(B) Whether less than three or more than two small business concerns were solicited.

(C) The reason for non-solicitation of small business if such was the case.

(D) The reason for small business failure to receive the award if such was the case when small business was solicited.

The records maintained in accordance with (iii) above may be in such form as the Contractor may determine, and the information shall be summarized quarterly and submitted by the purchasing department of each individual plant or division to the Contractor's cognizant small business liaison officer. Such quarterly summaries will be considered to be management records only and need not be submitted routinely to the Government; however, records maintained pursuant to this clause will be kept available for review.

(5) Notify the Contracting Officer before soliciting bids or quotations on any subcontract (including purchase orders) in excess of $10,000 if (i) no small business concern is to

be solicited, and (ii) the Contracting Officer's consent to the subcontract (or ratification) is required by a "Subcontracts" clause in this Contract. Such notice will state the Contractor's reasons for non-solicitation of small business concerns, and will be given as early in the procurement cycle as possible so that the Contracting Officer may give SBA timely notice to permit SBA a reasonable period to suggest potentially qualified small business concerns through the Contracting Officer. In no case will the procurement action be held up when to do so would, in the Contractor's judgment, delay performance under the Contract.

(6) Include the Utilization of Small Business Concerns clause in subcontracts which offer substantial small business subcontracting opportunities.

(7) Cooperate with the Contracting Officer in any studies and surveys of the Contractor's subcontracting procedures and practices that the Contracting Officer may from time to time conduct.

(8) Submit such information on subcontracting to small business concerns as is called for by the Contracting Officer.

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(c) The Contractor agrees that, in the event he fails to comply with his contractual obligations concerning the small business subcontracting program, this Contract may be terminated, in whole or in part, for default.

(d) The Contractor further agrees to insert, in any subcontract hereunder which may exceed $500,000 and which contains the Utilization of Small Business Concerns clause, provisions which shall conform substantially to the language of this clause, including this paragraph (d), and to notify the Contracting Officer of the names of such subcontractors."

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"(a) The Contractor agrees to establish and conduct a program which will encourage labor surplus area concerns to compete for subcontracts within their capabilities. In this connection, the Contractor shall:

(1) Designate a liaison officer who will (i) maintain liaison with duly authorized representatives of the Government on labor surplus area matters, (ii) supervise compliance with the Utilization of Concerns in Labor Surplus Areas clause, and (iii) administer the Contractor's "Labor Surplus Area Subcontracting Program;"

(2) Provide adequate and timely consideration of the potentialities of labor surplus area concerns in all "make-or-buy" decisions;

(3) Assure that labor surplus area concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of labor surplus area concerns;

(4) Maintain records showing procedures which have been adopted to comply with the policies set forth in this clause; and

(5) Include the Utilization of Concerns in Labor Surplus Areas clause in subcontracts which offer substantial labor surplus area subcontracting opportunities.

(b) A "labor surplus area concern" is a concern which will perform, or cause to be performed, a substantial proportion of any contract awarded to it in "Areas of Substantial Labor Surplus" (also called "Areas of Substantial Unemployment"), as designated by the Department of Labor. A concern shall be deemed to perform a substantial proportion of a contract in a labor surplus area if the costs that the concern will incur on account of manufacturing or production performed in persistent or substantial labor surplus areas (by itself or its first-tier subcontractors) amount to more than 50 percent of the price of such contract.

(c) The Contractor further agrees to insert, in any subcontract hereunder which may exceed $500,000 and which contains the Utilization of Concerns in Labor Surplus Areas clause, provisions which shall conform substantially to the language of this clause, including this paragraph (c), and to notify the Contracting Officer of the names of such subcontractors."

10. All other terms and conditions of the Contract remain unchanged.

Modification No. 32
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: [signature]
R. C. Blair, Manager
TITLE: Savannah River Operations Office

WITNESSES:

Grace Gaeden
Hicksville NY
(Address)

Milton Goll
Hicksville NY
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

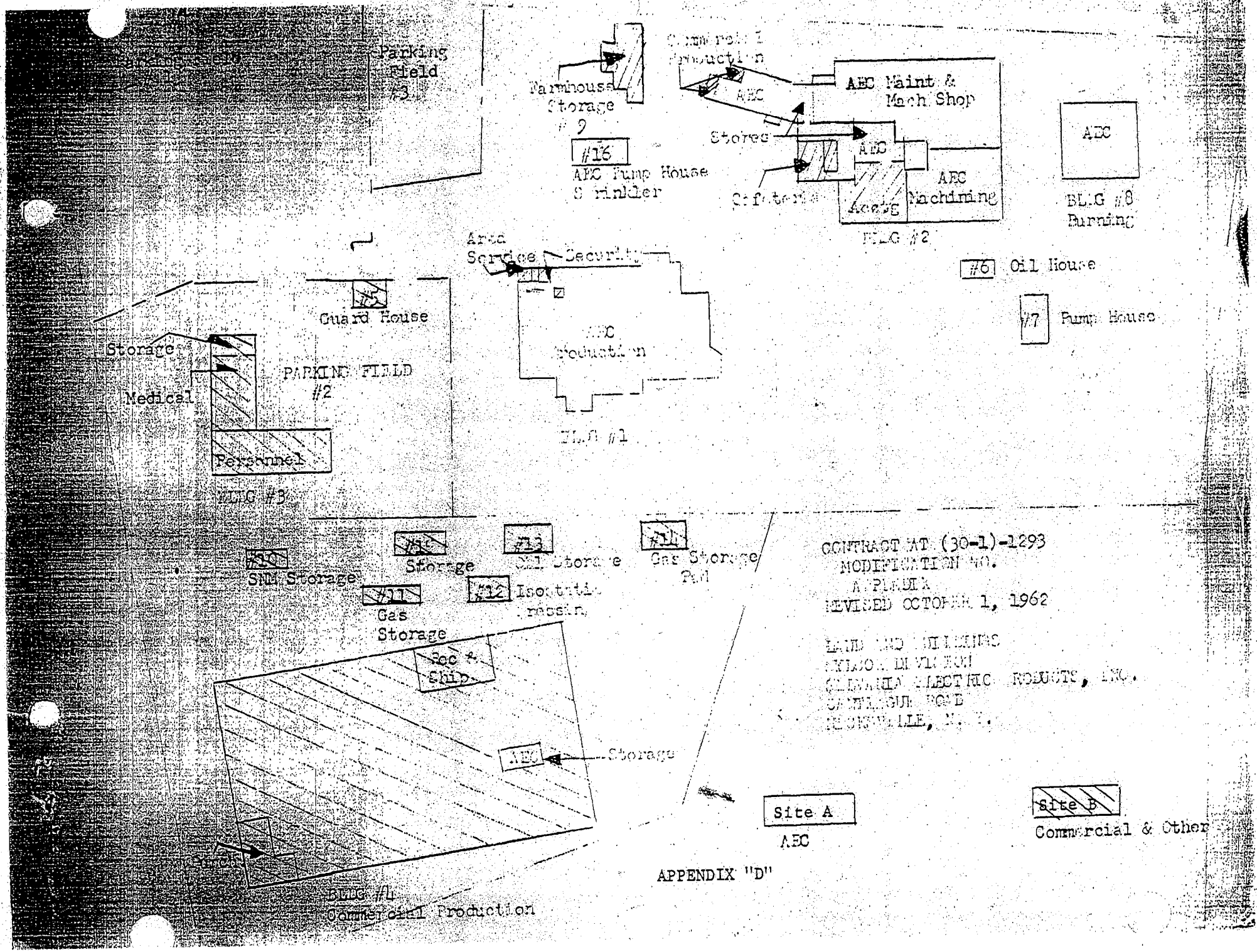
BY: D B Metz
D. B. Metz
TITLE: Manufacturing Manager
Sylcor Division

I, J. M. TOOHER, certify that I am ASST. SECRETARY of Sylvania Electric Products Inc., named above; that D. B. METZ who signed this Agreement on behalf of said corporation, was then MFG. MGR. SYLCOR DIV. of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 4 day of Feb, 1963.

[signature]
J. M. Tooher
Assistant Secretary

CORPORATE SEAL


Parking Field #3
Farmhouse Storage #9
#16
AEC Pump House Sprinkler
Commercial Production
AEC
AEC Maint & Mach Shop
Stores
AEC
Cafeteria
Acctg
AEC Machining
BLDG #2
AEC
BLDG #8 Burning
#6 Oil House
#7 Pump House
Area Service
Security
AEC Production
BLDG #1
Guard House
Storage
Medical
PARKING FIELD #2
Personnel
BLDG #3
#10 SNM Storage
#11 Gas Storage
#12 Isostatic Pressing
#13 Oil Storage
#14 Gas Storage Pad
Rec & Ship
AEC
Storage
BLDG #4 Commercial Production
Site A
AEC
Site B
Commercial & Other
CONTRACT AT (30-1)-1293
MODIFICATION NO.
APPENDIX
REVISED OCTOBER 1, 1962
LAND AND BUILDINGS
SYLVANIA ELECTRIC PRODUCTS, INC.
CANTIAGUE ROAD
NECKSVILLE, N. Y.

APPENDIX "D"

Responsive Record 7

[redacted]

WORK DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: E ADC ADD	1. Classification Unchanged
Name: R Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [signature]	4. Other: CG-NMP-2 9/00

This document consists of 2 pages
No. 1 of [illegible] copies. Series A

SR-A-139

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED MARCH 1, 1963, UNDER
MODIFICATION NO. 33

The scope of work to be performed by the Contractor during the period October 1, 1962, through September 30, 1963, as set forth by Modification No. 32, is revised to read as follows:

1. MARK VII-A - MARK V-B AND MARK V-E (Inner-Fuel)

a. The Contractor shall manufacture and furnish to the Commission Mark VII-A, Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark VII-A (Tons)	Mark V-B (Tons) Integral Rib	Mark V-B (Tons) Ribless	Mark V-E (Tons) Integral Rib
October 1962	70	10.2	0	0
November 1962	70	10.2	0	0
December 1962	70	10.2	6	0
January 1963	0	27.0	27	0
February 1963	0	38.0	27	0
March 1963	0	40.0	22	0
April 1963	0	57.0	0	0
May 1963	0	57.0	0	0
June 1963	0	57.0	0	0
July 1963	0	16.0	0	10
August 1963	0	40.0	0	22
September 1963	0	40.0	0	22

b. The Contractor shall produce by November 29, 196 , 50 Mark V-B IF ribbed dummy slugs according to Du Pont Drawing SSK 4-3-222 using unplated stainless steel as the core material rather than uranium.

2. MARK V-B (Outer-Fuel)

Maintain Mark V-B outer-fuel element facilities in ready standby which shall include such minimum token operation as required to maintain capability. It is understood that minimum token operation will not exceed an average production of approximately 100 pieces per month. This program will be discontinued upon depletion of inventory in March 1963.

[redacted]

Ayc. 9A+10A destroy 7/27/66

SROO Response to
FOIA (SR) - 04-028

[redacted]

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED MARCH 1, 1963, UNDER
MODIFICATION NO. 33

3. PROGRAM DEVELOPMENT

a. Mark V-E

Initiate development of a process for canning Mark V-E inner-fuel elements by the hot pressure bonding process. Contractor will conduct a program, using its best efforts, toward preparation of approximately 1,750 flow test, qualification, and reactor test pieces by June 1, 1963.

The program shall include the preparation of specifications and operating procedures for canning Mark V-E inner-fuel elements, including all necessary research development, canning and data accumulation. This program will also include the design of the necessary tooling and equipment for converting to a production program in either hot pressure bonding or hot die sizing process, whichever method is authorized by the Commission.

b. Hot Die Sizing

Continue investigation into the hot die sizing process of cladding Mark V-B inner-fuel elements to determine the feasibility and economic advantages, if any, of this method as a production process. Contractor shall design, procure and fabricate such equipment and tooling as is necessary to prepare test pieces, and conduct experimental procedures.

Also, the Contractor shall prepare specifications and operating procedures for canning V-B and Mark V-E inner-fuel elements in a production method, if possible. Further, Contractor shall design such tooling and equipment as is necessary to automate or mechanize the process evolved and to adapt this process to the Mark V-E fuel element when authorized by the Commission.

c. Nondestructive Testing

Investigate nondestructive techniques for the inspection of all fuel element cores and slugs processed at the Hicksville plant. The work under this program will consist of the following:

1. Continuation of work on the development of a method to detect the formation of a nickel-uranium eutectic in hot pressure bonded slugs.

2. Design of a positive nondestructive test for accurately distinguishing grain size and orientation of uranium after heat treatment and the incorporation of such test in the production line to permit inspection of 100 percent of the cores processed.

[redacted]

[redacted]

3. Improvement of a test to measure nickel thickness on cores and the plating quality and the modification of the equipment so that it is applicable to Mark V-E size cores and can be incorporated into an automatic assembly operation.

4. Modification of bond testing equipment to cover Mark V-E size cores and the incorporation of bond testing into the planned automated inspection equipment.

5. Automation of recent developments in the field of nondestructive testing and the extension thereof to development and production programs on V-B, V-E, and hot die sizing.

6. Conduct preliminary development work on the feasibility of hot pressure bonding Zircaloy-2 cladding to uranium core specimens. Prepare on a best efforts basis, samples of direct zirconium to uranium bonding and samples of zirconium to uranium bonding, with a nickel-aluminum interface.

4. DU PONT TOOLING

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont Tooling Program.

5. THORIUM

Complete the thorium program initiated under Modification No. 31 to the Contract. Strip Al cladding from approximately 2,500 pounds of reject Mark VII-T slugs. Machine and clad approximately 9,500 additional thorium metal slugs for delivery by September 30, 1963.

[redacted]

Responsive Record 8

[redacted]

11

WSRC CLASSIFICATION REVIEW
1st Review Date: 4/28/04 | Determination (Circle Number)
Authority: ☐ ADC ☒ ADD | 1. Classification Unchanged
Name: R.P. Collins | 2. Classification Changed To:
2nd Review Date: 4/28/04
Authority: ADD | 3. Classification Cancelled
Name: [redacted] | 4. Other: C6-NMP-2 9/00

This document consists of [redacted] pages
No. 1 of [redacted] copies, Series A

SR-A-141

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED MAY 1, 1963, UNDER
MODIFICATION NO. 34

The scope of work to be performed by the Contractor during the period October 1, 1962, through September 30, 1963, as set forth by Modification No. 33 is revised to read as follows:

1. MARK VII-A - MARK V-B AND MARK V-E (Inner-Fuel)

a. The Contractor shall manufacture and furnish to the Commission Mark VII-A, Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark VII-A (Tons)	Mark V-B (Tons)		Mark V-E (Tons)
		Integral Rib	Ribless	Integral Rib
October 1962	70	10.2	0	0
November 1962	70	10.2	0	0
December 1962	70	10.2	0	0
January 1963	0	27.0	27	0
February 1963	0	38.0	27	0
March 1963	0	40.0	22	0
April 1963	0	57.0	0	0
May 1963	0	74.0	0	0
June 1963	0	74.0	0	0
July 1963	0	41.0	0	10
August 1963	0	48.0	0	22
September 1963	0	48.0	0	22

b. The Contractor shall produce by November 29, 1962, 50 Mark V-B IF ribbed dummy slugs according to Du Pont Drawing SSK 4-3-222 using unplated stainless steel as the core material rather than uranium.

2. MARK V-B (Outer-Fuel)

Maintain Mark V-B outer-fuel element facilities in ready standby which shall include such minimum token operation as required to maintain capability. It is understood that minimum token operation will not exceed an average production of approximately 100 pieces per month. This program will be discontinued upon depletion of inventory in March 1963.

[redacted]

Group 1: Excluded from automatic downgrading and declassification.

Cys 4 & 10 A destroyed 7/27/64

SROO Response to
FOIA (SR) - 04-028

[redacted]

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED MAY 1, 1963, UNDER
MODIFICATION NO. 34

3. PROGRAM DEVELOPMENT

a. Mark V-E

Initiate development of a process for canning Mark V-E inner-fuel elements by the hot pressure bonding process. Contractor will conduct a program using its best efforts toward preparation of approximately 1,750 flow test, qualification, and reactor test pieces by June 1, 1963.

The program shall include the preparation of specifications and operating procedures for canning Mark V-E inner-fuel elements, including all necessary research, development, canning and data accumulation. This program will also include the design of the necessary tooling and equipment for converting to a production program in either hot pressure bonding or hot die sizing process, whichever method is authorized by the Commission.

b. Hot Die Sizing

Continue investigation into the hot die sizing process of cladding Mark V-B inner-fuel elements to determine the feasibility and economic advantages, if any, of this method as a production process. Contractor shall design, procure and fabricate such equipment and tooling as is necessary to prepare test pieces, and conduct experimental procedures.

Also, the Contractor shall prepare specifications and operating procedures for canning Mark V-B and V-E inner-fuel elements in a production method, if possible. Further, the Contractor shall design such tooling and equipment as is necessary to automate or mechanize the process evolved and to adapt this process to the Mark V-E fuel element when authorized by the Commission.

c. Nondestructive Testing

Investigate nondestructive techniques for the inspection of all fuel element cores and slugs processed at the Hicksville Plant. The work under this program will consist of the following:

1. Continuation of work on the development of a method to detect the formation of a nickel-uranium eutectic in hot pressure bonded slugs.

2. Design of a positive nondestructive test for accurately distinguishing grain size and orientation of uranium after heat treatment and the incorporation of such test in the production line to permit inspection of 100 percent of the cores processed.

[redacted]

3. Improvement of a test to measure nickel thickness on cores and the plating quality and the modification of the equipment so that it is applicable to Mark V-E size cores and can be incorporated into an automatic assembly operation.

4. Modification of bond testing equipment to cover Mark V-E size cores and the incorporation of bond testing into planned automated inspection equipment.

5. Automation of recent developments in the field of nondestructive testing and the extension thereof to development and production programs on V-B, V-E, and hot die sizing.

d. Zirconium Cladding

1. Conduct preliminary development work on the feasibility of hot pressure bonding Zircaloy-2 cladding to uranium core specimens. Prepare, on a best efforts basis, samples of direct zirconium to uranium bonding, with a nickel-aluminum interface.

2. Undertake the canning of twelve fuel tubes in zirconium, ten of which are to be acceptable for reactor use. The canning process will consist of etching and nickel plating the cores, assembling the cores in the tubing with a layer of aluminum foil between the core and the zirconium parts, and hot pressing the assembly to attempt to obtain bonding between all the metals.

e. Recovery of Ribbed Elements

Perform development work on recovery of Mark V-B IF ribbed elements accomplishing delivery of 2,500 re-canned cores to the Savannah River Plant prior to August 31, 1963, and an additional 2,500 prior to September 30, 1963.

f. Oxidation of Scrap

Undertake, on a best efforts basis, a program to convert to oxide approximately two hundred pounds of scrap uranium and uranium carbide.

g. Cladding of Dingot Cores

Clad experimental dingot Mark V-E IF cores and deliver 120 in June and 240 in August 1963 to the Savannah River Plant.

4. DU PONT TOOLING

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont tooling program.

5. THORIUM

Complete the thorium program initiated under Modification No. 31 to the Contract. Strip Al cladding from approximately 3,900 pounds of reject VII-T slugs (from the Savannah River Plant). Machine and clad approximately 9,500 additional thorium metal slugs for delivery to the Savannah River Plant by September 30, 1963; also machine thorium rod stock sufficient to produce an additional 2,000 Mark VII-T elements.

DEC 26 1962

SPONSORED TASK NO. CH-4
MODIFICATION NO. 12

CONTRACT AT-(30-1)-1293

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

THIS MODIFICATION, entered into as of the 19th day of December, 1962, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC., SYLCOR DIVISION (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into a certain agreement known and designated as Sponsored Task CH-4 (hereinafter called the "Agreement"), such Agreement having been entered into on July 1, 1959, and having been modified heretofore by Modifications Nos. 1 - 11; and

WHEREAS, the parties hereto desire to modify said Agreement further as herein provided;

NOW, THEREFORE, the parties hereto agree that the Agreement, as heretofore modified, is hereby modified further in the following particulars, but in no others:

1. The following new subparagraph is added to Paragraph 1, Description of Work:

"Notwithstanding the preceding subparagraph, during the period December 1, 1962, through January 31, 1963, the Contractor shall proceed with the final machining of semifinished Mark VII-A cores and the close-out activities required to complete Sponsored Task CH-4, as heretofore provided in the Agreement and in accordance with the Contractor's letter dated November 30, 1962, and the letter dated November 27, 1962, from C. L. Karl, Area Manager of the Commission's Cincinnati Area Office to the Contractor, which letters are hereby incorporated herein by reference."

2. The fixed fee specified in Paragraph 3 is hereby increased by $1,210.00 as a result of the work added thereby.

3. The completion date of the work stated in Paragraph 4 is changed to January 31, 1963.

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Box H-178-18

NARA 001816

4. The amount obligated by Paragraph 5 is increased by $21,390.00 as a result of the work added thereby. The revised amount of the Agreement is now as follows:

	Estimated Cost	Fixed Fee	Total
Obligated thru Modification No. 11	$1,165,802.00	$71,774.00	$1,237,576.00
This Modification No. 12	20,180.00	1,210.00	21,390.00
	$1,185,982.00	$72,984.00	$1,258,966.00

Except as otherwise provided in this modification, all the provisions of the Agreement as heretofore modified or supplemented shall remain in full force and effect.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION
OAK RIDGE OPERATIONS OFFICE

BY: _____

TITLE: _____

WITNESSES:

_____

_____
(Address)

_____

_____
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.
SYLCOR DIVISION

BY: _____
D. B. Metz

TITLE: Manufacturing Manager

NARA 001817

Roland A. Anderson, Assistant General Counsel for Patents, Germantown

January 18, 1963

Randall G. Erdley, Chief
Savannah River Patent Group

MODIFICATION NO. 12 TO SPONSORED TASK NO. CH-4 UNDER CONTRACT AT(30-1)-1293

CP:RGE:cm

This is to advise that by the subject modification effective December 19, 1962 the fixed fee has been increased by $1,210.00 from $71,774.00 to $72,984.00 and the completion date of the work has been extended to January 31, 1963. -

OFFICE ▶	Patent Br.					
SURNAME ▶	RGE.					
DATE ▶	1-18-63					

Form AEC-318 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—62781-3

USDOE 017231

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office
FINDINGS AND DETERMINATION

AUTHORIZATION FOR MODIFICATION OF COST-PLUS-FIXED-FEE CONTRACT

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.
Contract No. AT(30-1)-1293
Modification No. 33

The Atomic Energy Commission proposes to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc. to amend the scope of work to be performed by the Contractor during the period October 1, 1962, through September 30, 1963.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering an immediate unit-price arrangement.

2. Program requirements are subject to immediate change.

3. Continuous process development is required.

4. The revised estimated cost of the work under the contract, $3,498,602, is considered reasonable.

5. The fixed fee adjustment is based on the previously applied rate of 6 percent of the estimated cost fee base and is considered to be fair and equitable.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee Supplemental Agreement, and I hereby authorize the use of said Supplemental Agreement.

By: _____

Title: R. C. Blair, Manager
Savannah River Operations Office

Date: MAY 2 1963

[redacted]

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 33
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR	Sylvania Electric Products Inc. Hicksville, Long Island, New York
SUPPLEMENTAL AGREEMENT TO	Amend scope of work and other provisions of the contract.
EFFECTIVE DATE	March 1, 1963

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 32)	$22,702,786	$3,951,805	$26,654,591
This Modification Net Increase	2,402	-	2,402
New Total Direct Costs	$22,705,188	$3,951,805	$26,656,993
Previous Fixed Fee	$1,318,305	$ 172,150	$ 1,490,455
This Modification Decrease	(2,402)	-	(2,402)
New Total Fixed Fee	$1,315,903	$ 172,150	$ 1,488,053
Total Est. Cost and Fixed Fee	$24,021,091	$4,123,955	$28,145,046
Total Obligated 3/1/63			$28,145,046

A. E. C. FILE COPY

[redacted]

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 33
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 17th day of May, 1963, effective March 1, 1963, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended:

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is revised as of March 1, 1963, and is attached hereto and made a part hereof.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $26,656,993, exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2., Article V, of the Contract is $1,488,053. The estimated cost of the work, as described in paragraph 1. of the Article entitled SCOPE OF WORK for the period October 1, 1962, to September 30, 1963, is $3,498,602, exclusive of the Contractor's fixed fee of $197,263."

3. In subparagraph (d) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, delete the figure "$199,665" and substitute therefor the figure "$197,263."

4. Subparagraph (d) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(d) For the period October 1, 1962, through February 28, 1963, ninety percent (90%) of the fixed fee of $83,195 shall become due and payable in monthly installments of $14,975. For the period March 1, 1963, through September 30, 1963, ninety percent (90%) of the fixed fee of $114,068 shall become due and payable in monthly installments of $14,666."

5. Appendix "E," General Provisions, to Contract AT(30-1)-1293 is amended to delete subparagraph (a) Eight-Hour Law of 1912 - Overtime Compensation and substitute therefor the following new provision:

"(a) Work-Hours Act of 1962 - Overtime Compensation

This Contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87-581, 76 Stat. 357-360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962.

1. No contractor or subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such workweek, whichever is the greater number of overtime hours.

2. In the event of any violation of the provisions of paragraph 1., the Contractor and any subcontractor responsible for such violation shall be liable to any affected employee for his unpaid wages. In addition, such Contractor or subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph 1., in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of forty hours in a workweek without payment of the required overtime wages.

3. The Contracting Officer may withhold, or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor the full amount of wages required by this Contract and such sums as may administratively be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for liquidated damages as provided in paragraph 2.

4. The Contractor agrees to insert the foregoing clauses 1., 2., and 3., and this clause 4., in all subcontracts."

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF the parties hereto have executed this Modification as of the day and year first above written.

SYLVANIA ELECTRIC PRODUCTS INC.
~~UNITED STATES OF AMERICA~~
~~BY: U. S. ATOMIC ENERGY COMMISSION~~

BY: D. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

UNITED STATES OF AMERICA
~~SYLVANIA ELECTRIC PRODUCTS INC.~~
BY: U. S. ATOMIC ENERGY COMMISSION

BY: R. C. Blair, Manager

TITLE: Savannah River Operations Office

WITNESSES:

Jean Case

Hicksville New York
(Address)

Hicksville N.Y.
(Address)

I, J. M. TOOHEY, certify that I am ASST. SECRETARY of Sylvania Electric Products Inc., named above; that D. B. METZ who signed this Agreement on behalf of said corporation, was then MFG MGR - SYLCOR DIV of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 8 day of MAY, 1963.

CORPORATE SEAL

~~SECRET~~

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 33
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR	Sylvania Electric Products Inc. Hicksville, Long Island, New York
SUPPLEMENTAL AGREEMENT TO	Amend scope of work and other provisions of the contract.
EFFECTIVE DATE	March 1, 1963

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 32)	$22,702,786	$3,951,805	$26,654,591
This Modification Net Increase	2,402	-	2,402
New Total Direct Costs	$22,705,188	$3,951,805	$26,656,993
Previous Fixed Fee	$1,318,305	$ 172,150	$ 1,490,455
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New Total Fixed Fee	$1,315,903	$ 172,150	$ 1,488,053
Total Est. Cost and Fixed Fee	$24,021,091	$4,123,955	$28,145,046
Total Obligated 3/1/63			$28,145,046

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USDOE 017275

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 33
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 17th day of May, 1963, effective March 1, 1963, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is revised as of March 1, 1963, and is attached hereto and made a part hereof.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

"1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $26,656,993, exclusive of the Contractor's fixed fee. The Contractor's fixed fee, as set forth in paragraph 2., Article V, of the Contract is $1,488,053. The estimated cost of the work, as described in paragraph 1. of the Article entitled SCOPE OF WORK for the period October 1, 1962, to September 30, 1963, is $3,498,602, exclusive of the Contractor's fixed fee of $197,263."

3. In subparagraph (d) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, delete the figure "$199,665" and substitute therefor the figure "$197,263."

4. Subparagraph (d) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

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"(d) For the period October 1, 1962, through February 28, 1963, ninety percent (90%) of the fixed fee of $83,195 shall become due and payable in monthly installments of $14,975. For the period March 1, 1963, through September 30, 1963, ninety percent (90%) of the fixed fee of $114,068 shall become due and payable in monthly installments of $14,666."

5. Appendix "K," General Provisions, to Contract AT(30-1)-1293 is amended to delete subparagraph (a) Eight-Hour Law of 1912 - Overtime Compensation and substitute therefor the following new provision:

"(a) Work-Hours Act of 1962 - Overtime Compensation

This Contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87-581, 76 Stat. 357-360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962.

1. No contractor or subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such workweek, whichever is the greater number of overtime hours.

2. In the event of any violation of the provisions of paragraph 1., the Contractor and any subcontractor responsible for such violation shall be liable to any affected employee for his unpaid wages. In addition, such Contractor or subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph 1., in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of forty hours in a workweek without payment of the required overtime wages.

3. The Contracting Officer may withhold, or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor the full amount of wages required by this Contract and such sums as may administratively be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for liquidated damages as provided in paragraph 2.

USDOE 017277

4. The Contractor agrees to insert the foregoing clauses 1., 2., and 3., and this clause 4., in all subcontracts."

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, Savannah River Operations Office

WITNESSES:

/s/ Jean Case

Hicksville, New York
(Address)

/s/ Milton Boll

Hicksville, New York
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ D. B. Metz

TITLE: Manufacturing Manager, Sylcor Div.

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz who signed this Agreement on behalf of said corporation, was then Mfg. Mgr. - Sylcor Division of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 8th day of May, 1963.

/s/ J. M. Tooher

CORPORATE SEAL

USDOE 017278

Those Listed Below May 20, 1963

J. A. McFeely, Chief of Contracts
Contracts and Procurement Branch
Administrative Division
MODIFICATION NO. 33 TO CONTRACT AT(30-1)-1293 WITH
SYLVANIA ELECTRIC PRODUCTS INC.

AC:PS

Attached for your use are signed and/or conformed copies, as indicated, of the subject modification. Appendix "B" of the modification sets forth the scope of work to be followed and is classified.

Attachments:
As stated

B&F Division (1 signed, 3 conformed)
T&P Division (2 conformed - including Appendix "B" (1 cy.)
Office of Chief Counsel (1 conformed - including Appendix "B")
Patent Branch, OCC (1 conformed - including Appendix "B")

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USDOE 017274

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office
FINDINGS AND DETERMINATION

AUTHORIZATION FOR MODIFICATION OF COST-PLUS-FIXED-FEE CONTRACT

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.
Contract AT(30-1)-1293
Modification No. 34

The Atomic Energy Commission proposes to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc. to amend the scope of work to be performed by the Contractor during the period October 1, 1962, through September 30, 1963.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering an immediate unit-price arrangement.

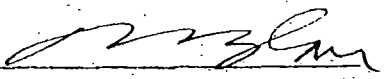
2. Program requirements are subject to immediate change.

3. Continuous process development is required.

4. The revised estimated cost of the work under the contract, $3,485,619, is considered reasonable.

5. The fixed fee adjustment is based on the previously applied rate of six percent of the estimated cost fee base and is considered to be fair and equitable.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee Supplemental Agreement, and I hereby authorize the use of said Supplemental Agreement.

BY: 

TITLE: R. C. Blair, Manager
Savannah River Operations Office

DATE: AUG 23 1963

[redacted]

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 34
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the contract.

EFFECTIVE DATE : May 1, 1963

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 33)	$22,705,188	$3,951,805	$26,656,993
This Modification Net Decrease	(9,390)	-0-	(9,390)
New Total Direct Costs	$22,695,798	$3,951,805	$26,647,603
Previous Fixed Fee	$ 1,315,903	$ 172,150	$ 1,488,053
This Modification Increase	562	-0-	562
New Total Fixed Fee	$ 1,316,465	$ 172,150	$ 1,488,615
Total Estimated Cost and Fixed Fee	$24,012,263	$4,123,955	$28,136,218
Total Obligation 6/30/63			$28,136,218

[redacted]

A. E. C. FILE COPY

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 34
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 23rd day of August, 1963, effective May 1, 1963, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is revised as of May 1, 1963, and is attached hereto and made a part hereof.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $26,647,603, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., Article V of the Contract, is $1,488,615. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work, for the period October 1, 1962, to September 30, 1963, is $3,485,619, exclusive of the Contractor's fixed fee of $197,825."

3. In subparagraph (d) of paragraph 2., Fixed Fee of Article V - ALLOWABLE COST AND FIXED FEE, delete the figure "$197,263" and substitute therefor the figure "$197,825."

A. E. C. FILE COPY

4. Subparagraph (d) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(d) Ninety percent (90%) of the fixed fee of $197,825 shall be due and payable in monthly installments as follows:

For the period October 1, 1962, to February 28, 1963	$14,975
For the period March 1, 1963, to April 30, 1963	14,666
For the period May 1, 1963, to September 30, 1963	14,767"

5. Appendix "E," General Provisions to Contract AT(30-1)-1293 is amended to delete Provision 11.(d), Nondiscrimination in Employment, and substitute therefor the following revised provision, effective upon execution of this modification.

"(d) Nondiscrimination in Employment

During the performance of this Contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited, to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, as amended, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

(5) The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, as amended, and by the rules, regulations, and orders of the said Committee, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, as amended, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(7) The Contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to section 303 of Executive Order No. 10925 of March 6, 1961, as amended, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States."

6. All other terms and conditions of the Contract remain unchanged.

Modification No. 34
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____
R. C. Blair, Manager
TITLE: Savannah River Operations Office

WITNESSES:

M. Lee
Hicksville NY
(Address)

J. Case
Hicksville, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

BY: D B Metz
D. B. Metz
TITLE: Manufacturing Manager
Sylcor Division

I, J. M. TOOHEY, certify that I am ASST. SECRETARY of Sylvania Electric Products Inc., named above; that D. B. METZ who signed this Agreement on behalf of said corporation, was then MFG MGR Sylcor Div. of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 6th day of Aug., 1963.

(CORPORATE SEAL)

_____

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 34
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the contract.

EFFECTIVE DATE : May 1, 1963

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	SROO	NYOO	TOTAL
Previous Direct Cost (Modification No. 33)	$22,705,188	$3,951,805	$26,656,993
This Modification Net Decrease	(9,390)	-0-	(9,390)
New Total Direct Costs	$22,695,798	$3,951,805	$26,647,603
Previous Fixed Fee	$ 1,315,903	$ 172,150	$ 1,488,053
This Modification Increase	562	-0-	562
New Total Fixed Fee	$ 1,316,465	$ 172,150	$ 1,488,615
Total Estimated Cost and Fixed Fee	$24,012,263	$4,123,955	$28,136,218
Total Obligation 6/30/63			$28,136,218

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U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 34
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 23rd day of August, 1963, effective May 1, 1963, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission involving the use and occupancy of the land and buildings of the Contractor on Cantiague Road in Hicksville, Long Island, New York; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is revised as of May 1, 1963, and is attached hereto and made a part hereof.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS, AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $26,647,603, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., Article V of the Contract, is $1,488,615. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work, for the period October 1, 1962, to September 30, 1963, is $3,485,619, exclusive of the Contractor's fixed fee of $197,825."

3. In subparagraph (d) of paragraph 2., Fixed Fee of Article V - ALLOWABLE COST AND FIXED FEE, delete the figure "$197,263" and substitute therefor the figure "$197,825."

USDOE 017269

4. Subparagraph (d) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(d) Ninety percent (90%) of the fixed fee of $197,825 shall be due and payable in monthly installments as follows:

For the period October 1, 1962, to February 28, 1963	$14,975
For the period March 1, 1963, to April 30, 1963	14,666
For the period May 1, 1963, to September 30, 1963	14,767"

5. Appendix "E," General Provisions to Contract AT(30-1)-1293 is amended to delete Provision 11.(d), Nondiscrimination in Employment, and substitute therefor the following revised provision, effective upon execution of this modification.

"(d) Nondiscrimination in Employment

During the performance of this Contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited, to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiserimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

USDOE 017270

(4) The Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, as amended, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

(5) The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, as amended, and by the rules, regulations, and orders of the said Committee, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, as amended, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(7) The Contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to section 303 of Executive Order No. 10925 of March 6, 1961, as amended, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States."

6. All other terms and conditions of the Contract remain unchanged.

USDOE 017271

Modification No. 34
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, Savannah River Operations Office

WITNESSES:

/s/ M. Boll

Hicksville, New York
(Address)

/s/ J. Case

Hicksville, New York
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ D. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz who signed this Agreement on behalf of said corporation, was then Mfg. Mgr. Sylcor Division of said corporation; and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 6th day of August, 1963.

(CORPORATE SEAL)

/s/ J. M. Tooher

USDOE 017272

U. S. ATOMICS ENERGY COMMISSION
Savannah River Operations Office

Modification No. 35
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the Contract.

EFFECTIVE DATE : October 1, 1963

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 34	Increase (Decrease)	Modification No. 35
Summary of Estimated Costs and Fixed Fee			
Operating Cost 1/	$26,523,671	$2,143,870	$28,667,541
Plant and Equipment (Beginning July 1, 1963)	123,932	249,100 2/	373,032 2/
Fixed Fee (Operations)	1,488,615	141,276	1,629,891
Total Estimated Costs and Fixed Fee	$28,136,218	$2,534,246	$30,670,464
Commission Obligation (as of November 1, 1963)			$29,326,218

1/ Includes Plant and Equipment prior to July 1, 1963.

2/ Includes $35,000 for first quarter FY 1965 authorizations not to be obligated in FY 1964.

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U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 35
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 28th day of February, 1964, effective October 1, 1963, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In Paragraph 1., Term, of Article III - TERM, EXPIRATION AND TERMINATION, the date "September 30, 1963," is deleted and the date "September 30, 1964," is substituted therefor.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,040,573, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,629,891. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work for the period October 1, 1963, to September 30, 1964, is $2,470,670, exclusive of the Contractor's fixed fee of $141,276."

3. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$28,145,046" is deleted and the figure "$29,326,218" is substituted therefor.

CONFORMED COPY

USDOE 017291

4. The following new subparagraph (e) is added to paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE:

"(e) The fixed fee applicable to work performed during the period October 1, 1963, to September 30, 1964, is $141,276."

5. The following new subparagraph (e) is added to paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $141,276 shall become due and payable in monthly installments of $10,595."

6. Item (c) Consulting Services of paragraph 4., Items of Allowable Cost, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

"(c) Consulting Services (including legal and accounting) and related expenses, as approved by the Contracting Officer, except as made unallowable by Item (y) of paragraph 5."

7. The following new subparagraph (y) is added to paragraph 5., Items of Unallowable Cost, of Article V - ALLOWABLE COST AND FIXED FEE:

"(y) Salaries or other compensation (and expenses related thereto) of any individual employed under this Contract as a consultant or in another comparable employment capacity who is an employee of another organization and concurrently performing work on a full-time basis for that organization under a cost-type contract with the Commission, except to the extent that cash payment therefor is required pursuant to the provisions of this Contract or procedures of the Commission applicable to the borrowing of such an individual from another cost-type contractor."

8. Appendix "A" Modification No. 29, as amended, is further amended as of October 1, 1963, and is attached hereto and made a part hereof.

9. Appendix "B" Modification No. 29, as amended, is further amended as of October 1, 1963, and is attached hereto and made a part hereof.

10. Provision 7., CONTRACTOR'S ORGANIZATION, of Appendix "E" General Provisions is revised to read as follows:

"7. CONTRACTOR'S ORGANIZATION

(a) Organization Chart. As promptly as possible after the execution of this Contract, the Contractor shall furnish to the Contracting Officer a chart showing the names, duties, and organization of

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key personnel to be employed in connection with the work, and shall furnish from time to time supplementary information reflecting changes therein.

(b) Supervising Representative of Contractor. Unless otherwise directed by the Contracting Officer, a competent full-time resident supervising representative of the Contractor, satisfactory to the Contracting Officer, shall be in charge of the work at the site at all times.

(c) Control of Employees. The Contractor shall be responsible for maintaining satisfactory standards of employee competency, conduct and integrity and shall be responsible for taking such disciplinary action with respect to his employees as may be necessary. The Contractor shall establish such standards and procedures as are necessary to implement effectively the provisions set forth in Atomic Energy Commission Procurement Regulations 9-12.54 and such standards and procedures shall be subject to the approval of the Contracting Officer."

11. The following new General Provision No. 23 is added to Appendix "E" General Provisions of the Contract:

"23. Consultant or Other Comparable Employment Services of Contractor Employees

The Contractor shall require all employees who are employed full-time (an individual who performs work under the cost-type contract on a full-time basis) or part-time (50 percent or more of regular annual compensation received under terms of a contract with the Commission) on the Contract work to disclose to the Contractor all consultant or other comparable employment services which the employees propose to undertake for others. The Contractor shall transmit to the Contracting Officer all information obtained from such disclosures. The Contractor will require any employee who will be employed full-time on the Contract work to agree, as a condition of his participation in such work, that he will not perform consultant or other comparable employment services for another Commission cost-type Contractor under its Contract with the Commission except with the prior approval of the Contractor."

12. All other terms and conditions of the Contract remain unchanged.

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IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, SROO

WITNESSES:

/s/ M. Boll

Hicksville, New York
(Address)

/s/ J. Case

Hicksville, N. Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ D. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz who signed this Agreement on behalf of said corporation, was then Mfg. Mgr., Sylcor Division of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 17th day of February 1964.

/s/ J. M. Tooher

(CORPORATE SEAL)

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Revised October 1, 1963

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Appendix "A"
Modification No. 35 to
Contract No. AT(30-1)-1293

SYLVANIA ELECTRIC PRODUCTS INC.
SYLCOR DIVISION

Contract No. AT(30-1)-1293

APPENDIX "A"
Revised October 1, 1963

PERSONNEL PRACTICES

I. GENERAL PROVISIONS

This Appendix "A" sets forth the current personnel policies, wage and salary practices, employee benefit programs, travel, transportation, subsistence and moving expenses, and miscellaneous expenses and allowances approved as allowable costs under Contract No. AT(30-1)-1293.

The provisions included hereunder reflect regularly established policies and practices of the Contractor, modified only to meet the particular requirements of the Contract and approved by the Commission, and shall be administered in accordance with the Contractor's regular procedures. Reimbursement for items of cost pertaining to the personnel practices and procedures not specifically covered below shall be in accordance with this Contractor's published policies and procedures or consistent with the Contractor's established commercial practices and approved by the Contracting Officer.

This Appendix "A" may be modified from time to time, in whole or in part, without formal Contract modification by mutual written agreement between the Commission and the Contractor.

II. ABSENCES

A. Holidays

The Contractor recognizes nine (9) paid holidays in each calendar year.

Holidays falling on Sunday will be observed the following Monday. Holidays falling on Saturday will be observed the preceding Friday.

B. Vacations

Employees of the Contractor who have, or will have, on July 1 of the current year the following records of continuous service, may receive paid vacations in accordance with the following schedule:

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Contract No. AT(30-1)-1293 with
Sylvania Electric Products Inc.,
Sylcor Division
Appendix "A"

Length of Service	Hourly Employee	Salary Employee
6 months but less than 1 year	20 hours	1 week
1 year but less than 3 years	40 hours	2 weeks
3 years but less than 10 years	80 hours	2 weeks
10 years but less than 25 years	120 hours	3 weeks
25 years or more	160 hours	4 weeks

A week's pay in lieu of one week's vacation may be granted to employees who are eligible for three or four weeks' vacation.

Additional prorated vacation payments may be made to employees eligible for vacation pay based on the following lengths of service:

Hourly Employees

More than 26 weeks but less than 52 weeks	1/26 of 20 hours for each week above 26
More than 2 years 12 weeks but less than 3 years	1 hour for each week above 2 years 12 weeks

Salaried Employees

More than 26 weeks but less than 52 weeks	1/26 of 1 week's pay for each week above 26

The above vacation allowances are non-cumulative and shall be taken prior to December 31 of the current vacation year or forfeited.

Shift premium if applicable, may be included in vacation payments. If the majority of the employees have actually worked on a schedule averaging 48 hours or more per week for the first six months of a calendar year, vacation payments may be based on a 48-hour per week straight time basis.

An extra day's vacation is allowed for each paid holiday falling within the vacation period. Payment for such holiday may be granted to hourly or non-exempt salaried employees.

Employees who leave the Company prior to July 1 of the current year may receive a vacation accrual equal to the number of weeks on the payroll since last July 1, divided by 52, multiplied by the normal vacation pay for an employee with their record of continuous service. Employees who leave the Company after July 1 who have not received the vacation pay to which they are eligible as of July 1, will receive such payments at the time of separation.

Revised October 1, 1963

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C. Sick Leave

1. Salaried Employees

Leave with pay may be granted to employees who are absent from work because of personal illness or injury. The amount of such leave granted shall be in accordance with established practices consistently applied throughout the Contractor's organization based upon the following schedule:

Employee's Service	Cumulative Time Off in Any 12-Month Period
Less than 6 months	1 week
6 months to 1 year	2 weeks
1 year to 2 years	4 weeks
2 years to 25 years	4 weeks plus 2 weeks for each full year of continuous service beyond 2 years up to maximum of 50 weeks
More than 25 years	50 weeks

No reimbursement shall be made for unused sick leave to employees upon termination of employment.

2. Hourly Employees

Excused leave with pay may be granted full-time employees who are absent from work for reasons of personal illness, injury, or disability based upon the following provisions:

Full-time employees with one or more years of continuous service who are on the payroll as of January 1 of any calendar year shall be credited with 40 hours of sick leave allowance for that calendar year.

Full-time employees who are not on the payroll as of January 1 but who returned to work from layoff or leave of absence subsequent to January 1 shall be credited for the balance of the calendar year with an amount of sick leave allowance equal to the number of full calendar months remaining in the calendar year times 3-1/3 hours.

Full-time employees who complete their first year of continuous service subsequent to January 1 shall be credited for the balance of the calendar year with an amount of sick leave allowance

equal to the number of full calendar months remaining in the calendar year times 3-1/3 hours.

Full-time employees who complete their first year of continuous services on or before the 15th day of the month will be credited with a full 3-1/3 hours of sick leave allowance for that month. Allowances for regular, part-time employees will be reduced proportionately, provided they are employed to work a minimum weekly work schedule of 20 hours or more.

Unused sick leave will be accumulated from year to year up to a maximum of 480 hours. In no case will unused sick leave pay be reimbursed to employees, including separation from the company, for any reason.

Sick leave pay shall be computed at the employee's straight-time hourly rate in effect on the first full or partial day of absence. Shift premium may be added to such straight-time sick leave for employees who, if they worked, would have been assigned to a premium shift.

Employees receiving sick leave pay will not be entitled to Non-Occupational Insurance Benefits for the same period of absence. The number of weeks of Non-Occupational Disability Insurance Benefits to which an employee is entitled shall be reduced by the equivalent number of consecutive 40-hour increments (or fractional portion thereof) of sick leave pay received. Non-Occupational Disability Insurance Benefits will commence at the termination of sick pay if the employee is still unable to return to work due to personal illness or injury and has been disabled for more than seven (7) consecutive calendar days.

Payments received under Workmen's Compensation, cost reimbursed in whole or in part by the Commission, shall be deducted from the sick leave pay received by an employee during any period such payments are received. Sick leave pay will be the difference between the weekly Workmen's Compensation payment and the employee's weekly straight-time wage in effect at the time an occupational disability occurs. When such partial sick leave payments are made, the number of hours to be charged against an employee's sick leave allowance will be determined by dividing the employee's straight-time earnings into the appropriate amount of weekly sick leave pay to be granted.

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D. Other Absences

1. Court Duty

Employees may be allowed time off without loss of straight-time pay for required jury duty or for required appearance at a court trial.

a. Hourly and Non-Exempt Salaried Employees will receive the difference between fees received from the court and their normal pay for an eight-hour day.

b. Exempt Salaried Employees will be paid their normal salary in addition to court fees.

2. Marriage

When an employee elects to be married, he may be granted time off as follows:

a. Hourly Employees: Up to one week off without pay.

b. Salaried Employees: Less than 6 months service: Up to one week off without pay. Six months service or more: Up to one week with pay.

3. Death in the Immediate Family

Any employee may be granted up to three working days off with pay because of the death of the employee's spouse, father, mother, son, daughter, brother or sister, mother-in-law or father-in-law.

4. Required Military Duty

Time off for required military reserve duty, not to exceed two weeks during any twelve-month period may be granted to:

Hourly Employees - without pay

Salaried Employees

(a) Less than six (6) months service - without pay

(b) With more than (6) months service, the difference, if any between their salary base rate and their military pay for the period.

All employees with six (6) months or more of continuous service

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who are ordered to active duty for periods of not less than six (6) months duration may receive the equivalent of one (1) month's pay upon release from employment to perform such duty unless he enlists while on an approved occupational deferment.

5. Required Selective Service Examination

Time off with pay may be granted to employees required to visit military examination centers for the purpose of taking preliminary or final type examinations. The amount paid to non-exempt employees shall not exceed eight (8) hours of straight-time pay, including shift premium, if any.

6. Personal Reasons

Time off may be granted to employees absent for personal reasons. Time off for personal reasons may be granted to hourly employees only on a non-pay basis. Non-exempt Plan B employees with six or more months of continuous service may be paid for time off not to exceed five days per year. Exempt Plan A employees with six or more months of continuous service may be paid for time off at the discretion of the Manufacturing Manager or, in his absence, the person acting in his behalf. When such time off exceeds two weeks, additional time off shall come under provisions of II. D.7., below.

7. Leave of Absence

A leave of absence without pay may be granted to employees who are absent for two or more weeks but not to exceed 18 months. Seniority or other benefits shall not be accrued during leaves of absences granted under this section.

III. WAGE AND SALARY ADMINISTRATION

A. Executive Compensation

Executive compensation including bonuses and other remunerations will, for cost-reimbursement purposes, not exceed a pro rata share of the equivalent of $30,000 per annum for any one executive. The determination of allowable related costs based on compensations paid will also be determined on the basis of the foregoing limitation. In addition, prior Commission approval shall be obtained on the establishment or adjustment of single rates or rate ranges which exceed $25,000 per year and on any individual salary action which involves a total compensation of $25,000 or more per year.

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B. Salary Schedules

Employees whose wages or salaries are cost-reimbursed under the Contract shall be employed in the job classification, grade and salary ranges approved under Schedules I and II attached hereto. Current organization charts, job descriptions and appropriate wage and salary data will be filed with the Commission in support of approved job classifications, grades and wage and salary ranges. Cost of living and general wage and salary adjustments require the prior approval of the Commission.

C. Increases and Promotions

1. Salaried Employees

It is the policy of the Contractor to base the employee's salary on his production and accomplishments in terms of the requirements of his job classification and the rate range for the classification. Reclassification, promotions and merit raises may be made at the discretion of the Contractor in accordance with established practices and procedures. Salaried employees may be considered for merit increases in accordance with the following schedule.

Employee's Place in Rate Range	Interval Between Merit Increases Salaried Employees	
	Non-Exempt	Exempt
Below mid-point of salary range	6 months	12 months
Above mid-point, not immediately promotable	12-18 months	18-24 months
Above mid-point, immediately promotable	6 months	12 months

A non-exempt salaried employee's job performance shall be reviewed semi-annually and he may receive an increase of up to 5% of his base rate at each semi-annual review. Merit increases for exempt salaried employees shall not be granted less than one year from the preceding merit or promotional increase except in unusual cases, and in no case shall they exceed 10% per year. Exceptions may be granted only with the prior approval of the Commission. No merit increase shall be given in excess of the established maximum rate for the position of the exempt or non-exempt salaried employee.

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2. Hourly Employees

Merit raises within the appropriate labor grade may be given once every three calendar months. In unusual circumstances a merit raise may be given after two calendar months have elapsed after a previous merit increase. New hires may receive a merit increase at the conclusion of a 45-day probationary period. New hires with trainee classification may be promoted to their regular classification and brought to their first step of the appropriate labor grade at the conclusion of a 45-day probationary period.

D. Leadman Premium (Hourly Employees)

An employee officially designated as a "Leadman" may be paid a 10% premium in addition to his hourly rate.

E. Shift Differential

Premium pay of 10% of straight time and overtime earnings will be paid for work on shifts commencing outside the hours of 7:00 a.m. to 9:00 a.m.

F. Compensation for Premium Time - Overtime and Holiday Work

As deemed essential to the performance of Contract work, the Contractor may authorize occasional overtime. Work weeks in excess of 40 hours scheduled for more than four consecutive weeks shall require prior approval of the Commission. Payments for overtime work shall be in accordance with the Federal Wage and Hour Law and the Contractor's established pay practices.

Regular employees may receive their regular straight time pay, not to exceed eight hours (including shift premium if applicable) for unworked official holidays.

If a non-exempt salaried or hourly employee is required to work on an official holiday, he will be compensated for the hours worked at one and one-half times his normal rate of pay including shift differential in addition to the basic eight hours holiday pay.

G. Report-in Pay

An employee who reports to work for his scheduled hours will receive full pay from such hours (not to exceed 8) for that day even though idle or sent home early because of delay or shortage or other reasons beyond his control, except that no such pay shall be made in cases where the Company's failure to provide work is due to power failure, fire, flood, weather conditions, or other conditions beyond the Company's control.

Revised October 1, 1963

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H. Call-in Pay (Non-exempt Salaried and Hourly Employees)

Employees who are called in for emergency work outside their regularly scheduled hours may be paid at overtime rates for such hours worked or a minimum of four hours straight time, whichever is greater.

I. Separation Pay

1. Separation Pay in Lieu of Notice

Employees with six (6) months or more of continuous service who are permanently and involuntarily separated without prejudice will receive notice or separation pay in lieu of notice as indicated below:

a. Hourly Employees - One (1) week's notice or one (1) week's pay at base rate, not to exceed 40 hours.

Should an hourly paid employee be separated because of lack of work while assigned to commercial work at the Hicksville Plant and "bump" through seniority rules an employee on Contract work, it is agreed the Commission shall not be liable for separation pay to the separated employee. Where an employee engaged on Contract work at the Hicksville Plant "bumps" a less senior employee assigned to commerical work, the Commission shall reimburse the Company, if required, for separation payments to the employee thus separated. In all instances where the Commission reimburses for separation pay to employees not engaged on its work at time of separation, payments must be approved by the Commission.

b. Non-Exempt Salaried Employees - Two (2) weeks' pay and as much notice as possible. An additional one week's pay may be granted to employees having five (5) or more years of continuous service.

Separation pay to eligible employees whose total Company service has been divided between the Contractor's commercial activities and work under this Contract shall be prorated according to length of service on Contract work and the Company's commercial activities.

c. Exempt Salaried Employees - Four (4) weeks pay or until the employee secures new employment for employees with up to five (5) years continuous service. An additional one (1) week's pay for each year, or portion thereof, of continuous service in excess of 5 years service or until the employee secures

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new employment except that in no instance shall the employee receive more than 15 weeks separation pay. Separation pay to eligible employees whose total Company service has been divided between the Contractor's commercial activities and work under this Contract shall be prorated according to length of service on Contract work and the Company's commercial activities.

2. Severance Pay - Hicksville Site Closing

Reimbursement will be made to the Company for severance payments only in the event that the Hicksville site is closed because of termination or expiration of this Contract. Severance payments made to employees whose total service has been divided between the Contractor's commercial work and work under this Contract shall be prorated according to the length of service on Contract work and commercial work. Employees whose employment is terminated because of the closing of the Hicksville site may receive severance pay in accordance with the sections of Sylvania Electric Products, Inc., Policy and Standard Practice entitled "Reassignment or Separation of Employees when a Plant or other Facility is Being Permanently Closed" and "Separation Policy-Plan 'A' Employees" further identified as No. 313. (Supplements 2 and 4) issued October 1, 1963.

IV. EMPLOYEE BENEFITS

A. Educational Benefits

When an employee is assigned to an educational course as part of his work under this Contract, the Contractor may pay the cost of the course, including books and required travel expenses.

Employees who elect to take educational courses may be reimbursed by the Contractor as outlined below.

1. The employee must obtain approval of the Plant Manager prior to enrolling in the course.

2. Upon completion of the course and before reimbursement for any part of the course cost is made, the employee shall provide acceptable evidence of successful completion and appropriate properly receipted bills.

3. If the course is directly related to the performance of Contract work, 100% tuition will be refunded upon satisfactory completion of the course.

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4. If the course is not directly related to the employee's present work but is related to the employee's development for higher level work in which there is a reasonable probability that he may be engaged under the Contract, 50% of the tuition may be refunded upon satisfactory completion of the course.

5. If the course is not directly related to Contract work but part of the requirement for a degree in a field directly related to the Contract work in which the employee is engaged, 50% of the tuition may be refunded upon satisfactory completion of the course.

In addition to the benefits outlined above, up to six hours time off per week with pay may be granted to employees who take approved graduate-level courses related to this Contract.

B. Group Insurance

The Contractor maintains group insurance program for all eligible and retired employees including: 1) life insurance, 2) accidental death and dismemberment insurance, 3) insurance for company travel, 4) hospital-surgical-medical insurance, 5) major medical insurance, and 6) non-occupational disability insurance, the details of which are on file and approved by the Commission. The Contractor's contribution to the cost of the program is reimbursable on a pro rata share basis as approved by the Commission. A proper share of dividends, premium refunds, and other credits accrued to the approved group insurance program will be credited to the cost of Contract work. The following group insurance programs are provided by the Contractor.

1. Life Insurance is provided for all regular employees at no cost to the employee after one month of Company service. The amount of insurance is determined by the employee's base rate of pay. The face value of the life insurance per eligible employee will be a minimum of $3,000 and a maximum of $225,000. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

2. Accidental Death and Dismemberment Insurance is provided for all regular employees at no cost to the employee after one month of Company service. The amount of insurance is determined by the employee's base rate of pay, with a minimum of $3,000 and a maximum of $20,000 for any one accident. Insurance coverage may be extended up to one year during the period an employee is totally disabled.

3. Insurance for Company Travel is provided at no cost to the employee to cover death while an employee is traveling on, and as a result

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of, Company business. The amount of death insurance will be two times the employee's base annual salary, subject to a minimum of $25,000 and a maximum of $150,000.

4. Hospital-Surgical-Medical Insurance is provided for regular employees at no cost to the employee after one month of Company service. The insurance covers the employee and his dependents. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

5. Major Medical Insurance is provided for all regular employees at no cost to the employee after one month of Company service. Major Medical Insurance is in addition to the basic Hospital-Surgical-Medical Insurance. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

6. Non-Occupational Disability Insurance is provided to all employees at no cost to the employee immediately upon employment if the employee was a covered employee working for a covered employer within the preceding six months or after 28 calendar days of employment. Benefits under this plan begin eight (8) days after a non-occupational illness or injury. Payments under this policy are made in lieu of salary or wages in an amount equal to one-half of the normal weekly pay, but not to exceed $65 per week. Benefits under this policy for any one accident or illness may not be paid for more than 26 weeks.

C. Pension Plan

A non-contributory Pension Plan is provided all employees of the Contractor, the details of which are filed with and approved by the Commission.

D. Savings and Security Plan

Regular employees with one year of continuous service may participate in a voluntary Savings and Security Plan as filed and approved by the Commission. Under the Plan participating employees contribute 3% of their earnings by payroll deductions and the Contractor contributes 6% of its net profits before Federal tax based on income for each year but not to exceed an amount equal to the total amount contributed by the members and not withdrawn during the year.

V. TRAVEL, TRANSPORTATION, SUBSISTENCE, AND MOVING EXPENSES

A. Travel, Transportation and Subsistence

Travel incurred by employees, consultants and prospective employees

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in connection with the performance of contract work may be reimbursed as follows:

1. The actual cost of transportation by common carrier, or $.08 per mile plus highway, bridge, ferry and tunnel tolls when travel by vehicle is authorized.

2. The reasonable actual cost of lodging in accordance with prevailing locality rates plus an allowance not in excess of $7.50 per day for subsistence.

3. The actual cost of necessary telephone calls, telegrams, and incidential transportation and personal expenses.

B. Moving and Relocation Expenses

Key scientific, technical and professional employees moving and relocation expenses to plants operated in connection with the performance of contract work may be reimbursed as follows:

1. Transportation expenses for an employee and dependents as in A. 1. above.

2. The reasonable actual cost of lodging plus a subsistence allowance not in excess of $7.50 per employee, $6.00 for each dependent over 12 years of age and $4.00 for each dependent 12 years of age and under while enroute from place of permanent residence to transferred location.

3. A living expense allowance not to exceed $9.00 per day for thirty (30) days to cover additional living expenses of an employee where family remains at principal place of permanent residence at time of transfer. In addition, the incurred cost of two (2) round trips from place of work to principal place of permanent residence during this period.

4. Reasonable travel expenses incurred by an employee's wife in making visits not in excess of two round trips to new location prior to transfer of residence with such expenses reimbursed in accordance with A.1., 2., and 3. above; or, if traveling with husband, in accordance with B.1., and 2. above.

5. Reasonable brokerage fees not to exceed 5% of sale price plus legal and other necessary closing fees in connection with the sale of principal place of permanent residence at the old location; or, a reasonable cancellation fee not to exceed the equivalent of three (3) months' rental in connection with the breaking of a lease on a

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rented house or apartment.

6. Legal fees and other unavoidable expenses not to exceed 3% of the purchase price in connection with the purchase of a residence at the new location.

7. The cost of real estate taxes, fire insurance, and interest on the mortgage on the old house not in excess of the equivalent of one month's payment when it is necessary for an employee to take title to a house in the new location without completing the sale and transfer of title to his house at the old location.

8. The reasonable cost of transportation of household goods and effects including packing, crating, insurance, unpacking, disconnecting and connecting equipment and for temporary storage of house hold goods and effects not in excess of thirty (30) days.

9. Incidental relocation expenses not to exceed 50% of one (1) month's base salary for an employee who owns and transfers household goods to the new location.

10. When at the Contractor's request an Exempt Plan A employee is transferred from another Sylvania location to the Hicksville site, reimbursement consistent with Sylvania commercial practice as defined in its Policy and Standard Practice Manual dated February 15, 1963, may be made for a loss sustained by the employee in the sale of his residence. It is understood that this policy shall be applied uniformly to all company Plan A employees and that reimbursement for such a loss is limited to its occurrence upon the transfer of an employee to the Hicksville site to perform work on Contract AT(30-1)-1293 and not applicable to its occurrence upon the transfer of an employee performing work on Contract AT(30-1)-1293 from the Hicksville site to another location. Reimbursement of any loss in excess of $500 shall be subject to the Commission's prior approval.

C. <u>New Hires - Key Scientific, Technical and Professional Employees</u>

Travel and moving expenses incurred by new hires in connection with Contract work may be reimbursed as follows:

1. Transportation and moving expenses for an employee and dependents as in V.A.1., B.2., and B.8.

2. Reasonable cost of room and board for two weeks and reasonable travel expenses incurred by an employee or his wife in making visits not to exceed two round trips between new location and former residence if the new employee relocates before moving his

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family.

VI. MISCELLANEOUS EXPENSES AND ALLOWANCES

A. Pre-Employment Physical Examination

Reimbursements may be made for the expense of pre-employment physical examinations performed by a non-company physician when such examinations are necessary for the placement of an individual on Contract work. Such reimbursements will not exceed $35 for any one individual.

B. In-Plant Training Courses

The reasonable costs of in-plant training courses deemed essential and of benefit to the performance of Contract work are approved as allowable Contract costs.

C. Outside Training and Meetings

When it is in the interest of the Contract for an employee to participate in outside training at the request of the Contractor or attend scientific, technical, or professional meetings, the cost of such training or attendance is an allowable cost under the Contract. Participation in outside training or attendance at meetings for a period of five (5) working days or more and all foreign travel incurred in connection therewith, will require the prior approval of the Commission.

D. Licenses, Professional Society Memberships, and Magazine Subscriptions

1. When professional licenses are considered essential to the performance of Contract work or where an employee is the official representative of the Contractor or attends meetings of engineering, management or professional societies as part of his work, reimbursement may be made for the actual costs of such licenses, dues or memberships, and magazine subscriptions.

2. Where employee subscriptions to technical magazines, professional licenses, or memberships in scientific, engineering or professional societies are considered of benefit to the performance of Contract work, reimbursements may be made up to one-half the costs of such subscriptions, licenses or memberships.

E. Publication Awards

Employees may receive token awards not to exceed $50 for publications of technical papers in technical journals which are of interest to the Contract and for which no compensation has been received from the

USDOE 017310

publisher.

F. Employee Social and Recreational Activities

Costs incurred as Contractor contributions to employee social and recreational activities may be made in an amount not exceeding the equivalent of 9 cents per week per employee.

G. Supper Money

Reasonable supper money allowances may be paid to exempt employeeswhen they are not receiving overtime pay and work 2½ hours or more past the end of their standard shift. Non-exempt salaried and hourly employees, who receive overtime wages, will not receive supper money.

H. Employment Agency Fees

When employment agency services are required to secure properly qualified personnel for the performance of Contract work, agency fees for such services may be reimbursed in an amount not exceeding 10% of an employee's base annual wage or salary.

I. Printed Material

A pro rata share of the cost of printed material which is distributed to employees for training, information and indoctrination under the Contract is reimbursable.

J. Clothing Loss

Damage to or loss of employee clothing and personal property as the result of the performance of Contract work and not attributable to the employee's carelessness or negligence will be reimbursed. The amount of reimbursement will be based on replacement cost minus a fair depreciation estimate.

K. Personal Protective Equipment

The Contractor will be reimbursed for the cost of providing employees with required personal protective equipment or clothing in accordance with the Contractor's established policies and practices.

L. Patent Awards

The Contractor may be cost reimbursed in amounts not to exceed $100 per employee under the Contractor's Patent Award Program for patents granted and assigned to the Commission. Where the invention or dis-

USDOE 017311

covery is of particular importance or value to the Commission, additional awards may be granted with prior written Commission approval.

M. Suggestion Awards

The Contractor may be reimbursed on a pro rata share basis for the reasonable cost of a Suggestion Awards Program. Hourly and non-exempt salaried employees on jobs which require working out improvements, developments, or new ideas shall be eligible for awards for only those suggestions which apply outside the scope of their own responsibility, duties, or assignments. Exempt employees shall not be eligible for suggestion awards. The minimum award is $7.50. The maximum award is $25,000. Reimbursement of any award in excess of $250 for any one employee or $500 for any employee group shall be subject to the approval of the Commission. The Contractor will provide the Commission with such data as may from time to time be required for appraisal and substantiation of costs incurred under the program.

O. Family Day

The Contractor may be reimbursed on a pro rata share basis for the reasonable cost of holding an annual "Family Day - Open House" program. Reimbursement shall be subject to prior approval of the Commission.

P. Cooperative Student Work Program

When it is in the interest of the contract to afford engineering or scientific students employment under a cooperative arrangement with an accredited college or university that has a bona fide and established cooperative student work program in accredited, engineering and/or scientific disciplines, reimbursement may be made for expenses as follows:

1. Travel and Related Expenses for the Student's Initial Interview

a. The actual cost of transportation between the school and the contractor plant site by common carrier, or $.08 per mile plus highway, bridge, ferry and tunnel tolls when travel by private passenger vehicle is used.

b. The reasonable actual cost of lodging plus an allowance not in excess of $7.50 per day for subsistence.

c. The actual cost of necessary telephone calls, telegrams, and incidental transportation expenses.

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2. Travel and Relocation Expenses

a. Travel as described in A.1., above between the school and the contractor's plant site for each 6 months term of work where the student ordinarily lives (except when in school) more than 50 miles from the contractor's plant site.

b. The reasonable actual cost of lodging plus a subsistence allowance not in excess of $7.50 per day while in travel status.

c. In order to allow the student time to find housing, the reasonable actual cost of lodging not to exceed $7.50 per day for a period up to one week (7 days) on the initial work term and up to 3 days on subsequent work terms and approved by the contractor on an individual basis.

3. Salaries

Students working under a cooperative program and performing work on the contract will be paid according to the following scale:

	Work Term*	Weekly Salary
Co-op Student 1	(1	$78.00
	(2	82.00
Co-op Student 2	(3	90.00
	(4	94.00
Co-op Student 3	(5	102.00
	(6	106.00
Co-op Student 4	(7	114.00
	(8	114.00

* Each term represents 3 months

4. Continuity of Service

The student's return to school work at the end of each work term will, for the purpose of calculating company benefits, be regarded as a resignation and service will not accumulate from one term to another unless and until the student ceases to work under the co-operative program and becomes a full time regular employee. At such time as the student becomes a full time regular employee all company benefits will be applicable to the student and credit will

USDOE 017313

be given for the full time he worked under the cooperative program.

5. Other Benefits

Cooperative students will not be eligible for all company benefits but may be treated the same as a regular employee under Appendix "A" for the following:

Section II	A	Holidays
Section III	D - 1	Court Duty
	D - 3	Death in Immediate Family
	D - 5	Required Selective Service Examinations
Section IV	B	Group Insurance

USDOE 017314

SCHEDULE I

SALARIED EMPLOYEES

Exempt

Job Classification	Grade	Monthly Salary Range
Manufacturing Manager	13 J	$1150 - $1905
Engineering Manager "B"	12 J	1035 - 1710
Engineering Specialist Plant Manager "C" Section Head	11 J	940 - 1555
Manufacturing Superintendent Supervisor of Product Engineering Advanced New Product Development Engineer-Sylcor	10 J	855 - 1410
Advanced Research (or Development) Engineer Engineer-in-Charge Supervisor of Quality Control "A" Senior Sales Engineer	9 J	765 - 1260
Equipment Design Specialist General Foreman Project Engineer Research (or Development) Engineer Supervisor of Cost Control "A"	8 J	690 - 1145
Safety Engineer, Sylcor Research Metallographer Senior Engineer "A" Supervisor, Production Control "B" Supervisor, Quality Control "B" Supervisor of Personnel "B"	7 J	635 - 1045

Revised December 30, 1963

USDOE 017315

SCHEDULE I

SALARIED EMPLOYEES

Exempt

Job Classification	Grade	Monthly Salary Range
Contract Administrator Equipment Designer, Sr. Purchasing Agent "A" Senior Engineer "B" Supervisor of Security and Administrative Service Supervisor of Maintenance "B" Toolroom Foreman Foreman Class I Tool Coordinator	6 J	$ 590 - $ 965
Buyer Cost Analyst & Statistician Supervisor of An Accounting Department Section	5 K	550 - 890
Engineer Foreman, Nuclear Products Industrial Engineer Accountant, Senior Foreman II Personnel Assistant Systems and Procedures Analyst, Jr. Equipment Designer	4 K	510 - 815
Cost Accountant	3 K	470 - 745

Revised December 30, 1963

USDOE 017316

SCHEDULE I

SALARIED EMPLOYEES

Non-Exempt

Job Classification	Grade	Weekly Salary Range
Master Craftsman Technical Associate	64	$126 - $190
Designer-Draftsman	63	118 - 176
Material Requirements Analyst Production or Maintenance Supervisor I Technician, Senior Production Scheduling Clerk Job Estimating Clerk Accountability Supervisor	62	109 - 166
Draftsman Accountant, Junior Production or Maintenance Supervisor II Safety Inspector Plant Protection, Supervisor	60	97 - 148
Employment Interviewer & Counselor Buyer, Junior Nurse, Senior Technician Stock Clerk Production Control Clerk	59	91 - 138
Payroll Accountant Purchasing Clerk Secretary, Senior	58	86 - 130

Revised October 1, 1963

USDOE 017317

SCHEDULE I

SALARIED EMPLOYEES

Non-Exempt

Job Classification	Grade	Weekly Salary Range
Draftsman, Junior Nurse Production Section Leader	57	$82 - $123
Production Control Clerk, Junior Technician, Junior Secretary Accounting Clerk, Senior Stock Clerk, Junior Statistical Clerk, Senior	56	77 - 114
Clerk, Senior	55	74 - 106
Accounting Clerk, Junior Technical or Statistical Clerk Telephone Operator II	54	71 - 98
Clerk-Typist	52	71 - 86

General Wage Increase - Effective September 2, 1963

Revised October 1, 1963

USDOE 017318

SCHEDULE II

HOURLY EMPLOYEES

Non-Exempt

Job Classification	Grade	Hourly Salary Range
Tool, Die & Model Maker "A"	LG 12	$3.05 - $3.66
Machinist "A" Electrician Specialist Inspector "A" Sheet Metal Specialist	LG 11	2.88 - 3.49
Mechanic "A" Welder "A" Sheet Metal Worker "A" Electrician "A" Welder I Machinist I	LG 10	2.72 - 3.28
Machinist "B" Carpenter Inspector "B"	LG 9	2.56 - 3.08
Mechanic "B" Process & Equipment Checker Assembly & Furnace Brazing Rolling Mill Operator Melter Guard Sergeant Fluoroscope Operator & X-Ray Inspector Radiographist	LG 8	2.41 - 2.92

General Wage Increase - Effective September 2, 1963

Revised October 1, 1963

USDOE 017319

SCHEDULE II

HOURLY EMPLOYEES

Non-Exempt

Job Classification	Grade	Hourly Salary Range
Armed Guard Armed Courier Storekeeper Machinist "C" Inspector "C" Chemical Room Operator Machining Operator-CPP Sodium Loading Dry Box Operator Briquetting Operator Heat Treatment Operator Hot Pressing Operator-VB Welding Operator-VB Machining Operator-VB Fluoroscope Operator Hot Press Operator Finishing Operator Maintain Chemical Solutions	LG 7	$2.2[illegible] - $2.73
Materials Stock Clerk Mechanic "C" Canning-Hot Press Operator Canning-Assembler Die Processing Operator Machining Operator-AEC Plating Machine Operator Fabrication Operator Rack Maintenance Man	LG 6	2.14 - 2.56
Groundskeeper Trainee, Production	LG 5	2.02 - 2.41
Maintenance Apprentice	LG 4	1.91 - 2.26
Cafeteria-Dishwasher, Porter Janitor-Porter	LG 3	1.81 - 2.13

General Wage Increase - Effective September 2, 1963

Revised October 1, 1963

USDOE 017320

Responsive Record 9

[redacted]

36

This document consists of [redacted] pages
No. [redacted] of [redacted] Series

WSRC DECLASSIFICATION REVIEW
1st Review Date: 4/28/94
Authority: ☐ ADC ☒ ADD
Name: R. Collins
2nd Review Date: 4/28/94
Authority: ADD
Name: [illegible]
Determination (Circle Number)
1. Classification Unchanged
2. Classification Changed To:
3. Classification Cancelled
Other: CG-NMP-2 9/00

SR-A-142

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED OCTOBER 1, 1963, UNDER
MODIFICATION NO. 35

As provided for in paragraph 1. of Article I of Modification No. 29 of Contract No. AT(30-1)-1293, this Appendix "B" describes the scope of work to be performed by the Contractor during the period October 1, 1963, through September 30, 1964.

1. PRODUCTION

A. MARK V-B AND MARK V-E (Inner-Fuel)

The Contractor shall manufacture and furnish to the Commission Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark V-B (Tons) Integral Rib	Mark V-E (Tons) Integral Rib
October 1963	57	27
November 1963	41	27
December 1963	44	23
January 1964	48	23
February 1964	44	23
March 1964	46	23
April 1964	47	0
May 1964	44	0
June 1964	48	0
July 1964	12	0
August 1964	42	0
September 1964	42	0

B. THORIUM

Complete the canning and delivery of 11,500 Mark VII-T slugs for irradiation at the Savannah River Plant.

II. PROGRAM DEVELOPMENT

[redacted]

A. ELEMENT DEVELOPMENT

1. Long Slugs

Develop a process for canning Mark V-B and Mark V-E IF and OF Elements up to 16" in length by the hot pressure bonding process. Both impact extrusions and tubing will be investigated for cladding.

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION.

SROO Response to FOIA (SR) - 04-028

[redacted]

Cyp 4 pa 10 A fleetwood 7/13/04

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

2. Added Rib

Continue development of the canning of Mark V-B IF elements with added ribs. Investigate the use of other types of aluminum for the rib and changes in the physical structure of the rib.

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

3. Tube Cladding

Study the effects of the use of tubing as cladding for Mark V-B and V-E IF hot pressure bonded slugs.

4. Recovery of Mark V-E

Develop a recovery program to reclaim reject Mark V-E IF slugs and reuse the cores. Set up standards, specifications and operating procedures, whereby reject slugs may be declad and reprocessed through the HPB process.

B. TOOLING AND CLADDING MATERIALS

1. Furnace Tooling

Investigate potential improvements in quality and economy attainable through the replacement of Inconel X by such metals as AF71 or Inconel for furnace tooling, such as mandrels, dies and vacuum pots. Make items of promising materials and test them in the HPB process.

2. Cladding

Investigate potential advantages of low alloys of aluminum as cladding material. Test the most promising materials, such as aluminum with additives of beryllium or germanium, in the HPB process, for further evaluation at SRP.

[redacted]

C. INDUCTION HEATING

1. Heat Pattern Control

Run a series of experiments on HPB induction furnaces to determine actual heat patterns and provide a consistent improved control of the heat applied to the slug.

Investigate the possible use of scanning equipment which will designate the temperature of the die as it leaves the furnace, thereby offering additional improvement of heat pattern control.

2. Cores with Anodic Etch

Investigate possible improvement of HPB strengths by the use of anodic etching of cores before plating and the rapid heat-up cycle attainable with induction furnaces.

D. NONDESTRUCTIVE TESTING

1. Eutectic Prevention

Investigate new methods for the detection of Mark V-B and V-E slugs that have been overheated during the pressing cycle, such as the use of magnetic and hysteresis effects and the chemical test which showed promise with Mark VII-A slugs.

2. Nickel Plate Control

Continue investigation of new types of nickel detection and measurement, such as the magnetic probe, to provide a closer control of the nickel plate on cores.

3. Uranium Metal Quality

Refine and test ultrasonic equipment for potential use in the detection of metal quality rejects before plating.

4. Aluminum Metal Quality

Investigate methods of improving the detection of metal quality rejects in aluminum cladding components before they are used.

[redacted]

[redacted]

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED OCTOBER 1, 1963, UNDER
MODIFICATION NO. 35

III. DU PONT TOOLING

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont Tooling Program.

[redacted]

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Revised October 1, 1963

SYLVANIA ELECTRIC PRODUCTS INC.
SYLCOR DIVISION

Contract No. AT(30-1)-1293

APPENDIX "A"
Revised October 1, 1963

PERSONNEL PRACTICES

I. GENERAL PROVISIONS

This Appendix "A" sets forth the current personnel policies, wage and salary practices, employee benefit programs, travel, transportation, subsistence and moving expenses, and miscellaneous expenses and allowances approved as allowable costs under Contract No. AT(30-1)-1293.

The provisions included hereunder reflect regularly established policies and practices of the Contractor, modified only to meet the particular requirements of the Contract and approved by the Commission, and shall be administered in accordance with the Contractor's regular procedures. Reimbursement for items of cost pertaining to the personnel practices and procedures not specifically covered below shall be in accordance with this Contractor's published policies and procedures or consistent with the Contractor's established commercial practices and approved by the Contracting Officer.

This Appendix "A" may be modified from time to time, in whole or in part, without formal Contract modification by mutual written agreement between the Commission and the Contractor.

II. ABSENCES

A. Holidays

The Contractor recognizes nine (9) paid holidays in each calendar year.

Holidays falling on Sunday will be observed the following Monday. Holidays falling on Saturday will be observed the preceding Friday.

B. Vacations

Employees of the Contractor who have, or will have, on July 1 of the current year the following records of continuous service, may receive paid vacations in accordance with the following schedule:

Contract No. AT(30-1)-1293 with
Sylvania Electric Products Inc.,
Sylcor Division
Appendix "A"

Length of Service	Hourly Employee	Salary Employee
6 months but less than 1 year	20 hours	1 week
1 year but less than 3 years	40 hours	2 weeks
3 years but less than 10 years	80 hours	2 weeks
10 years but less than 25 years	120 hours	3 weeks
25 years or more	160 hours	4 weeks

A week's pay in lieu of one week's vacation may be granted to employees who are eligible for three or four weeks' vacation.

Additional prorated vacation payments may be made to employees eligible for vacation pay based on the following lengths of service:

Hourly Employees

More than 26 weeks but less than 52 weeks	1/26 of 20 hours for each week above 26
More than 2 years 12 weeks but less than 3 years	1 hour for each week above 2 years 12 weeks

Salaried Employees

More than 26 weeks but less than 52 weeks	1/26 of 1 week's pay for each week above 26

The above vacation allowances are non-cumulative and shall be taken prior to December ~~27~~ 31 of the current vacation year or forfeited.

Shift premium if applicable, may be included in vacation payments. If the majority of the employees have actually worked on a schedule averaging 48 hours or more per week for the first six months of a calendar year, vacation payments may be based on a 48-hour per week straight time basis.

An extra day's vacation is allowed for each paid holiday falling within the vacation period. Payment for such holiday may be granted to hourly or non-exempt salaried employees.

Employees who leave the Company prior to July 1 of the current year may receive a vacation accrual equal to the number of weeks on the payroll since last July 1, divided by 52, multiplied by the normal vacation pay for an employee with their record of continuous service. Employees who leave the Company after July 1 who have not received the vacation pay to which they are eligible as of July 1, will receive such payments at the time of separation.

Revised October 1, 1963

C. Sick Leave

1. Salaried Employees

Leave with pay may be granted to employees who are absent from work because of personal illness or injury. The amount of such leave granted shall be in accordance with established practices consistently applied throughout the Contractor's organization based upon the following schedule:

Employee's Service	Cumulative Time Off in Any 12-Month Period
Less than 6 months	1 week
6 months to 1 year	2 weeks
1 year to 2 years	4 weeks
2 years to 25 years	4 weeks plus 2 weeks for each full year of continuous service beyond 2 years up to maximum of 50 weeks
More than 25 years	50 weeks

No reimbursement shall be made for unused sick leave to employees upon termination of employment.

2. Hourly Employees

Excused leave with pay may be granted full-time employees who are absent from work for reasons of personal illness, injury, or disability based upon the following provisions:

Full-time employees with one or more years of continuous service who are on the payroll as of January 1 of any calendar year shall be credited with 40 hours of sick leave allowance for that calendar year.

Full-time employees who are not on the payroll as of January 1 but who returned to work from layoff or leave of absence subsequent to January 1 shall be credited for the balance of the calendar year with an amount of sick leave allowance equal to the number of full calendar months remaining in the calendar year times 3-1/3 hours.

Full-time employees who complete their first year of continuous service subsequent to January 1 shall be credited for the balance of the calendar year with an amount of sick leave allowance

equal to the number of full calendar months remaining in the calendar year times 3-1/3 hours.

Full-time employees who complete their first year of continuous services on or before the 15th day of the month will be credited with a full 3-1/3 hours of sick leave allowance for that month. Allowances for regular, part-time employees will be reduced proportionately, provided they are employed to work a minimum weekly work schedule of 20 hours or more.

Unused sick leave will be accumulated from year to year up to a maximum of 480 hours. In no case will unused sick leave pay be reimbursed to employees, including separation from the company, for any reason.

Sick leave pay shall be computed at the employee's straight-time hourly rate in effect on the first full or partial day of absence. Shift premium may be added to such straight-time sick leave for employees who, if they worked, would have been assigned to a premium shift.

Employees receiving sick leave pay will not be entitled to Non-Occupational Insurance Benefits for the same period of absence. The number of weeks of Non-Occupational Disability Insurance Benefits to which an employee is entitled shall be reduced by the equivalent number of consecutive 40-hour increments (or fractional portion thereof) of sick leave pay received. Non-Occupational Disability Insurance Benefits will commence at the termination of sick pay if the employee is still unable to return to work due to personal illness or injury and has been disabled for more than seven (7) consecutive calendar days.

Payments received under Workmen's Compensation, cost reimbursed in whole or in part by the Commission, shall be deducted from the sick leave pay received by an employee during any period such payments are received. Sick leave pay will be the difference between the weekly Workmen's Compensation payment and the employee's weekly straight-time wage in effect at the time an occupational disability occurs. When such partial sick leave payments are made, the number of hours to be charged against an employee's sick leave allowance will be determined by dividing the employee's straight-time earnings into the appropriate amount of weekly sick leave pay to be granted.

D. Other Absences

1. Court Duty

Employees may be allowed time off without loss of straight-time pay for required jury duty or for required appearance at a court trial.

a. Hourly and Non-Exempt Salaried Employees will receive the difference between fees received from the court and their normal pay for an eight-hour day.

b. Exempt Salaried Employees will be paid their normal salary in addition to court fees.

2. Marriage

When an employee elects to be married, he may be granted time off as follows:

a. Hourly Employees: Up to one week off without pay.

b. Salaried Employees: Less than 6 months service: Up to one week off without pay. Six months service or more: Up to one week with pay.

3. Death in the Immediate Family

Any employee may be granted up to three working days off with pay because of the death of the employee's spouse, father, mother, son, daughter, brother or sister, mother-in-law or father-in-law.

4. Required Military Duty

Time off for required military reserve duty, not to exceed two weeks during any twelve-month period may be granted to:

Hourly Employees - without pay

Salaried Employees

(a) Less than six (6) months service - without pay

(b) With more than (6) months service, the difference, if any between their salary base rate and their military pay for the period.

All employees with six (6) months or more of continuous service

who are ordered to active duty for periods of not less than six (6) months duration may receive the equivalent of one (1) month's pay upon release from employment to perform such duty unless he enlists while on an approved occupational deferment.

5. Required Selective Service Examination

Time off with pay may be granted to employees required to visit military examination centers for the purpose of taking preliminary or final type examinations. The amount paid to non-exempt employees shall not exceed eight (8) hours of straight-time pay, including shift premium, if any.

6. Personal Reasons

Time off may be granted to employees absent for personal reasons. Time off for personal reasons may be granted to hourly employees only on a non-pay basis. Non-exempt Plan B employees with six or more months of continuous service may be paid for time off not to exceed five days per year. Exempt Plan A employees with six or more months of continuous service may be paid for time off at the discretion of the Manufacturing Manager or, in his absence, the person acting in his behalf. When such time off exceeds two weeks, additional time off shall come under provisions of II. D.7., below.

7. Leave of Absence

A leave of absence without pay may be granted to employees who are absent for two or more weeks but not to exceed 18 months. Seniority or other benefits shall not be accrued during leaves of absences granted under this section.

III. WAGE AND SALARY ADMINISTRATION

A. Executive Compensation

Executive compensation including bonuses and other remunerations will, for cost-reimbursement purposes, not exceed a pro rata share of the equivalent of $30,000 per annum for any one executive. The determination of allowable related costs based on compensations paid will also be determined on the basis of the foregoing limitation. In addition, prior Commission approval shall be obtained on the establishment or adjustment of single rates or rate ranges which exceed $25,000 per year and on any individual salary action which involves a total compensation of $25,000 or more per year.

B. Salary Schedules

Employees whose wages or salaries are cost-reimbursed under the Contract shall be employed in the job classification, grade and salary ranges approved under Schedules I and II attached hereto. Current organization charts, job descriptions and appropriate wage and salary data will be filed with the Commission in support of approved job classifications, grades and wage and salary ranges. Cost of living and general wage and salary adjustments require the prior approval of the Commission.

C. Increases and Promotions

1. Salaried Employees

It is the policy of the Contractor to base the employee's salary on his production and accomplishments in terms of the requirements of his job classification and the rate range for the classification. Reclassification, promotions and merit raises may be made at the discretion of the Contractor in accordance with established practices and procedures. Salaried employees may be considered for merit increases in accordance with the following schedule.

Employee's Place in Rate Range	Interval Between Merit Increases Salaried Employees	
	Non-Exempt	Exempt
Below mid-point of salary range	6 months	12 months
Above mid-point, not immediately promotable	12-18 months	18-24 months
Above mid-point, immediately promotable	6 months	12 months

A non-exempt salaried employee's job performance shall be reviewed semi-annually and he may receive an increase of up to 5% of his base rate at each semi-annual review. Merit increases for exempt salaried employees shall not be granted less than one year from the preceding merit or promotional increase except in unusual cases, and in no case shall they exceed 10% per year. Exceptions may be granted only with the prior approval of the Commission. No merit increase shall be given in excess of the established maximum rate for the position of the exempt or non-exempt salaried employee.

Revised October 1, 1963

2. Hourly Employees

Merit raises within the appropriate labor grade may be given once every three calendar months. In unusual circumstances a merit raise may be given after two calendar months have elapsed after a previous merit increase. New hires may receive a merit increase at the conclusion of a 45-day probationary period. New hires with trainee classification may be promoted to their regular classification and brought to their first step of the appropriate labor grade at the conclusion of a 45-day probationary period.

D. Leadman Premium (Hourly Employees)

An employee officially designated as a "Leadman" may be paid a 10% premium in addition to his hourly rate.

E. Shift Differential

Premium pay of 10% of straight time and overtime earnings will be paid for work on shifts commencing outside the hours of 7:00 a.m. to 9:00 a.m.

F. Compensation for Premium Time - Overtime and Holiday Work

As deemed essential to the performance of Contract work, the Contractor may authorize occasional overtime. Work weeks in excess of 40 hours scheduled for more than four consecutive weeks shall require prior approval of the Commission. Payments for overtime work shall be in accordance with the Federal Wage and Hour Law and the Contractor's established pay practices.

Regular employees may receive their regular straight time pay, not to exceed eight hours (including shift premium if applicable) for unworked official holidays.

If a non-exempt salaried or hourly employee is required to work on an official holiday, he will be compensated for the hours worked at one and one-half times his normal rate of pay including shift differential in addition to the basic eight hours holiday pay.

G. Report-in Pay

An employee who reports to work for his scheduled hours will receive full pay from such hours (not to exceed 8) for that day even though idle or sent home early because of delay or shortage or other reasons beyond his control, except that no such pay shall be made in cases where the Company's failure to provide work is due to power failure, fire, flood, weather conditions, or other conditions beyond the Company's control.

Revised October 1, 1963

H. Call-in Pay (Non-exempt Salaried and Hourly Employees)

Employees who are called in for emergency work outside their regularly scheduled hours may be paid at overtime rates for such hours worked or a minimum of four hours straight time, whichever is greater.

I. Separation Pay

1. Separation Pay in Lieu of Notice

Employees with six (6) months or more of continuous service who are permanently and involuntarily separated without prejudice will receive notice or separation pay in lieu of notice as indicated below:

a. Hourly Employees - One (1) week's notice or one (1) week's pay at base rate, not to exceed 40 hours.

Should an hourly paid employee be separated because of lack of work while assigned to commercial work at the Hicksville Plant and "bump" through seniority rules an employee on Contract work, it is agreed the Commission shall not be liable for separation pay to the separated employee. Where an employee engaged on Contract work at the Hicksville Plant "bumps" a less senior employee assigned to commerical work, the Commission shall reimburse the Company, if required, for separation payments to the employee thus separated. In all instances where the Commission reimburses for separation pay to employees not engaged on its work at time of separation, payments must be approved by the Commission.

b. Non-Exempt Salaried Employees - Two (2) weeks' pay and as much notice as possible. An additional one week's pay may be granted to employees having five (5) or more years of continuous service.

Separation pay to eligible employees whose total Company service has been divided between the Contractor's commercial activities and work under this Contract shall be prorated according to length of service on Contract work and the Company's commercial activities.

c. Exempt Salaried Employees - Four (4) weeks pay or until the employee secures new employment for employees with up to five (5) years continuous service. An additional one (1) week's pay for each year, or portion thereof, of continuous service in excess of 5 years service or until the employee secures

new employment except that in no instance shall the employee receive more than 15 weeks separation pay. Separation pay to eligible employees whose total Company service has been divided between the Contractor's commercial activities and work under this Contract shall be prorated according to length of service on Contract work and the Company's commercial activities.

2. Severance Pay - Hicksville Site Closing

Reimbursement will be made to the Company for severance payments only in the event that the Hicksville site is closed because of termination or expiration of this Contract. Severance payments made to employees whose total service has been divided between the Contractor's commercial work and work under this Contract shall be prorated according to the length of service on Contract work and commercial work. Employees whose employment is terminated because of the closing of the Hicksville site may receive severance pay in accordance with the sections of Sylvania Electric Products, Inc., Policy and Standard Practice entitled "Reassignment or Separation of Employees when a Plant or other Facility is Being Permanently Closed" and "Separation Policy-Plan 'A' Employees" further identified as No. 313. (Supplements 2 and 4) issued October 1, 1963.

IV. EMPLOYEE BENEFITS

A. Educational Benefits

When an employee is assigned to an educational course as part of his work under this Contract, the Contractor may pay the cost of the course, including books and required travel expenses.

Employees who elect to take educational courses may be reimbursed by the Contractor as outlined below.

1. The employee must obtain approval of the Plant Manager prior to enrolling in the course.

2. Upon completion of the course and before reimbursement for any part of the course cost is made, the employee shall provide acceptable evidence of successful completion and appropriate properly receipted bills.

3. If the course is directly related to the performance of Contract work, 100% tuition will be refunded upon satisfactory completion of the course.

4. If the course is not directly related to the employee's present work but is related to the employee's development for higher level work in which there is a reasonable probability that he may be engaged under the Contract, 50% of the tuition may be refunded upon satisfactory completion of the course.

5. If the course is not directly related to Contract work but part of the requirement for a degree in a field directly related to the Contract work in which the employee is engaged, 50% of the tuition may be refunded upon satisfactory completion of the course.

In addition to the benefits outlined above, up to six hours time off per week with pay may be granted to employees who take approved graduate-level courses related to this Contract.

B. Group Insurance

The Contractor maintains group insurance program for all eligible and retired employees including: 1) life insurance, 2) accidental death and dismemberment insurance, 3) insurance for company travel, 4) hospital-surgical-medical insurance, 5) major medical insurance, and 6) non-occupational disability insurance, the details of which are on file and approved by the Commission. The Contractor's contribution to the cost of the program is reimbursable on a pro rata share basis as approved by the Commission. A proper share of dividends, premium refunds, and other credits accrued to the approved group insurance program will be credited to the cost of Contract work. The following group insurance programs are provided by the Contractor.

1. Life Insurance is provided for all regular employees at no cost to the employee after one month of Company service. The amount of insurance is determined by the employee's base rate of pay. The face value of the life insurance per eligible employee will be a minimum of $3,000 and a maximum of $225,000. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

2. Accidental Death and Dismemberment Insurance is provided for all regular employees at no cost to the employee after one month of Company service. The amount of insurance is determined by the employee's base rate of pay, with a minimum of $3,000 and a maximum of $20,000 for any one accident. Insurance coverage may be extended up to one year during the period an employee is totally disabled.

3. Insurance for Company Travel is provided at no cost to the employee to cover death while an employee is traveling on, and as a result

of, Company business. The amount of death insurance will be two times the employee's base annual salary, subject to a minimum of $25,000 and a maximum of $150,000.

4. Hospital-Surgical-Medical Insurance is provided for regular employees at no cost to the employee after one month of Company service. The insurance covers the employee and his dependents. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

5. Major Medical Insurance is provided for all regular employees at no cost to the employee after one month of Company service. Major Medical Insurance is in addition to the basic Hospital-Surgical-Medical Insurance. Insurance coverage may be extended up to one year during a period an employee is totally disabled.

6. Non-Occupational Disability Insurance is provided to all employees at no cost to the employee immediately upon employment if the employee was a covered employee working for a covered employer within the preceding six months or after 28 calendar days of employment. Benefits under this plan begin eight (8) days after a non-occupational illness or injury. Payments under this policy are made in lieu of salary or wages in an amount equal to one-half of the normal weekly pay, but not to exceed $65 per week. Benefits under this policy for any one accident or illness may not be paid for more than 26 weeks.

C. Pension Plan

A non-contributory Pension Plan is provided all employees of the Contractor, the details of which are filed with and approved by the Commission.

D. Savings and Security Plan

Regular employees with one year of continuous service may participate in a voluntary Savings and Security Plan as filed and approved by the Commission. Under the Plan participating employees contribute 3% of their earnings by payroll deductions and the Contractor contributes 6% of its net profits before Federal tax based on income for each year but not to exceed an amount equal to the total amount contributed by the members and not withdrawn during the year.

V. TRAVEL, TRANSPORTATION, SUBSISTENCE, AND MOVING EXPENSES

A. Travel, Transportation and Subsistence

Travel incurred by employees, consultants and prospective employees

in connection with the performance of contract work may be reimbursed as follows:

1. The actual cost of transportation by common carrier, or $.08 per mile plus highway, bridge, ferry and tunnel tolls when travel by vehicle is authorized.

2. The reasonable actual cost of lodging in accordance with prevailing locality rates plus an allowance not in excess of $7.50 per day for subsistence.

3. The actual cost of necessary telephone calls, telegrams, and incidential transportation and personal expenses.

B. Moving and Relocation Expenses

Key scientific, technical and professional employees moving and relocation expenses to plants operated in connection with the performance of contract work may be reimbursed as follows:

1. Transportation expenses for an employee and dependents as in A. 1. above.

2. The reasonable actual cost of lodging plus a subsistence allowance not in excess of $7.50 per employee, $6.00 for each dependent over 12 years of age and $4.00 for each dependent 12 years of age and under while enroute from place of permanent residence to transferred location.

3. A living expense allowance not to exceed $9.00 per day for thirty (30) days to cover additional living expenses of an employee where family remains at principal place of permanent residence at time of transfer. In addition, the incurred cost of two (2) round trips from place of work to principal place of permanent residence during this period.

4. Reasonable travel expenses incurred by an employee's wife in making visits not in excess of two round trips to new location prior to transfer of residence with such expenses reimbursed in accordance with A.1., 2., and 3. above; or, if traveling with husband, in accordance with B.1., and 2. above.

5. Reasonable brokerage fees not to exceed 5% of sale price plus legal and other necessary closing fees in connection with the sale of principal place of permanent residence at the old location; or, a reasonable cancellation fee not to exceed the equivalent of three (3) months' rental in connection with the breaking of a lease on a

rented house or apartment.

6. Legal fees and other unavoidable expenses not to exceed 3% of the purchase price in connection with the purchase of a residence at the new location.

7. The cost of real estate taxes, fire insurance, and interest on the mortgage on the old house not in excess of the equivalent of one month's payment when it is necessary for an employee to take title to a house in the new location without completing the sale and transfer of title to his house at the old location.

8. The reasonable cost of transportation of household goods and effects including packing, crating, insurance, unpacking, disconnecting and connecting equipment and for temporary storage of house hold goods and effects not in excess of thirty (30) days.

9. Incidental relocation expenses not to exceed 50% of one (1) month's base salary for an employee who owns and transfers household goods to the new location.

10. When at the Contractor's request an Exempt Plan A employee is transferred from another Sylvania location to the Hicksville site, reimbursement consistent with Sylvania commercial practice as defined in its Policy and Standard Practice Manual dated February 15, 1963, may be made for a loss sustained by the employee in the sale of his residence. It is understood that this policy shall be applied uniformly to all company Plan A employees and that reimbursement for such a loss is limited to its occurrence upon the transfer of an employee to the Hicksville site to perform work on Contract AT(30-1)-1293 and not applicable to its occurrence upon the transfer of an employee performing work on Contract AT(30-1)-1293 from the Hicksville site to another location. Reimbursement of any loss in excess of $500 shall be subject to the Commission's prior approval.

C. New Hires - Key Scientific, Technical and Professional Employees

Travel and moving expenses incurred by new hires in connection with Contract work may be reimbursed as follows:

1. Transportation and moving expenses for an employee and dependents as in V.A.1., B.2., and B.8.

2. Reasonable cost of room and board for two weeks and reasonable travel expenses incurred by an employee or his wife in making visits not to exceed two round trips between new location and former residence if the new employee relocates before moving his

family.

VI. MISCELLANEOUS EXPENSES AND ALLOWANCES

A. Pre-Employment Physical Examination

Reimbursements may be made for the expense of pre-employment physical examinations performed by a non-company physician when such examinations are necessary for the placement of an individual on Contract work. Such reimbursements will not exceed $35 for any one individual.

B. In-Plant Training Courses

The reasonable costs of in-plant training courses deemed essential and of benefit to the performance of Contract work are approved as allowable Contract costs.

C. Outside Training and Meetings

When it is in the interest of the Contract for an employee to participate in outside training at the request of the Contractor or attend scientific, technical, or professional meetings, the cost of such training or attendance is an allowable cost under the Contract. Participation in outside training or attendance at meetings for a period of five (5) working days or more and all foreign travel incurred in connection therewith, will require the prior approval of the Commission.

D. Licenses, Professional Society Memberships, and Magazine Subscriptions

1. When professional licenses are considered essential to the performance of Contract work or where an employee is the official representative of the Contractor or attends meetings of engineering, management or professional societies as part of his work, reimbursement may be made for the actual costs of such licenses, dues or memberships, and magazine subscriptions.

2. Where employee subscriptions to technical magazines, professional licenses, or memberships in scientific, engineering or professional societies are considered of benefit to the performance of Contract work, reimbursements may be made up to one-half the costs of such subscriptions, licenses or memberships.

E. Publication Awards

Employees may receive token awards not to exceed $50 for publications of technical papers in technical journals which are of interest to the Contract and for which no compensation has been received from the

publisher.

F. Employee Social and Recreational Activities

Costs incurred as Contractor contributions to employee social and recreational activities may be made in an amount not exceeding the equivalent of 9 cents per week per employee.

G. Supper Money

Reasonable supper money allowances may be paid to exempt employees when they are not receiving overtime pay and work 2½ hours or more past the end of their standard shift. Non-exempt salaried and hourly employees, who receive overtime wages, will not receive supper money.

H. Employment Agency Fees

When employment agency services are required to secure properly qualified personnel for the performance of Contract work, agency fees for such services may be reimbursed in an amount not exceeding 10% of an employee's base annual wage or salary.

I. Printed Material

A pro rata share of the cost of printed material which is distributed to employees for training, information and indoctrination under the Contract is reimbursable.

J. Clothing Loss

Damage to or loss of employee clothing and personal property as the result of the performance of Contract work and not attributable to the employee's carelessness or negligence will be reimbursed. The amount of reimbursement will be based on replacement cost minus a fair depreciation estimate.

K. Personal Protective Equipment

The Contractor will be reimbursed for the cost of providing employees with required personal protective equipment or clothing in accordance with the Contractor's established policies and practices.

L. Patent Awards

The Contractor may be cost reimbursed in amounts not to exceed $100 per employee under the Contractor's Patent Award Program for patents granted and assigned to the Commission. Where the invention or dis-

covery is of particular importance or value to the Commission, additional awards may be granted with prior written Commission approval.

M. Suggestion Awards

The Contractor may be reimbursed on a pro rata share basis for the reasonable cost of a Suggestion Awards Program. Hourly and non-exempt salaried employees on jobs which require working out improvements, developments, or new ideas shall be eligible for awards for only those suggestions which apply outside the scope of their own responsibility, duties, or assignments. Exempt employees shall not be eligible for suggestion awards. The minimum award is $7.50. The maximum award is $25,000. Reimbursement of any award in excess of $250 for any one employee or $500 for any employee group shall be subject to the approval of the Commission. The Contractor will provide the Commission with such data as may from time to time be required for appraisal and substantiation of costs incurred under the program.

O. Family Day

The Contractor may be reimbursed on a pro rata share basis for the reasonable cost of holding an annual "Family Day - Open House" program. Reimbursement shall be subject to prior approval of the Commission.

P. Cooperative Student Work Program

When it is in the interest of the contract to afford engineering or scientific students employment under a cooperative arrangement with an accredited college or university that has a bona fide and established cooperative student work program in accredited, engineering and/or scientific disciplines, reimbursement may be made for expenses as follows:

1. Travel and Related Expenses for the Student's Initial Interview

   a. The actual cost of transportation between the school and the contractor plant site by common carrier, or $.08 per mile plus highway, bridge, ferry and tunnel tolls when travel by private passenger vehicle is used.

   b. The reasonable actual cost of lodging plus an allowance not in excess of $7.50 per day for subsistence.

   c. The actual cost of necessary telephone calls, telegrams, and incidental transportation expenses.

2. Travel and Relocation Expenses

a. Travel as described in A.1., above between the school and the contractor's plant site for each 6 months term of work where the student ordinarily lives (except when in school) more than 50 miles from the contractor's plant site.

b. The reasonable actual cost of lodging plus a subsistence allowance not in excess of $7.50 per day while in travel status.

c. In order to allow the student time to find housing, the reasonable actual cost of lodging not to exceed $7.50 per day for a period up to one week (7 days) on the initial work term and up to 3 days on subsequent work terms and approved by the contractor on an individual basis.

3. Salaries

Students working under a cooperative program and performing work on the contract will be paid according to the following scale:

	Work Term*	Weekly Salary
Co-op Student 1	(1	$78.00
	(2	82.00
Co-op Student 2	(3	90.00
	(4	94.00
Co-op Student 3	(5	102.00
	(6	106.00
Co-op Student 4	(7	114.00
	(8	114.00

* Each term represents 3 months

4. Continuity of Service

The student's return to school work at the end of each work term will, for the purpose of calculating company benefits, be regarded as a resignation and service will not accumulate from one term to another unless and until the student ceases to work under the cooperative program and becomes a full time regular employee. At such time as the student becomes a full time regular employee all company benefits will be applicable to the student and credit will

be given for the full time he worked under the cooperative program.

5. Other Benefits

Cooperative students will not be eligible for all company benefits but may be treated the same as a regular employee under Appendix "A" for the following:

Section II	A	Holidays
Section III	D - 1	Court Duty
	D - 3	Death in Immediate Family
	D - 5	Required Selective Service Examinations
Section IV	B	Group Insurance

SCHEDULE I

SALARIED EMPLOYEES

Exempt

Job Classification	Grade	Monthly Salary Range
Manufacturing Manager	13 J	$1150 - $1905
Engineering Manager "B"	12 J	1035 - 1710
Engineering Specialist Plant Manager "C" Section Head	11 J	940 - 1555
Manufacturing Superintendent Supervisor of Product Engineering Advanced New Product Development Engineer-Sylcor	10 J	855 - 1410
Advanced Research (or Development) Engineer Engineer-in-Charge Supervisor of Quality Control "A" Senior Sales Engineer	9 J	765 - 1260
Equipment Design Specialist General Foreman Project Engineer Research (or Development) Engineer Supervisor of Cost Control "A"	8 J	690 - 1145
Safety Engineer, Sylcor Research Metallographer Senior Engineer "A" Supervisor, Production Control "B" Supervisor, Quality Control "B" Supervisor of Personnel "B"	7 J	635 - 1045

Revised December 30, 1963

SCHEDULE I

SALARIED EMPLOYEES

Exempt

Job Classification	Grade	Monthly Salary Range
Contract Administrator Equipment Designer, Sr. Purchasing Agent "A" Senior Engineer "B" Supervisor of Security and Administrative Service Supervisor of Maintenance "B" Toolroom Foreman Foreman Class I Tool Coordinator	6 J	$ 590 - $ 965
Buyer Cost Analyst & Statistician Supervisor of An Accounting Department Section	5 K	550 - 890
Engineer Foreman, Nuclear Products Industrial Engineer Accountant, Senior Foreman II Personnel Assistant Systems and Procedures Analyst, Jr. Equipment Designer	4 K	510 - 815
Cost Accountant	3 K	470 - 745

Revised December 30, 1963

SCHEDULE I

SALARIED EMPLOYEES

Non-Exempt

Job Classification	Grade	Weekly Salary Range
Master Craftsman Technical Associate	64	$126 - $190
Designer-Draftsman	63	118 - 176
Material Requirements Analyst Production or Maintenance Supervisor I Technician, Senior Production Scheduling Clerk Job Estimating Clerk Accountability Supervisor	62	109 - 166
Draftsman Accountant, Junior Production or Maintenance Supervisor II Safety Inspector Plant Protection, Supervisor	60	97 - 148
Employment Interviewer & Counselor Buyer, Junior Nurse, Senior Technician Stock Clerk Production Control Clerk	59	91 - 138
Payroll Accountant Purchasing Clerk Secretary, Senior	58	86 - 130

Revised October 1, 1963

Contract No. AT(-1)-1293 with
Sylvania Electric Products Inc.,
Sylcor Division
Appendix "A"

SCHEDULE I

SALARIED EMPLOYEES

Non-Exempt

Job Classification	Grade	Weekly Salary Range
Draftsman, Junior Nurse Production Section Leader	57	$82 - $123
Production Control Clerk, Junior Technician, Junior Secretary Accounting Clerk, Senior Stock Clerk, Junior Statistical Clerk, Senior	56	77 - 114
Clerk, Senior	55	74 - 106
Accounting Clerk, Junior Technical or Statistical Clerk Telephone Operator II	54	71 - 98
Clerk-Typist	52	71 - 86

General Wage Increase - Effective September 2, 1963

Revised October 1, 1963

Contract No. AT(-1)-1293 with
Sylvania Electric Products Inc.,
Sylcor Division
Appendix "A"

SCHEDULE II

HOURLY EMPLOYEES

Non-Exempt

Job Classification	Grade	Hourly Salary Range
Tool, Die & Model Maker "A"	LG 12	$3.05 - $3.66
Machinist "A" Electrician Specialist Inspector "A" Sheet Metal Specialist	LG 11	2.88 - 3.49
Mechanic "A" Welder "A" Sheet Metal Worker "A" Electrician "A" Welder I Machinist I	LG 10	2.72 - 3.28
Machinist "B" Carpenter Inspector "B"	LG 9	2.56 - 3.08
Mechanic "B" Process & Equipment Checker Assembly & Furnace Brazing Rolling Mill Operator Melter Guard Sergeant Fluoroscope Operator & X-Ray Inspector Radiographist	LG 8	2.41 - 2.92

General Wage Increase - Effective September 2, 1963

Revised October 1, 1963

SCHEDULE II

HOURLY EMPLOYEES

Non-Exempt

Job Classification	Grade	Hourly Salary Range
Armed Guard Armed Courier Storekeeper Machinist "C" Inspector "C" Chemical Room Operator Machining Operator-CPP Sodium Loading Dry Box Operator Briquetting Operator Heat Treatment Operator Hot Pressing Operator-VB Welding Operator-VB Machining Operator-VB Fluoroscope Operator Hot Press Operator Finishing Operator Maintain Chemical Solutions	LG 7	$2.2[illegible] - $2.73
Materials Stock Clerk Mechanic "C" Canning-Hot Press Operator Canning-Assembler Die Processing Operator Machining Operator-AEC Plating Machine Operator Fabrication Operator Rack Maintenance Man	LG 6	2.14 - 2.56
Groundskeeper Trainee, Production	LG 5	2.02 - 2.41
Maintenance Apprentice	LG 4	1.91 - 2.26
Cafeteria-Dishwasher, Porter Janitor-Porter	LG 3	1.81 - 2.13

General Wage Increase - Effective September 2, 1963

Revised October 1, 1963

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office

FINDINGS AND DETERMINATION

Authorization for Modification of Cost-Plus-Fixed-Fee Contract

Sylcor Division
Sylvania Electric Products Inc.
Contract No. AT(30-1)-1293
Modification No. 35

The Atomic Energy Commission proposes to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc., to extend the term of the contract through September 30, 1964, and define the scope of work to be performed during the extended period.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering into an immediate unit price arrangement.

2. Program requirements are subject to immediate change.

3. Continuous process development is required.

4. The revised estimated cost ($2,470,670) of the work under the contract is considered reasonable.

5. The proposed fixed fee of $141,276 averages six percent (6%) of the estimated cost fee base and is considered fair. The fee was arrived at as a result of negotiations between the parties and is within the AEC fee curve limits.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee Supplemental Agreement, and I hereby authorize the use of said Supplemental Agreement.

BY: H. L. Kilburn
H. L. Kilburn, For the Manager

TITLE: Savannah River Operations Office

DATE: JAN 21 1964

U. S. ATOMICS ENERGY COMMISSION
Savannah River Operations Office

Modification No. 35
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the Contract.

EFFECTIVE DATE : October 1, 1963

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 34	Increase (Decrease)	Modification No. 35
Summary of Estimated Costs and Fixed Fee			
Operating Cost 1/	$26,523,671	$2,143,870	$28,667,541
Plant and Equipment (Beginning July 1, 1963)	123,932	249,100 2/	373,032 2/
Fixed Fee (Operations)	1,488,615	141,276	1,629,891
Total Estimated Costs and Fixed Fee	$28,136,218	$2,534,246	$30,670,464
Commission Obligation (as of November 1, 1963)			$29,326,218

1/ Includes Plant and Equipment prior to July 1, 1963.

2/ Includes $35,000 for first quarter FY 1965 authorizations not to be obligated in FY 1964.

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U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 35
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 28th day of February, 1964, effective October 1, 1963, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In Paragraph 1., Term, of Article III - TERM, EXPIRATION AND TERMINATION, the date "September 30, 1963," is deleted and the date "September 30, 1964," is substituted therefor.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,040,573, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,629,891. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work for the period October 1, 1963, to September 30, 1964, is $2,470,670, exclusive of the Contractor's fixed fee of $141,276."

3. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$28,145,046" is deleted and the figure "$29,326,218" is substituted therefor.

4. The following new subparagraph (e) is added to paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE:

"(e) The fixed fee applicable to work performed during the period October 1, 1963, to September 30, 1964, is $141,276."

5. The following new subparagraph (e) is added to paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $141,276 shall become due and payable in monthly installments of $10,595."

6. Item (c) Consulting Services of paragraph 4., Items of Allowable Cost, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

"(c) Consulting Services (including legal and accounting) and related expenses, as approved by the Contracting Officer, except as made unallowable by Item (y) of paragraph 5."

7. The following new subparagraph (y) is added to paragraph 5., Items of Unallowable Cost, of Article V - ALLOWABLE COST AND FIXED FEE:

"(y) Salaries or other compensation (and expenses related thereto) of any individual employed under this Contract as a consultant or in another comparable employment capacity who is an employee of another organization and concurrently performing work on a full-time basis for that organization under a cost-type contract with the Commission, except to the extent that cash payment therefor is required pursuant to the provisions of this Contract or procedures of the Commission applicable to the borrowing of such an individual from another cost-type contractor."

8. Appendix "A" Modification No. 29, as amended, is further amended as of October 1, 1963, and is attached hereto and made a part hereof.

9. Appendix "B" Modification No. 29, as amended, is further amended as of October 1, 1963, and is attached hereto and made a part hereof.

10. Provision 7., CONTRACTOR'S ORGANIZATION, of Appendix "E" General Provisions is revised to read as follows:

"7. CONTRACTOR'S ORGANIZATION

(a) Organization Chart. As promptly as possible after the execution of this Contract, the Contractor shall furnish to the Contracting Officer a chart showing the names, duties, and organization of

key personnel to be employed in connection with the work, and shall furnish from time to time supplementary information reflecting changes therein.

(b) Supervising Representative of Contractor. Unless otherwise directed by the Contracting Officer, a competent full-time resident supervising representative of the Contractor, satisfactory to the Contracting Officer, shall be in charge of the work at the site at all times.

(c) Control of Employees. The Contractor shall be responsible for maintaining satisfactory standards of employee competency, conduct and integrity and shall be responsible for taking such disciplinary action with respect to his employees as may be necessary. The Contractor shall establish such standards and procedures as are necessary to implement effectively the provisions set forth in Atomic Energy Commission Procurement Regulations 9-12.54 and such standards and procedures shall be subject to the approval of the Contracting Officer."

11. The following new General Provision No. 23 is added to Appendix "E" General Provisions of the Contract:

"23. Consultant or Other Comparable Employment Services of Contractor Employees

The Contractor shall require all employees who are employed full-time (an individual who performs work under the cost-type contract on a full-time basis) or part-time (50 percent or more of regular annual compensation received under terms of a contract with the Commission) on the Contract work to disclose to the Contractor all consultant or other comparable employment services which the employees propose to undertake for others. The Contractor shall transmit to the Contracting Officer all information obtained from such disclosures. The Contractor will require any employee who will be employed full-time on the Contract work to agree, as a condition of his participation in such work, that he will not perform consultant or other comparable employment services for another Commission cost-type Contractor under its Contract with the Commission except with the prior approval of the Contractor."

12. All other terms and conditions of the Contract remain unchanged.

Modification No. 35
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____
R. C. Blair, Manager

TITLE: Savannah River Operations Office

WITNESSES:

_____
_____
(Address)

_____
_____
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: _____
B. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

I, _____, certify that I am _____ of Sylvania Electric Products Inc., named above; that _____ who signed this Agreement on behalf of said corporation, was then _____ of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 17 day of February, 19 64.

_____

(CORPORATE SEAL)

Responsive Record 10

[redacted]

9

This document consists of 10 pages
No. 1 of 10 copies, Series A.

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/23/04	Determination (Circle Number)
Authority: ☑ ADC ☐ ADD	1. Classification Unchanged
Name: R. Collins	2. Classification Changed To:
2nd Review Date: 5/23/04	
Authority: ADD	3. Classification Cancelled
Name: R. Collins	4. Other: CR WHD 7/9/12

SR-A-144

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED FEBRUARY 1, 1964, UNDER
MODIFICATION NO. 36

The scope of work to be performed by the Contractor during the period October 1, 1963, through September 30, 1964, as set forth by Modification No. 35 is revised to read as follows:

I. PRODUCTION

A. MARK V-B AND MARK V-E (Inner-Fuel)

The Contractor shall manufacture and furnish to the Commission Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark V-B (Tons) Integral Rib	Mark V-E (Tons) Integral Rib
October 1963	45	48
November 1963	47	20
December 1963	44	26
January 1964	41	28
February 1964	29	33
March 1964	19	33
April 1964	26	31
May 1964	24	27
June 1964	26	31
July 1964	12	11
August 1964	25	25
September 1964	25	25

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

B. THORIUM

1. Complete the canning and delivery of 11,500 Mark VII-T slugs for irradiation at the Savannah River Plant.

2. Recover and reclad by December 23, 1963, approximately 500 Mark VII-T slugs to standard quality and dimensional specification except that the slug length is to be 6.400 ± 0.070 inch.

II. PROGRAM DEVELOPMENT

[redacted]

SROO Response to
FOIA (SR) - 04-028

A. ELEMENT DEVELOPMENT

1. Long Slugs

Develop a process for canning Mark V-B and Mark V-E IF and OF Elements up to 16" in length by the hot pressure bonding process. Both impact extrusions and tubing will be investigated for cladding.

[redacted]

Cyc 9 Ao 10 A destroy 7/27/64

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

2. Added Rib

Continue development of the canning of Mark V-B IF elements with added ribs. Investigate the use of other types of aluminum for the rib and changes in the physical structure of the rib.

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

3. Tube Cladding

Study the effects of the use of tubing as cladding for Mark V-B and V-E IF hot pressure bonded slugs.

4. Recovery of Mark V-E

Develop a recovery program to reclaim reject Mark V-E IF slugs and reuse the cores. Set up standards, specifications and operating procedures, whereby reject slugs may be declad and reprocessed through the HPB process.

B. TOOLING AND CLADDING MATERIALS

1. Furnace Tooling

Investigate potential improvements in quality and economy attainable through the replacement of Inconel X by such metals as AF71 or Inconel for furnace tooling, such as mandrels, dies and vacuum pots. Make items of promising materials and test them in the HPB process.

2. Cladding

Investigate potential advantages of low alloys of aluminum as cladding material. Test the most promising materials, such as aluminum with additives of beryllium or germanium, in the HPB process, for further evaluation at SRP.

[redacted]

C. INDUCTION HEATING

1. Heat Pattern Control

Run a series of experiments on HPB induction furnaces to determine actual heat patterns and provide a consistent improved control of the heat applied to the slug.

Investigate the possible use of scanning equipment which will designate the temperature of the die as it leaves the furnace, thereby offering additional improvement of heat pattern control.

2. Cores with Anodic Etch

Investigate possible improvement of HPB strengths by the use of anodic etching of cores before plating and the rapid heat-up cycle attainable with induction furnaces.

D. NONDESTRUCTIVE TESTING

1. Eutectic Prevention

Investigate new methods for the detection of Mark V-B and V-E slugs that have been overheated during the pressing cycle, such as the use of magnetic and hysteresis effects and the chemical test which showed promise with Mark VII-A slugs.

2. Nickel Plate Control

Continue investigation of new types of nickel detection and measurement, such as the magnetic probe, to provide a closer control of the nickel plate on cores.

3. Uranium Metal Quality

Refine and test ultrasonic equipment for potential use in the detection of metal quality rejects before plating.

4. Aluminum Metal Quality

Investigate methods of improving the detection of metal quality rejects in aluminum cladding components before they are used.

[redacted]

III. DU PONT TOOLING

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont Tooling Program.

U. S. ATOMICS ENERGY COMMISSION
Savannah River Operations Office

Modification No. 36
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the Contract.

EFFECTIVE DATE : February 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 35	Increase (Decrease)	Modification No. 36
Summary of Estimated Costs and Fixed Fee			
Operating Cost	$28,667,541	$ 381,913	$29,049,454
Plant and Capital Equip. (Beginning July 1, 1963)	373,032	(156,743)	216,289 a/
Fixed Fee (Operations)	1,629,891	4,632	1,634,523
Total Estimated Cost and Fixed Fee	$30,670,464	$ 229,802	$30,900,266 a/
Commission Obligation			$30,870,266

a/ Includes $30,000 for first quarter FY 1965 authorizations not to be obligated in Fy 1964.

Document transmitted herewith contains
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~~SECRET~~

USDOE 017322

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 36
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 20th day of April, 1964, effective February 1, 1964, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,265,743, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,634,523. The estimated cost of the work as described in paragraph 1. of the article entitled SCOPE OF WORK for the period October 1, 1963, to September 30, 1964, is $2,545,200, exclusive of the Contractor's fixed fee of $145,908."

2. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$29,326,218" is deleted and the figure "$30,870,266" is substituted therefor.

3. Subparagraph (e) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

   "(e) The fixed fee applicable to work performed during the period October 1, 1963, to September 30, 1964, is $145,908."

USDOE 017323

4. Subparagraph (e) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $145,908 shall become due and payable in monthly installments as follows:

October 1963 - December 1964	$13,883
January 1964 - September 1964	9,963

5. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is further amended as of February 1, 1964, and is attached hereto and made a part hereof.

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, SROO

WITNESSES:

/s/ M. Boll

Hicksville, New York
(Address)

/s/ J. Steglis

Hicksville, New York
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ D. B. Metz

TITLE: Manufacturing Manager

USDOE 017324

Modification No. 36
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz who signed this Agreement on behalf of said corporation, was then Mfg. Manager, Sylcor Division, of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 9th day of April 1964.

(CORPORATE SEAL)

/s/ J. M. Tooher

USDOE 017325

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office
FINDINGS AND DETERMINATION

AUTHORIZATION FOR MODIFICATION OF COST-PLUS-FIXED-FEE CONTRACT

SYLCOR DIVISION
SYLVANIA ELECTRIC PRODUCTS INC.
Contract AT(30-1)-1293
Modification No. 36

The Atomic Energy Commission proposes to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc. to amend the scope of work to be performed by the Contractor during the period October 1, 1963, through September 30, 1964.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering an immediate unit-price arrangement.

2. Program requirements are subject to immediate change.

3. Continuous process development is required.

4. The revised estimated cost of the work under the contract, $2,545,200 is considered reasonable.

5. The fixed fee adjustment is based on the previously applied rate of six percent of the estimated cost fee base and is considered to be fair and equitable.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee Supplemental Agreement, and I hereby authorize the use of said Supplemental Agreement.

BY: W. L. Kilbourn

TITLE: Savannah River Operations Office

DATE: APR 2 1964

U. S. ATOMICS ENERGY COMMISSION
Savannah River Operations Office

Modification No. 36
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.,
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the Contract.

EFFECTIVE DATE : February 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 35	Increase (Decrease)	Modification No. 36
Summary of Estimated Costs and Fixed Fee			
Operating Cost	$28,667,541	$ 381,913	$29,049,454
Plant and Capital Equip. (Beginning July 1, 1963)	373,032	(156,743)	216,289 a/
Fixed Fee (Operations)	1,629,891	4,632	1,634,523
Total Estimated Cost and Fixed Fee	$30,670,464	$ 229,802	$30,900,266 a/
Commission Obligation			$30,870,266

a/ Includes $30,000 for first quarter FY 1965 authorizations not to be obligated in Fy 1964.

[redacted]

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 36
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 20th day of April, 1964, effective February 1, 1964, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,265,743, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,634,523. The estimated cost of the work as described in paragraph 1. of the article entitled SCOPE OF WORK for the period October 1, 1963, to September 30, 1964, is $2,545,200, exclusive of the Contractor's fixed fee of $145,908."

2. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$29,326,218" is deleted and the figure "$30,870,266" is substituted therefor.

3. Subparagraph (e) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

   "(e) The fixed fee applicable to work performed during the period October 1, 1963, to September 30, 1964, is $145,908."

Modification No. 36
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

4. Subparagraph (e) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $145,908 shall become due and payable in monthly installments as follows:

October 1963 - December 1964	$13,883
January 1964 - September 1964	9,963

5. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, as amended, is further amended as of February 1, 1964, and is attached hereto and made a part hereof.

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____
R. C. Bixby, Manager

TITLE: Savannah River Operations Office

WITNESSES:

_____
Hicksville N.Y.
(Address)

_____
Hicksville, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: _____

TITLE: Manufacturing Manager
Sylcor Div.

Modification No. 36
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that D. D. Metz who signed this Agreement on behalf of said corporation, was then Mfg Mgr Sylvania Div. of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this 9th day of Apr. 1964.

(CORPORATE SEAL)

Responsive Record 11

[redacted]

9

WBRC DECLASSIFICATION REVIEW
4/28/04 ... Number)
... Classification Unchanged
Rh Collins 2. Classification Changed To:
Review Date: 4/28/04
Authority: ADD 3. Classification Cancelled
Name: [illegible] 4. Other: CG-NMP-2
9/00

This document consists of 9 pages
No. / [illegible] copies, Series A.

[redacted]

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED JUNE 30, 1964, UNDER
MODIFICATION NO. 37

The scope of work to be performed by the Contractor during the period October 1, 1963, through September 30, 1964, as set forth by Modification No. 36 is revised to read as follows:

1. PRODUCTION

A. MARK V-B AND MARK V-E (Inner Fuel)

The Contractor shall manufacture and furnish to the Commission Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark V-B (Tons) Integral Rib	Mark V-E (Tons) Integral Rib
October 1963	45	48
November 1963	47	20
December 1963	44	26
January 1964	41	28
February 1964	29	33
March 1964	19	33
April 1964	26	36
May 1964	24	33
June 1964	26	36
July 1964	12	13
August 1964	25	23
September 1964	25	23

B. EXTENDED LENGTH MARK V-B SLUGS

Effective June 30, 1964, undertake the canning for delivery by September 30, 1964, of 190 sets of extended length Mark V-B slugs.

C. THORIUM

1. Complete the canning and delivery of 11,500 Mark VII-T slugs for irradiation at the Savannah River Plant.

2. Recover and reclad by December 23, 1963, approximately 500 Mark VII-T slugs to standard quality and dimensional specification except that the slug length is to be 6.400 ± 0.070 inch.

[redacted]

SROO Response to
FOIA (SR) - 04-028

[redacted]

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

Cys. 9A & 10A destroyed 7/27/66

[redacted]

3. Effective June 30, 1964, undertake the swaging, machining, cladding and welding of approximately 7,000 solid thorium slugs for shipment to SRP by August 21, 1964.

II. DEVELOPMENT

A. ELEMENT DEVELOPMENT

1. Long Slugs

Develop a process for canning Mark V-B and Mark V-E IF and OF Elements up to 16" in length by the hot pressure bonding process. Both impact extrusions and tubing will be investigated for cladding.

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

2. Added Rib

Continue development of the canning of Mark V-B IF elements with added ribs. Investigate the use of other types of aluminum for the rib and changes in the physical structure of the rib.

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

3. Tube Cladding

Study the effects of the use of tubing as cladding for Mark V-B and V-E IF hot pressure bonded slugs.

4. Recovery of Mark V-E

Develop a recovery program to reclaim reject Mark V-E IF slugs and reuse the cores. Set up standards, specifications and operating procedures, whereby reject slugs may be declad and reprocessed through the HPB process.

B. TOOLING AND CLADDING MATERIALS

1. Furnace Tooling

Investigate potential improvements in quality and economy attainable through the replacement of Inconel X by such metals as AF71 or Inconel

[redacted]

for furnace tooling, such as mandrels, dies and vacuum pots. Make items of promising materials and test them in the HPB process.

2. Cladding

Investigate potential advantages of low alloys of aluminum as cladding material. Test the most promising materials, such as aluminum with additives of beryllium or germanium, in the HPB process, for further evaluation at SRP.

C. INDUCTION HEATING

1. Heat Pattern Control

Run a series of experiments on HPB induction furnaces to determine actual heat patterns and provide a consistent improved control of the heat applied to the slug.

Investigate the possible use of scanning equipment which will designate the temperature of the die as it leaves the furnace, thereby offering additional improvement of heat pattern control.

2. Cores with Anodic Etch

Investigate possible improvement of HPB strengths by the use of anodic etching of cores before plating and the rapid heat-up cycle attainable with induction furnaces.

D. NONDESTRUCTIVE TESTING

1. Eutectic Prevention

Investigate new methods for the detection of Mark V-B and V-E slugs that have been overheated during the pressing cycle, such as the use of magnetic and hysteresis effects and the chemical test which showed promise with Mark VII-A slugs.

2. Nickel Plate Control

Continue investigation of new types of nickel detection and measurement, such as the magnetic probe, to provide a closer control of the nickel plate on cores.

[redacted]

3. Uranium Metal Quality

Refine and test ultrasonic equipment for potential use in the detection of metal quality rejects before plating.

4. Aluminum Metal Quality

Investigate methods of improving the detection of metal quality rejects in aluminum cladding components before they are used.

III. DU PONT TOOLING

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont Tooling Program.

[redacted]

Responsive Record 12

[redacted]

8

This document consists of 8 pages
No. 1 of 10 copies, Series A.

[redacted]

1st Review Date: 4/28/04	(Circle Number)
Authority: ☐ ADC ☑ ADD	1. Classification Unchanged
Name: R L Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other: CG-NMA 2, 9/20

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED AUGUST 1, 1964, UNDER
MODIFICATION NO. 38

The scope of work to be performed by the Contractor during the period October 1, 1963, through September 30, 1964, as set forth by Modification No. 37 is revised to read as follows:

1. PRODUCTION

A. MARK V-B AND MARK V-E (Inner Fuel)

The Contractor shall manufacture and furnish to the Commission Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark V-B (Tons) Integral Rib	Mark V-E (Tons) Integral Rib
October 1963	45	48
November 1963	47	20
December 1963	44	26
January 1964	41	28
February 1964	29	33
March 1964	19	33
April 1964	26	36
May 1964	24	33
June 1964	26	36
July 1964	12	13
August 1964	19	23
September 1964	19	23

B. EXTENDED LENGTH MARK V-B SLUGS

Effective June 30, 1964, undertake the canning for delivery by September 30, 1964, of 190 sets of extended length Mark V-B slugs.

C. THORIUM

1. Complete the canning and delivery of 11,500 Mark VII-T slugs for irradiation at the Savannah River Plant.

2. Recover and reclad by December 23, 1963, approximately 500 Mark VII-T slugs to standard quality and dimensional specification except that the slug length is to be 6.400 ± 0.070 inch. [redacted]

GROUP 1

Copy 9A & 10A destroyed 7/27/66

[redacted]

SROO Response to
FOIA (SR) - 04-028

[redacted]

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED AUGUST 1, 1964, UNDER
MODIFICATION NO. 38

3. Effective June 30, 1964, undertake the swaging, machining, cladding and welding of approximately 13,000 solid thorium slugs for shipment to SRP as follows:

Quantity	Delivery Date
7,000	by August 21, 1964
6,000	by September 30, 1964

II. DEVELOPMENT

A. ELEMENT DEVELOPMENT

1. Long Slugs

Develop a process for canning Mark V-B and Mark V-E IF and OF elements up to 16" in length by the hot pressure bonding process. Both impact extrusions and tubing will be investigated for cladding

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

2. Added Rib

Continue development of the canning of Mark V-B IF elements with added ribs. Investigate the use of other types of aluminum for the rib and changes in the physical structure of the rib.

This program shall include the establishment of standards, specifications and operating procedures and all necessary research, development, canning and data accumulation. Also, qualification and reactor test slugs will be made.

3. Tube Cladding

Study the effects of the use of tubing as cladding for Mark V-B and V-E IF hot pressure bonded slugs.

4. Recovery of Mark V-E

Develop a recovery program to reclaim reject Mark V-E IF slugs and reuse the cores. Set up standards, specifications and operating procedures, whereby reject slugs may be declad and reprocessed through the HPB process.

[redacted]

[redacted]

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED AUGUST 1, 1964, UNDER
MODIFICATION NO. 38

B. TOOLING AND CLADDING MATERIALS

1. Furnace Tooling

Investigate potential improvements in quality and economy attainable through the replacement of Inconel X by such metals as AF71 or Inconel for furnace tooling, such as mandrels, dies and vacuum pots. Make items of promising materials and test them in the HPB process.

2. Cladding

Investigate potential advantages of low alloys of aluminum as cladding material. Test the most promising materials, such as aluminum with additives of beryllium or germanium, in the HPB process, for further evaluation at SRP.

C. INDUCTION HEATING

1. Heat Pattern Control

Run a series of experiments on HPB induction furnaces to determine actual heat patterns and provide a consistent improved control of the heat applied to the slug.

Investigate the possible use of scanning equipment which will designate the temperature of the die as it leaves the furnace, thereby offering additional improvement of heat pattern control.

2. Cores with Anodic Etch

Investigate possible improvement of HPB strengths by the use of anodic etching of cores before plating and the rapid heat-up cycle attainable with induction furnaces.

D. NONDESTRUCTIVE TESTING

1. Eutectic Prevention

Investigate new methods for the detection of Mark V-B and V-E slugs that have been overheated during the pressing cycle, such as the use of magnetic and hysteresis effects and the chemical test which showed promise with Mark VII-A slugs.

[redacted]

2. Nickel Plate Control

Continue investigation of new types of nickel detection and measurement, such as the magnetic probe, to provide a closer control of the nickel plate on cores.

3. Uranium Metal Quality

Refine and test ultrasonic equipment for potential use in the detection of metal quality rejects before plating.

4. Aluminum Metal Quality

Investigate methods of improving the detection of metal quality rejects in aluminum cladding components before they are used.

III. DU PONT TOOLING

The Contractor shall furnish all materials, services and supplies necessary to perform all work authorized by the Commission in furtherance of the Du Pont Tooling Program.

UNITED STATES ATOMIC ENERGY COMMISSION
Savannah River Operations Office

FINDINGS AND DETERMINATION

Sylcor Division
Sylvania Electric Products Inc.
Contract AT(30-1)-1293
Modification No. 37

The Atomic Energy Commission proposes to modify its cost-plus-fixed-fee contract with Sylcor Division, Sylvania Electric Products Inc., to amend the scope of work to be performed by the Contractor during the period October 1, 1963, through September 30, 1964.

I hereby find that a modification to the cost-plus-fixed-fee type contract is necessary for the following reasons:

1. Specifications for the production of metal units are not sufficiently definitive to permit entering an immediate unit price arrangement.

2. Program requirements are subject to immediate change.

Upon the basis of the findings set forth above, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee supplemental agreement, and I hereby authorize the use of said supplemental agreement.

BY: H. L. Kilburn
H. L. Kilburn, Deputy Manager
TITLE: Savannah River Operations Office

DATE: JUN 30 1964

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 37
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend Scope of work and other provisions of the Contract

EFFECTIVE DATE : April 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 36	Increase (Decrease)	Modification No. 37
Operating Cost	$ 29,049,454	$ 60,519	$ 29,109,973
Plant and Capital Equipment (Beginning July 1, 1963)	216,289 a/	-0-	216,289
Fixed Fee (Operations)	1,634,523	3,769	1,638,292
Total Estimated Cost and Fixed Fee	$ 30,900,266	$ 64,288	$ 30,964,554
Commission Obligation	$ 30,870,266	$ 64,288	$ 30,934,554

a/ Includes $30,000 for first quarter FY 1965 authorizations not to be obligated in FY 1964.

[redacted]

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 37
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 24th day of August, 1964, effective April 1, 1964, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,326,262, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,638,292. The estimated cost of the work as described in paragraph 1. of the article entitled SCOPE OF WORK for the period October 1, 1963, to September 30, 1964, is $2,603,099, exclusive of the Contractor's fixed fee of $149,677."

2. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$30,870,266" is deleted and the figure "$30,934,554" is substituted therefor.

3. Subparagraph (e) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

   "(e) The fixed fee applicable to the work performed during the period October 1, 1963, to September 30, 1964, is $149,677."

Modification No. 37
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

4. Subparagraph (e) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $149,677 shall become due and payable in monthly installments as follows:

October 1963 - December 1963	$13,883
January 1964 - May 1964	9,963
June 1964 - September 1964	10,811"

5. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, revised June 30, 1964, under Modification No. 37, attached hereto and made a part hereof.

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: H. L. Kilburn
H. L. Kilburn, Deputy Manager

TITLE: Savannah River Operations Office

WITNESSES:

M. Boes
Hicksville, N.Y.
(Address)

(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: D. B. Metz
D. B. Metz

TITLE: Manufacturing Manager, Sylcor Div.

Modification No. 37
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. Tooher, certify that I am Assistant Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz, who signed this agreement on behalf of said corporation, was then Manufacturing Manager-Sylcor Division, of said corporation, and that this agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

WITNESS my hand and seal of said corporation this fourteenth day of August, 1964.

J. M. Tooher, Assistant Secretary

(Corporate Seal)

~~SECRET~~

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 37
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend Scope of work and other provisions of the Contract

EFFECTIVE DATE : April 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 36	Increase (Decrease)	Modification No. 37
Operating Cost	$ 29,049,454	$ 60,519	$ 29,109,973
Plant and Capital Equipment (Beginning July 1, 1963)	216,289 a/	-0-	216,289
Fixed Fee (Operations)	1,634,523	3,769	1,638,292
Total Estimated Cost and Fixed Fee	$ 30,900,266	$ 64,288	$ 30,964,554
Commission Obligation	$ 30,870,266	$ 64,288	$ 30,934,554

a/ Includes $30,000 for first quarter FY 1965 authorizations not to be obligated in FY 1964.

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USDOE 017327

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 37
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 24th day of August, 1964, effective April 1, 1964, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,326,262, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,638,292. The estimated cost of the work as described in paragraph 1. of the article entitled SCOPE OF WORK for the period October 1, 1963, to September 30, 1964, is $2,603,099, exclusive of the Contractor's fixed fee of $149,677."

2. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$30,870,266" is deleted and the figure "$30,934,554" is substituted therefor.

3. Subparagraph (e) of paragraph 2., Fixed Fee, of Article V. - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

   "(e) The fixed fee applicable to the work performed during the period October 1, 1963, to September 30, 1964, is $149,677."

USDOE 017328

4. Subparagraph (e) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $149,677 shall become due and payable in monthly installments as follows:

October 1963 - December 1963	$13,883
January 1964 - May 1964	9,963
June 1964 - September 1964	10,811"

5. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, revised June 30, 1964, under Modification No. 37, attached hereto and made a part hereof.

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ H. L. Kilburn

TITLE: Deputy Manager, SROO

WITNESSES:

/s/ M. Boll

Hicksville, N. Y.
(Address)

/s/ M. Steglic

Hicksville, N. Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ D. B. Metz

TITLE: Manufacturing Manager, Sylcor Div.

USDOE 017329

Roland A. Anderson, Assistant General
Counsel for Patents, Germantown

August 31, 1964

Randall G. Erdley, Chief
Savannah River Patent Group

MODIFICATION NO. 37- SUPPLEMENTAL AGREEMENT TO CONTRACT AT(30-1)-1293 WITH SYLVANIA ELECTRIC PRODUCTS, INC.

CP:AFW:cm

The subject modification authorizes an increase in obligation of funds from $30,870,266 to $30,934,554 with $149,677 designated as fixed fee applicable to work performed during the period October 1, 1963 to September 30, 1964.

OFFICE ▶	Patent Br.					
SURNAME ▶	[illegible]					
DATE ▶	8/31/64					

Form AEC-318 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—62761-3

USDOE 017211

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[redacted]

WSRC D...
1st Review Date: 4/28/04
Authority: ☐ ADC ☒ ADD
Name: R L Collins
2nd Review Date: 4/28/04
Authority: ADD
Name: [illegible]

Determination Circle Number
1. Classification Unchanged
2. Classification Changed to
3. Classification Cancelled
4. Other: CG-NMP-2 9/00

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED OCTOBER 1, 1964, UNDER
MODIFICATION NO. 39

As provided for in paragraph 1. of Article I of Modification No. 29 of Contract No. AT(30-1)-1293, this Appendix "B" describes the scope of work to be performed by the Contractor during the period October 1, 1964, through September 30, 1965.

1. PRODUCTION

A. MARK V-B AND MARK V-E (Inner Fuel)

The Contractor shall manufacture and furnish to the Commission Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark V-B (Tons) Integral Rib	Mark V-E (Tons) Integral Rib
October 1964	21	26
November 1964	18	22
December 1964	19	23
January 1965	19	23
February 1965	19	23
March 1965	22	27
April 1965	20	24
May 1965	19	23
June 1965	21	25
July 1965	12	13
August 1965	19	24
September 1965	19	23

B. EXTENDED LENGTH MARK V-B SLUGS

Undertake the canning of 560 sets of extended length Mark V-B slugs for delivery in accordance with the following schedule:

75 sets by October 19, 1964
175 sets by December 14, 1964
310 sets by February 28, 1965

Cys 9A+10A Destroyed 7/27/66

[redacted]

SROO Response to
FOIA (SR) - 04-028

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT: Amend scope of work and other provisions of the Contract

EFFECTIVE DATE : October 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 38	Increase (Decrease)	Modification No. 39
Operating Cost	$29,070,651	$1,439,591	$30,510,242
Plant and Capital Equipment (Beginning July 1, 1963)	208,567	82,722	291,289 a/
Fixed Fee (Operations)	1,637,581	91,415	1,728,996
Total Estimated Cost and Fixed Fee	$30,916,799	$1,613,728	$32,530,527
Commission Obligation			$32,515,527

a/ Includes $15,000 for first quarter FY 1966 authorizations not to be obligated in FY 1965.

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 24th day of November, 1964, effective October 1, 1964, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In paragraph 1., Term, of Article III - TERM, EXPIRATION AND TERMINATION, the date "September 30, 1964," is deleted and the date "September 30, 1965," is substituted therefor.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $30,801,531, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,728,996. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work, for the period October 1, 1964, to September 30, 1965, is $1,563,980, exclusive of the Contractor's fixed fee of $91,415."

3. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATE OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$30,916,799" is deleted and the figure "$32,515,527" is substituted therefor.

4. The following new subparagraph (f) is added to paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE:

   "(f) The fixed fee applicable to work performed during the period October 1, 1964, to September 30, 1965, is $91,415."

5. The following new subparagraph (f) is added to paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS:

   "(f) For the period October 1, 1964, through September 30, 1965, ninety percent (90%) of the fixed fee of $91,415 shall become due and payable in monthly installments of $6,856."

6. Appendix "B" Modification No. 29, as amended, is further amended as of October 1, 1964, and is attached hereto and made a part hereof.

7. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: [signature]

TITLE: R. C. [illegible] Savannah River Operations Office

WITNESSES:

Grace Golden

Hicksville L.I. N.Y.
(Address)

Mary D. Stiglic

Hicksville N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: W. R. Mandaro

TITLE: W. R. Mandaro
Manufacturing Manager
Sylcor Division

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, T. M. Tocher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that W. R. Mandaro who signed this Agreement on behalf of said corporation, was then Mfg Mgr Sylvar Division of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 9th day of November 1964.

(CORPORATE SEAL)

~~SECRET~~

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 38
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the Contract

EFFECTIVE DATE : August 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 37	Increase (Decrease)	Modification No. 38
Operating Cost	$29,109,973	$(39,322)	$29,070,651
Plant and Capital Equipment (Beginning July 1, 1963)	216,289	(7,722)	208,567
Fixed Fee (Operations)	1,638,292	(711)	1,637,581
Total Estimated Cost and Fixed Fee	$30,964,554	$(47,755)	$30,916,799
Commission Obligation			$30,916,799

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USDOE 017332

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 38
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 14th day of October, 1964, effective August 1, 1964, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties do mutually agree as follows:

1. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATIONS OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,279,218, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2. of Article V of the Contract is $1,637,581. The estimated cost of the work as described in paragraph 1. of the Article entitled Scope of Work for the period October 1, 1963, to September 30, 1964, is $2,556,055, exclusive of the Contractor's fixed fee of $148,966."

2. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$30,934,554" is deleted and the figure "$30,916,799" is substituted therefor.

3. Subparagraph (e) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

   "(e) The fixed fee applicable to the work performed during the period October 1, 1963, to September 30, 1964, is $148,966."

USDOE 017333

4. Subparagraph (e) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $148,996 shall become due and payable in monthly installments as follows:

October 1963 - December 1963	$13,883
January 1964 - May 1964	9,963
June 1964 - July 1964	10,811
August 1964 - September 1964	10,492

5. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, revised August 1, 1964, under Modification No. 38, is attached hereto and made a part hereof.

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, SROO

WITNESSES:

/s/ Grace Golden

Hicksville, L.I., New York
(Address)

/s/ Mary G. Steglic

Hicksville, L. I., New York
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ D. B. Metz

TITLE: Manufacturing Manager
Sylcor Division

USDOE 017334

Modification No. 38
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. Tooher, certify that I am Assistant Secretary of Sylvania Electric Products Inc., named above; that D. B. Metz who signed this Agreement on behalf of said corporation, was then Mfg. Manager of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 2nd day of October, 1964.

(CORPORATE SEAL)

/s/ J. M. Tooher

USDOE 017335

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 38
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT TO: Amend scope of work and other provisions of the Contract

EFFECTIVE DATE : August 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

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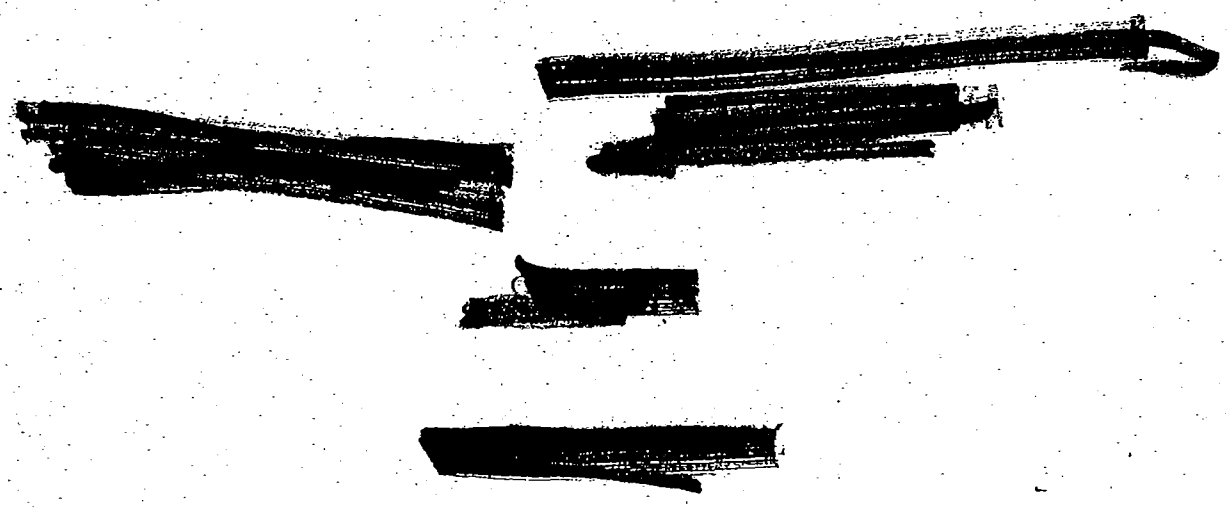
Total Estimated Cost and Fixed Fee	$30,964,554	$(47,755)	$30,916,799
Commission Obligation			$30,916,799



U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 38
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 14th day of October, 1964, effective August 1, 1964, unless otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties do mutually agree as follows:

1. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATIONS OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $29,279,218, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2. of Article V of the Contract is $1,637,581. The estimated cost of the work as described in paragraph 1. of the Article entitled Scope of Work for the period October 1, 1963, to September 30, 1964, is $2,556,055, exclusive of the Contractor's fixed fee of $148,966."

2. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$30,934,554" is deleted and the figure "$30,916,799" is substituted therefor.

3. Subparagraph (e) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read as follows:

   "(e) The fixed fee applicable to the work performed during the period October 1, 1963, to September 30, 1964, is $148,966."

Modification No. 38
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

4. Subparagraph (e) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read as follows:

"(e) For the period October 1, 1963, through September 30, 1964, ninety percent (90%) of the fixed fee of $148,996 shall become due and payable in monthly installments as follows:

October 1963 - December 1963	$13,883
January 1964 - May 1964	9,963
June 1964 - July 1964	10,811
August 1964 - September 1964	10,492

5. Appendix "B" Modification No. 29, Contract AT(30-1)-1293, revised August 1, 1964, under Modification No. 38, is attached hereto and made a part hereof.

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____
R. C. Blair, Manager

TITLE: Savannah River Operations Office

WITNESSES:

_____
(Address)

_____
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: _____
D. B. Metz

TITLE: ~~Manufacturing Manager~~
Sylcor Div.

Modification No. 38
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. TOOHEY, certify that I am ASST. SECRETARY of Sylvania Electric Products Inc., named above; that D. B. METZ who signed this Agreement on behalf of said corporation, was then MFG. MGR Silicon Div. of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 2nd day of OCTOBER, 1964.

(CORPORATE SEAL)

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT: Amend scope of work and other provisions of the Contract

EFFECTIVE DATE : October 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION:

	Modification No. 38	Increase (Decrease)	Modification No. 39	
Operating Cost	$29,070,651	$1,439,591	$30,510,242	
Plant and Capital Equipment (Beginning July 1, 1963)	208,567	82,722	291,289	a/
Fixed Fee (Operations)	1,637,581	91,415	1,728,996	
Total Estimated Cost and Fixed Fee	$30,916,799	$1,613,728	$32,530,527	
Commission Obligation			$32,515,527	

a/ Includes $15,000 for first quarter FY 1966 authorizations not to be obligated in FY 1965.

[redacted]

CONFORMED COPY

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[redacted]

USDOE 017339

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 24th day of November, 1964, effective October 1, 1964, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In paragraph 1., Term, of Article III - TERM, EXPIRATION AND TERMINATION, the date "September 30, 1964," is deleted and the date "September 30, 1965," is substituted therefor.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $30,801,531, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,728,996. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work, for the period October 1, 1964, to September 30, 1965, is $1,563,980, exclusive of the Contractor's fixed fee of $91,415."

3. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATE OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$30,916,799" is deleted and the figure "$32,515,527" is substituted therefor.

USDOE 017340

4. The following new subparagraph (f) is added to paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE:

"(f) The fixed fee applicable to work performed during the period October 1, 1964, to September 30, 1965, is $91,415."

5. The following new subparagraph (f) is added to paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS:

"(f) For the period October 1, 1964, through September 30, 1965, ninety percent (90%) of the fixed fee of $91,415 shall become due and payable in monthly installments of $6,856."

6. Appendix "B" Modification No. 29, as amended, is further amended as of October 1, 1964, and is attached hereto and made a part hereof.

7. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, SROO

WITNESSES:

/s/ Grace Golden

Hicksville, L. I., N. Y.
(Address)

/s/ Mary G. Steglic

Hicksville, N. Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ W. R. Mandaro

TITLE: Manufacturing Manager

USDOE 017341

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. Tooher, certify that I am Assistant Secretary of Sylvania Electric Products Inc., named above; that W. R. Mandaro who signed this Agreement on behalf of said corporation, was then Mfg. Mgr. Sylcor Division of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 9th day of November 1964.

/s/ J. M. Tooher

(CORPORATE SEAL)

USDOE 017342

~~SECRET~~

UNCLASSIFIED

Roland A. Anderson, Assistant General
Counsel for Patents, Germantown

December 3, 1964

Randall G. Erdley, Chief
Savannah River Patent Group

CONTRACT AT(30-1)-1293 SYLVANIA ELECTRIC PRODUCTS, INC.
MOD. NO. 39 (DATED OCTOBER 1, 1964)

Document No. SR-C-235

This document consists of 1 pages

No. 2 of 3 Copies, Series A

CP:RGE:cm

The subject contract has been extended to September 30, 1965 to provide for additional production of Mark V-B and Mark V-E fuel slugs.

Estimated cost..... $1,563,980

Fixed fee..... 91,415

New obligation of funds.....$32,515,527.

Cy. 1A - R. A. Anderson
2A - Official File
3A - Reading file

DEPARTMENT OF ENERGY SAVANNAH RIVER [illegible]
1st Review Date: 3-28-03
Authority: ADC ADD
Name: J. B. Slack
2nd Review Date: 3-28-03
Authority: ADD
Name: [illegible]

Determination (Circle Number)
1. Classification Unchanged
2. Classification changed to:
3. Classification Canceled
4. Other: CG-NMP-2 9/00

~~RESTRICTED DATA~~

~~This document contains Restricted Data as defined in the Atomic Energy Act [illegible] transmittal or the disclosure of its contents [illegible] unauthorized person is prohibited.~~

UNCLASSIFIED

OFFICE ▶	Patent Br.					
SURNAME ▶	RGE					
DATE ▶	12-3-64					

Form AEC-318 (Rev. 9-53)

U. S. ~~SECRET~~ 02703-3

USDOE 017266

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT: Amend scope of work and other provisions of the Contract

EFFECTIVE DATE : October 1, 1964

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 38	Increase (Decrease)	Modification No. 39
Operating Cost	$29,070,651	$1,439,591	$30,510,242
Plant and Capital Equipment (Beginning July 1, 1963)	208,567	82,722	291,289 a/
Fixed Fee (Operations)	1,637,581	91,415	1,728,996
Total Estimated Cost and Fixed Fee	$30,916,799	$1,613,728	$32,530,527
Commission Obligation			$32,515,527

a/ Includes $15,000 for first quarter FY 1966 authorizations not to be obligated in FY 1965.

[redacted]

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC

THIS SUPPLEMENTAL AGREEMENT, entered into the 24th day of November, 1964, effective October 1, 1964, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In paragraph 1., Term, of Article III - TERM, EXPIRATION AND TERMINATION, the date "September 30, 1964," is deleted and the date "September 30, 1965," is substituted therefor.

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $30,801,531, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,728,996. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work, for the period October 1, 1964, to September 30, 1965, is $1,563,980, exclusive of the Contractor's fixed fee of $91,415."

3. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATE OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$30,916,799" is deleted and the figure "$32,515,527" is substituted therefor.

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

4. The following new subparagraph (f) is added to paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE:

"(f) The fixed fee applicable to work performed during the period October 1, 1964, to September 30, 1965, is $91,415."

5. The following new subparagraph (f) is added to paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS:

"(f) For the period October 1, 1964, through September 30, 1965, ninety percent (90%) of the fixed fee of $91,415 shall become due and payable in monthly installments of $6,856."

6. Appendix "B" Modification No. 29, as amended, is further amended as of October 1, 1964, and is attached hereto and made a part hereof.

7. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____

TITLE: _____

WITNESSES:

_____

_____
(Address)

_____

_____
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: _____

TITLE: W. R. Mandaro
Manufacturing Manager
Sylcor Division

Modification No. 39
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC

I, T. M. TOOHEY, certify that I am ASST. SECRETARY of Sylvania Electric Products Inc., named above; that W. R. MANDARO who signed this Agreement on behalf of said corporation, was then MFG MGR SYLVER DIVISION of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 9th day of NOVEMBER 1964.

(CORPORATE SEAL)

~~SECRET~~

UNCLASSIFIED

This document consists of 1 page
No. 8 of 10 copies, Series A.

SR-A-151

DEPARTMENT OF ENERGY-SAVANNAH RIVER DECLASSIFICATION REVIEW
1st Review Date 3-28-03
Authority: ☒ ADC ☐ ADD
Name: J. B. Slack
2nd Review Date 3-28-03
Authority: ADD
Name: N. N. Dendon
Determination (Circle Number)
1. Classification Unchanged
2. Classification changed to:
(3) Classification Canceled.
4. Other: CG-NMP-2 9/00

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED JANUARY 1, 1965, UNDER
MODIFICATION NO. 40

The scope of work to be performed by the Contractor during the period October 1, 1964, through September 30, 1965, as set forth by Modification No. 39 is revised to read as follows:

1. PRODUCTION

A. MARK V-B AND MARK V-E (Inner Fuel)

The Contractor shall manufacture and furnish to the Commission Mark V-B and Mark V-E slugs at motnhly tonnages as follows:

	Mark V-B (Tons) Integral Rib	Mark V-E (Tons) Integral Rib
October	21	26
November	18	22
December	15	23
January	10	20
February	-	21
March	-	23
April	-	21
May	-	21
June	-	21
July	-	9
August	-	21
September	-	20

B. EXTENDED LENGTH MARK V-B SLUGS

Undertake the canning of 560 sets of extended length Mark V-B slugs for delivery in accordance with the following schedule:

75 sets by October 19, 1964
175 sets by December 14, 1964
310 sets by February 28, 1965

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION.

UNCLASSIFIED

~~SECRET~~

~~RESTRICTED DATA~~
~~[illegible] unauthorized person is prohibited~~

2-15-14

USDOE 017348

UNITED STATES ATOMIC ENERGY COMMISSION

FINDINGS AND DETERMINATION

The Atomic Energy Act of 1954, as amended

Findings

In accordance with the requirements of the Atomic Energy Act of 1954, as amended, I make the following findings:

1. During the past thirteen years, Sylcor Division has operated its Hicksville plant under a cost-plus-fixed-fee type contract with the Commission for the primary performance of canning uranium slugs for the Savannah River Plant reactor use. The land and buildings at the Hicksville plant are owned by Sylcor; however, the equipment utilized in performing this contract work is owned by the Commission, and is used exclusively on Commission work.

2. The Commission has a continuing need for fuel elements for the SRP reactors.

3. Specifications for the production of the fuel elements are not sufficiently definitive to permit entering into a fixed unit price arrangement.

4. Program requirements are subject to immediate change.

Determination

Based upon the foregoing findings, I hereby determine that it is impracticable to secure services of the kind and quality desired without the use of a cost-plus-fixed-fee supplemental agreement, and I hereby authorize the use of said supplemental agreement.

BY: H. L. Kilburn

TITLE: Actg Mgr. SROO

DATE: 10/26/64

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 40
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT: Amend scope of work and other provisions of the Contract.

EFFECTIVE DATE : January 1, 1965

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 39	Increase (Decrease)	Modification No. 40
Operating Cost	$30,510,242	$(270,940)	$30,239,302
Plant and Capital Equipment (Beginning July 1, 1963)	291,289	(30,000)	261,289 a/
Fixed Fee (Operations)	1,728,996	(16,914)	1,712,082
Total Estimated Cost	$32,530,527	$(317,854)	$32,212,673 a/
Commission Obligation	$32,515,527	$(312,854)	$32,202,673
Operation	-	(287,854)	-
Equipment	-	(25,000)	-

a/ Includes $10,000 first quarter FY 1966 equipment requirements that are not being obligated.

Document transmitted herewith contains RESTRICTED DATA

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CONFORMED COPY

SECRET

USDOE 017344

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 40
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 26th day of February, 1965, effective January 1, 1965, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. In Article I - SCOPE OF WORK, paragraph 3. is renumbered paragraph 4., and the following new paragraph 3. is added:

"3. Notwithstanding any other provisions of this Article and/or Contract, the Contractor may utilize in Site "A" the area occupied, equipment and personnel of Department No. 21 - Chemical Services, Department No. 23 - Engineering Department, Department No. 24 - Machine Services, Department No. 27 - Plant Engineering (Drafting and Maintenance), and Department No. 29 - Metallography Services, to perform non-nuclear services or work for private commercial interest under the terms and conditions set forth in the letter dated October 23, 1964, from R. C. Blair to W. R. Mandaro, Manufacturing Manager, Sylcor, as accepted and implemented by W. R. Mandaro's letter and attachment thereto dated December 4, 1964, addressed to R. C. Blair, which letters and attachment are incorporated herein by reference, and upon the further condition that the Contractor does hereby release the Government of all responsibility with respect to such work and agrees that it shall indemnify and hold harmless the Government and the Commission from liability of any type arising out of or in the course of the performance of any such work. The conditions set forth in the letters aforesaid may be modified from time to time, in writing, by mutual agreement of the parties, without the necessity of formally amending the Contract."

2. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

"1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $30,500,591, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2., of Article V of the Contract is $1,712,082. The estimated cost of the work, as described in paragraph 1. of the Article entitled Scope of Work for the period October 1, 1964, to September 30, 1965, is $1,263,040, exclusive of the Contractor's fixed fee of $74,501."

3. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATE OF COST, OBLIGATION OF FUNDS, AND FIXED FEE, the figure "$32,515,527" is deleted and the figure "$32,202,673" is substituted therefor.

4. Subparagraph (f) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read:

"(f) The fixed fee applicable to work performed during the period October 1, 1964, to September 30, 1965, is $74,501."

5. Subparagraph (f) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read:

"(f) For the period October 1, 1964, through September 30, 1965, ninety percent (90%) of the fixed fee of $74,501 shall become due and payable in monthly installments as follows:

October-November 1964	$6,856
December 1964 - September 1965	5,334

6. Appendix "B" Modification No. 29, as amended, is further amended as of January 1, 1965, and is attached hereto and made a part hereof.

7. All other terms and conditions of the Contract remain unchanged.

USDOE 017346

Modification No. 40
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, SROO

WITNESSES:

/s/ Grace Golden

Hicksville, N. Y.
(Address)

/s/ Mary G. Steglic

Hicksville, N. Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

BY: /s/ W. R. Mandaro

TITLE: Manufacturing Manager
Sylcor Division

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that W. R. Mandaro who signed this Agreement on behalf of said corporation, was then Mfg. Mgr.-Sylcor Division of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 15th day of February, 1965.

/s/ J. M. Tooher

(CORPORATE SEAL)

USDOE 017347

Responsive Record 14

[redacted]

Box 4

WSRC DECLASSIFICATION REVIEW	
1st Review Date: 4/28/04	Determination (Circle Number)
Authority: ☐ ADC ☒ ADD	1. Classification Unchanged
Name: RL Collins	2. Classification Changed To:
2nd Review Date: 4/28/04	
Authority: ADD	3. Classification Cancelled
Name: [illegible]	4. Other:

Co-NMP-2 9/00

~~This document consists of 1 page No. [illegible] of [illegible] copies, Series A.~~

SR-A-153

APPENDIX "B" TO MODIFICATION NO. 29
CONTRACT NO. AT(30-1)-1293
REVISED JUNE 1, 1965, UNDER
MODIFICATION NO. 41

The scope of work to be performed by the Contractor during the period October 1, 1964, through September 30, 1965, as set forth by Modification No. 39 is revised to read as follows:

I. PRODUCTION

A. MARK V-B AND MARK V-E (Inner Fuel)

The Contractor shall manufacture and furnish to be Commission Mark V-B and Mark V-E slugs at monthly tonnages as follows:

	Mark V-B (Tons) Integral Rib	Mark V-E (Tons) Integral Rib
October	21	26
November	18	22
December	15	23
January	10	20
February	-	21
March	-	23
April	-	21
May	-	21
June	-	28
July	-	12
August	-	-
September	-	-

B. EXTENDED LENGTH MARK V-B SLUGS

Undertake the canning of 560 sets of extended length Mark V-B slugs for delivery in accordance with the following schedule:

75 sets by October 19, 1964
175 sets by December 14, 1964
310 sets by February 28, 1965

C. THORIUM

Strip approximately 800 thorium slugs for transhipment to Textron, Inc., by March 31, 1965.

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

[redacted]

SROO Response to
FOIA (SR) - 04-028

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 41
Supplemental Agreement to
Contract AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

CONTRACTOR : Sylvania Electric Products Inc.
Hicksville, Long Island, New York

SUPPLEMENTAL AGREEMENT: Amend scope of work and other provisions of the Contract.

EFFECTIVE DATE : June 1, 1965

RECAPITULATION OF REVISED COSTS AND COMMISSION OBLIGATION

	Modification No. 40.	Increase (Decrease)	Modification No. 41
Operating Costs	$ 30,239,302	$(198,864)	$ 30,040,438
Plant and Capital Equipment (Beginning July 1, 1965)	261,289	(12,516)	248,773
Fixed Fee (Operations)	1,712,082	(4,011)	1,708,071
Total Estimated Cost	$ 32,212,673 a/	$(215,391)	$ 31,997,282
Commission Obligation	$ 32,202,673	$(205,391)	$ 31,997,282
Operation & Fee	--	1,825	
Equipment	--	(2,516)	
Commitments Operating	--	(204,700)	

a/ Included $10,000 equipment first quarter FY 1966 not obligated.

SECRET

[redacted] contains [redacted] DATE [redacted]

When separated from enclosure handle this document as UNCLASSIFIED

USDOE 017350

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 41
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 29th day of November, 1965, effective June 1, 1965, unless otherwise hereinafter specifically provided, by and between the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and the parties desire to further amend said Contract to revise the scope of work and to amend certain other provisions of the Contract as hereinafter set forth; and

WHEREAS, this Supplemental Agreement is authorized by the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, the parties do mutually agree as follows:

1. Paragraph 1., Estimate of Cost and Fixed Fee, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, is revised to read as follows:

   "1. Estimate of Cost and Fixed Fee. The presently estimated cost of the work under this Contract is $30,289,211, exclusive of the Contractor's fixed fee. The Contractor's fixed fee as set forth in paragraph 2. of Article V of the Contract is $1,708,071. The estimated cost of the work as described in paragraph 1 of the article entitled Scope of Work for the period October 1, 1964, to September 30, 1965, is $1,261,029, exclusive of the Contractor's fixed fee of $70,490."

2. In paragraph 2., Obligation of Funds, of Article IV - ESTIMATES OF COSTS, OBLIGATION OF FUNDS AND FIXED FEE, the figure "$32,202,673" is deleted and the figure "$31,997,282" is substituted therefor.

3. Subparagraph (f) of paragraph 2., Fixed Fee, of Article V - ALLOWABLE COST AND FIXED FEE, is revised to read:

   "(f) The fixed fee applicable to work performed during the period October 1, 1964, to September 30, 1965, is $70,490."

CONFORMED COPY

USDOE 017351

4. Subparagraph (f) of paragraph 2., Payment of Fixed Fee, of Article VI - PAYMENTS, is revised to read:

"(f) For the period October 1, 1964, through September 30, 1965, ninety percent (90%) of the fixed fee of $70,490 shall become due and payable in monthly installments as follows:

October-November 1964	$6,856
December 1964 - July 1965	5,334
August-September 1965	3,528

5. Appendix "B," Modification No. 29, as amended, is further amended as of June 1, 1965, and is attached hereto and made a part hereof.

6. All other terms and conditions of the Contract remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ H. L. Kilburn

TITLE: Deputy Manager, SROO

WITNESSES:

/s/ Mary G. Steglic

Hicksville, New York
(Address)

/s/ M. Boll

Hicksville, New York
(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

BY: /s/ W. R. Mandaro

TITLE: Manufacturing Manager

USDOE 017352

Modification No. 41
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc. named above; that W. R. Mandaro who signed this Agreement on behalf of said corporation, was then Mfg. Manager of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 17th day of November, 1965.

(CORPORATE SEAL)

/s/ J. M. Tooher

USDOE 017353

Patent Br

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 42
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 15th day of December, 1965, effective October 1, 1965, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor at its Hicksville, Long Island, Plant of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time to revise the scope of work and other provisions therein; and

WHEREAS, the Contract, as so amended and revised, now provides in Article VII - GOVERNMENT PROPERTY, that there shall be no charge to the Government for the storage of Government-owned property at the Contractor's Hicksville Plant for a period of 120 days after expiration of said Contract and in Article III - TERM, EXPIRATION AND TERMINATION, that upon expiration, the Contractor shall: (1) discontinue work thereunder, and (2) take such other action as may be required under the provisions of the Contract and subject to the approval of the Commission, such other action as may be appropriate; and

WHEREAS, said Contract expired on September 30, 1965, and the parties thereto now desire to make a written record of the appropriate work which it has been agreed shall be performed by the Contractor within 120 days after such expiration and of the terms and conditions under which such work will be performed; and

WHEREAS, this Modification has been prepared for the purpose of amending the parties' Agreement as aforesaid and for no other purpose.

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. That within a period of 120 days beginning October 1, 1965, the Contractor shall perform the following work at its Hicksville Plant.

   (a) Furnish or cause to be furnished all personnel, equipment, tools, and materials necessary to decontaminate the entire AT(30-1)-1293 Contract area at Sylcor's Hicksville, New York, facility including the demolition of Building No. 8. Said buildings and ground areas shall be decontaminated to 2000 dpm/100 sq. cms. (disintegrations per minute per 100 square centimeters) fixed alpha and 100 dpm/100 sq. cms. removable alpha.

CONFORMED COPY

USDOE 017193

(b) Prepare, crate, and effect the shipment of Government property as directed by the Commission.

(c) Perform such accounting work in connection with the above as may be requested by the Commission.

2. As full and complete compensation for the work performed by the Contractor as provided in 1. above, the Government shall pay the Contractor:

(a) For repair of damages caused to the Contractor's property by the removal of Government-owned property therefrom, the fixed sum of $ -0- payable upon final financial settlement of this Contract.

(b) For all work except that referred to in (a) hereof performed by the Contractor pursuant to 1. above, the following:

(1) Direct labor and salaries at an actual cost basis, based on time records maintained by the Contractor. In addition, a fixed rate of 20% of direct labor and salaries shall be paid for fringe benefits and payroll taxes. These amounts shall be paid monthly as incurred and invoiced.

(2) Heat, lights, utility services, and miscellaneous materials used by the Contractor in the performance of work on an actual cost basis, payable monthly as incurred and invoiced.

(3) Decontamination of the Plant at a subcontract amount approved by the Contracting Officer, payable monthly as incurred and invoiced.

(4) For Hicksville Plant indirect expense (including management, accounting and all other overhead) plus home office general and administrative expense (corporate level), a fixed amount of $5,030, payable when invoiced as follows: at October 31 - $3,030; at November 30 - $1,000; at December 31 - $1,000.

(5) A fixed fee of $1,860, payable when invoiced as follows: at October 31 - $686; at November 30 - $687; at December 31 - $487.

3. Payments as provided in paragraph 2. above shall be made from obligated funds remaining available under this Contract as of September 30, 1965.

4. That this modification does not alter and shall not be interpreted to alter, change or modify in any respect the rights, duties and responsibilities of the parties as they existed on September 30, 1965, the date of the expiration of Contract AT(30-1)-1293.

USDOE 017194

Modification No. 42
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. C. Blair

TITLE: Manager, SROO

WITNESSES:

/s/ M. Boll

Hicksville, New York
(Address)

/s/ Grace Golden

Hicksville, New York
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ W. R. Mandaro

TITLE: Manufacturing Manager
Sylcor Division

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that W. R. Mandaro who signed this Agreement on behalf of said corporation, was then Mfg. Mgr. Sylcor Division of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 6th day of December, 1965.

(CORPORATE SEAL)

/s/ J. M. Tooher

USDOE 017195

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 42
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 15th day of December, 1965, effective October 1, 1965, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor at its Hicksville, Long Island, Plant of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time to revise the scope of work and other provisions therein; and

WHEREAS, the Contract, as so amended and revised, now provides in Article VII - GOVERNMENT PROPERTY, that there shall be no charge to the Government for the storage of Government-owned property at the Contractor's Hicksville Plant for a period of 120 days after expiration of said Contract and in Article III - TERM, EXPIRATION AND TERMINATION, that upon expiration, the Contractor shall: (1) discontinue work thereunder, and (2) take such other action as may be required under the provisions of the Contract and subject to the approval of the Commission, such other action as may be appropriate; and

WHEREAS, said Contract expired on September 30, 1965, and the parties thereto now desire to make a written record of the appropriate work which it has been agreed shall be performed by the Contractor within 120 days after such expiration and of the terms and conditions under which such work will be performed; and

WHEREAS, this Modification has been prepared for the purpose of amending the parties' Agreement as aforesaid and for no other purpose.

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. That within a period of 120 days beginning October 1, 1965, the Contractor shall perform the following work at its Hicksville Plant.

   (a) Furnish or cause to be furnished all personnel, equipment, tools, and materials necessary to decontaminate the entire AT(30-1)-1293 Contract area at Sylcor's Hicksville, New York, facility including the demolition of Building No. 8. Said buildings and ground areas shall be decontaminated to 2000 dpm/100 sq. cms. (disintegrations per minute per 100 square centimeters) fixed alpha and 100 dpm/100 sq. cms. removable alpha.

A. E. C. FILE COPY

(b) Prepare, crate, and effect the shipment of Government property as directed by the Commission.

(c) Perform such accounting work in connection with the above as may be requested by the Commission.

2. As full and complete compensation for the work performed by the Contractor as provided in 1. above, the Government shall pay the Contractor:

(a) For repair of damages caused to the Contractor's property by the removal of Government-owned property therefrom, the fixed sum of $ -0- payable upon final financial settlement of this Contract.

(b) For all work except that referred to in (a) hereof performed by the Contractor pursuant to 1. above, the following:

(1) Direct labor and salaries at an actual cost basis, based on time records maintained by the Contractor. In addition, a fixed rate of 20% of direct labor and salaries shall be paid for fringe benefits and payroll taxes. These amounts shall be paid monthly as incurred and invoiced.

(2) Heat, lights, utility services, and miscellaneous materials used by the Contractor in the performance of work on an actual cost basis, payable monthly as incurred and invoiced.

(3) Decontamination of the Plant at a subcontract amount approved by the Contracting Officer, payable monthly as incurred and invoiced.

(4) For Hicksville Plant indirect expense (including management, accounting and all other overhead) plus home office general and administrative expense (corporate level), a fixed amount of $5,030, payable when invoiced as follows: at October 31 - $3,030; at November 30 - $1,000; at December 31 - $1,000.

(5) A fixed fee of $1,860, payable when invoiced as follows: at October 31 - $686; at November 30 - $687; at December 31 - $487.

3. Payments as provided in paragraph 2. above shall be made from obligated funds remaining available under this Contract as of September 30, 1965.

4. That this modification does not alter and shall not be interpreted to alter, change or modify in any respect the rights, duties and responsibilities of the parties as they existed on September 30, 1965, the date of the expiration of Contract AT(30-1)-1293.

Modification No. 42
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: _____
R. C. Blair, Manager
TITLE: Savannah River Operations Office

WITNESSES:

_____
(Address)

_____
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: _____
W. R. Mandaro
TITLE: Manufacturing Manager
Sylcor Division

I, _____, certify that I am _____ of Sylvania Electric Products Inc., named above; that _____ who signed this Agreement on behalf of said corporation, was then _____ of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my hand and seal of said corporation this 6th day of December, 1965.

(CORPORATE SEAL) _____

Patent Div.

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 43
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 14th day of January, 1966, effective December 16, 1965, except as otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor at its Hicksville, Long Island, Plant of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and so amended and revised expired on September 30, 1965; and

WHEREAS, prior to the expiration of said Contract, the parties had informally agreed on an amendment to paragraph 2, Article VIII - SETTLEMENT OF GOVERNMENT INVESTMENT IN IMPROVEMENTS, of said Contract but inadvertently neglected to include such an agreement in a formal amendment to the Contract; and

WHEREAS, during the term of said Contract, certain improvements were made at the expense of the Government to the lands and buildings of the Contractor at its Plant on Cantiague Road, and the parties, following expiration of said Contract and acting pursuant to the provisions of Article VIII of said Contract, have agreed on the "appraised value in place," the "appraised net salvage value" and the "mutually agreed value" of said improvements; and

WHEREAS, within 120 days following the expiration of said Contract, the Government, pursuant to provisions of Article VII - GOVERNMENT PROPERTY, thereof, removed certain Government-owned equipment and supplies from the Contractor's Plant located on Cantiague Road, Hicksville, Long Island, and in the process of such removal damaged buildings of the Contractor; and

WHEREAS, this Modification has been prepared for the sole purpose of formalizing the parties' agreement with respect to matters referred to in the three preceeding clauses.

NOW, THEREFORE, the parties hereto do mutually agree as follows:

CONFORMED COPY

No patent act in required
Wait for patent clearance
from NY P.C.
[illegible] 1/24/

USDOE 017184

Modification No. 43
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

1. Effective September 22, 1965, paragraph 2, Article VIII - SETTLEMENT OF GOVERNMENT INVESTMENT IN IMPROVEMENTS, is amended to read as follows:

"Upon termination or expiration of this Agreement, the appraised net salvage value of the improvements shall be determined by mutual agreement of the parties following separate appraisals to be made by an appraiser to be selected by the Government and an appraiser to be selected by the Contractor. Promptly following determination of the appraised value in place and the appraised net salvage value, the Contractor shall in good faith further negotiate with and pay to the Government an amount equal to the mutually agreed value of such improvements. The mutually agreed value shall be determined after giving full consideration to the appraised value in place and the current value to the Contractor of such improvements. In no event shall the mutually agreed value be less than the appraised net salvage value of the improvements. Failure to agree upon either the appraised value in place, the appraised net salvage value, or the mutually agreed value to the foregoing provisions of this article shall be considered a dispute to be settled in accordance with the general provisions of this Contract entitled Disputes."

2. In the interest of arriving at a mutual agreement with respect to matters listed in 3, 4, and 5 below, the Contractor does hereby withdraw its claim against the Government for reimbursement for damages occurring to its property by the removal of Government-owned equipment at its Plant on Cantiague Road, Hicksville, Long Island, and does hereby release the Government from any further and all obligations for repairs, restoration and/or damages to such property.

3. The Government-owned improvements described in Exhibit "A," attached hereto and made a part hereof, have an "appraised net salvage value" of $1,700 and an "appraised value in place" of $25,000.

4. The Contractor agrees to pay to the Government for the improvements described in Exhibit "A," attached hereto, the sum of $10,000, which sum is the amount determined by the parties to be the mutually agreed value of said improvements, after giving full consideration to the current value to the Contractor of such improvements and the release by the Contractor of the Government from any further obligations for repairs, restoration and/or damages to the Contractor's property as provided in 2. above.

5. Nothing contained herein shall be deemed to prejudice the other rights and obligations of the parties hereto as they existed as of the effective date of this amendment.

41

USDOE 017185

Modification No. 43
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: /s/ R. L. Kilburn, Deputy Manager

TITLE: Savannah River Operations Office

WITNESSES:

/s/ M. Boll

Hicksville, N. Y.
(Address)

/s/ M. Stiglis

Hicksville, N. Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: /s/ W. R. Mandaro
Manufacturing Manager

TITLE: Sylcor Division

I, J. M. Tooher, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that W. R. Mandaro who signed this Agreement on behalf of said corporation, was then Mfg. Mgr. Sylcor Div. of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my handl and seal of said corporation this 7th day of January, 1966.

(CORPORATE SEAL)

/s/ J. M. Tooher

USDOE 017186

U. S. ATOMIC ENERGY COMMISSION
Savannah River Operations Office

Modification No. 43
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

THIS SUPPLEMENTAL AGREEMENT, entered into the 14th day of January, 1966 effective December 16, 1965, except as otherwise hereinafter specifically provided, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government") as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission") and SYLVANIA ELECTRIC PRODUCTS INC. (hereinafter referred to as the "Contractor"):

WITNESSETH THAT:

WHEREAS, as of the 10th day of December 1951, the Commission and the Contractor entered into Contract AT(30-1)-1293 for the performance by the Contractor at its Hicksville, Long Island, Plant of certain work for the Commission; and

WHEREAS, said Contract has heretofore been amended from time to time and so amended and revised expired on September 30, 1965; and

WHEREAS, prior to the expiration of said Contract, the parties had informally agreed on an amendment to paragraph 2, Article VIII - SETTLEMENT OF GOVERNMENT INVESTMENT IN IMPROVEMENTS, of said Contract but inadvertently neglected to include such an agreement in a formal amendment to the Contract; and

WHEREAS, during the term of said Contract, certain improvements were made at the expense of the Government to the lands and buildings of the Contractor at its Plant on Cantiague Road, and the parties, following expiration of said Contract and acting pursuant to the provisions of Article VIII of said Contract, have agreed on the "appraised value in place," the "appraised net salvage value" and the "mutually agreed value" of said improvements; and

WHEREAS, within 120 days following the expiration of said Contract, the Government, pursuant to provisions of Article VII - GOVERNMENT PROPERTY, thereof, removed certain Government-owned equipment and supplies from the Contractor's Plant located on Cantiague Road, Hicksville, Long Island, and in the process of such removal damaged buildings of the Contractor; and

WHEREAS, this Modification has been prepared for the sole purpose of formalizing the parties' agreement with respect to matters referred to in the three preceeding clauses.

NOW, THEREFORE, the parties hereto do mutually agree as follows:

A. E. C. FILE COPY

Modification No. 43
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

1. Effective September 22, 1965, paragraph 2, Article VIII - SETTLEMENT OF GOVERNMENT INVESTMENT IN IMPROVEMENTS, is amended to read as follows:

"Upon termination or expiration of this Agreement, the appraised net salvage value of the improvements shall be determined by mutual agreement of the parties following separate appraisals to be made by an appraiser to be selected by the Government and an appraiser to be selected by the Contractor. Promptly following determination of the appraised value in place and the appraised net salvage value, the Contractor shall in good faith further negotiate with and pay to the Government an amount equal to the mutually agreed value of such improvements. The mutually agreed value shall be determined after giving full consideration to the appraised value in place and the current value to the Contractor of such improvements. In no event shall the mutually agreed value be less than the appraised net salvage value of the improvements. Failure to agree upon either the appraised value in place, the appraised net salvage value, or the mutually agreed value to the foregoing provisions of this article shall be considered a dispute to be settled in accordance with the general provisions of this Contract entitled Disputes."

2. In the interest of arriving at a mutual agreement with respect to matters listed in 3, 4, and 5 below, the Contractor does hereby withdraw its claim against the Government for reimbursement for damages occurring to its property by the removal of Government-owned equipment at its Plant on Cantiague Road, Hicksville, Long Island, and does hereby release the Government from any further and all obligations for repairs, restoration and/or damages to such property.

3. The Government-owned improvements described in Exhibit "A," attached hereto and made a part hereof, have an "appraised net salvage value" of $1,700 and an "appraised value in place" of $25,000.

4. The Contractor agrees to pay to the Government for the improvements described in Exhibit "A," attached hereto, the sum of $10,000, which sum is the amount determined by the parties to be the mutually agreed value of said improvements, after giving full consideration to the current value to the Contractor of such improvements and the release by the Contractor of the Government from any further obligations for repairs, restoration and/or damages to the Contractor's property as provided in 2. above.

5. Nothing contained herein shall be deemed to prejudice the other rights and obligations of the parties hereto as they existed as of the effective date of this amendment.

Modification No. 43
Supplemental Agreement to
Contract No. AT(30-1)-1293
SYLVANIA ELECTRIC PRODUCTS INC.

IN WITNESS WHEREOF, the parties hereto have executed this Modification as of the day and year first above written.

UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: H L Kilburn
H. L. Kilburn, Deputy Manager
TITLE: Savannah River Operations Office

WITNESSES:

M Sue
Hicksville, N. Y.
(Address)

M. Steglie
Hicksville, N. Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.

BY: W R Mandaro
W. R. Mandaro
TITLE: Manufacturing Manager
Sylcor Div.

I, J. M. Toohey, certify that I am Asst. Secretary of Sylvania Electric Products Inc., named above; that W. R. Mandaro who signed this Agreement on behalf of said corporation, was then Mfg. Mgr. Sylcor Div. of said corporation, and that this Agreement was duly signed for and in behalf of said corporation by authority of its governing body and within the scope of its corporate powers.

Witness my handl and seal of said corporation this 7th day of June, 1966.

(CORPORATE SEAL)

[signature]

EXHIBIT "A"

IMPROVEMENTS TO PROPERTY CONTRACT AT(30-1)-1293

Asset No.	Description	Location	Date Acquired	First Cost Est.	Net Book Value @ 6/30/65
	BUILDINGS, HICKSVILLE REHABILITATION				
3478	Install Glass and Security Windows	Bldgs. 1 & 2		$ 3,916	
	Construct Gas House	Stockagde Area		1,519	
	Heat and Ventilation	Bldgs. 1 & 2		13,053	
	Electricity Installations	Bldgs. 1 & 2		171,224	
	Undergrd Tele & Elec Duct Lines	Bldgs. 1 & 2		1,089	
	Addi.-Cafeteria	Bldgs. 1 & 2		3,750	
	Trenching & Pits (Inside Lines)	Bldg. 1		9,209	
	Quality Control Room	Bldg. 1		1,236	
	Fire Protection System	Bldgs. 1 & 2		22,050	
	Roofing & Roof Monitor	Bldgs. 1 & 2		21,525	
	Fence	Bldg. 1 (Adjacent)		5,276	
			TOTAL	$253,847	
	FENCES				
2002	Chain Link w/16" Gate	Rear Bldg. 1 (Sump)	7/56	$ 554	$ 54
3287	400' of 7' Fence w/Gates	Front - Guardhouse	12/53	1,215	652
3289	Security Fence w/Gate	Bldg. 2 Mach. Weld Shop	6/60	557	447
3416	Security Folding Gate	Front - Guardhouse	8/54	165	94
3482	Chain Link Fence	Bldg. 1 Stockade Area	8/59	2,022	825
			TOTAL	$ 4,513	$2,072

IMPROVEMENTS TO PROPERTY CONTRACT AT(30-1)-1293

Asset No.	Description	Location	Date Acquired	First Cost	Net Book Value @ 6/30/65
	BUILDING EQUIPMENT				
1924	Fan, Ceiling Exhaust	Bldg. 2 Mach. Shop	9/56	$ 191	$ 32
1925	Fan, Ceiling Exhaust	Bldg. 2 Mach. Shop	9/56	191	32
1926	Fan, Ceiling Exhaust	Bldg. 2 Mach. Shop	9/56	191	32
1927	Fan, Ceiling Exhaust	Bldg. 2 AEC Metal Rm.	9/56	191	32
2035	Fan, Ceiling Exhaust	Bldg. 2 Cafeteria	6/56	319	-0-
2036	Fan, Ceiling Exhaust	Bldg. 2 Cafeteria	6/56	319	-0-
2556	Roof Ventilator	Bldg. 2 AEC Stockrm	12/56	99	-0-
3676	Roof Ventilator	Bldg. 2 Cafeteria	8/61	284	166
3677	Roof Ventilator	Bldg. 2 Cafeteria	8/61	285	168
2092	Fountain, Wash, Circular	Bldg. 1 Prod. Washrm	10/56	240	32
3277	Fountain, Wash, Circular	Bldg. 1 Prod. Washrm	7/60	253	131
3278	Fountain, Wash, Circular	Bldg. 2 Prod. Mch. Washrm	7/60	179	85
3279	Fountain, Wash, Circular	Bldg. 2 Prod. Mch. Washrm	7/60	178	84
2180	Fountain, Wash, Circular	Bldg. 2 Mach. Shop Washrm	11/56	240	32
			TOTAL	$3,160	$ 826
	WALKS, PADS, PARKING FIELD				
3492	Parking Field #2	Park. Area Bldg. 3	12/56	$8,070	$1,169
3493	Poles, Tele. Bumper Guards	Parking Fields	2/57	185	34
			TOTAL	$8,255	$1,203

IMPROVEMENTS TO PROPERTY CONTRACT AT(30-1)-1293

Asset No.	Description	Location	Date Acquired	First Cost	Net Book Value @ 6/30/65
	CHANGES TO BUILDING INTERIOR				
3483	Dustproof Room	Assbly Room Bldg. 1	3/57	$ 7,473	$ 3,005
3487	Expand Men's Room	Building 2	8/56	850	101
3488	Expand Accountability Area	Building 1	7/56	5,000	464
3480	Alterations to Cafeteria	Building 2	8/56	2,561	314
3491	Alterations to Chem. Lab.	Building 1	3/53	1,300	-0-
3511	Vent System - Dust Room	Building 1	5/57	714	126
3888	Production Office	Building 1	5/64	1,419	1,251
		TOTAL		$19,317	$ 5,261
	SUMPS, WELLS AND DRAINS				
3481	Cesspool	Behind Bldg. 1 for Process Water	9/56	400	82
3484	Clay Pipe Drain	Connecting Sumps for Proces. Water	7/56	250	34
3485	Drain System & Tanks	Bldg. 1 - For Process Water	1/58	12,487	2,711
3489	Stone Area	Grade Area North of Sumps	11/57	2,530	1,242
3490	Dry Well & Catch Basin	Drain Water - Storage Area	11/57	600	140
3494	2 Dry Wells & Catch Basin	Retwn Bldgs. 1 & 3 Parking Lot 2	5/57	1,060	178
3507	Sump	Behind Bldg. 1	10/56	3,250	415
3508	Sump Incl. Test Bore #3495	Behind Bldg. 1	6/56	2,948	328
3733	Filter Basin	Used w/Planing Machine	1/62	840	546
3757	Dry Well	Rear Bldg. 2	12/61	475	303
3883	Dry Well	Stockade	2/64	420	352
3458	Sump w/Fence	Rear Bldg. 2 - Mach. Shop	1/60	1,740	1,425
		TOTAL		$27,000	$ 7,756

IMPROVEMENTS TO PROPERTY CONTRACT AT(30-1)-1293

Asset No.	Description	Location	Date Acquired	First Cost	Net Book Value @ 6/30/65
3515	AUTOMATIC SPRINKLER SYSTEM				
	1. Pump House	AEC Site	7/60	$ 5,600	
	2. 150,000 Gallon Storage Tank	AEC Site		12,000	
	3. Hot Water System (Temp. Control)	AEC Site		2,500	
	4. Underground installation 6" & 8" lines, check valves, underground piping, excavating, repaving, etc.			26,350	
	5. Sprinkler overhead pipe system incl. sprinkler heads			32,312	
		TOTAL COST	7/60	$78,762	$39,402

IMPROVEMENTS TO PROPERTY CONTRACT AT(30-1)-1293

Asset No.	Description	Location	Date Acquired	First Cost	Net Book Value @ 6/30/65
3053	Air Conditioner)	Bldg. 1 Admin. office	8/57	$ 795	$ 376
3683	Cooling Tower)	Bldg. 1 used w/above condi.	9/61	1,867	596
3054	Air Conditioner	Bldg. 2 Acctg. Dept.	8/57	200	94
3250-51	Blower w/Motor	Bldg. 1 - on roof	4/60	846	625
3360	Fan, Ventilating	Bldg. 2 - Roof Maint. Shop	6/57	640	382
3093	Exhaust Fan	Bldg. 1 On roof Chem. Lab.	11/57	1,045	244
3275	Air Conditioner	Bldg. 4 Former Purch. area	7/60	967	644
3459	Air System	Bldg. 1 Exhaust-Plating & Chem. Lines	12/59	10,975	8,523
3470	Blowers		7/60	414	207
3477	Fan	Bldg. 1 Roof	10/60	873	458
		TOTAL		$18,622	$12,149

FINAL RELEASE

Contract No. AT(30-1)-1293

Contractor SYLVANIA ELECTRIC PRODUCTS INC.

The work under Contract No. between the UNITED STATES OF AMERICA (represented by the ATOMIC ENERGY COMMISSION) and the Contractor, having been completed and finally accepted, and in consideration of final payment thereunder, the United States of America, its officers and agents, are hereby released from all claims and demands whatsoever arising under or by virtue of said Contract except as follows:

(1) specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor as follows:

(2) claims, together with reasonable expenses incidental thereto, based upon liabilities of the Contractor to third parties arising out of performance of this Contract; provided that such claims are not known to the Contractor on the date of the execution of the release; and provided further that the Contractor gives notice of such claims in writing to the Contracting Officer not more than six (6) years after the date of the release or the date of any notice to the Contractor that the Government is prepared to make final payment, whichever is earlier; and

(3) claims for reimbursement of costs (other than expenses of the Contractor by reason of any indemnification of the Government against patent liability), including reasonable expenses incidental thereto; incurred by the Contractor under the provisions of this Contract relating to patents.

The Contractor agrees, in connection with patent matters and with claims which are not released as set forth above, that it will comply with all of the provisions of said Contract, including without limitation those provisions relating to notification of the Contracting Officer and relating to the defense or prosecuting of litigation.

Executed this 29th day of June 1966.

Witnesses:

M. Foell

Hicksville, N.Y.
(Address)

Grace Gordon

Hicksville, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.
(Contractor)

By: W. R. Mandaro
W. R. Mandaro
Manufacturing Manager, Sylcor Div.
(Official Title)

GENERAL ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS, that [redacted] (Contractor) (a corporation organized and existing under the laws of the State of [redacted], with its principal place of business at [redacted]) has been engaged in performing work under Contract No. [redacted] with the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), work under said Contract having been (completed and finally accepted) (terminated), and in consideration of the terms of said Contract and final payment thereunder, the Contractor does hereby presently assign and transfer to the Government, to the extent not heretofore assigned or transferred to the Government, (a) any and all subcontracts, purchase orders, and other agreements entered into in the performance of the Contract and all of the rights and interests it may have thereunder, except those listed in Schedule "A" attached hereto, including without limitation transfer of the administration of such subcontracts, purchase orders, and other agreements; and (b) all of its rights to and interests in any refunds, rebates, allowances, accounts receivable, or other credits applicable to or in connection with any expenditures which were allowable costs under the said Contract, except as specifically set forth in Schedule "B," attached hereto and hereby expressly made a part hereof.

In addition, the Contractor does hereby presently assign and transfer to the Government all rights and interests of the Contractor in any refunds, rebates or other credits, applicable to or against any expenditures which were allowable costs under the above-numbered Contract which are not presently known but which may materialize at a later date.

The Contractor agrees to furnish, at the expense of the Government, any and all assistance which may be required of it in connection with the enforcement of the rights or interests herein assigned or the settlement or defense of claims or litigation arising out of the subcontracts, purchase orders, or other agreements herein or heretofore assigned or transferred, such assistance to include furnishing any and all pertinent records, correspondence, documents, and other papers in its possession, and the assistance of employees possessing knowledge of the facts for conference and for attendance in court as witnesses in connection with the enforcement of said rights or the settlement or defense of said claims or litigation.

The Government, for its part, does hereby assume all obligations which the Contractor may have under the subcontracts, purchase orders, and other agreements herein or heretofore assigned or transferred, to the extent that such obligations are allowable costs under the Contract and does hereby release the Contractor from all liability and responsibility for the collection of any of said refunds, rebates, allowances, accounts receivable, or other credits herein assigned, and for the enforcement of any rights, or the defense of any claims or litigation with respect thereto, except as herein provided.

Executed this 29th day of June, 19 66.

WITNESSES:

M. Soll

Hicksville, N.Y.
(Address)

Grace Gordon

Hicksville, N.Y.
(Address)

SYLVANIA ELECTRIC PRODUCTS INC.
Contractor

By: W R Mandaro
W. R. Mandaro
Manufacturing Manager, Sylcor Div.
Official Title

ACCEPTANCE BY UNITED STATES OF AMERICA
BY: U. S. ATOMIC ENERGY COMMISSION

BY: N Stetson
N. Stetson, Manager
TITLE: Savannah River Operations Office

If the Contractor is a corporation, the following certificate will be executed:

CORPORATE CERTIFICATE

I, J. M. Tooke certify that I am the Asst. Secretary of the Corporation executing the foregoing assignment; that W. G. Whitmore who signed the said document on behalf of the assignor, was then Vice Pres. (officer) of said Corporation; that I know his signature, and his signature thereto is genuine; and that said assignment was duly signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

(CORPORATE SEAL)

J. M. Tooke

CONTRACT NO. AT(30-1)-GEN-366

TAB	DOCUMENT
A:	GENERAL CONTRACT NO. AT(30-1)-GEN-366 DOCUMENTS, AMENDMENTS, MODIFICATIONS, AND CORRESPONDENCE:
1	Background Summary on Sylvania-Contract AT(30-1)-1293, dated August 12, 1954, discussing Contract AT-30-IGEN-366.
2	Memo from V. L. Parsegian to W. E. Kelley, dated August 14, 1952, regarding Request For Letter Amendment 9 To Contract AT-30-1-GEN-366-Sylvania Electric Products, Inc.
3	Memo from F. M. Belmore to W. E. Kelley, dated January 22, 1953, regarding Amendment To Contract No. AT-30-1-GEN-366 With Sylvania Electric Products, Inc.
4	Letter from F. M. Belmore to E. S. Norris, dated March 17, 1953, regarding Metal Quality Investigation-Amendment To Contract No. AT-30-1-GEN-366.
5	Memo from G. E. Dunlap to File, dated May 7, 1953, regarding Visit To Sylvania May 1, 1953, Contract AT-30-1 GEN-366.
6	Memo from E. M. Kaulbach to R. L. Kirk, dated August 3, 1953, regarding GM-S And S-59 For Sperry Products, Inc.-Subcontract For Non-Destructive Testing Development Under Sylvania Prime Contract No. AT(30-1)-GEN-366.
7	Memo from W. B. Harris to W. H. Donnelly, dated December 6, 1954, regarding Hydrostatic Pressing Facility-Sylvania Contract AT(30-1)-GEN-366.
8	Savannah River Operations Office Contract Data Book, dated December 31, 1955.
9	New York Operations Office, Status and Progress Report For The Months Of June and July, 1956.
10	New York Operations Office, Status and Progress Report For The Month Of August, 1956.
11	New York Operations Office, Status and Progress Report For The Month Of September, 1956.
12	New York Operations Office, Status and Progress Report For The Month Of October, 1956.
13	New York Operations Office, Status and Progress Report For The Month Of December, 1956.

	December, 1956.
14	New York Operations Office, Status and Progress Report For The Month Of January, 1957.
15	Modification No. 26, Supplemental Agreement To Contract No. AT-30-1-GEN-366 and Modification No. 16, Supplemental Agreement To Contract No. AT(30-1)-1293.
16	New York Operations Office, Status and Progress Report For The Month Of April, 1957.
17	Memo from J. C. Clarke, dated April 26, 1957, regarding Notification Of Assignment Of Contract No. AT-30-1-GEN-366 With Sylvania Electric Products Inc.
18	New York Operations Office, Status and Progress Report For The Month Of May, 1957.
19	New York Operations Office, Status and Progress Report For The Month Of June, 1957.
20	New York Operations Office, Status and Progress Report For The Month Of July, 1957.
21	New York Operations Office, Status and Progress Report For The Month Of August, 1957.
22	New York Operations Office, Status and Progress Report For The Month Of November, 1957.
23	New York Operations Office, Status and Progress Report For The Month Of December, 1957.
24	Memo from J. F. O'Brien to A. D. Russell, dated December 26, 1957, regarding Subcontract Under AEC Contract AT30-1-GEN-366.
25	Security Survey of Sylvania Corning Nuclear Corp., dated February 25, 1959.
26	Letter Modification No. 35 effective as of the 30th day of September, 1959 to Contract No. AT-30-1-Gen-366 entered into as of the 1st day of July, 1948.
27	Memo from Howard M. Cohen , dated March 29, 1960, regarding Irradiation Programs.
28	Amendment No. 14 To Appendix "D", effective July 1, 1961.
29	Modification No. 39, Supplemental Agreement To Contract No. AT-30-1-GEN-366.

B:	WORK FOR GENERAL ELECTRIC COMPANY AIRCRAFT NUCLEAR PROPULSION DEPARTMENT
1	Telegram from Palmeter, Lockland Area Office, to Del Vecchia, New York Operations Office, regarding Work For General Electric From May 1954 Through February 1955.
2	Letter from V. J. Nicholas to R. E. VanAusdal, dated February 25, 1954, regarding Proposed Subcontract No. AT-24 With Sylvania Electric Products, Inc.
3	Subcontract Check List, Administrative Branch, Subcontract No. AT-24, Appendix "C".
4	Subcontract Check List, Finance Branch, Appendix "C".
5	Subcontract Procurement Check List, Technical Branch, Appendix "C".
6	Subcontract No. AT-24, Contract No. AT-30-1-GEN-366, Appendix "C".
7	Subcontract Check List, Administrative Branch, Subcontract No. AT-24, Modification No. 1.
8	Memo from E. M. Volten to M. Eisenbud, dated March 8, 1955, regarding Modification Number 1 To Sponsored Task C-4 (Subcontract AT-24 Between Sylvania Electric Products And General Electric Company).
9	Modification No. 1 to Sponsored Task C-4, Subcontract No. AT-24, dated February 18, 1955.
10	Subcontract Check List, Administrative Branch, Subcontract No. AT-24, Amendment No. 2.
11	Procurement Action Check List, Finance Branch, Subcontract No. AT-24, Amendment No. 2.
12	Modification No. 2 to Sponsored Task C-4, Subcontract No. AT-24, dated January 30, 1956.
13	Sponsored Task No. C-4, Modification No. 3, Contract AT(30-1)-GEN-366, Appendix "C", dated November 13, 1958.
14	Subcontract Check List, Procurement Management Branch, Sponsored Task C-4, Subcontract No. AT-24.
15	Memo from M. W. Holliday to John D. Hart, dated September 13, 1960, regarding Modification No. 14 To GE Subcontract AT-38 And Amendment No. 3 To GE Subcontract AT-24.

16	Subcontract Check List, Administrative Branch, Subcontract No. AT-30, Appendix "C".
17	Subcontract Procurement Check List, Technical Branch, Subcontract No. AT-30, Appendix "C".
18	Sponsored Task C-34, Contract No. AT-30-1-GEN-366, Subcontract No. AT-30, Appendix "C".
19	Subcontract Check List, Administrative Branch, Subcontract No. AT-30, Amendment No. 1.
20	Procurement Action Check List, Finance Branch, Subcontract No. AT-30, Amendment No. 1.
21	Memo from T. A. Nemzek to J. W. Backscheider, dated November 16, 1955, regarding Proposed Amendment Number 1 To Subcontract AT 30 With Sylvania Electric Products.
22	Letter from J. W. Backscheider to V. R. Nicholas, dated December 19, 1955, regarding Amendment No. 1 To Sponsored Task C-34 (Subcontract AT-30) Between General Electric Company And Sylvania Electric Products, Inc.
23	Amendment No. 1 to Sponsored Task C-34, Subcontract AT-30.
24	Subcontract Check List, Administrative Branch, Subcontract No. AT-30, Appendix "C".
25	Procurement Action Check List, Finance Branch, Subcontract No. AT-30, Amendment No. 2, Appendix "C".
26	Check List For Subcontract No. AT-30, Appendix "C".
27	Memo from M. W. Holliday to E. O. Kuns, dated March 19, 1956, regarding Amendment No. 2-Subcontract AT-30-Sylvania Electric Products, Inc.
28	Amendment No. 2 to Sponsored Task C-34, Subcontract AT-30.
29	Subcontract Check List, Administrative Branch, Subcontract No. AT-30, Amendment No. 3.
30	Procurement Action Check List, Finance Branch, Subcontract No. AT-30, Amendment No. 3.
31	Amendment No. 3 to Sponsored Task C-34, Subcontract AT-30.
32	Memo from James R. Marin to Charles E. Jones, dated March 2, 1959, regarding Sylvania-Corning Nuclear Corporation, Bayside, New York.

	Sylvania-Corning Nuclear Corporation, Bayside, New York.
33	Memo from Charles E. Jones to J. H. Jones, dated March 6, 1959, regarding Sylvania-Corning Nuclear Corporation, Bayside, New York And Hicksville, New York.
C:	WORK PERFORMED FOR THE OAK RIDGE OPERATIONS OFFICE
1	Letter from E. S. Norris to A. J. Vanderweyden, dated June 11, 1954, regarding Submission Of Revised Uranium And Thorium Project Proposals Sylvania Contract AT(30-1)GEN-366.
2	Memo from John R. Moore to W. H. Donnelly, dated July 6, 1954, regarding Contract No. AT-30-1-GEN-366 With Sylvania Electric Products, Inc.
3	Memo from T. P. Carbarry to Warren H. Donnelly, dated July 7, 1954, regarding Sylvania Electric Products, AT(30-1)-GEN-366.
4	Memo from S. R. Sapirie to J. P. Morgan, dated July 19, 1954, regarding Sylvania Electric Products, Inc., Contract AT(30-1)-GEN-366, Reduction Of Uranium And Thorium.
5	Letter from S. R. Sapirie to W. E. Kingston, dated July 20, 1954, regarding Appendix "C" to Contract AT(30-1)-GEN-366.
6	Memo from S. R. Sapirie to J. P. Morgan, dated July 23, 1954, regarding Sylvania Electric Products, Inc., Contract AT(30-1)-GEN-366, Reduction Of Uranium And Thorium.
7	Letter from W. H. Donnelly to W. E. Kingston, dated July 26, 1954, regarding AT(30-1)-GEN-366.
8	Draft Memo from F. R. Dowling to M. Goldberg, dated January 6, 1955, regarding Sylvania Electric Products, Inc., AT(30-1)-GEN-366-Sponsored Task 13.
9	Letter from William J. Donohue to W. H. Donnelly, dated February 25, 1955, regarding Contract AT-30-1-GEN 366 C-13 With OROO Project 1837.
10	Memo from M. Eisenbud to S. R. Sapirie, dated March 23, 1955, regarding Sylvania Electric Products, Inc.-AT-30-1-GEN-366 Oak Ridge Sponsored Work.
11	Letter from F. R. Dowling, dated April 20, 1956, regarding Process Development Work For Oak Ridge, Project 1837-a, Contract No. AT-30-1-GEN-366.
12	Letter from E. S. Norris to F. R. Dowling, dated May 24, 1956, regarding Contract AT-30-1-GEN-366.
13	Memo from V. J. Del Vecchia to L. B. MacKay, dated June 6, 1956, regarding Sylvania Electric Products, Contract AT-(30-1)-366 Sponsor Task C-13 And Attached

	Schedule #1.
14	Letter from F. R. Dowling, dated June 19, 1956, regarding Process Development Work For Oak Ridge, Project 1837-a, Contract No. AT-30-1-GEN-366.
15	Letter from A. M. Master, Jr. to F. R. Dowling, dated August 10, 1956, regarding Contract AT-30-1-366.
16	Memo from F. R. Dowling to A. M. Master, Jr., dated August 17, 1956.
17	Letter from Arthur M. Master, Jr. to John W. Ruch, dated May 16, 1957.
18	Memo from R. G. Humphries to M. Goldberg, dated July 25, 1957, regarding Sylvania-Corning Nuclear Corporation, AT-30-1-GEN-366.
19	Memo from John R. Moore to M. Goldberg, dated August 18, 1957, regarding Sylvania-Corning Nuclear Corporation, AT 30-1-GEN-366.
20	Memo from V. J. Del Vecchia to L. D. MacKay, dated January 8, 1958, regarding Sylvania-Corning Nuclear Corporation, Audit Of Oak Ridge Sponsored Portion Of Work Included In Contract AT-(30-1)-366 Period July 1, 1955 To June 30, 1957, Projects 1837, 1838, 1840 & 1889.
21	Memo from Lyman Bryan to L. D. MacKay, dated April 8, 1959, regarding Sylvania-Corning Nuclear Corporation, Audit Of Oak Ridge Sponsored Portion Of Work Included In Contract AT(30-1)-366, Period January 1, 1957 To June 30, 1957, Projects 1837, 1838, 1840 And 1889.
D:	WORK UNDER THE SAVANNAH RIVER OPERATIONS OFFICE
1	Sponsored Task C-24, Contract No. AT-30-1-GEN-366, Appendix "C", C-24, effective as of January 14, 1955.
2	Shipping Receipt For AT(30-1) GEN 366 Appendix C-Sponsored Task C-24, dated April 27, 1956.
3	Sponsored Task C-31, Contract No. AT-30-1-GEN-366, Appendix "C", effective as of February 23, 1955.
4	Modification No. 1, Supplemental Agreement to Contract No. AT-30-1-GEN-366, Sponsored Task C-31, effective as of March 21, 1955.
5	Modification No. 2, Supplemental Agreement to Contract No. AT-30-1-GEN-366, Sponsored Task C-31, effective as of March 12, 1956.
6	Sponsored Task C-33, Contract No. AT-30-1-GEN-366, Appendix "C", effective as of July 1, 1955.

7	Letter from E. S. Norris to R. C. Blair, dated March 16, 1956, regarding Partial Termination Sponsored Task C-33.
8	Modification No. 1, Supplemental Agreement to Contract No. AT(30-1)-GEN-366, Sponsored Task C-33, effective as of March 16, 1956.
9	Modification No. 2, Supplemental Agreement to Contract No. AT(30-1)-GEN-366, Sponsored Task C-33, effective as of July 1, 1956.
10	Modification No. 3, Supplemental Agreement to Contract No. AT(30-1)-GEN-366, Sponsored Task C-33.
11	Letter from Garth W. Edwards to J. Donohue, dated January 9, 1957, regarding Status Of Sponsored Task C-33.
12	Memo from Lyman Bryan to James Wise, dated October 12, 1959, regarding Sylvania-Corning Nuclear Corp. Contract AT-(30-1)-366 Audit Of Sponsor Task C-33 Savannah River Oper. Office Audit Period: July 1, 1958 to April 30, 1959.
E:	WORK FOR DU PONT
1	Letter from Garth W. Edwards to R. C. Blair, dated May 2, 1959, regarding Contract AT(30-1)GEN-366, Proposed Sponsored Task C-74.
2	Telecommunication Message from R. C. Blair to Garth Edwards, dated June 17, 1959.
3	Task No. C-74, Contract AT(30-1)-GEN-366, Appendix "C".
4	Modification No. 1 To Task No. C-74 Under Contract AT(30-1)-GEN-366.
5	Letter from R. C. Blair to M. C. Cullen, dated December 23, 1959, regarding Sponsored Task C-74 Under Contract AT(30-1)-GEN-366.

A

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~~SECURITY INFORMATION~~

B608F16

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No. 2 of 12 Copies, Series A

Distribution

August 12, 1954

Paul J. Hagelston

SR-TM-1621

BACKGROUND SUMMARY ON SYLVANIA - CONTRACT AT(30-1)-1293

Classification Cancelled
Date 11-28-73
For the U.S. Atomic Energy Commission
M J Connelus
Division of Classification

SYMBOL: TM:EJD:pew

Historical Background

In the latter part of 1947, Sylvania Electric Products, Inc. at Bayside, L. I., initiated a metallurgical research and development program under Contract AT-30-IGEN-366 with NYOO. At this time, the Commission was interested in the possibilities of powder metallurgy as a method for the fabrication of fuel elements in reactor components. By late 1951, Sylvania had developed apparently successful laboratory methods for producing uranium slugs by powder metallurgy techniques.

On this basis, a contract No. AT(30-1)-1293 was entered into December 10, 1951, with Sylvania Electric Products by NYOO to expand the powder metallurgy development on a pilot plant scale. Following the signing of this contract, Sylvania acquired by outright purchase a development site at Hicksville, suitable for pilot plant operations. There were two major buildings on the property. Building No. 1 was used to house the operation phase of the pilot plant and administrative offices. Building No. 2 was used to house the drafting and design offices, machine shops, storage rooms, and cafeteria. Building alterations and rehabilitation began in February 1952. Initial pilot plant operation began on August 15, 1952. Experimental production was continued through the end of fiscal year 1954.

Beginning in the latter part of January, 1954, at the request of the du Pont Company, Sylvania prepared about 160 uranium oxide-aluminum fuel slugs and lithium salts-aluminum target slugs by powder metallurgy techniques at Hicksville. At that time it was believed that slugs prepared from oxides and salts with aluminum powder would be less reactive with water than cast or extruded aluminum alloy slugs. Although the manufacturing experiment was successful, interest in the development waned due to the solution of the problem through another line of attack. Again at the request of the du Pont Company, in March 1954, Sylvania embarked on a development program to pressure bond and can, cast and extruded

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Reviewing Official V. T. Gardner 9-00
V M Gardner, DOE-SR Classification Analyst
Date: 3-27-03

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~~SECURITY INFORMATION~~

USDOE 017132

uranium-aluminum slugs, by means of a similiar technique. The successful experimental work thus initiated resulted in a letter on May 28, from du Pont (L. Squires, Director, Technical Division) to Sylvania (Walter E. Kingston, General Manager, Atomic Energy Division) requesting a formal proposal for pressure bonding 25,000 enriched uranium-aluminum alloy slugs.

In response to this request, on June 17, 1954, a proposal was made to Mr. Curtis A. Nelson from Mr. E. S. Norris, Manager, Sylvania's Control Department, by means of a letter and attachments. After due consideration and negotiation, proposal C of this letter was accepted and supplement 8 to the original contract was signed on June 29, 1954. In the meantime, in order to implement SROO's anticipated intention of accepting some of Sylvania's proposals, Mr. H. B. Fry, Manager, NYOO, by letter of June 8 extended the contract through July 31, 1954, and added $9,500 to the Commission's monetary obligation under the contract. Sylvania was authorized to proceed to plan and prepare for work at Hicksville on the assumption that the Commission would authorize, prior to August 1, a further contract modification covering one or more of the proposals under consideration.

Contractual Information

The contract is a cost-plus-fixed fee type. Fee is based on 6% of estimated operation cost. The contract is integated, and is financed by Sylvania funds. The services under this contract were procured by negotiation without formal advertising.

In round numbers, the modified contract calls for the pressure-bond canning of 50,000 enriched slugs (slugs, caps, cans to be furnished by SROO) during the period July 1954 through May 1955. Total estimated cost is $689,000. Of this, the fee will amount to $37,000 and $57,500 is the estimated capital cost. Total construction is estimated as $7,[illegible]00, largely for a security storage vault and alarm equipment.

Status Reports

For additional detail concerning overall status of the contract, reference is made to SR-TM-1530, dated 7/15/54 and SR-TM-1611, dated 8/10/54.

Distribution:

1A Nelson/Blair/Vogel
2A Davis
3A Edwards/Vinciguerra
4A Slaton
5A Low
6A Samples
7A Bergen
8A Matls Br. Files
9A Chrono
10,11,12A Rdg. Files

[redacted]

USDOE 017133

2

W. B. Kelley, Manager — August 14, 1952

V. L. Parsegian, Director, Research Division

REQUEST FOR LETTER AMENDMENT 9 TO CONTRACT AT-30-1-GEN-366 - SYLVANIA ELECTRIC PRODUCTS, INC.

SYMBOL: RD:JDK:be

ATTENTION: V. C. DUNCOMBE, ASSISTANT GENERAL COUNSEL

Please extend the term of the subject contract to September 30, in order to allow time for the negotiation of a definitive amendment to cover all research work to be performed through June 30, 1953.

The level and Scope of Work to be carried out by Sylvania had not been determined by AEC until this week; and accordingly, Sylvania has been unable to present a proposal. It is expected that they will submit a proposal by August 31 and that a definitive amendment will be negotiated before September 30.

CC:
F. Belmore, Production
F. Chrestia, Budget
J. Clarke, Contract Coordinator

NARA II
RG 326
Accession:
4kR-326-83-
012
Box 55

SEP 1 1952

3

PRODUCED AT THE NATIONAL ARCHIVES

W. E. Kelley, Manager January 22, 1953

F. M. Belmore, Director, Production Division

AMENDMENT TO CONTRACT NO. AT-30-1-GEN-366 WITH SYLVANIA ELECTRIC PRODUCTS, INC.

SYMBOL: PM:GRD:smh

Attention: V. C. Duncombe, Assistant General Counsel

Please prepare Amendment No. 5 to the above contract as follows:

1. Perform and report on certain analytical studies of samples of uranium ingot, bar or slug metal as will be furnished by the Commission from time to time.

2. Increase Commission obligation in the amount of $6,000 for this work. *

The above analytical studies will be performed under pilot plant support program at Bayside, New York, and will be primarily required for the ingot quality improvement programs at St. Louis and Fernald as well as for information to Sylvania on the nature of uranium ingot feed material for the pilot plant at Hicksville.

cc: J. C. Clarke
F. Chrestia
V. L. Parsegian
T. P. Carberry

* This OK by Hicks
JR
2/6

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012
Box 55

NARA 002067

4

FM:EMK:smh

MARCH 17 1953

File

Mr. E. S. Morris
Sylvania Electric Products, Inc.
P. O. Box 59
Bayside, Long Island, New York

Subject: METAL QUALITY INVESTIGATION - AMENDMENT TO CONTRACT NO. AT-30-1-GEN-366.

Dear Mr. Morris:

This is to confirm E. M. Kaulbach's verbal request on March 16, 1953 that you submit a fee proposal for our consideration in connection with metallurgical examinations of uranium metal quality which you are conducting. This information is required in connection with the preparation of an amendment to Contract AT-30-1 GEN-366 to cover this additional work.

Very truly yours,

F. M. Belmore
Acting Director
Production Division

cc: V. L. Parsegian, Research Div.
I. Landes, Office of Asst.Gen.Counsel
E. Kaulbach, Prod.Div.
T. Carberry, Prod.Div.

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012
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NARA 002082

5

File

Files
THRUR. L. Kirk

May 7, 1953

G. E. Dunlap, Chief, Metallurgical Development Branch, Production Division

VISIT TO SYLVANIA MAY 1, 1953
CONTRACT AT-30-1 GEN-366

SYMBOL: FM:GED:mah

Dr. Maury Hausner, Mr. Emerson Morris, Mr. Joe Koch and others discussed with the writer the need for a nickel electroplating laboratory. This laboratory would be suitable for plating full length tubes for flat fuel plates. The cost that Sylvania had recently estimated was $17,500, of which a portion was construction money. They propose that an enclosure be built in the Hicksville plant equipped with new tanks and other facilities for this purpose.

I told them that the Commission did not wish to build up the Hicksville plant any further at this time and asked if they would consider putting plating equipment which would be suitable for Program A of their flat plate program into the Bayside laboratories. This suggestion did not meet with favorable response. I then suggested that they diligently pursue subcontracting of the electroplating work and met with a rather mixed response on this suggestion. Currently Sylvania has been dealing with Hart Laboratories in New Jersey, with General American Tank and one subdivision of their own company for electroplating of tubes. They stated that they had contacted a large number of plating companies without success. It was first implied that the lack of this plating laboratory would delay the flat plate program and Dr. Hausner indicated he wished to inform du Pont to this effect. However, it later developed on a visit to Hicksville that the present plating tank which has been installed there would receive and plate tubes up to 26" in length. Furthermore, it developed that the necessary aluminum tubes will not be available from du Pont for some time. Sylvania could, if they desired: (a) plate 63S aluminum alloy tubes for trial in their present Hicksville plating setup; and (b), subcontract with qualified top plating companies to provide samples of 63S alloy for experimental runs.

I therefore informed them that the New York Office would not approve the construction of a plating laboratory at Hicksville and that if they wished to show us a more economical way out, in writing, we would be happy to receive it. Sylvania will probably submit to us a comparison of the cost of installing this plating laboratory at Hicksville verwus Bayside but our position should be to refuse either until adequate efforts have been made to subcontract this plating work.

cc: V. L. Parsegian, Research Div.
T. Carberry, Production Div.

MAY 11 1953

NARA II
RG 326
Accession:
4kR-326-83-
012
Box 55

NARA 002083

6

To: File Sylvania-366

TO: R.L. Kirk
~~H. B. Fry, Manager~~

August 3, 1953

FROM: E.M. KAULBACH
~~R. L. Kirk, Director, Production Division~~

GM - S AND S - 39 FOR SPERRY PRODUCTS, INC - SUBCONTRACT FOR NON-DESTRUCTIVE TESTING DEVELOPMENT UNDER SYLVANIA PRIME CONTRACT NO. AT(30-1)-GEN-366

SYMBOL: FM:[illegible]

~~Attention: V. C. Duncombe, Assistant General Counsel~~

In accordance with requirements of GM-S and S-39, the following information is presented as justification for Sylvania Electric Products, Inc. (Contract No. AT(30-1)-GEN-366) to enter into a subcontract with Sperry Products, Inc., without formal advertising. Numerical sequence of the following statements corresponds to that shown on Page 1 of GM-S and S-39.

1. Sperry Products, Inc., Danbury, Connecticut.

2. Test work is to be conducted at the Research and Test Laboratories of Sperry Products, Inc., Danbury, Connecticut or at Sylvania Laboratory at Bayside, New York, as required.

3. Subcontract No. S-AEC-4 and Amendment No. 1, thereto.

4. Sylvania Electric Products, Inc. at 208-20 Willets Point Boulevard, Bayside, Long Island, New York - Contract No. AT(30-1)-GEN-366.

5. Definitive sub-contract - Time and Materials type.

6. The work will consist of an investigation of ultrasonic inspection techniques applicable to the now destructive testing of flat plate samples supplied by Sylvania. Work to begin on or about July 1, 1953 and to be completed before November 2, 1953. It is anticipated that not more than 300 engineering man hours will be entailed, that the rental from time to time of a reflectoscope will be required and that a very small amount of materials (probably under $500.00 total) will be needed. It is not expected that much travel will be necessary. The work is not to exceed $4,500.00 maximum on a time and material basis.

7. Formal advertising was not practical in this instance. This is not the type of problem which lends itself to formal advertising because

Production
Kaulbach: Kirk

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it is not possible to give out detailed specifications covering the work required and much must be left to the individual initiative and discretion of the researcher. Also, this firm has cleared personnel and this is important because the schedule for the flat plate program involved is very tight. Sylvania has requested Sperry to perform the work involved because it is a leader in this field, is located in the immediate area and has the necessary "Q" cleared personnel.

8. Not applicable.

a. Sylvania has informed us that the negotiations were routine in character, involving no significant difference in opinion or unusual aspects. No price changes were involved.

b. Not applicable.

c. Not applicable.

d. Not applicable.

e. Sylvania states that Sperry is unwilling to furnish a breakdown of the rates or to permit the Commission to examine Sperry's books and records with respect to these rates. Further, Sylvania has stated that Sperry has informed them that the applicable rates are no higher or no lower than those charged by Sperry to the general public for similar work.

f. Not applicable.

g. Not applicable.

h. None, except for the flat plates to be furnished for testing.

i. Financial condition of proposed subcontractor is considered satisfactory. The subcontract is to be wholly financed by the subcontractor. Certificate of necessity or guaranteed loan are not involved. The accounts under the subcontract are to be integrated with the AEC accounts.

j. Sperry Products is one of the leaders in the field of non-destructive testing research.

k. Prime Contract No. AT(30-1)-GEN-866.

Total Amount of Contract	- $8,946,795
Appropriation Number	- 899/40101.91
Allotment Symbol	- 29-41-91
Sub-program Class	- 0008
Budget Item	- 2801

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l. Delivery requirements are based on the urgency of Sylvania's supplying uranium flat plates to Savannah River as soon as possible.

m. Pricing aspects of this sub-contract are in accordance with the normal rates which Sperry Products, Inc. charges for this type of work.

n. R. L. Kirk - Plaza 7-5600.

cc: T. C. Carberry
J. C. Clarke, Contract Control
V. J. Del Vecchia

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December 6, 1954

W. H. Donnelly,
Contracts Division

W. B. Harris, Chief, Industrial Hygiene Branch,
Health and Safety Laboratory

HYDROSTATIC PRESSING FACILITY - SYLVANIA CONTRACT AT(30-1)-OEM-366

SYMBOL: HSH:WBH

I have examined the Sylvania proposal to locate a high pressure hydrostatic test facility at Hicksville.

From the standpoint of safety, the arguments which they give for placing the facility at Hicksville are good. We would be unwilling to see the facility placed in the farmhouse under any circumstances. There is no objection to the proposed designs from a safety standpoint. It is presumed, of course, that the orientation would be such that the ramp would face away from the populated area.

Enclosure:
Ltr Norris, Sylvania
to Donnelly, 11/26/54.

HSH
HARRIS:rle
12/6/54

8

SAVANNAH RIVER OPERATIONS OFFICE

1. Name and Address

Sylvania Electric Products, Inc.
P. O. Box 59
Bayside, New York

2. Contract Number

Contract AT(30-1)-GEN-366
Appendix "C" Agreement
SROO Sponsored Task C-33

3. Statement of Work

A. Continuation of the Savannah River fuel and target element development.
B. Development of a process for reduction of "88"

Note: As of December 31, 1955, that portion of the statement of work referred to as paragraph A, above, has been terminated.

4. Term of Contract

This agreement is effective for the period July 1, 1955, through June 30, 1956.

5. Type of Contract

Cost-plus-fixed-fee

6. Amount of Contract

A. Work as identified under 3 A -	Operating Costs	$ 251,060
	Equipment	14,500
	Fee	15,060
	Total	$ 280,620
B. Work as identified under 3 B -	Operating Costs	$ 108,420
	Equipment	12,500
	Fee	6,510
	Total	$ 127,430
	Total Obligation	$ 408,050
		11,560
		386490

15060
6510
21,56

7. Basis of Award

The services for this contract were procured by negotiation because the uncertainty involved in the research and development effort make it infeasible to arrive at a fixed price which would represent a reasonable estimate of the cost of the work.

Sylvania Electric Products Inc. - C-33

8. Payments made as of 12/31/55

	FY 1956 Actual 7/1 thru 12/31/55
Fee	$ 6,051
Cost	101,360
Total	$107,411

USDOE 013596

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USDOE 000994

DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTHS OF

JUNE AND JULY, 1956

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USDOE 000995

SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Office Management

Teletype traffic decreased during the month of July. This reduction was due primarily to the completion of the Pacific tests.

A breakdown of telephone and teletype traffic for the report months is as follows:

	July	June
Local Calls	8,952 cost $406.60	9,140 cost $415.06
Long Distance	634 cost $1,040.58	632 cost $1,088.95
Teletypes	819	1,017

Procurement

A physical inspection concerning procurement activities was conducted at Nuclear Metals. This completed the Procurement Appraisal Program for Fiscal Year 1956.

Procurement activities during June have been concerned to a considerable extent with advertising for supplies and services which are procured on an annual basis and on which existing contracts expire at the close of the fiscal year.

During June four contracts were prepared for the Brookhaven Area. Contract No. AT(30-1)1915 with Sylvester Sternberg, Inc., in the amount of $43,236 for furnishing and erecting structural steel and erecting a crane for the Engineering Works Area; Contract No. AT(30-1)1923 with Conco Engineering Works, in the amount of $32,125, for supplying a crane to the Engineering Works Area; Contract No. AT(30-1)1947 with Malan Construction Corp., in the amount of $329,000 for construction work for the Engineering Works Area; Contract No. AT(30-1)1924 with Malan Construction Corp., in the amount of $5,141,879 for construction of the Medical Research Center.

A Procurement Survey was conducted at Columbia University.

USDOE 000996

Property

Arrangements were made with the U.S. Naval Ammunition Depot, Earle, New Jersey for shipments of contaminated waste during the report months from the following installation:

Pittsburgh Area Office (Westinghouse Atomic Power Division) for the disposal of 194.590 tons

During June arrangements were completed for the acquisition of approximately $29,724.70 worth of excess property at an average cost of 20%. Savings realized from these transactions approximated $23,779.83. In July arrangements were completed for the acquisition of approximately $14,381.84 worth of excess property at an average cost of 15%. Savings realized from these transactions approximated $11,505.16.

A property management appraisal was completed at Carnegie Institute of Technology (AT-30-1-882). Several recommendations were made and transmitted to the contractor for compliance. A property management appraisal was also completed at Columbia University,(AT-30-1-72). The report is being prepared and recommendations will be transmitted to the contractor shortly.

There were 69 trips made by 5 vehicles during the report months for a total of 5,695 miles travelled.

195.614 troy ounces of pure (99.9%) platinum were shipped out for the two months for a total value of $19,537.40

The office was represented at a meeting of the Inter-Agency Advisory Committee on Motor Vehicles at the Foley Square Courthouse. The GSA sponsored motor pool will begin operation at three different locations on or about July 1, 1956. The AEC will take active part in the program.

Horizons, Inc., Cleveland, Ohio, was visited to determine feasibility of accepting termination inventory from Savannah River Operations Office. Due to contamination and restoration costs involved, NYOO will not accept complete transfer of accountability for all equipment, but will accept administrative transfer of only that equipment required by NYOO.

Records Management

The University of Rochester, Cyclotron Project, Contract No. AT(30-1)875 was visited to determine the need for a records management program at that installation. The contract is not large enough to warrant a records program at this time, however, the records problems that existed were resolved at the time of the visit.

USDOE 000997

Records management appraisals were made at the University of Rochester, Contract No. W-7401-Eng-49; Sylvania Electric Products, Contract No. AT(30-1)Gen-366; and Associated Universities, Inc., Contract No. AT(30-2) Gen-16. These contractors are conducting satisfactory records programs. However, recommendations will be made in the formal appraisal report which should increase the efficiency of their programs.

During the report period, 18 visitors availed themselves of Library facilities. Of these, 10 were access permittees.

A total of 90 calls were received from access permittees requesting information concerning AEC reports.

Contracts

Contract Status

Active Contracts May 1, 1956			376
Contract Actions Completed During May, June, and July, 1956			
New Contracts Added	54	54	
Contract Amendments	204		
Total Actions	258		
Contracts Removed from Active List		8	
Net Added			46
Active Contracts July 31, 1956			422

Harvard University, Cambridge Accelerator Project, Contract AT(30-1)-1909. A selection board designated by the Manager selected Charles T. Main to design the laboratory building and accelerator housing. The negotiation board subsequently approved by the Manager completed its negotiations successfully. Harvard and Main have signed the subcontract which has been reviewed and approved by NYOO.

New York University, Computing Center, Contract AT(30-1)-1480. NYU submitted a proposal that the AEC install an IBM 704 computer at the University. A meeting was held with the Vice-President and Treasurer of the University to clarify several points, including the feasibility of installing the equipment in the UNIVAC building rather than in the other building proposed by NYU; the extent of AEC responsibility to pay full amortization for space provided in the event of termination; the duration of the amortization period; AEC rights to use of space; costs for installing the equipment; and costs for repairs and alterations needed for the building. NYU is to submit a revised proposal. Meanwhile NYU has secured an extension of its purchase option for the proposed building until September 15, 1956.

USDOE 000998

New York University, Subcritical Facility, AT(30-1)-1870.
Negotiations for loan of the fuel material broke down over patents. NYU holds that the proposed AEC patent provisions extend too far, and would sweep in improvements to reactors or other aspects of atomic energy with little direct connection to use of the facility. NYU is considering a counter proposal on patents to limit AEC rights.

Nuclear Metals, Inc., Contract AT(30-1)-1565.
At a negotiation meeting, substantial agreement was achieved concerning provisions for sale of AEC equipment and lease of the Hood Building. NYOO Counsel is writing a final draft of a complete contract action to accomplish this.

In June a fire and safety report disclosing a number of unsatisfactory conditions was sent to Nuclear. A follow-up visit is planned for July. Unless effective correction actions have been taken, or are scheduled, it is intended to suspend work in the areas involved.

There was a small fire on July 26 when molten beryllium spilled on a wooden floor in the foundry area of the Hood Building. The staff was evacuated and sent home. The building was cleaned up and back in operation the following morning. There was no property damage or personnel injury.

NYOO visited the Hood Building July 31, to review safety conditions. The general density of operations, machines and equipment in this building appeared unsafe for long term continued operations. Nuclear was instructed to add no more staff in the building; to reduce the present inventories of fissionable materials as quickly as possible consistent with jobs on hand to less than one kilogram; to take a lease option on 17,000 square feet in a building immediately across the street, and to consider which operations could be moved into this space. The Manager, NYOO plans to personally inspect and evaluate the situation during the latter part of August.

Princeton University, Matterhorn, Contract AT(30-1)-1238.
Princeton withdrew its proposal to sell to the AEC the buildings of the Matterhorn complex. They proposed instead to provide additional general facilities with their own capital. In return, the AEC would guarantee amortization of the Matterhorn complex. NYOO has forwarded this new proposal to Washington and negotiations are now underway.

NYOO met with Princeton representatives and the Chief of the Sherwood Branch to discuss steps leading to construction of the initial phase of the Model "C" complex. Princeton's proposal to undertake preliminary studies of the site selected and the construction is being awaited. The initial phase will involve about $1,000,000 for construction.

USDOE 000999

Princeton University, Accelerator Project, AT(30-1)-1916.
Princeton signed the letter contract for this work on June 15. A selection board appointed by the Manager, NYOO, chose Gibbs & Hill as the architect/engineer for design work on the building and housing of the accelerator. A negotiation board appointed by the Manager, NYOO, with representatives from Princeton and AEC, met with Gibbs & Hill. Questions surrounding the architect/engineer's fee proposal and cost estimate which were substantially above reasonable expectations have been resolved. Discussions are also in progress concerning items to be reimbursed through overhead for the Forrestal Research Center. Princeton's Controller has expressed a preference to await the results of various studies of university overhead now going on before reaching agreement on this problem.

University of Rochester, Cyclotron Project, AT(30-1)-875.
Negotiations have been completed with an architect/engineer for preliminary design of a building for nuclear emulsion studies.

Sylvania Electric Products, Inc., Contract AT(30-1)GEN-366.
Sylvania announced its plans to construct a new laboratory. NYOO began review of the implications of Sylvania's announcement of its plans to build a new nuclear laboratory of its own and move its Atomic Energy Division there in about eighteen months. NYOO wrote raising a number of questions, centering about proposed treatment of costs involved. Sylvania had informed us that none of the moving costs would be charged to AEC. Our letter requests a more specific definition now. NYOO also inquired about depreciation rates Sylvania would propose for inclusion in its overhead pool at the new site.

Sylvania was authorized to proceed with construction of a test-cell for hot-hydrostatic pressing at an estimated cost of $9,200.

There was an explosion at Sylvania on July 2, which damaged AEC equipment, disrupted operations for several days, and caused serious injury to four Sylvania employees assigned to AEC work. The apparent origin of the blast was in thorium fines that were being burned prior to shipment for scrap recovery. A detailed report has been submitted by NYOO to the Director of Biology and Medicine.

Sylvania was instructed to suspend work on the Plutonium Laboratory which was being installed in its Metallurgical Laboratory at Bayside. Sylvania has been requested to propose an alternate site for installation.

Sylvania was authorized to use AEC equipment for work under an Air Force subcontract from Curtiss-Wright. This use is being permitted without charge because the work is related to AEC efforts in aircraft nuclear propulsion.

NYOO inspected Sylvania owned equipment in the Sylvania Laboratory used for AEC work to consider the depreciation which is charged back to AEC

USDOE 001000

as Sylvania overhead. It was concluded that use of the equipment was necessary for the work and the charge to overhead was thus warranted.

Yale University, Linear Accelerator Project, Contract AT(30-1)-1691. The Director of Research confirmed a revised statement of scope which was provided by Yale, relating to changes in the building. The contract was modified to state this scope and to provide an interim, partial payment of the increased costs to Yale resulting from this change. The final extent of AEC participation in these increased costs is to be negotiated, balancing the increase in building costs against the change in scope.

A meeting was held to review audit problems. Substantial agreement on remedial action was reached on most points. The estimated completion date for the accelerator was revised by Yale from January 30 to April 30, 1957. Yale has also revised its budget from $1,500,000 to $1,828,000. NYOO has referred this change to Washington.

Walter Kidde Nuclear Laboratories, Contract AT(30-1)-1572. NYOO and D. A. Gilbert, Division of Research, Washington, visited Walter Kidde of Nuclear Laboratories to review the present work status. NYOO is now waiting for Washington instructions on termination of this work.

Manager's Office

June 19, Dr. C. L. Dunham, Director, Division of Biology and Medicine, visited NYOO on way to Oslo with Dr. Harley.

Public Information

During the month of June, the Public Information staff worked with the United States Information Agency and Brookhaven National Laboratory in the photographing of sequences at Brookhaven for a USIA film. A conference was also held with Grant Leenhouts of Cinerama. A press release announcing contracts awarded for the Medical Center at Brookhaven was issued during the month.

The July 2 explosion at the Bayside plant of Sylvania Electric Products, Inc. occupied most of the Public Information staff for the remainder of the month. On the day of the accident, three oral statements and one written press release were issued by NYOO. Sylvania and NYOO statements were coordinated to insure uniformity of fact and information.

On July 10, the Director, Public Information Service, and the Chief of the Industrial Hygiene Branch went to Washington to brief the General

USDOE 001001

Manager and his staff on the technical facts of the accident and the public relations implications.

A final report was prepared and submitted to the General Manager, with copies to the Assistant General Managers, Washington Division Directors, Operation Office Managers, and Public Information Officers in the field, on July 16.

Press coverage of the incident was sensational and revealed a lack of understanding of the materials involved and the nature of the radiation on the part of many state and city agencies concerned. Latter day stories were written in a more reasonable tone. Close coordination with the Sylvania Public Relations Staff was maintained throughout the month of July.

On July 23, NYOO issued a press release reiterating the facts of the explosion, as well as giving information on the urine analyses performed as a result of it. This release was issued to forestall a sensational story which NYOO discovered was being prepared by one of the New York afternoon papers. This tactic proved highly successful, and the sensational story never appeared.

When the most critically injured of the four Sylvania employees died on the morning of August 8, Sylvania checked its obituary with NYOO. Newspaper stories indicated that the death was the result of blast and burn injuries with no complications from radiation.

During the report period, 107 films from the Information Service's Film Library were shown to approximately 4,708 people.

Security

During the report period, 285 clearances for access to secret data and 215 for access to confidential data were granted to Access Permittees by the Security Division. Requests for 245 secret and 202 confidential clearances were received for processing in the same period.

Technical Liaison

During the report period, 28 new access permits were assigned to the New York Operations Office for implementation. Of access permits already assigned, there were 8 amendments. Of the new access permits assigned in July, 5 of these were granted on a secret basis. This brings the total number of all access permits assigned to NYOO up to 315. Of these, 138 are in the secret category and 177 are in the confidential category.

USDOE 001002

HEALTH AND SAFETY LABORATORY

Nuclear Safety Review Board

Feasibility Reports

The following feasibility reports were approved by the Nuclear Safety Review Board (formerly Criticality Review Board--changed as per memorandum dated 7/12/56):

NMI-JJP-1 Feasibility Report for Fabrication and Heat Treatment of Zirconium-Clad Enriched Uranium-Molybdenum Irradiation Specimens for APDA

Amendment to Feasibility Reports No. 33 and 34 - Sylvania/NAA

NMI-OLW-1 Supplement 1 to General Feasibility Report for the Fabrication of S3G Type Elements for the Knolls Atomic Power Laboratory

Feasibility Report No. 39 - Dimensional Instability of Uranium - Division of Research, Sylvania Electric Products Inc. (Bayside)

Sylvania Electric Products, Inc. - Feasibility Report for Production of U-Mo and U-Zr Alloys for ANL Irradiation Studies

Sylvania Electric Products, Inc. - Feasibility Report No. 38 Sponsored Task C-4

Sylvania Feasibility Report (Hicksville) DCF No. 1235H - Brookhaven Fuel Elements

Feasibility Report, NMI-OLW-1 for the Fabrication of S3G Type Elements for the Knolls Atomic Power Laboratory

Supplement No. 3 to Feasibility Report No. 36 Sponsored Task C-49

Field Studies

Beryllium Corporation

At the request of the Chicago Operations Office, a visit was made to the Beryllium Corporation at Temple and also to a site located east of Hazleton, Pennsylvania where the company is considering locating a new beryllium facility. The primary purpose of the visit was to review the location from the standpoint of solid, liquid, and gaseous waste disposal, and to review the plans of the company for providing suitable health protection to the workers and to the environment of the new plant.

USDOE 001003

It was noted that the proposed location is isolated and should be very well suited to the operations of beryllium production. The proposed techniques of solid liquid and gaseous waste disposal and the inplant controls appear to have been thoughtfully prepared, and although they are too preliminary to permit critical judgment of their effectiveness, they seem to be in line with good industrial hygiene practice. It was suggested that plant management consult with local agencies to insure that all regulations pertaining to health are being complied with.

Brush Beryllium

Analytical results of samples taken by Brush personnel at the Luckey plant have been reviewed. The results showed several locations wherein personnel are being over-exposed to beryllium dust; in some cases seriously. An analysis of the results together with recommendations have been transmitted to the Lockland Area Office for their action.

A visit was made to Luckey to review the completion of the recommendations which had been made prior to startup of the plant. A timetable of improvements has been established. The plant will be visited sometime in August to define the exposures.

Columbia University

A Safety and Fire Protection Survey was made in the Van de Graaff area of Columbia University. Several recommendations were made toward improving the integrity of the fire protection in the Van de Graaff area, and also in the storate shed wherein large quantities of parrafin, flammable liquids, radium, beryllium, isotopes, combustibles, and gas cylinders were found. The latter could present a very serious hazard.

Grand Junction Sampling Plant

As a result of finding high uranium in samples of urine of operators of the Grand Junction Sampling Plant a visit was made to the plant to determine the cause of the unusual excretion rate. Air samples were taken at all of the operations in the sampling plant in order to determine locations of possible over-exposure. The plant appeared to be reasonably well ventilated and housekeeping was good. However, analysis of the air samples showed several locations where over-exposures to uranium dust undoubtedly occurs. It has been suggested to Grand Junction that a complete survey of the operations be scheduled.

Interception of Sensitive Materials

Following is a list of the subject areas in which HASL participated under its agreement to assist other Government agencies in the interception and examination of nuclear materials and devices:

USDOE 001004

Rare Earths Ore Samples	6/6/56
Radioactivity in Cargo of City of Poona, British Freighter	6/9/56
Uranium Ore from Melbourne, Australia	6/4/56
Radium Embedded in Decanter Stopper	6/5/56
Assorted Mineral Specimens from South Africa	6/5/56
Strontium-90 Source	6/1/56
Thorium Metal for France	7/5/56
Iron Ore from Sweden Abroad Mormac-York	7/12/56
Ore Samples from Turkey	7/16/56
Torbernite Crystal from Spain	7/26/56
Niccolite and Carbolite Ore Sample from Iran	7/26/56
Piece of Gold Bearing Ore from Johannesburg, South Africa	7/26/56
Assorted Mineral Samples from Australia	7/26/56

Massachusetts Institute of Technology

A Safety and Fire Protection Survey was made in the Sanitary Engineering and Radioactivity Research Laboratories at MIT. Certain small items were noted which required correction. Recommendations covering these items have been forwarded to the Institute.

Massachusetts Institute of Technology Reactor

At the request of the Contracts Division, a review of the MIT reactor hazards summary report was made. It was pointed out that because this building is already under construction, an additional urgent reason existed for taking steps to remove the Nuclear Metals Operation from the Hood Building. In this already highly industrialized neighborhood, a great deal of damage could result from a chemical explosion. The addition of a research reactor in the area makes the problem even more critical.

Metals and Controls

A visit was made to Metals and Controls Company in Attleboro, at the request of the Schenectady Operations Office. The main purposes of the visit were to review the contemplated operations in the plant, especially with regard to the handling of special nuclear materials, and also to review in detail the waste disposal procedures which are contemplated. Suggestions regarding the various aspects of waste handling were made, and also an offer to assist the management in having these procedures cleared by local authorities.

New York University

A Safety and Fire Protection Survey was made of the UNIVAC operation. Several items having to do with increasing the protection against high voltage and fire hazards were noted, and recommendations for the correction of these items have been forwarded to the University.

USDOE 001005

Norton Company

At the request of Chicago Operations a visit was made to the Norton Company to review their procedures for handling special nuclear materials. The work which they contemplate involves the pressing and firing of an enriched urania thoria mixture. The facilities were inspected, and a short talk was given to the operators on the unusual hazards involved in the handling of special materials. The details of the operation were reviewed and suggestions were made for safe practices.

Nuclear Metals

A Safety and Fire Protection Survey was made at the Nuclear Metals Operation in the Hood Building in Cambridge. As usual, a large number of small safety violations were noted. Although this plant is reasonably safety conscious and does make a considerable effort to keep the place in good shape, the conditions of operation and the condition of the building make this extremely difficult.

In the course of the visit, the following items were among those noted: (1) general deterioration of housekeeping, (2) poor storage of flammables and acids, (3) inadequate high voltage protection, (4) cluttered aisles, and (5) jury rigged protective devices, and so forth. Recommendations were forwarded for the improvement of conditions.

A small fire was ignited on the floor of the mezzanine section in the Nuclear Metals foundry. The fire resulted from the accidental spattering of some molten beryllium as it was being poured. The droplets ignited several small fires which were quickly extinguished with dry powder extinguishers. The dry powder flowed throughout the building and created the illusion of possible berillia fume. The building was completely evacuated, and after about an hour all personnel except those involved in clean-up were sent home. The clothing which was used in the building was gathered for laundering. Air samples were taken about three hours after the incident, and switches and sweeping of settled material were collected. The samples were analyzed in this office and showed the following: (a) All air samples, with one exception, were below the limit of detection. This one sample analyzed approximately 0.5 ug/M^3. (b) With the exception of a couple of floor sweepings, the settled material contained essentially no beryllium. One of the sweepings from the mezzanine floor showed small amounts of beryllium.

The incident was immediately reported to Washington. The incident occurred on Friday and by Monday morning all work was resumed as usual.

A visit was made to the Hood Building to discuss the handling of scrap materials. Although the handling of these materials had been settled in a previous visit, several things have since occurred which tend to upset the original decision. These are: (1) the refusal of National Lead to

USDOE 001006

accept any scrap uranium which contains zirconium. This is a result of the Oak Ridge zirconium powder explosion. (2) The Sylvania incident makes the storage of scrap even more undesirable than before.

As a result of our discussions, recommendations were transmitted to the Hood Building which should permit safe handling of all scrap materials. These included the erection of an exterior scrap storage building and clearance of all scrap materials from inside the building on a daily basis. Permission has been granted to Nuclear Metals to sea dispose the potentially dangerous uranium and thorium.

Operation Redwing

The telemetering function at PPG was deleted because of equipment difficulties. The data was instead transmitted by voice with plane position and radiation reading given. With two planes in operation the transmissions were staggered at three and six minute intervals respectively for the close-in and the distant plane. This method is satisfactory but does not provide the detail expected of the telemetering mechanism.

Continuous seawater activity measuring equipment was installed on the Destroyer Escort Walter. Initial reports indicated good operation although contamination of the tank brought new problems. According to reports the addition of sea water in the tank provided an attenuation factor of 3 over a normal background reading of approximately .01 mr/hr. After the equipment is in use for several days the contamination in the tank increases to 10 times the original background before sea water insertion. This contamination level can be reduced by washing the tank interior with a detergent, after which the background level drops to the normal value.

University of Rochester

A Safety and Fire Protection Survey was made at the Atomic Energy Project Laboratories at Rochester University. In general, the laboratory was found to be reasonably well maintained, but there were several items noted which could lead to trouble. These included mainly the handling of flammable liquids which were found rather promiscuously distributed without adequate control and several small items pertaining to mechanical safety protection. Recommendations have been transmitted to the management for the correction of these conditions.

Sylvania Electric

On July 2 a serious explosion occurred at the Sylvania Electric Products Metallurgical Laboratory in Bayside. The explosion injured four people, one of whom subsequently died, and resulted in considerable damage to the building and to equipment. HASL personnel made a thorough survey of the

USDOE 001007

area, inside and outside of the plant, to establish levels of radiation and of airborne radioactive materials. Despite the fact that considerable stress had been placed on the possible existance of such material, no significant findings were reported.

A thorough investigation was made of the incident, and reported to the Commission.

Projects

Cooperation with New York State Department of Labor

During the period under review, arrangements were made for the New York State Department of Labor to receive Health and Safety Laboratory radiation detection instruments under the Instrument Recall Program. The instruments will be used in the New York and Buffalo offices of the New York State Department of Labor. It is understood these instruments are to be supplied on an interim basis until the Department of Labor is adequately equipped with its own instrumentation. Similar cooperation has been offered to other nearby State and local agencies.

Equipment for Mallinckrodt

The system for use at the Weldon Springs Plant will have the same general characteristics as the one to be designed for the Analytical Branch here. Automatic changer mechanisms units are in construction at the vendor's plant and should be completed during August with the electrical accessories scheduled for a later time.

F.C.D.A.

Work has continued on design of a scintillation survey meter for aircraft use. Electrical circuits have been worked out satisfactorily and mechanical layout is proceeding. No commitment has been received from FCDA regarding funds for this instrument or the radio altimeter.

Image Minifier - Scanning Tube for Gamma Ray Radiography

A directive has been received to place the development work with the A. B. DuMont Laboratory. The initial phase will cover only the design of an image minifier (image reducer structure) to go from a 27 or 30 inch diagonal image down to a $1\frac{1}{2}$ inch to 3 inch diagonal image. Only initial design work has been started.

Instruments

A new contract has been negotiated with the A. B. DuMont Laboratories to cover work on photomultiplier tubes for the next year. This contract will include work on fast structures, improved mounting structures for

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large tubes to permit the use of liquid phosphors without intermediate gasketing and seal problems. Improvements in cathodes, secondary emission surfaces and electrical insulation are projected as well.

Proposals have been secured on the image intensifier tubes and the present indications are that the contract will be awarded to the A.B. DuMont Laboratories. The present opinion points toward construction of design of tubes with 30" diagonals in preference to the 20" diagonal in order to improve the image size. Since the cost of development and fabrication at this stage will be no greater and since the image area will be increased by a factor of approximately two, major benefits are expected.

There has been no success in securing any large glass manufacturers to aid in fabrication of scintillation phosphors made of glass. On the other hand, it is possible that one of the smaller glass manufacturers will be interested, and offers will be made to them. A contract to NYU is being negotiated to cover a solid state study of the phenomena.

Mercury Vapor Detector

Initial design work has been activated on a transistorized power supply for the mercury vapor detector. The major problem lies in the lack of a good air mover for the one liter per minute volume desired. With the transistorized high voltage supply the current drain is less than 100 ma at 6 volts; all commercial fans and blowers require from 1/2 to 1 ampere at 6 volts. The matter is being studied but it is expected that a good fan design would be evolved.

Proposed Electron Linear Accelerator - Yale University

On July 20 the Assistant Chief, Radiation Branch visited the electron linear accelerator group at Yale University to discuss the shielding required for a new 40 MEV linear accelerator now at the stage of preliminary negotiation.

This machine will be a high current machine primarily for the production of fast neutrons by the gamma-N reaction in Uranium. The estimated X-ray output of this device will be 10^6 rad per minute at 1 meter with an approximate neutron output of 10^{14} neutrons per second.

The shielding of the linear accelerator is essentially 6 feet of ordinary concrete. If the accelerator achieves the energy and beam current anticipated, it is adequate. It was recommended that ultimate attenuation requirements over and above the present shielding await the performance of a radiation survey which will indicate the precise quantity of additional shielding required.

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Punch Card Data Reduction

Work is proceeding on the adaption of the IBM punch card mechanism to all the automatic counting systems in the Analytical Laboratory. The data storage dekatron counting modules, the accessory equipment and a large portion of the relay circuitry, to be used at each stage, has been designed. Fabrication of 300 modules will continue in August and should be completed before the end of the month. Other design criteria are being evolved and it is expected the system will be constructed in the laboratory in the latter part of this year.

Special Training

Mr. James McLaughlin, Jr. of the Radiation Branch concluded his training at BNL in reactor and critical facility technology. Mr. McLaughlin has left for a period of two months at which time he will be on duty at the National Reactor Testing Station, Arco, Idaho.

Stratospheric Air Sampler

Work has been completed on the laboratory testing of the stratospheric air sampler. A complete report covering the experimental work, entitled "Experimental Collection Efficiency of a Stratospheric Air Sampler" has been published and forwarded to the interested parties.

Training of Coast Guard Personnel

At a meeting held in Washington on May 31, 1956, it was agreed that the New York Office would explore the feasibility of setting up a training course for Coast Guard personnel engaged in the Port Security Program. Conversations with BNL authorities indicated that BNL would be willing to arrange such a program if it did not conflict with other commitments. An exploratory meeting was held on June 12, 1956, and included representatives of the U.S. Coast Guard (Captain F. K. Johnson); Hanson Blatz, NYOO; J. Kelly, DMA, Washington; and Gordon Stubbings, BNL Area Office.

Approximately 200 Coast Guard personnel would require training to utilize the special instrumentation which will be available next fall or winter. It was decided that a suitable approach would be to select 12 to 15 OCS reserve officers with scientific background to be given intensive training in all aspects of the problem. Each of these officers would be assigned to one of the Coast Guard areas to train other personnel involved in the Port Security Program. Tentative arrangements call for a course of one to three weeks duration in the Fall or Winter of this year.

Detailed administrative aspects of this program are being reviewed to assure concurrence of all agencies concerned and to comply with necessary security requirements.

* * *

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Equipment is being fabricated for the IBM punch card set up. The progress is in accordance with schedule with no major difficulties appearing.

All laboratory equipment has been placed in operating condition and is now being maintained. The radon apparatus has been reworked and the previous low background levels have been reached or reduced with satisfactory operation reported throughout.

The initial draft of Chapter I of Volume III of the Reactor Handbook, prepared as a group effort by the Health and Safety Laboratory, has been transmitted to the editors.

Laboratory Work

Fallout

10,218 fallout samples were processed during this period.

Radiation and Surface Contamination Surveys

The total number of film badges processed for the months of June and July, 1956 is 5,048.

Instruments Repaired - 50
Instruments Calibrated - 72
Instruments Checked for Contamination - 23

With respect to the Sylvania-Bayside blast on July 2, continued analyses for urinary uranium have been run on the hospitalized personnel and the results show a continuing decrease as expected from previous experience. Thorium analyses are not complete and a summary analysis report will not be written until this data is ready. Approximately 420 samples were analyzed for urinary uranium.

Miscellaneous Personnel Activities

Committee Participation

AEC Manual

A meeting was called by the Division of Production in Washington for the purpose of discussing a revision of Chapter 5182. The meeting was generated by the work recently done by this office on the decontamination of stainless, nickel and copper scrap, and also on conferences held with the National Association of Photographic Manufacturers on the possibility

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of releasing contaminated scrap into commercial channels. Drafts of revised chapters which would include the disposition of stainless, nickel, and copper, and also of equipment were agreed upon at the meeting. These drafts will be published in the very near future.

National Congress of Radiology

The Chief of the Radiation Branch represented the Health and Safety Laboratory at the International Congress of Radiology in Mexico City from June 21 through June 28. A compilatory study performed by the Radiation Branch on gonadal doses received during diagnostic X-ray procedures was distributed at the meeting.

New Jersey Governors' Committee on Radiation Protection

On June 22, the Chief of the Radiation Branch attended a meeting of the Governors' Committee on Radiation Protection.

* * *

On June 6, John Harley, Ira Whitney, and John Alercio attended a meeting with respect to the current platinum inventory and devising a better system for taking inventories.

On June 12 through June 14, a representative of the Radiation Branch (J.E. McLaughlin, Jr.) participated in the Joint U.K.-U.S.A. Meeting on Reactor Hazards at Chicago, Illinois.

On June 22, Jim Fresco attended a meeting in Washington with respect to the comparison conducted by the Armour Research Foundation of fallout sampling.

On June 26 (in Washington) and on June 29 (in New York), the Chief of the Radiation Branch met with a representative of the AEC-OGC to make what is anticipated to be the final revisions of 10 CFR Part 20.

On June 27, Ira Whitney and H. DiGiovanni met with Capt. L. Stone and Mr. C. E. Heidt of the Air Force (Cambridge, Mass.) with respect to high altitude measurements.

On June 27, the Assistant Chief of the Radiation Branch presented a paper to the second annual meeting of the Health Physics Society entitled, "Measurement of the Scatter Component from Kilocurie Cobalt-60 Source" (L. Solon, K. O'Brien, and H. DiGiovanni). A paper on "Decontamination of Non-Ferrous Metals (Klevin and Harris) was also delivered by W. B. Harris.

During the week of July 23, Jim Fresco and Si Licht participated in a resurvey of the Stockton, New Jersey area to collect and analyze water

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samples. Previous surveys, under the direction of Jack Kratchman, Geologist, Raw Materials Division, Washington, were conducted during November, 1955.

During the week of July 30, George Welford and Doris Sutton attended the Gordon Research Conference on Ion Exchange in Meriden, New Hampshire.

Visits by HASL

On June 24-26, John Harley visited the Atomic Energy Research establishments at Harwell and Woolwich to discuss interlaboratory analyses of milk, fallout summaries, etc.

On June 28, the Assistant Chief of the Radiation Branch lectured to a group of 40 firemen participating in a course at the Fire College on radiological monitoring.

On July 24, John Harley attended an ESSO Executive Group meeting at the ESSO Relocation Center in Morristown, New Jersey, as part of Operation ALERT. He discussed fallout in general non-technical terms from a viewpoint of both immediate and long-term hazards and possible counter measures.

William Harris attended a meeting called by the Denver Research Institute and Atomic Industrial Forum in Denver. He presented a paper on "Radon Exposures in Mines".

Visits to HASL

On June 5, Ed Palmes of New York University visited John Harley and Ed Hardy to discuss soil sample analysis.

On June 7, Eduardo Ramos (Rodrigues), UN Scientific Committee on Radiation Member from Spain, visited the Laboratory.

On June 13, Dr. Umberger and Mr. Leo Dal Cortivo of New York University visited John Harley with respect to the current contract on trace analysis in biological specimens.

On June 13, Bob List of the U.S. Weather Bureau visited John Harley, John Whitnah, and Dr. Brandt to discuss the fallout network.

On June 14, Steve Wiberly, together with Bob Osteryoung and Ray Meyer of Rensselaer visited John Harley to discuss a timing device for army aircraft equipment.

On June 21, Dr. E. A. Watkinson of the Canadian Atomic Energy Installation visited Ira Whitney to discuss Canadian fallout and the setting up of an inter-laboratory comparison of U.S.-Canadian milk.

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On June 21-22, Dr. Alan Lough, Consultant, talked to Ira Whitney with respect to the overall Sunshine Program.

On June 26, Dr. Gentry and Dr. G. Bullin of the New York State Department of Health talked to Ira Whitney with respect to measurements of radioactivity in water, soil, and airborne dust.

On July 9, Dr. Aldo Forcella visited Naomi A. Hallden to borrow a thulium source and to discuss the subject of possible gamma sources.

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SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR JUNE AND JULY 1956

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

A. Construction - During the month of June all pile driving, including the sheet piling for the Target Area, was completed. On the Service Building, all roofing and interior block partitions were erected and interior painting was started in July. Eleven bids for the Magnet Enclosure and the Linear Accelerator Tunnel concrete work were opened on June 28. The apparent low bidder, White Construction Company, was given a conditional Notice of Award for the construction of the Tunnel. It is expected that the contract will be executed during the early part of August.

B. Design

Buildings - Stone and Webster was authorized to proceed with design of External Shielding, Land Improvements and Machine Cooling. Design of the Magnet Enclosure, mechanical work on the Linac Building and the Target Building is 75% complete.

Machine - The General Electric proposal for the Magnet fabrication was withdrawn at their request in order that they may submit a complete package proposal including responsibility for procuring the Magnet steel. Definitive specifications on the main power supply were furnished to Westinghouse, General Electric, and Allis-Chalmers. A prototype mechanical model of a linear accelerator section was received and was being tested at month's end. A prototype model of the electrical RF section for the Linac was also received and is being tested.

Medical Research Center

A contract for the construction of the Medical Research Center was awarded to the Malan Construction Corporation in the amount of $5,141,879 on June 7, 1956. Malan moved on to the job and started construction officially on June 21. A detailed progress schedule for the Medical Research construction is being developed with the Contractor. A determination of the effect of the steel strike on the over-all job progress will be made.

Engineering Works Area

A contract for the construction of the Engineering Works Area was awarded to the low bidder, Malan Construction Corporation, on June 22, 1956, in the amount of $372,236 which includes the assignment of the contract

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previously placed with the firm of Sylvester Sternberg for furnishing, fabrication, and erection of structural steel and also $1,210 for the erection of the Engineering Works Area crane, to be furnished by Conco Engineering. Actual construction was started on July 27. Progress schedule for this job is being established with the Malan Construction Corporation and the effect of the steel strike upon the previously predicted completion date will be analyzed.

Cosmotron

The past month has seen an increased use of the external proton beam. Several bubble chamber runs have been made using the external beam. These experiments have necessitated the erection of rather bulky concrete block houses to shield the chamber.

For the past year the Cosmotron has been inspected every eight hours and the operators, at this time, listen for new sounds from the magnet that may reveal changes. Recently, new sounds have developed that indicate a general loosening of the structure as a result of nearly six million pulses. They do not, however, suggest a critical condition that calls for immediate remedy.

18" Cyclotron

A major portion of June was spent relocating the control console and experimental electronics circuits in order to get the personnel involved out of the path of the external beam from the Cosmotron. With their present location in the far northwest corner of the test shack, it should now be possible to operate the machine most of the time during external beam operation of the Cosmotron.

However, since the present conditions of high humidity interfere with the smooth operation of this machine in its present location in the test shack, it was decided to cease operation altogether and make careful checks this summer on the shape of the magnetic field. When the oscillator frequency was increased from 18 megacycles to 20 megacycles last spring, the resulting particle energy did not rise to the values expected. This has now been attributed to non-uniformities in the shape of the magnetic field. It was found that there is a serious azimuthal field distortion and some time will be spent in correcting this.

Contract Actions

1. The agreement between the AEC and Wright Air Development Center was signed by both parties during the month of June. In accordance with the terms of the agreement, the Air Force will continue the Shielding Development work formerly conducted by Brookhaven National Laboratory under activity No. 4570.

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2. Negotiations continued with Babcock and Wilcox for the LMFR-E. A draft definitive contract, dated June 15, 1956, was sent to Babcock and Wilcox. At a meeting between AEC and B&W, held on June 22, the parties considered the detailed terms and conditions. The areas of disagreement regarding clauses for patents, copyrights, and hold harmless are being pin pointed and subsequent negotiations should find these resolved between the parties. B&W people met with the Laboratory staff on July 10 and 11 for the purpose of general orientation on liquid metal fuel subjects.

3. The last obstacle in obtaining a Fotosetter at Brookhaven was surmounted by the signing of an agreement with Brookhaven and Intertype Corporation in June.

4. Modification No. 29 to the Associated Universities, Inc. prime contract was signed by both parties providing initial operations for F. Y. 1957, together with several plant and equipment projects and working fund provided for in the F. Y. 1956 financial plan. The tentative operating levels including equipment for F. Y. 1957 are as follows:

Program 4000	4,610,000.
Program 5000	8,109,000.
Program 6000	2,962,000.
Total	15,681,000.

5. T. H. Johnson, Director, Division of Research, Washington, D. C., visited the Area Office and Brookhaven National Laboratory on July 26 and 27, to review the Physics Program and consider important proposed budget changes.

Summer Program

About 90 scientists from about 50 different educational institutions are working at the Laboratory this summer for periods of 1 to 3 months. Half of these receive their primary financial support from other sources than the Laboratory. 14 come from other countries. About 20 graduate students are being brought to the Laboratory by these visiting scientists to work as their research assistants.

Applications for the formal Summer Student Program were received from 400 students representing 115 different colleges and universities. 105 appointments were offered to 45 graduate students and 60 undergraduate students. Of these 90 accepted and are now working at the Laboratory.

There are also 14 Radiological Physics Fellows at Brookhaven National Laboratory for the usual field training part of their program. 3 aliens sponsored by their respective governments have also been admitted to this course.

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Including the 30 faculty membrrs from engineering schools coming to the Institute for Nuclear Engineering starting July 2, the total influx for the summer will consist of about 120 scientists and an equal number of students.

Reactor Hazards Summary Reports

Two Brookhaven Reactor Hazards Summary Reports were forwarded to Washington for approval by the Reactor Hazards Evaluation Staff in June. The reports are "Medical Research Reactor Hazards Report" and a "Hazards Summary Report on the Enriched Fuel Element Loading for the Brookhaven National Laboratory Research Reactor".

Research Reports

During June and July 72 papers were approved for publication. This number included 37 on physical sciences, 28 on life sciences, and 7 on applied and general subjects.

Visitors

The Laboratory was visited during the above period by the following, among others:

General Eduardo Hernandez Vidal, Dr. Jose' Maria Otero, and Jose' Vergara of the Spanish Nuclear Energy Commission on June 1.

Marcel Huberlant, Andre Point, and Emanual Neve de Mevergnies from the Belgian Centre of Nuclear Applications on June 13.

Guido Colonna, Italy; Pierre Huet, France; Einar Saeland, Norway; Bertrand Larcher, France; of the Organization for European Economic Cooperation accompanied by representatives from the State Department on June 13.

Henry Tasca, Minister for Economic Affairs of the American Embassy in Bonn, on July 3.

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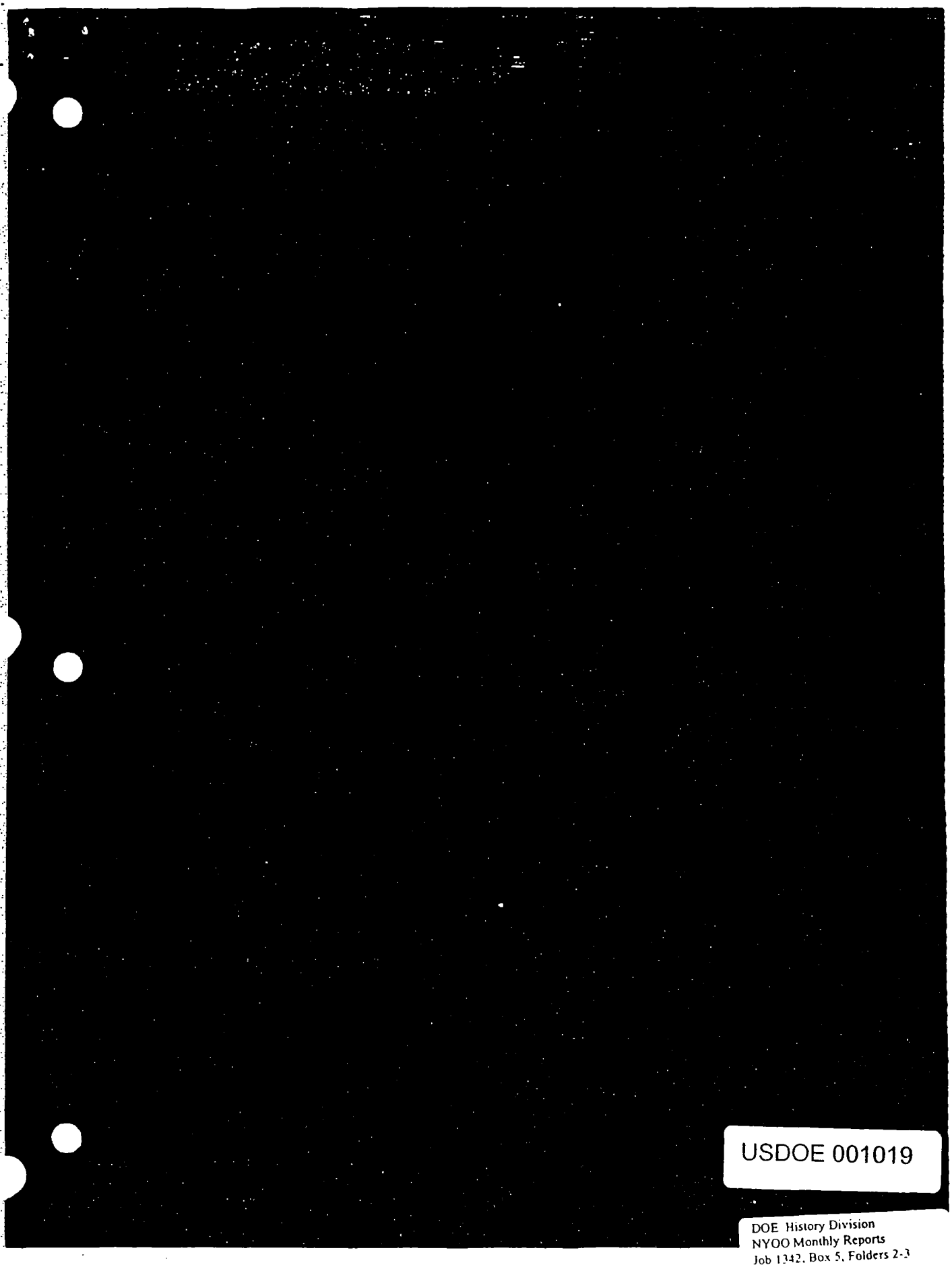

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DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

AUGUST, 1956

Prepared by the Staff

of the

New York Operations Office

September 25, 1956

USDOE 001020

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

AUGUST, 1956

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SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Office Management

Arrangements were made at the Air Force Cambridge Research Center, Bedford, Massachusetts for the assignment of space there to Nuclear Metals, Inc. at 224 Albany Street, Cambridge, Massachusetts.

Procurement

A procurement appraisal was conducted at Sylvania Electric Products, Inc.

Property

Arrangements were made with the U. S. Naval Ammunition Depot, Earle, New Jersey for shipments of contaminated waste from the following installation:

Pittsburgh Area Office (Westinghouse Atomic Power Division) for the disposal of 73.483 tons.

The annual contaminated waste disposal program for BNL was carried out this month. 620 drums of contaminated waste were dumped at sea from Floyd Bennett Field, through the cooperation of the Third Naval District, U. S. Navy. Also disposed of at this time were several items of contaminated waste for Sylvania Electric Products, Inc. Contract AT-30-1-Gen-366.

The U. S. Naval Ammunition Depot, Earle, New Jersey was visited for the purpose of inspecting the U. S. S. Calhoun County (LST 519) to determine recent contamination of the ship during disposal of contaminted wastes at Earle. Discussions were held with Commander W. J. Miller and Lt. Commander E. Ambroziak in charge of the Ordnance Division at Earle and responsible for the handling of radioactive waste and its loading on the ship, as well as Capt. E. C. Hawk, Commanding Officer of the Depot, and Lt. H. R. Hern, Commanding Officer of LST 519.

As a result of these discussions a brief basic training in radiation monitoring will be given at Brookhaven National Laboratory in October to one or two of the men at Earle and a trained officer of the ship.

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Records Management

A records management appraisal report was issued covering the records program being conducted at the University of Rochester. The overall program was reported as satisfactory with minor exceptions which were brought to the attention of the contractor.

Contracts

Accelerator Cost Controls. At the request of the Director of Research, NYOO met with him and representatives of the Controller and the Director, Construction and Supply, to review cost controls to be applied to the accelerator projects at Princeton and Harvard. The controls proposed by NYOO were favorably received. NYOO is to work out with each project director cost controls and realistic estimates for the principal components.

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909. The architect-engineer subcontractor, Charles T. Main, Inc., began work for design of the laboratory building. In mid-August Harvard submitted a proposal to the Director of Research, Washington for an additional floor in the laboratory building, more space in the target area, and additional shielding. The estimated cost was $740,000.

New York University, Computing Center, Contract AT(30-1)-1480. NYOO submitted to the Division of Research, Washington the principal terms of an expected revised proposal from the University for purchase and alteration of a building to house the IBM 704 computer.

Nuclear Metals, Inc. Contract AT(30-1)-1565. Nuclear and NYOO agreed to relocation of a substantial part of the metallurgical laboratory activities from the Hood Building to another nearby government-owned building. All of the administrative offices, the library, the foundry, some storage, and some laboratory activity will be moved. The Manager, NYOO visited and inspected conditions at the Hood Building and approved these proposed relocations. The principal effects of this change will be to remove storage of fissionable material from the Hood Building, to reduce the number of people working there by about 70, and to relieve congestion of machines and equipment. The activities selected for moving were those that could be shifted with least cost.

Princeton University, Project Matterhorn, Contract AT(30-1)-1238. NYOO received Washington approval for Princeton's proposal for additional general facilities at the Matterhorn complex. Princeton will finance the new construction. NYOO will guarantee amortization.

Princeton University, Accelerator, Contract AT(30-1)-1916. The architect-engineer, Gibbs and Hill, began work under a letter of intent pending completion of negotiations with Princeton for a definitive subcontract.

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Rochester Cyclotron Project, Contract AT(30-1)-875. NYOO approved Rochester's contract with the architect-engineer firm of Waasdorf and Northrup for preliminary design of the nuclear emulsion laboratory building.

Walter Kidde Nuclear Laboratories, Contract AT(30-1)-1572. NYOO is proceeding with termination of the contract as requested by Washington. Kidde has submitted an estimate of costs as a basis for this action.

Yale Linear Accelerator, Contract AT(30-1)-1691.
NYOO met with Yale and negotiated a revision of AEC participation in the building costs for housing the accelerator. A contract modification is being drawn up for this.

Manager's Office

August 21, John Hall, Director, International Affairs visited the Manager to discuss the activities of the International Affairs Division.

August 23, J. B. Kelley, Department of Commerce visited the Manager to discuss the Sylvania accident.

August 27, Frank Smallwood, Administrative Assistant to A. Tammaro, AGM for Research and Industrial Development, Dr. C. L. Dunham and H. C. Brown, Jr. of the Division of Biology and Medicine visited the Manager to discuss NYOO matters.

Organization & Personnel

NYOO served as a trail office for the forthcoming AEC Functional Manpower Survey. Gregory Abdian, Management Specialist of the Division of Organization and Personnel, Washington visited New York, and with his assistance functional coding of all NYOO personnel was completed.

A preliminary discussion meeting was held with Sylvania Electric Products, Inc. relative to their request for an indemnity agreement to protect them for any uninsured liability which might arise out of the use of nuclear materials. Sylvania is to submit a formal request.

The Oil, Chemical and Atomic Workers Union won a consent election to represent the pile operators at the Brookhaven National Laboratory. The vote was 16 to 1. No date has been set for negotiations.

Public Information

During the report period 20 films from the Information Service's Library were shown to approximately 880 people.

No major projects were undertaken and press and general public inquiries

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were of a routine nature. One press release was prepared by NYOO Public Information Service for use by the United States Mission to the United Nations regarding the transmission of the report "Radioactive Fallout Through September 1955" to the United Nations Scientific Committee on the Effects of Atomic Radiation.

Technical Liaison

During the month of August, 1956, there were 12 new access permits assigned to NYOO. Of these 12, 8 were for access to Secret, Restricted Data. In addition, there were 10 amendments to access permits already granted, changing these permits from Confidential to Secret. The total number of access permits assigned to NYOO is now 327. Of these, 156 gives access to Secret, Restricted Data.

Security

During the report period, 143 clearances for access to secret data and 73 for access to confidential data were granted to Access Permittees by the Security Division. Requests for 128 secret and 58 confidential clearances were received for processing in the same period.

Health and Safety Laboratory

The press of work in the Laboratory during July made it necessary for many staff members to schedule their vacation during August. Therefore, there is little activity to report for that month and the work which was conducted will be covered in the next report.

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SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR AUGUST 1956

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

The Service Building is rapidly nearing completion. Installation of mechanical equipment for building services, including air conditioning, is well advanced. Final grading for the area adjacent to the Service Building has been started.

The White Construction Company proceeded with form and reinforcing work on the Tunnel and at month's end, had completed their initial concrete pour. Notice of impending bidding for the Linear Accelerator and Target Buildings was mailed to a list of some 50 contractors and to several of the commercial construction trade papers.

Medical Research Center

At month's end excavation was 85% complete, concrete footings 53% complete, and concrete foundation walls 12½% complete. It appears now that structural steel will start arriving on the job for erection about October 15, 1956.

Engineering Works Area

Construction proceeded with excavation of column footings. Form work was started and a token amount of concrete poured for footings and column piers. It appears that the steel strike will affect completion date of this project by approximately two months.

Cosmotron

A great many experiments have been performed with negative pions in the past because these particles are bent outward from the Cosmotron magnet due to their negative charge and are readily available. High energy positive pions, on the other hand, have not been studied because these were not available in a beam of appreciable intensity. By allowing the external proton beam to strike a target of liquid hydrogen it was found that at about 7° to the incident proton beam high energy positive pions are produced in such numbers that a focused beam could be formed containing two 1.3 Bev positive pions for every proton of the same momentum. The intensity of this beam is ample for bubble chambers, and experiments using this new source of high energy particles are now being planned.

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Due to a shortage of operators the Cosmotron is now being operated on only two shifts (8:00 A. M. to 12:00 Midnight).

18" Cyclotron

The past month has been spent entirely on magnetic measurements. It has been found impossible to correct properly the magnetic field by simple shimming between the present pole-tips and the fixed poles of the magnet. Originally, a satisfactory field had been obtained by soldering thin pieces of iron to the surfaces of these pole-tips. An existing pair of spare tips have been machined with as nearly plane-parallel surfaces as possible in the heavy machine shop. Measurements of the azimuthal and radial field variations at different magnetic currents have indicated that a satisfactory azimuthal field could be obtained by simple tilting of the tips relative to the fixed poles. These tips are now being modified in the machine shop to provide a ¼" gap between each tip and its fixed pole. It is believed that the required field configuration can be obtained for different magnet currents by the insertion of shims in this gap.

Contract Actions

Babcock and Wilcox signed the Liquid Metal Fuel Reactor Experiment contract on August 31, 1956. Babcock and Wilcox is returning the contract to the New York Operations Office for transmittal to Washington.

Foreign Scientists at Brookhaven

The program at Brookhaven this summer has taken on an international flavor. There have been about 45 foreign scientists working here for continuous periods extending from two months to more than a year. They have come from 20 different nations as follows:

Argentina	1	France	2	Norway	2
Austria	1	Germany	4	South Africa	2
Belgium	6	Greece	1	Spain	2
Canada	2	India	1	Sweden	1
China	3	Israel	3	Thailand	1
England	2	Italy	3	Yugoslavia	1
Egypt	2	Japan	5		

Their distribution among the Departments at the Laboratory is:

Accelerator Development	1	Medical	3
Biology	7	Nuclear Engineering	7
Chemistry	9	Physics	12
Cosmotron	7	Reactor	1
Health Physics	3		

In addition to the above, there are 5 working here continuously who are in an immigrant status, and 12 other scientists of foreign citizenship who work at Brookhaven intermittently.

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Conversely, a number of Brookhaven scientists have visited the laboratories in other countries. Besides the team which visited the Colombo Nations under the leadership of Dr. Fox, 18 staff scientists have attended international conferences in Europe this summer. Most of them presented papers at these conferences by invitation. Two of them visited the U.S.S.R.

This international communication directly between researchers has proved stimulating to the research activities at Brookhaven National Laboratory, and tends to promote a better understanding with peoples of other lands.

The cooperative program designed to produce useful mutations in agriculturally important plants and trees has expanded to include a number of foreign countries. Active cooperation with Canadian institutions begun last year, has resulted in a total of 17 studies. Cooperative projects have been initiated with scientists in Australia, Cuba, Italy, Mexico, Pakistan, Peru, The Phillipines, Rumania, Thailand, Venezuela, and West Germany. It is likely that this foreign cooperation will increase considerably.

During the month of August alone, the Laboratory has had 26 visitors from other countries representing 14 different nationalities.

Research Reports and General Publications

During the month 20 papers were approved for publication. This number included 14 on physical sciences, and 6 on life sciences. In addition, the Brookhaven National Laboratory Quarterly Progress Report for the first quarter of 1956 was published.

Visitors

The Laboratory was visited during the above period by the following among others:

Mohamed Aslam of the West Pakistan Government on August 24th.

Maurtiz Hoyertz of the Swedish Atomic Energy Commission on August 1st.

Hiut Rosado and Saldantra Derzi of the Brazilian Congress on August 2nd.

45 Students from the International School of Nuclear Science and Engineering on August 16th.

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NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

SEPTEMBER, 1956

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SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Procurement

A Procurement Appraisal was made at the Brookhaven National Laboratory.

A traffic survey of NYOO was conducted by M. Harrington, Construction and Supply Division, Washington. One day was spent at Brookhaven National Laboratory.

Property

Arrangements were made with the U.S. Naval Ammunition Depot, Earle, New Jersey for shipments of contaminated waste from the following installations:

Chicago Operations Office

Pittsburgh Area Office (Westinghouse Atomic Power Division)
for disposal of 164.8975 tons

Hartford Area Office (Pratt and Whitney Aircraft Corp.)
for disposal of 6.2015 tons

New York Operations Office

Sylvania Electric Products, Inc. - Contract AT(30-1)366
for disposal of 4.65 tons

Property Management Appraisals were conducted at Nuclear Metals, Inc. Contract AT(30-1)-1565 and University of Rochester - Contract W-7401-Eng-49 and AT(30-1)875.

Records Management

A records management appraisal report was issued covering the records program being conducted at the Brookhaven National Laboratory. Considerable improvement was noted during the past year, indicating that the overall program is progressing satisfactorily. To increase the efficiency of the program certain recommendations were made to the contractor.

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Contracts

Accelerator Cost Controls: Members of the Contracts and Technical Liaison Divisions met with both Harvard and Princeton to explain the construction directive system and to present the NYOO plan for reporting and control of costs. There is some objection on the part of the Universities to the distribution of scientific and technical labor costs to the design and construction of each of the machine components.

General Electric, Proposed Contract AT(30-1)-1963: Negotiations were begun with GE for research and development of certain capacitors needed by the Sherwood Program. GE is resisting inclusion of AEC rights to background patents and "know-how."

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909: The Contractor requested approval for the purchase of the first major equipment item. This was an r.f. power supply unit to be used initially for test and development work, and, according to the Contractor, will be used later to power the machine up to electron energies of 5 BEV. NYOO requested that additional terms and conditions be written into the specifications.

New York University Computing Center, Contract AT(30-1)-1480: A meeting was held with NYU's Vice-President and Treasurer and members of his staff to discuss NYOO's draft of the contract modification for the IBM-704 Computer. Agreement was reached on substantially all points. NYU is to submit an estimate of costs which is to include: rental of the IBM-704 for five years, amortization of the building and modifications for ten years, alterations of four floors required for AEC use, computer operating costs for five years, interest of the cost of the land for five years, and credits for rental income for five years. NYU also is to submit preliminary proposals for alterations of the four floors required by the AEC and for initial modification of the building. NYOO is to help NYU obtain a better delivery date for the computer.

Nuclear Development Corporation of America-Chugach Electric Association: The Deputy Manager attended the first negotiation meeting as an observer at the Schenectady Operations Office. A copy of the preliminary contract draft by Schenectady was sent to NYOO.

Nuclear Metals, Inc., Contract AT(30-1)-1565: Negotiations for sale of the laboratory equipment at the Hood Building and lease of this building continued. A detailed, final draft of the proposed modification was sent to Nuclear for its consideration.

Pennsylvania State University, Proposed Contract AT(30-1)-1859: The University was requested to reconsider its objection to the reports provision of this contract for the no-charge loan of fuel for their reactor. The NYOO Director of Finance was requested to estimate use charges for this material should AEC and the University continue the stalemate over this provision. Contact with Washington indicates there is little likelihood that the University's request for more favorable treatment will be approved.

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Princeton University, Project Matterhorn, Contract AT(30-1)-1238: A small fire at Project Matterhorn interrupted operations for a short time, and one unit was out of commission for a week.

A revised draft modification was submitted to Princeton covering guaranteed amortization for the expansion of the general facilities at the Forrestal Research Center. One negotiation meeting was held, negotiations continue.

Radio Corporation of America, Contract AT(30-1)-1958: Negotiations were completed for a definitive contract for development of a high speed electron accelerator structure for photomultiplier tubes.

Sylvania Electric Products, Co., Contract AT(30-1)GEN-366: The General Manager of Sylvania's Atomic Energy Division visited the Manager to discuss Sylvania's request for a hold-harmless article in the contract to cover both in-plant hazards and subsequent accidents involving products of the AEC research and development program. They are to submit a formal request for AEC consideration. The final overhead rate for calendar year 1955 was negotiated and negotiations are proceeding for a revised provisional rate for calendar year 1956. Sylvania also came in for preliminary discussion on treatment of clean-up and repair costs resulting from the thorium explosion in July.

Yale Linear Accelerator, Contract AT(30-1)-1691: Yale's revised budget providing for increased AEC participation in the project costs was submitted to Washington Research with a request for funds.

Vitro Corporation, Contract AT(30-1)-1782: Negotiations are underway to reduce the fee for the work under this contract during FY 1956 following a change in pace request from Reactor Development. The work involved in revising the Reactor Handbook remains the same, but is now stretched out into FY 1957.

Manager's Office

September 11, R. L. Corsbie, Chief, Civil Defense Liaison Branch, Division of Biology and Medicine, and Dr. A. W. Bellamy and Dean H. L. Bowman, Consultants to Biology and Medicine met with the Manager and other representatives of NYOO to review civil defense measures.

September 18, Dr. Kovan, Beryllium Corporation, for general discussion of beryllium poisoning.

September 24, Walter E. Kingston and Garth Eduwards, Sylvania Electric Products, Inc., met with the Manager and Deputy Manager to discuss contract indemnity provisions.

September 26, Captain Mandelhorn, NRDL to discuss HASL-NRDL cooperation.

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Personnel

Contractor Personnel

Agreement was reached among representatives of Vitro Corp. of America, Washington Organization and Personnel, and NYOO concerning revisions to the personnel policy appendix which applies to all Vitro cost contracts with AEC.

The Personnel policies of Dumont were reviewed with contractor representatives and agreement was reached concerning items which are to be reimbursed under the contract.

Federal Personnel Statistics

During the month the following personnel activities took place:

54 interviews with prospective candidates
32 screening, preliminary or courtesy interviews
22 interviews with candidates and operating officials
5 selections of outside candidates
5 temporary employees selected for permanent positions
7 other permanent appointments made
12 job evaluations completed
1 suggestion award of $60 granted
2 superior accomplishment awards of $300 each given

Miscellaneous

This office participated in wage, salary and fringe benefit surveys conducted by Nuclear Metals, Inc. and Columbia University.

During the strike of the Chauffeurs and Teamsters Union in the New York City area arrangements were made with local #478 to furnish drivers to transport argon gas from Linde Air Products, N.J. to Sylvania Electric Products, Bayside, N.Y.

Public Information

During the report period, 64 films from the Information Service's Film Library were shown to approximately 2816 people.

Security

During the report period, 183 clearances for access to secret data and 147 for access to confidential data were granted to Access Permittees by the Security Division. Requests for 80 secret and 71 confidential clearances were received for processing in the same period.

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Technical Liaison

During the month of September 15 new access permits were assigned to NYOO. Of these new permits, 5 are for access to Secret Restricted Data. An additional 2 amendments to Secret brings the total number of Secret access permits up to 163. The total number of access permits assigned to NYOO is 342.

HEALTH AND SAFETY LABORATORY

Nuclear Safety Review Board

Feasibility Reports Approved

General Feasibility Report for the Fabrication of S3G Type Elements for the Knolls Atomic Power Laboratory (NMI-OLW-1) - Supplement No. 2 and 3

Norton Company Report of Feasibility for Manufacture of Exponential Elements for Argonne National Laboratory.

Fuel Element Dissolving Study - NDA

NMI-PDC-14 (Revised) Supplement No. 1

NMI-HFS-8 (Revised) Supplement No. 1

Field Studies

Anaconda Copper

Subsequent to a conference with Mr. J. H. Bayner of the Anaconda Copper Company and a request by Savannah River Operations, visits were made to the American Brass Company in Waterbury, Connecticut, an Anaconda subsidiary, and to the Heppenstall Company in Bridgeport to define for them the potential problems which might be involved in the heating, forging, and extruding of uranium tubing. The companies had been given conflicting information on the possible toxicity of these materials, and as a result were very confused. Copies of reports on studies carried out by the HASL on similar operations were lent to the American Brass Company and discussed during the conferences. As a result, the extrusions operations which were in question were carried out on a pilot scale. HASL personnel were present and obtained air samples during the operations. American Brass has been informed by letter that no hazard existed.

Bell Laboratory Infra-Red Spectrometer Survey

At the request of the Technical Liaison Division, the Radiation Branch conducted a survey of the above spectrometer to determine whether it had become contaminated during its use for the analysis of uranium.

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Beryllium Corporation

Following a request by the Beryllium Corporation received through the Lockland Area Office, conferences have been held with the engineers designing the Beryllium Corporation's unit price beryllium metal plant to be built at Hazelton, Pennsylvania. Discussions have been held with the Beryllium Corporation engineers, and with the engineers of the Lummus Corporation who are designing the plant. During these conferences the flow pattern of the projected process was gone over in detail, and suggestions were made on the choice of process equipment, ventilation equipment, and air cleaning devices. It is expected that such a conference will be scheduled at least twice each month during the preliminary design phases.

Bridgeport Brass Company

At the request of OROO, the survey instrument service to the Bridgeport Brass Company contract is being extended for an additional year.

Brush Beryllium, Cleveland

A report has been transmitted covering an occupational dust study which was made in the Brush Beryllium Company plant in Cleveland. The report indicates a significant increase in the number of people who are exposed to concentrations of airborne beryllium material in excess of permissible amounts. Recommendations to improve these exposure conditions have been transmitted with the report.

Federal Civil Defense Administration

At the request of Region I Headquarters of the Federal Civil Defense Administration, a member of HASL visited the Headquarters during Operation Alert 1956. The purpose of this visit was to establish a liaison between the AEC and the FCDA and to learn at first hand those areas in which the Laboratory could provide useful assistance to the FCDA.

Food and Drug Administration

At the request of the Food and Drug Administration, the Radiation Branch has agreed to extend its Sensitive Materials activities to cooperate with them in the following up of violations of Federal regulations relating to the importation of fraudulent radioactive therapeutic devices.

Cooperation with Foreign Agencies

The Radiation Branch continued to supply film badges and report the indicated exposures to Dr. M. Nakaidzumi of the University of Tokyo. Film badges were also supplied to the University of Sciences of Bangkok, Thailand at their request.

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Metals and Controls

At the request of the Schenectady Operations Office a visit was made to the Metals and Controls plant in Attleboro, Mass. The plant facilities were inspected and there was a general discussion with management concerning various areas of health and safety, especially items such as criticality control and disposal of liquid and solid wastes. As a follow-up on these discussions, a memo was transmitted to SOO outlining the basic procedures which should be followed by the plant in adhering to the Health and Safety standards published in Handbook #52.

Mallinckrodt Chemical Works

A report has been transmitted covering occupational exposures to uranium and fluoride materials in the metal plant of Mallinckrodt Chemical Works in St. Louis. With the exception of 4 operators, exposures of all the 105 employees of this plant were found to be acceptable. Recommendations have been submitted to the St. Louis area office for the improvement of the conditions.

Nuclear Development Corporation of America

A visit was made to the White Plains and Pawling facilities of NDA. The White Plains laboratory, which contains substantially all of the "cold" operations, appears to be functioning smoothly without any significant hazard. Here the primary problem appeared to arise from the possible rupture of a sodium loop. The various loops, however, appear to be under reasonably good control. Only one portion of the Pawling site, the hot cell, was in use. The other, the critical facility, is still in the final stages of construction. Inasmuch as the level of operation in the hot cell facility was very low at the time of the visit, it was not possible to make any definitive comment on the operations. A few minor recommendations were made to the company covering the general location and layout of the buildings.

Nuclear Metals, Incorporated

An inspection of the Hood Building facilities was made on July 27. As a result of this inspection it was concluded that continued occupancy of the Hood Building for Commission sponsored activities at the current level was inconsistent with Commission safety policies. It was therefore recommended that the work being accomplished at that site be relocated to whatever practical.

Because of overcrowding, NMI had already begun negotiations to remove a portion of their operations to 24 Lansdown Street. As a result of the HASL recommendations, however, it was decided to suspend these negotiations and to look for space which could accommodate a very significant portion of the Nuclear Metals Operations.

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Nuclear Metals, Incorporated (Continued)

Such space was in fact located in a government-owned building about two blocks from the Hood Building which is at present being used by certain Air Force contracts. Negotiations have been completed to remove approximately 50% of the operations located in the Hood Building to the new space as quickly as possible.

A report has been transmitted covering a study of uranium dust exposures in the Hood Building. All of the employees were found to be exposed to less than 2% of permissible uranium dust concentrations in the air.

Project Matterhorn

A visit was made to the Forrestal Research Center, Princeton, New Jersey to investigate fire and safety protection in the Project Matterhorn Laboratory. A report has been submitted transmitting a large number of recommendations, primarily for protection against potential fire. There were also a few recommendations regarding installation of safety equipment.

Project Redwing

All personnel have returned from field operations. The computation and evaluation of the Redwing Program data continues and is now being correlated to include the attenuation information computed at the NYU Univac for variation of attenuation with collimator angle and altitude. All existing data on measurements made by HASL in aerial surveys have been brought together and are being compared. There are indications that some field measurements are still in order but final requirements cannot be stated until all data has been worked through.

Radiation Surveys

A survey team from HASL conducted a radiation survey at the University of Virginia Van De Graaff Generator on 9/11 through 9/13 and several accelerators at the University of Chicago including the Synchrocyclotron on 9/24 through 28.

State Agencies

Arrangements have been made to calibrate survey instruments for the New York State Department of Health in its recently implemented program of inspections of radiation installations.

Sylvania Electric, Bayside

As a result of the explosion which took place at the Sylvania Laboratory at Bayside in July, several actions have been taken to prevent such occurrences in the future. The HASL has provided assistance in the design and construction of a ventilation hood to be located outside of the building and to be used for the burning of pyrophoric materials. This hood has been built and will shortly be ready for operation. The hood includes a shielded front opening to protect the operator, an explosion vented top and rear to relieve the pressure of a possible explosion within the hood, and a filter exhaust system to remove from the air particulate material generated by the burning.

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Sylvania Electric, Bayside (Continued)

In addition to building the hood, it has been necessary to dispose of the thorium fine material which was residual after the explosion. It was the intention of Sylvania to pack this material and ship it to sea for disposal. Because of the unnecessary cost and especially because of the potential inherent danger in repackaging the material, it was suggested that the drummed material be buried on the site.

Sylvania Electric, Hicksville

A report has been transmitted covering the occupational exposure to uranium dust of employees involved in the machining and grinding of uranium slugs at the Hicksville Pilot Plant. One of the operators was found to have higher exposure than considered advisable. However, the operation was discontinued shortly after the survey. Recommendations were made in the report which should be followed in the event the operation is resumed.

Projects

Calculations of Dose Rate Measured from Aircraft

Arrangements were made with NYU for the use of the Univac to calculate radiation attenuation for airborne measurements based upon equations developed by the Radiation Branch.

Federal Civil Defense Administration

The equations for air attenuation of gamma radiation at various altitudes with various cones of collimation have been run through the NYU Univac computer. With the data from this study, it is apparent that within the system reliability, at altitudes plus or minus 100 ft. about a selected median level, aerial surveys are practical without the use of a radio altimeter to correct altitude.

The multiplier phototube readout circuits are being redesigned to eliminate the altitude correction.

Image Minifier Scanning Tube for Gamma Ray Radiography

Work on the Image Minifier Scanning Tube for Gamma Ray Radiography is proceeding at the A.B. DuMont Laboratories. During August the initial investigation specifically centered on the possibility of using a rectangular face plate for the photosensitive surface, but has since been tested and found unsatisfactory. The contractor has been instructed to start design of a circular geometry tube. It is expected that an operable model will be available during October.

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Image Minifier Scanning Tube for Gamma Ray Radiography (Continued)

The Chief of the Instruments Branch visited the Raytheon Manufacturing Company, Waltham, Massachusetts, to discuss image storage mechanism. It became evident that it would be feasible to store one or more images for several hours and reproduce them with full fidelity. This would be of major utility for fluoroscopic applications of gamma radiography.

Mercury Vapor Detector

During August the only sample mercury vapor glow tube was damaged and new tubes were not available until the second week of September. The power supply problems have been solved and a new high efficiency blower motor has been tested so that the total current drain of the system is less than 100 ma at 1 1/2 volts. This will obviate the need for storage batteries, AC power connections, or any other bulky power sources.

New mercury vapor lamps have been received and tested. The new design has a 1/2" arc length compared to the 1" arc length of the original version and provides sufficient UV light so that with a 365 millimicrons pass band filter and with no mercury vapor in the absorption column, the signal from the multiplier phototube (931A) is from 4 to 8 volts. This is completely sufficient to the needs of the problem. Additional light filters have been ordered, but have not been received so that testing of the light balancing circuit has been deferred.

Punch Card Data Reduction

Design work continues on components and sections of the system to be used with the IBM punch card machine. Equipment racks have been assembled for the fallout equipment, the main power supply and data conversion racks, the auxiliary test racks and the wireways. Progress has been made in the following areas:

1. The storage glow module designs have been completed, sufficient modules for immediate needs (300) have been fabricated and tested and have been put into stock pending installation.

2. The mechanical design for beta tape counting units has been completed and all models will be brought to this stage of design within the next few weeks.

3. The radon system has been redesigned, the mechanical structure changes completed on one unit, and all other units will be changed over in the near future.

4. A large proportion of the control mechanisms, the relay selections, the structure philosophy of mounting and other pertinent decisions have been made.

5. Dial sample changing mechanisms for the Mercury Vapor Detector at Weldon Spring, Missouri.

The system is progressing smoothly with indications that we will meet completion schedules set for approximately the first of next year.

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Scrap Disposal

AEC Manual Chapter 5182, specifying permissible disposal of scrap materials has been revised to reflect the results of work which was performed by the HASL. This work, which was completed earlier this year, showed that negligible amounts of uranium would remain in several non-ferrous metals after resmelting. Chapter 5182, which had previously been limited to ferrous metals, was therefore revised to include stainless steel, copper and nickel.

Sensitive Materials

Following is a list of the subject areas in which HASL participated under its agreement to assist other Government agencies:

Torbenite from British Museum	8/9/56
Thorium Phosphate from England	9/11
Rock Samples from Texas	9/11
Uranium Ore Sample from Salt Lake City	9/11
Torbenite Sample from Spain	9/11
Uraninite Sample from Canada	9/11
Monazite Sand Sample from Brazil	9/11
Thorium Mineral Samples from Brazil	9/11
Small Ore Sample from Portugal	9/11
Columbium Ore Shipment from Brazil	9/12
200 millicuries Mesothorium, Laboratory Source	9/12
Radioactive Ore from Chile	9/13

Waste Disposal Program

On July 15, representatives of the Administrative Operations Division and the Chief, Radiation Branch visited the Naval Ammunition Depot, Earle, New Jersey to resolve problems arising with the increased quantity of wastes now being disposed of in this manner. It was agreed to arrange for a training course for Navy personnel from both the depot and the Steamship SS Calhoun County in order to avoid repetition of contamination incidents which have occurred, and although these have not been serious, they are a source of some friction between the AEC and the Navy. It appears that inexperience on the part of Navy personnel is largely responsible for the trouble. Brookhaven National Laboratory has agreed to conduct this training course.

Because the capacity of the SS Calhoun County has now been exceeded, AEC Washington has been asked to make a formal request to the U.S. Navy for additional shipping facilities.

X-Ray Generator

The installation of the 250 KV generator in the Radiation Branch has been completed together with the structural shielding. Additional local shielding around the tubehead is necessary before the generator can be placed in full-scale operation.

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Laboratory Work

Fallout

9,490 samples were processed during August and September.

Pot Samples

The Analytical Branch set up a program of collection of pot samples by (1) The University of Hawaii, (2) USPHS in Salt Lake City, and (3) University of California in West Los Angeles.

Sample Analyses

The Analytical Branch analyzed 1491 samples of the following:

Uranium - Air Dust 512, Urinary, 349, Misc. 336
Beryllium - Air Dust 222, Urinary 12, Misc. 19
Thorium - Urine and tissue 32
Fluoride - 9

Instruments

Films Processed - 3002
Instruments Calibrated - 52
Instruments Repaired - 36
Instruments checked for contamination - 40
Instruments decontaminated - 1

Miscellaneous Personnel Activities

Publications

An analytical study of film badge characteristics was completed and a report entitled "A System of Film Badge Interpretation" was prepared and has been accepted by Nucleonics for publication.

A Literature Search report, NYO-4712, on the subject of "Background Radiation" by Wayne M. Lowder and Leonard R. Solon was completed and distributed.

A report entitled "An Ionization Chamber Method of Measuring Gamma Radiation Dose Rates and Neutron Fluxes in Mixed Fields of Known Engery," by Karen O'Brien and Jim McLaughlin, Jr. was completed and accepted by Nucleonics for publication.

Report NYO-4751 entitled "Summary of Analytical Results from the HASL Strontium Program to June 1956" was prepared and 160 copies were submitted to Norman Armour of the U.S. Mission for transmission to the UN Committee on the Effects of Atomic Radiation.

A complete set (9 volumes) of Fallout Summaries were prepared for transmission to the UN Committee on the Effects of Atomic Radiation.

"Radioactive Fallout Through September 1955" by Merril Eisenbud and John Harley was published in Science on 8/10.

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Visits by HASL

The Director, HASL, and Chief, Radiation Branch visited Dr. G. Failla at his home to discuss a special Sunshine Report.

The Chief, Radiation Branch attended his first meeting as Scientific Secretary of the Advisory Committee, Division of Biology and Medicine, Washington. The Director of the Laboratory also attended.

HASL was represented at the AEC Radiation Protection Panel Meeting as well as the Biology and Medicine Program Directors Meeting in Idaho Falls, September 26 through 28, by the Radiation Branch Chief.

Naomi Hallden met with Al Berk of Simon Adhesive Company on 9/26 to discuss the cause of the discrepancy with respect to tensile strength between their results and those of HASL on the latest shipment of gummed film for the fallout network.

Visits to HASL

Dr. H. Pychlay, Freiberg, West Germany, visited the Radiation Branch to discuss the use of survey meters manufactured by his company.

Dr. Hideo Ierie, Professor of Radiology at Kyushu University, Japan for tour of HASL.

John Hall, Director of International Affairs, Washington AEC to view HASL.

Dr. Graul, Editor of Atomprixis, Germany.

Mr. Ray Zintz of Biology and Medicine visited HASL and Brookhaven to discuss the formulation of AEC Radiation Safety Standards.

Mr. Al Rihm of the New York State Department of Health visited to discuss AEC cooperation in the calibration of instruments for the State inspectors.

Miss B.L. Jones of the American Education Labor Service visited to discuss a Labor Education Program in radiation protection with Director, Public Information Service and Chief, Radiation Branch.

Dr. Bo Lindell of the Institute of Radiophysics, Stockholm, Sweden visited to discuss background measurements.

Dr. Carl H. Roberts, Director, Health Physics for the Curtiss-Wright Corporation visited to discuss a program for the new Curtiss-Wright Plant in Pennsylvania.

Colonel James B. Hartgering of the Walter Reed Army Institute of Research visited Dr. Harley to discuss Marshallese urine samples and future cooperation between his laboratory and HASL.

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Visits to HASL (Continued)

Dr. I.R. Tabershaw of the New York Department of Labor visited Dr. Harley and brought samples for uranium and thorium analysis.

Dr. Dayton E. Carritt, Johns Hopkins University at Annapolis, Maryland, visited Dr. Harley to complete report of the NAS-NCR Committee on the Development of Atomic Energy in Relation to Oceanography and Fisheries.

Drs. Alexander and Peterson, U.S. Department of Agriculture, Beltsville, Maryland, discussed the strontium program with Dr. Harley, Ira Whitney and Ed Hardy.

Dr. Salva Nassar, Associate Professor of Physics at the American University of Beirut (Lebanon) visited Dr. Harley and discussed monitoring procedures and analytical procedures required for health protection.

Howard Boroughs of the University of Hawaii Marine Laboratory visited Dr. Harley to discuss analytical procedures for their current AEC contract.

Frank Smallwood, Administrative Assistant to A. Tammaro, visited NYOO and was taken on an inspection of the laboratory.

Dr. Matsuaki Shimagawa was taken on an inspection of the laboratory.

Dr. E. Tajima, Secretary to the U.N. Committee on Radiation visited the laboratory and discussed fallout procedures and results.

Dr. Lloyd Zumwalt of Nuclear Science and Engineering Corporation, Pittsburgh, Pennsylvania, visited Dr. Harley to discuss uranium and thorium analyses.

Dr. Carl Roberts of Curtiss-Wright visited Dr. Harley to discuss beryllium processes and site survey measurements.

Dr. Stan Cohen of the Naval Radiological Laboratory, San Francisco visited Ira Whitney to discuss uranium fluorimetric analyses.

The Japanese Atomic Energy Policy Study Team was taken on a tour of the laboratory.

Messrs. E.W. Caille and R. Corph of the Westinghouse Corporation visited William Harris for advice in setting up a millicure quantity isotope laboratory in the Bloomfield Lamp Division Plant in New Jersey.

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SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR SEPTEMBER 1956

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

A. Buildings

Construction of the Service Building is approximately 95% complete. It is planned that, consistent with completion of the Service Building, all machine tools will be installed by October 15, and all personnel will be moved into new quarters by November 15. Final design of the Linear Accelerator and Target Buildings was approximately 95% complete at month's end. It is anticipated that Invitations to Bid for the super-structures of these two buildings will be issued on October 22, with bid opening to take place on November 27. Steel for the two buildings, which was previously procured from Belmont Iron Works, is scheduled for delivery at the site on December 15.

B. Machines

Magnet - The Allis-Chalmers fabrication model for the Magnet has been shipped to the site for test. Westinghouse Electric Company model is under construction and is promised for shipment to Brookhaven in November. Discussion with steel suppliers has continued and an attempt is being made to firm up the Magnet steel specification by November 1.

Power Supply - Bids for the power supply have been solicited and are to be received by October 15.

Linac - Progress reports from Eimac indicate that no substantial work has been performed on the Klystrons to date. It is understood that the Cockroft Walton machine being supplied by Phillips is under construction. The mechanical model for the Linac has been received and will be moved into the Service Building on or about November 1 for testing. Drift tube models have been received and tested and found to be satisfactory as has the electrical model for the Linac tank. As a result of the last two items, specifications and final design are under way.

RF System - Ferrite cavities have been received and have been assembled. They will be placed under test in the new Service Building when that building is available. Detail design for prototype cavities has been approved.

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Vacuum System - A definite decision has been reached to use Evaporion pumps. Mechanical tests are continuing on the vacuum chamber. Currently it is anticipated that the vacuum chamber will be an Inconel tube with exterior fins to provide mechanical support against collapse.

Target Shielding - Magnetite shielding blocks have been received for the Target Building and will undergo test in the near future to allow firming up of specifications for bidding.

Medical Research Center

At month's end, heavy building excavation was virtually complete except for the Reactor Building. Pouring of foundation concrete and installation of underground electrical work has placed the Medical Center at an estimated 4% complete.

During the month, the contract with the Daystrom Company for the Medical reactor was executed by the New York Office with certain conditions which are being resolved with the Daystrom Company. The shutters for the Reactor have been fabricated and poured (by Baldwin-Lima-Hamilton) and will be ready for test in the near future.

Engineering Works Area

Overall progress on the preliminary construction work on this project is approximately 4%.

Cosmotron

During the regular maintenance shutdown of the Cosmotron, an inspection of the pole face winding connections has revealed several points at which arcing has taken place. The particular faults have been corrected but the general condition still exists and may prove troublesome in the future.

It has been found that when the deflecting magnet for the external proton beam is in place inside the straight section, the intensity of the circulating beam is reduced by a factor of two. The cause of this has not yet been definitely determined but from tests performed near the end of the past running period it is believed that the loss is due to distortion of the Cosmotron's magnetic field by the presence of the iron in this deflecting magnet. Further studies will be made to find means to correct the cause of this loss in beam intensity.

The principal run during this report period was one using the external proton beam directed against a target near the Columbia Cloud Chamber. The object of this run was to obtain more data on the production of the

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newly found neutron θ_2 meson. Both the MIT and Princeton multiplate cloud chambers were operated simultaneously during this run, receiving occasional pulses when needed. The past month also saw the first use of the BNL hydrogen bubble chamber. 4000 pictures were obtained of negative pions passing through the chamber. These will be examined for interactions resulting in the production of hyperons and heavy mesons.

A rather large propane bubble chamber, provided with solenoids to furnish a magnetic field, which was constructed at Columbia, has been installed on the floor of the Cosmotron and will be operated in the next running period starting about October 1.

The new hydrogen liquefier is being readied for initial operation. Two engineers from the Boulder, Colorado branch of the Bureau of Standards are here to assist in getting this equipment into operation.

60" Cyclotron

During the month, the Cyclotron was opened to replace water cooling lines which had shown evidence of erosion. It was found that two short circuits showed a considerable loss of copper (greater than 50%) while one longer circuit in parallel service showed only about 5% loss of copper. This confirms the suggestion of the Metallurgy Department that the cause is velocity erosion. An effort is now being made to reduce the flow in all water cooling circuits as much as is consistent with adequate cooling.

Reactor Safety Study

At the request of the Division of Reactor Development, Brookhaven National Laboratory has undertaken a "Reactor Safety Study Project" to be completed by January 1, 1957. The project will concern itself with the environmental aspects of a conceivable major accident of commercial power reactors up to 1000 megawatts thermal power. The adequacy and accuracy of present knowledge will be explored and recommendations will be made for further study leading to more accurate understandings. A report will be furnished for use by the Joint Committee for Atomic Energy.

Financial Information

A review of the total operating costs for BNL for the first two months of FY 1957 determined that the level was 97.3% of the estimated costs for the period. During this time, the Laboratory operated under a tentative financial plan in amounts less than those requested and operations will continue on this basis until a definitive approved financial plan is received. Costs of equipment not related to construc-

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tion were found to be 96.3% of the estimated amounts. In the absence of an approved financial plan, no new construction is being undertaken. Construction projects obligated in prior years are going forward but Brookhaven is in need of funds for General Plant Projects.

Research Reports

During September, 33 papers were approved for publication. This number included 21 on physical sciences, 6 on life sciences, and 6 on applied and general subjects.

Visitors

The Laboratory was visited by the following, among others:

60 foreign students participating in the MIT Foreign Student Summer Project, on September 5.

37 Scientists participating in a conference on Dynamics of Proliferating Tissues, sponsored by the Biology Council of the National Academy of Sciences and the National Research Council, September 5 - 8.

9 insurance underwriters, interested in special hazards for personnel working in atomic energy establishments on September 11.

34 members of the French Parliament, on September 12.

7 Deans from universities of Colombia, South America, on September 13.

Henri Paul Jammet, a French member of the United Nations Delegation to discuss fallout effects of radiation on September 13.

5 representatives of the United Nations Public Relations Department, one Chinese, one Egyptian, one New Zealander, and two U. S. citizens, to get background information on the Laboratory and view the general facilities, on September 14.

4 engineers from the French AEC, on September 14.

14 members of the Japanese Diet and industrialists, on September 20.

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43 scientists, including 3 Canadians, a Britisher and a Belgian, participating in a conference on Resonance Absorption of Neutrons in Nuclear Reactors, on September 24 and 25.

4 Japanese industrial representatives, on September 25.

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NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

OCTOBER 1956

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SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Office Management

A breakdown of telephone and teletype traffic in August, September and October shows a normal increase from the vacation period to the months of heavier workload throughout the NYOO.

	August	September	October
Local Calls	8,300 cost $377.26	8,852 cost $402.10	8,901 cost $404.30
Long Distance	612 cost $960.35	578 cost $952.20	650 cost $1003.90
Teletypes	790	669	858

Procurement & Traffic

An exhibit of items purchased by NYOO and suitable for supply by small business firms was assembled by members of the Procurement Branch for showing at Procurement Conferences held in Trenton, N. J. and Waterbury, Conn. The exhibits were sponsored by the Small Business Administration and were viewed by more than 500 potential suppliers.

Property

Arrangements were made with the U. S. Naval Ammunition Depot, Earle, New Jersey for shipments of contaminated waste for the quarterly period ending October 31, 1956, for the following installations:

Chicago Operations Office

Pittsburgh Area Office (Westinghouse Atomic Power Division)
for the disposal of 393.1765 tons

Hartford Area Office (Pratt & Whitney Aircraft Corp.)
for the disposal of 6.2015 tons

New York Operations Office

Sylvania Electric Products, Inc. - Contract AT(30-1)-366
for the disposal of 4.65 tons

*Brookhaven's wastes were picked up by Dept. of Navy at Floyd Bennett Field, Brooklyn, N.Y. for disposal at sea.

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During the quarterly reporting period, arrangements were completed for the acquisition of approximately $93,500 worth of excess property for approximately $10,500. This represents about 12% of acquisition cost. There were 100 trips made by 5 vehicles during the quarter for a total of 11,547 miles travelled.

There were 2197.043 troy ounces of contaminated and uncontaminated platinum received for processing during the quarter worth approximately $219,704. Shipped out were 821.181 troy ounces of pure platinum for a total value of approximately $82,118.

The following visited this office regarding property matters:

D. Lundy - Bishop & Company, P. Williams, J. Cooney and R. Volterra - Metals Control Corp., R. Mortenson - University of Rochester (Cyclotron Project) and Byron Roscoe - Purchasing Agent - Harvard University

Records Management

Revised listing, relfecting approved categories for NYOO contractors to receive classified reports on automatic distribution, was completed and forwarded to TISE, Oak Ridge, for inclusion in the 19th Edition of the Standard Distribution Tests.

A visit was made to Nuclear Metals, Inc., to assist the contractor's Record's Manager in establishing a sound records management program.

Report NYO-4753 "Annotated Bibliography on Fall-Out Resulting From Nuclear Explosions", containing 175 references was sent to TISE, Oak Ridge, for distribution.

Contracts

General Electric, Proposed Contract AT(30-1)-1963:
Negotiations continued and were centered upon background patent rights. General Electric has proposed that it license other suppliers to use its background patents and know-how, for the manufacture of the capacitors to be developed under this contract. NYOO is considering this proposal as well as General Electric's position concerning ownership of technical data and know-how developed by reason of the contract.

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909:
Authority was given to the Harvard group to proceed with detailed design of the laboratory-control building. Bids for groundbreaking and a sewer relocation ranged from about $31,000 to $74,000 and were submitted to NYOO for approval. Purchase of the first major subcomponent, an RF generator, has been approved by NYOO.

A complete draft of a definitive contract was sent to Harvard on October 17th as a basis for final negotiations. Harvard's proposal for overhead continues to receive attention because they have requested a rate different from the established rate, and because the applicability of their normal overhead structure to this project is not yet established.

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New York University, Computing Center, Contract AT(30-1)-1480:

Negotiations proceeded for modification of this contract to provide for the University's purchase of the building to house the IBM-704 computer. The University's revised preliminary proposal for alteration of the building and operation of the computer was received and is being sent to Headquarters for approval. The delivery date expected for the computer is March 15, 1957. The University has possession of the building and is now arranging for building alterations. A modification is being negotiated to extend the term of the contract for UNIVAC operation for three years with funding on an annual basis.

Nuclear Development Corporation of America-Chugach Electric Association:

The Assistant General Counsel was represented by NYOO at the Schenectady Operations Office's negotiation meeting on October 10th, and the Contracts Division participated in a subsequent NYOO review of the draft contract terms. NYOO Counsel is to draft and consolidate comments for SOO consideration.

Nuclear Development Corporation, Contract AT(30-1)-862:

The final firm overhead for the period April 1, 1955 to September 30, 1955 was negotiated. The contractor's overhead structure has been revised to provide three separate overhead rates; a charge for personnel benefits and costs, a charge for technical services, and a charge for administrative and general costs.

Nuclear Metals, Inc., Contract AT(30-1)-1565:

Nuclear submitted its comments on the NYOO definitive draft of a contract modification to accomplish the sale of AEC equipment and lease of the Hood Building. They requested that this contract modification include a hold-harmless provision to protect them against liabilities arising out of accidents during the course of or involving items produced under their AEC work program. Counsel is preparing to submit this to Headquarters. Nuclear has begun to prepare space in a nearby government-owned building for hazardous work that is to be transferred from the Hood Building.

Pennsylvania State University, Proposed Contract AT(30-1)-1859:

The University has not yet agreed to the terms of the contract for the loan of fuel for the Penn State reactor. They have acknowledged NYOO's request that they reconsider their previous objections to the Patents and Reports provisions and state that their counsel now has the problem under review.

Princeton University, Accelerator Project, Contract AT(30-1)-1916:

Princeton has agreed to a system of cost control based upon the directive system and conforming with the requirements of the Staff Paper by which the selection of their proposal was approved. University representatives met with NYOO on October 2nd to discuss general contract terms, and on the nineteenth, submitted a proposal for title and right of use for the facilities

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to be provided. They proposed to take title to the administration building (as presently conceived this is a two story building devoted to offices, stores, shop and some small laboratory space). As for the accelerator, and associated buildings and equipment, these would belong to the AEC subject to the following conditions which are now under consideration:

(1) the University may use the facilities for AEC contracts or for other purposes approved by the AEC.
(2) if no operating contract is consummated, the University shall have the right to use the facilities unless the Commission decides that the use is not in the best interests of the country. In that event, the University would retain the right to at least half of the regular operating time and the Commission could use the facilities during the remaining time.
(3) the land would be leased to the Commission for 25 years.
(4) the University would have an option to buy the facilities at cost less depreciation, or at the value at time of purchase.
(5) Title would vest in the University after 25 years.

Princeton University, Project Matterhorn, Contract AT(30-1)-1238:

NYOO is reviewing the University's formal report on the fire which took place in September to determine the extent of damage to AEC property and possible claims for reimbursement. Negotiations concerning expansion of the Matterhorn facilities, NYOO is awaiting Princeton's position on the extent to which the University will be responsible for supplying general facilities that may be needed before proceeding with negotiation on the expansion of Matterhorn.

Sylvania Electric Products, Inc., Contract AT(30-1)-GEN-366:

Sylvania has requested a general hold-harmless provision from the AEC to safeguard them against liabilities arising out of accidents in their plant or involving items produced under this contract. NYOO is preparing the submission of this to Headquarters. Sylvania has also requested to be held harmless for liabilities arising out of any accident that might occur during their disposal of some thorium scrap. This material is the same as that involved in the July explosion at Sylvania. Sylvania has requested authority to proceed with fabrication and installation of testing equipment for its Aircraft Reactor's work at an estimated cost of $70,000. Since this cost estimate was substantially in excess of earlier ones, they were requested to submit a detailed specification and estimate.

Yale Linear Accelerator, Contract AT(30-1)-1691:

The Division of Research, Washington approved additional funds for increased AEC participation in the project costs. A contract modification is being prepared to change the scope of work and to reflect this increase.

Vitro Corporation, Contract AT(30-1)-1782:

Negotiations were concluded for reduction of the FY 1956 fee and to establish the fee for the FY 1957 work on revision of the AEC Reactor Handbook.

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University of Rochester Cyclotron Project, Contract AT(30-1)-875:

NYOO authorized the University to proceed with detailed design of additional laboratory space.

Personnel

Contractor Personnel

A tuition refund policy was developed and accepted as a reimbursable item under the contract with Nuclear Development Corporation of America.

Final agreement was reached on items of personnel costs which will be reimbursed under the contract with Babcock and Wilcox.

Federal Personnel Statistics

During the month the following personnel activities took place:

85 interviews with prospective candidates
19 screening, preliminary or courtesy interviews
36 interviews with candidates and operating officials
9 selections of outside candidates
1 selection from another AEC office
7 appointments made
18 job evaluations completed

As a result of extensive publicity and circularization 326 applications for employment were received during the month.

Miscellaneous

A group award of $300, and appropriate certificates of merit, were presented to 38 employees for outstanding performance in connection with the most recent Nuclear test series.

Public Information

During the first two weeks of October the Public Information Service served as liaison between the department of State and Brookhaven National Laboratory on arrangements for a tour of the Laboratory on Saturday, October 20 by Delegates to the International Atomic Energy Conference at the United Nations. Seventy-nine delegates, accompanied by 32 members of the foreign and domestic press corps were transported from UN headquarters to the Laboratory in buses provided by the NYOO. The guests were received by Merril Eisenbud, NYOO Manager, and Dr. Lee J. Haworth, Laboratory director who sketched Laboratory history and programs for them. They were then taken on a tour of special exhibits after lunch visited the Cosmotron, the reactor and the hot chemistry facilities. An impromptu press conference with Dr. Lee Farr was held for reporters who indicated an interest in neutron capture therapy. After an informal tea the visitors departed for the UN.

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On Saturday October 27, the one day Atomic Energy Institute for Junior High School science teachers, planning for which had begun in late Spring, was successfully concluded. The program was sponsored by the Board of Education with the cooperation of PIS NYOO and the Consolidated Edison Company, which provided the lecture hall and served lunch to the teachers and other guests.

The 238 teachers who attended represented better than 80% of the Junior High Schools in the city's five boroughs. The program included an opening lecture on the basic science of atomic energy by Mr. Elmer Galley one of the seven "traveling science teachers" trained at the Oak Ridge Institute of Nuclear Studies. Mr. Galley also gave the concluding lecture on how to teach atomic energy to science students. In addition the teachers heard discussions on the peacetime uses of atomic energy in biology, medicine, agriculture and industry as well as a review of the status of atomic power.

In addition to inquiries on varied aspects of atomic energy the New York Press Corps was particularly concerned during October with two subjects: One was the origin, distribution, potency and efforts of strontium 90. The other was the death of Dr. Kenneth Koerber, who was said, by the Philadelphia coroner, to have died of radiation poisoning acquired during a year's employment at Brookhaven National Laboratory. PIS answered inquiries from press in and around New York City and approved a statement for use by the Laboratory. Subsequent analysis of bone from the deceased has proved that statements by the Philadelphia physician were without basis in fact.

During the report period 92 films from the Information Service's Film Library were shown to approximately 4048 people.

Security

During the report period, 185 clearances for access to secret data and 72 for access to confidential data were granted to Access Permittees by the Security Division. Requests for 147 secret and 75 confidential clearances were received for processing in the same period.

Technical Liaison

During the month of October, 13 new access permits were assigned to NYOO. Of these new permits, 5 were for access to Secret Restricted Data. An additional 3 amendments to Secret brings the total number of Secret access permits up to 171. With cancellation of one Confidential access permit, the total number of access permits assigned to NYOO is 355.

HEALTH AND SAFETY LABORATORY

Nuclear Safety Review Board

Feasibility Report No. 6; Burnup Analysis on Irradiated Fuel Elements - Contract AT(30-1)-862

Feasibility Report No. 40 - Sponsored Task C-46
Sylvania Electric Products, Inc. Bayside

NMI-OLW-1 (Suppl. 4), NMI-OLW-1 (Suppl. 5)

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Field Studies

American Brass Company

A report has been transmitted to Nuclear Metals, SROO, and the American Brass Company covering a visit which was made to the Waterbury plant of American Brass for the purpose of reviewing potential health hazards accompanying extrusion operations. The operations were part of a pilot study to evaluate the possibility of using extrusion as a procedure for forming hallow uranium tubes. Air samples which were taken indicate that the potential exposure from this type of operation is very low.

Beryllium Corporation of America

Conferences have been held with the Lummus Corporation (designing engineers) and the Beryllium Corporation regarding the design of the latter's new beryllium facility. In the course of the discussions, the types of equipment proposed for approximately the first half of the process have been discussed. Suggestions made to the designing engineer should result in a safer plant design.

Brookhaven National Laboratory

A report has been transmitted covering a fire protection survey which was made at BNL. As a result of the survey several specific and a few general recommendations were made about the safety and fire protection status of the Laboratory. These included personnel staffing requirements, as well as automatic alarm equipment in several of the areas. A few recommendations of a procedural nature were also included.

Long Island Biological Laboratory

A visit was made to the Cold Springs Harbor Laboratory of the Long Island Biological Laboratory for the purpose of reviewing the safety and fire protection at the Laboratory. No recommendations appeared to be needed at the time of the visit.

Mallinckrodt Chemical Works

A report has been transmitted covering a survey of the Plant 4 area of Mallinckrodt Chemical Works, made to define the occupational exposure of the 74 employees to airborne dust of various uranium compounds. Analyses were also performed to elucidate several fluoride exposures. The results of the survey indicate that concentrations of airborne uranium and fluoride dust to which personnel were exposed are within acceptable limits. Several recommendations of a procedural nature were presented with the report. These were made to facilitate general improvement.

A report was transmitted describing a survey of Plant 6 of Mallinckrodt Chemical Works. This survey evaluated the exposure of 434 employees to airborne uranium dust. Of the people who were studied 94% (408) employees had daily exposures below 100 d/m/M^3. The remaining 26 men were exposed to more than this value. The largest single exposure resulted from a single intermittent kind of operation. The others came from other components of the work. Recommendations were presented with the report for an

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improvement of the conditions leading to the high exposures.

Project Redwing

The Redwing data is being worked into final form. It is believed that a field program will be essential to measure the attenuation characteristics of collimated detectors using a simulated infinite plane source. A proposal will be written to cover this operation at some future date.

Projects

DTR System

The punch card data reduction system has now been designated as the DTR (Digital Transfer Reporter) and the components are coming into form. The glow storage modules are complete, have been tested and are found to be satisfactory. The background subtractor circuit has been designed and is now in test to determine tolerances of components to permit construction specifications. The circuit as it now operates will handle 2 pulses spaced 10 microseconds apart. An investigation has been started on the possibility of using printed circuit techniques, especially those utilizing the ceramic plaque fabrication where the manufacturer packages the entire unit.

The key punch operation circuit has been designed and tested. A mercury wetted relay will be used and is sufficiently fast to permit at least 18 operations per second.

The time date group module has been designed so that the years date and time record will be numerically sequenced by days, and the days divided into 15 minute intervals. A one day timer will sequence the day numbers and reset the 15 minute interval record to 00.

Fallout Counter Measures

A. J. Breslin Industrial Hygiene Branch and Len Solon Radiation Branch attended a conference on the Shielding Symposium which was held in San Francisco. A portion of the symposium was devoted to the various aspects of shielding radiations from nuclear explosions. Mr. Breslin presented a synopsis of the work done to the present time on the general subject of fallout countermeasures.

In connection with this work, a small pilot study was set up to determine the feasibility of using water to remove fallout materials from a simulated roof surface. Aluminum roofing material was used and successive tests were run on plain, corroded, and painted surfaces to determine the effectiveness of the washdown. The simulated roofing was also treated to simulate a graveled surface.

Water was applied to the roof by means of a simple spray nozzle and by dribbling from a hole in the header. Using the spray the water consumption was approximately 0.3 gallons/minute/foot of width. Crystalline limestone was sifted into the roof at a rate of about 1 gram/square foot to simulate fallout. The tests showed moderately high efficiency. It appears that with this kind of treatment the aluminum cleaned to the extent of about 97% to 99%, whereas the simulated gravel surface cleaned about 50%.

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Image Intensifier Scanning Tube

Construction has been started on a 22" diameter tube embodying the final principles which will be used in the 30" tube. It is now indicated that the tube will be delivered about December 1.

Sensitive Materials

The following is a list of the subject areas in which HASL participated under its agreement to assist other government agencies.

Radium exported to Geneva, Switzerland	10/2
10 lbs. of assorted minerals from Berlin, Germany	10/4
Uranium ore samples of Spanish origin	10/15
Chemicals for analysis from India	10/18
Liquid level gauge from England	10/19
Tea shipment from Indonesia	10/19

Utilization and Disposal

In connection with the Labortory's efforts toward revising AEC regulations to permit disposal of contaminated material, a draft copy of paragraph 5170-1411, permitting disposal of contaminated equipment, was reviewed. This paragraph would divide equipment into three groups according to contamination levels. One of these would be assumed to be uncontaminated; a second, disposable, but contaminated; and the third, disposable only within the Commission. Several major changes were suggested in the draft copy.

Laboratory Operations

Soil Survey

A soil survey of seventeen stations in the US, was made by HASL personnel during the period 10/8/56 to 10/15/56.

Fallout

10,883 fallout samples were processed during this period. March and April samples were composited in order to complete results for the first-half of the 1956 data.

Sample Analyses

The Analytical Branch analyzed 973 samples of the following:

Uranium - air dust, 381; urinary, 196; misc. 110
Beryllium - air dust, 177; misc. 39
Radium - urinary, 1; misc. 8
Radon - 2
Misc. - 59

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Miscellaneous Personnel Activities

Publications

The report of the radiation survey at the University of Virginia Van De Graaff accelerator has been completed and distributed.

A report on film badge evaluation by K. O'Brian, H. Blatz, and L.R. Solon appeared in the October issue of Nucleonics.

An article entitled "Recent Observations on Dust Control in South African Mines" by W. B. Harris appeared in the October issue of A.M.A. Archives of Industrial Health.

Meetings

H. D. LeVine visited FCDA at Battle Creek, Michigan and reached agreement regarding the program to be undertaken for a radiation survey meter to be used for Civilian Defense. FCDA has agreed to finance this program and should provide authorization.

John Harley participated in Bio-assay meetings at Los Alamos, N.M. on 10/10 and also met with L.T. Alexander at the Soil Survey Center, Beltsville, Md. on 10/17 to discuss strontium soil studies.

John Harley, Ira Whitney, and Ed Hardy participated in the International Cooperation meeting in Washington D. C. on 10/8 re proposed US-UK-Canadian Conference on Radioactive Fallout.

John Harley attended International Geophysical Year meeting in Washington, D. C. on 10/20.

John Harley participated in meeting with Merril Eisenbud and Allen Laugh with respect to the strontium contract.

John Harley attended five afternoon sessions of the second UN Scientific Committee on the Effects of Atomic Radiation on 10/24, 25, 26, 29, 30 as an advisor.

A meeting was held between Hanson Blatz and G. K. Green, Director of the BNL accelerator group to discuss long range radiation protection aspects of the AGS accelerator design.

Hanson Blatz represented the AEC at a Labor Department hearing in Hamilton, Ohio to testify in connection with the defense against a claim for death benefits by a former employee of the National Lead Company of Ohio. The claim was based upon radiation induced cancer.

Hanson Blatz attended a meeting with Commissioner Hilleboe, NY State Dept of Health, Albany to discuss implementation of the first National Academy of Science recommendation on the maintenance of individual personal radiation exposure records, particularly by the medical profession. A trail run in a small upper NY State community has been agreed upon, although the community has not yet been selected.

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Members of the Radiation Branch attended a meeting at the Francis Delafield Hospital on the subject of radiation protection legislation.

Mr. W. B. Harris attended a meeting with members of the Beryllium Advisory Committee held at NYOO on 10/31 to discuss revision of the AEC Recommendations for the Control of Beryllium Hazards.

Visits to HASL

Drs. Tajima and Bersson of the UN Scientific Committee toured HASL.
Dr. Toshio Hoki, Chief, Health Physics Group, Japanese Atomic Energy Research Institute toured HASL.
Drs. M. Tsuzuki, N. Saito, S. Ohita, and H. Ishida of the University of Tokyo toured HASL.
R. Miller of the Hunter College High School and 27 science students toured HASL.
R. Boulinger, Belgium toured HASL and received lecture on analytical methods and drawings for radon equipment.
Dr. A. C. Chamberlain and Dr. A. Morgan, AERE-Harwell on re Strontium program.
Dr. A. A. Smales and Dr. F. J. Bryant, AERE-Harwell on re Strontium program.
Dr. G. Barzongam, Iran re Fallout sampling.
Dr. E. Anderson, Los Alamos Scientific Laboratory re Exchange on analytical results on milk analyses.
Mr. James Poling, free-lance writer, re Strontium Program.
Dr. Ira Pullman, National Academy of Sciences re Strontium data.
Messrs. Veen and Abbate of the General Electric Company to discuss beryllium hazards.
Dr. Y. Hiyama, Fisheries Institute of the Tokyo U Faculty of Agriculture re Strontium program.

Visits

Mr. Harris gave a talk on reactor materials at the University of Rochester on 10/17.

USDOE 001062

SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR OCTOBER 1956

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

A. Buildings

All major construction of the Service Building has been completed and the building is being occupied. Work on the Magnet Tunnel is on schedule with all footings, 90% of the lower walls and 50% of the Tunnel Roof completed. The Linac Tunnel walls are 90% complete and 50% of the roof is complete. Excavation of north and south Target Building conjunction sections has been completed and footings for the north unit are being poured. Invitation for bid for the balance of the structural work was issued on October 10, 1956, bids to be returned and opened November 27, 1956.

B. Machines

Magnet - The Allis-Chalmers fabrication model has been received and has been set up for testing in the Service Building. The Westinghouse fabrication model assembly has been delayed due to the non-specification nature of the material furnished. Preliminary sepcifications for steel to be used in the AGS Magnet have been written. Formal inquiries including these specifications have been forwarded to five steel companies for comment. Only two bids for the Magnet Power Supply were received and these are being analyzed.

Linac - Linac tank diameter has been frozen. Considerable effort is now being expended on the Linac power model. Accelerator tube and pre-accelerator focusing system are under final design study.

Medical Research Center

This project is estimated to be 6.5% complete. During the month, the contractor started excavating for the Reactor Area Basement, started pouring floor slabs in the Hospital Sector, and continued pouring the Laboratory Basement floor slab, forming basement walls, forming the Laboratory main floor slab, setting utility inserts in the Laboratory slab forms and placing conduit and plumbing for the Hospital Sector floor slabs.

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Engineering Works Area

This project is estimated to be 9% complete. During the month, the contractor proceeded with work on grade beams, foundations, excavation of trenches and manholes, building manholes, installing ground cable and concrete conduit and completed the storm and sanitary sewers. The fabricator expects to start erecting steel about December 15, 1956.

Cosmotron

The Cosmotron ran satisfactorily until the latter part of the month when unusually large spillout of the beam was encountered. Attempts to locate the cause of this condition failed. On the night of October 26, one of the bolted connections between copper strips in the main generator rotor opened up. It is believed at this time that this break can be repaired without removing the rotor. Since the connection showed signs of prolonged arcing, this condition may have been responsible for the beam spillout.

During the three weeks of successful operation, a bubble chamber run for a Columbia group which yielded 40,000 pictures were completed. Another important experiment which had an effective run was one by a combined Princeton-Brookhaven National Laboratory counter group investigating the newly found neutral θ_2 K meson.

The new hydrogen liquefier is now in satisfactory operation. Parahydrogen is being produced at a rate of 60 liters per hour.

60" Cyclotron

The work of repairing the water lines in order to reduce or eliminate velocity erosion has been completed. Tests indicate that these changes have been successful and the Cyclotron is back in operation.

Contract Actions

Negotiations were begun with Associated Universities, Inc., under Contract AT-30-2-GEN-16, looking toward agreement on a figure for Management Allowance for AUI during FY 1957.

Proposed prime contract with Babcock & Wilcox Company for LMFR-E was under consideration in the Washington Office during the month of October. Indications are that it will be sent to New York Operations Office shortly for signature of Babcock & Wilcox and the Manager of the New York Operations Office.

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Wright Air Development Center forwarded a modification to their contract covering the Shielding Program at Brookhaven National Laboratory. The modification extends the contract for another year. It is expected that it will be approved by New York Operations Office and distributed early in November.

Service Awards

On October 2, 1956, Merril Eisenbud, Manager, New York Operations Office, presented 10 and 20-year service pins to employees of the Brookhaven Area Office. It was noted that more than 50% of the Area Office Staff received the awards.

Research Reports

During October, 31 papers were approved for publication. This number included 24 on physical sciences, 6 on life sciences, and 1 general.

Visitors

The Laboratory was visited by the following, among others:

3 members of the Japanese Delegation and 3 scientific members of the Argentine Delegation to the United Nations Meeting on the International Atomic Energy Agency, on October 1.

55 members of the Instrument Society of America, on October 2.

Siegfried Heesemann, Chief of the Atomic Energy Division of the Ministry of Economics; Joachim Pretsch, Scientific Adviser to the Ministry of Atomic Energy Affairs; and Karl Vossler from the Federal Ministry of Labor, Republic of West Germany, on October 4.

61 scientists participating in a Molecular Beams Conference on October 5 and 6.

19 members of the Japanese Atomic Industrial Forum Mission, on October 9.

R. B. J. Patel and N. B. Prasad, Indian Architects, interested in Laboratory buildings, on October 17.

Cavid Brginsoy, member of the Turkish Research Reactor Project, on October 18.

86 delegates to the United Nations Meeting on the International Atomic Energy Agency, on October 20.

Georg Michael Kahn-Ackermann, of the West German Parliament and free lance journalist, on October 17.

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37 participants in the Fifth Tripartite Instrumentation Conference, October 22 - 26.

5 members of the Danish AEC, on October 24.

Dr. T. H. Johnson, Director, Division of Research, AEC, visited Brookhaven on October 22.

Mr. H. C. Brown, Assistant Director of Administration, Division of Biology and Medicine, AEC, accompanied by Mr. H. A. Stanwood, Chief, Program Coordination Branch on October 22.

Student's and Visitor's Days

The annual "Student Visitors' Day" was held on October 12. 4100 students attended. One innovation this year consisted of lectures to interested students on the Laboratory's programs in physics, in chemistry and in biology. Each of these three lectures was repeated a second time. Hundreds of students attended each talk and were encouragingly responsive during the question periods that followed. This innovation proved successful and similar lectures will be offered on future Student Visitors' Days.

The annual "Visitors' Day" for lay people was held on October 13. 3800 individuals attended.

AUI Board of Trustees

The annual Board Meeting of the Trustees of Associated Universities, Inc. was held on October 19, 1956. The newly elected Chairman of the Board is LaRoy B. Thompson, Director of Research Administration, University of Rochester. The two newly designated Trustees are Dr. Courtney C. Brown, Vice President in Charge of Business Affairs, Columbia University, and Dr. Edward M. Purcell, Professor of Physics at Harvard University.

USDOE 001066

USDOE 001084

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NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

DECEMBER 1956

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USDOE 001085

SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Property

Arrangements were made with the U. S. Naval Ammunition Depot, Earle, New Jersey for the disposal of 149.3025 tons of contaminated wastes at sea for the Chicago Operations Office (Westinghouse Electric Corporation, Pittsburgh, Pennsylvania). Approximately 5.175 tons of contaminated wastes were also disposed of at Earle for Nuclear Metals, Incorporated Contract AT(30-1)-1565.

Negotiations are being made to acquire from the Oak Ridge Operations Office approximately 30,000 tons of ferrous metals scrap for use as shielding blocks by Associated Universities, Incorporated, Contract AT(30-1)-GEN-16; Harvard University Contract AT(30-1)-1909; Rochester University Contract AT(30-1)-875; Princeton University Contract AT(30-1)-1916.

Visits were made to Baker and Company, Newark, New Jersey to witness sampling operations and to Arthur D. Little, Incorporated, Contract AT(30-1)-1013 to effect property clearance due to contract termination.

Records Management

Approximately 170 linear feet of retired records which had been retained in the Records Center, have been destroyed. This made room in the Center for the receipt of a like quantity of records which are ready for retirement. Plans are being made for the establishment of a New York Operations Office Records Disposition Program pursuant to AEC Manual Chapter 0231, with the goal of accomplishing the objectives of the chapter before the end of 1957.

Dr. Warheit of the Washington Technical Information Service visited Administrative Operations on December 7, 1956, to discuss the proposed Civilian Application Library.

USDOE 001086

Contracts

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909

The Deputy Manager, the Director of Finance, and the Deputy Director of Contracts visited the University on December 27, in an effort to reach agreement on overhead. Both parties are agreed that the fixed overhead allowance should represent estimated actual cost, but questions still center about the distribution of costs and whether certain costs claimed by Harvard relate to the work.

Proposals were received by the University from potential suppliers for the 20 MEV linear electron accelerator. A project committee is to review these in January.

Harvard has received bids for construction of the laboratory building substructure. Since the University will not break ground, however, until all contract terms have been agreed upon and approved both in NYOO and at Headquarters, it has sought an extension of the low bid. The range of bids was from $82,949 to $118,537. The architect engineer had estimated $115,500 for the job.

Massachusetts Institute of Technology

The Institute has renewed its request that NYOO consider a master contract to include all the contracts now at MIT. Exploratory discussions are scheduled for January.

New York University, Contract AT(30-1)-1480

The bids for alteration of space in NYU's building for the IBM-704 installation, which were issued last month, have been opened and are being analyzed. Additional work plus a contingency have increased the total estimated cost to $500,000 and have delayed the scheduled completion date. If award can be made soon, it should be possible to have the space ready by March 15, 1957, the scheduled delivery time for the computer. A modification of this contract to provide for installation of the computer is in preparation.

Nuclear Development Corporation of America, Contract AT(30-1)-862

During the month there has been no progress toward dissolution of the impasse which exists on the matter of overhead. A specific statement of reasons for those items disallowed by NYOO is being drawn up at the request of the contractor.

USDOE 001087

Nuclear Development Corporation of America - Chugach

The NYOO Assistant General Counsel represented the office as an observer at a negotiation meeting in New York between Schenectady Operations Office, NDCA and Chugach. NYOO is preparing comments to Schenectady concerning the contract draft presented at this meeting.

Nuclear Metals, Inc., Contract AT(30-1)-1565

The final draft of the contract modification to sell the AEC equipment at the AEC Metallurgical Laboratory to Nuclear, its present operator, and to make the Hood Building and other space available to it for private work was completed and sent to the contractor on December 20. By the end of the month only minor comments had been received. NYOO has assigned top priority to writing the transmittal and justification necessary to submit this action to Headquarters early in January.

Princeton University, Project Matterhorn, Contract AT(30-1)-1238

Further study has been given the Princeton proposal that the AEC guarantee amortization for expansion of the general facilities at the Forestal Research Center to support this project. NYOO expects a preliminary proposal early in January for the preparation of a new site for future work.

Princeton University, Accelerator Project, Contract AT(30-1)-1916

The draft of the definitive contract, mentioned last month, has made slow progress because of the priority status assigned to the Nuclear Metals and Harvard contracts. Now that both of these are virtually complete, the negotiation of this definitive contract can receive more attention. Cost control procedures are being worked out and seem to be in almost final form.

Sylvania Electric Products, Inc., Contract AT(30-1)GEN-366

NYOO met with Sylvania to explore the implications to its contract of the newly formed Sylvania Corning Nuclear Corporation. Sylvania anticipates that the new corporation will be ready to undertake the responsibility for the present research and development contract early in the Spring of 1957.

Material Loan Contracts

Contract documents have been written for the following material loan contracts:

New York University - proposed contract AT(30-1)-1870. During the month the University wrote to Headquarters to request an exception from AEC patent policies as these apply to loan contracts.

USDOE 001088

College of the City of New York - proposed contract AT(30-1)-1959. The contract was mailed to the college.

Receiving staff review are:

MIT proposed contract AT(30-1)-1966
Yale University, proposed contract AT(30-1)-1970
University of Maryland, proposed contract AT(30-1)-1971

Pennsylvania State University, proposed contract AT(30-1)-1859

NYOO is still waiting for clarification of the University's position on patent and reporting requirements, which has been long delayed.

Manager's Office

Visit by B. G. Beckhoefer of the Division of International Affairs re International Atomic Energy Agency.

Dr. Scott Russell, Harwell Agricultural Research Council, re metabolism of strontium 90 in plants.

W. K. Maher, Deputy Director, Division of Construction & Supply to discuss plan to use project engineers to appraise engineering and construction functions of operations offices.

Personnel

Federal Personnel Statistics

During the month the following personnel activities took place:

62 interviews with prospective candidates
22 screening preliminary or courtesy interviews
35 interviews with candidates and operating officials
4 selections of outside candidates
10 job evaluations completed
7 permanent appointments made

Miscellaneous

An incentive award and $10 were presented to Judith L. Sugarman, HASL.

USDOE 001089

Public Information

The Director, Public Information Service, met with the Supervisor of Science for the New York City Board of Education, and subsequently with representatives of the Institute of Radio Engineers to plan a teacher training course to be held in conjunction with the IRE meeting in March of 1957. Although the Board of Education was enthusiastic about the particular plan under consideration, the IRE felt that it would be better equipped to cooperate in such a program after its educational committee, now being established, had had some operating experience.

Discussions were also held with Board of Education representatives regarding the possible up-dating of the booklet, "Laboratory Experiments with Radioisotopes for High School Science Demonstrations." This booklet originally grew out of an in-service training course for high school science teachers conducted by the New York City Board of Education with the aid of the New York Operations Office. The NYOO has indicated to the Board of Education its willingness to conduct another workshop for teachers during the Easter vacation so that the booklet may be supplemented. George Glasheen, Chief of the Educational Services Branch, Washington, is investigating the possibility of payment to the teachers during the time the booklet is being written.

During the month review was made of an article on strontium 90 in milk prepared for the American Milk Review by a staff reporter who interviewed HASL personnel. The article, which appears in the December 1956 issue under the title, "What is This Strontium 90 Business?", comes to the conclusion that, "The greater immediate danger to the economic structure of the milk business lies in the spread of this false belief (misinformation given in other publications) rather than in the facts of milk and strontium 90 as they are."

During the report period, 109 films were shown to 4,796 people. This is an unusually high number for the month of December, which has been heretofore somewhat lower than others because of the lengthy school vacations.

Security

During December, 114 clearances for access to secret data and 117 for access to confidential data were granted to Access Permittees by the Security Division. Requests for 96 secret and 76 confidential clearances were received for processing in the same period.

Technical Liaison Division

During the month under review, five new access permits were assigned to NYOO. Of these, four were in the Secret Restricted Data category. In addition, two were amended to include Secret. This brings the total of access permits assigned NYOO to 371. Of these, 181 have access to Secret Restricted Data and 190 have access to Confidential Restricted Data.

USDOE 001090

HEALTH AND SAFETY LABORATORY

Nuclear Safety Review Board

The following feasibility reports were approved by the Nuclear Safety Review Board:

NUCLEAR METALS FEASIBILITY REPORT: NMI-FR-2 CORROSION TESTING OF ISLAND PT TYPE FUEL ELEMENTS FOR METALS AND CONTROLS, INC. - 11/9/56

NDA FEASIBILITY REPORT NO. 7: FABRICATION OF APPR FUEL ELEMENTS, AEC (SCHENECTADY OPERATIONS OFFICE) CONTRACT AT(30-3)-21, NDA PROJECT NO. 2063 - 11/21/56

Field Studies

Allied Chemical

At the request of the Production Division, Washington and Allied Chemical and Dye Company, Mr. Brannigan of the Washington office and Mr. Harris consulted with personnel of Allied's General Chemical Division. The purpose of the consultation was to advise on matters of health, safety, and fire protection in the design of the new UF_6 plant which the company is building under a unit price contract with the Commission. A summary of Commission experience in the handling of the materials which were involved in the production of UF_6 was presented to the interested parties.

Aberdeen Proving Ground

At the request of Dr. Aminia Nordio, of Picatinny Arsenal, a visit was made to Aberdeen Proving Grounds to consult on matters of potential uranium toxicity.

It appears that the Proving Ground is carrying on some destructive testing of natural uranium, and some of the safety personnel have been deeply concerned about the potential toxicity of the airborne material. A meeting was called by the Commanding General which was attended by 30 people. Commission experience in the handling of uranium materials was presented to the group by Mr. Harris. As a result of this meeting, it was decided to continue the test work without prejudice.

Industrial Inquiries

During the past month, HASL assistance has been given either by conference, telephone, or letter to a large number of individual firms. These firms have requested such information for the handling of uranium, beryllium, and miscellaneous materials. The following partial list is representative of the inquiries:

USDOE 001091

N.Y. State Dept. of Labor	Beryllium
Westinghouse, Philadelphia	Sr 90 Waste Disposal
Autonetics, Downey, California	Beryllium
Nuclear Instrument & Chemical, Chicago	Beryllium (and isotopes)
U.S. Public Health Service, Cincinnati	2% beryllium copper
Aeroprojects, Inc., West Chester, Pa.	Beryllium
General Dynamics, San Diego, Cal.	Beryllium

National Lead Company Grand Junction Pilot Plant

Copies of report HASL-NL-1 have been transmitted to the GJOO and to the Division of Raw Materials in Washington. This report covered a survey of airborne dust and radiation exposures at the Grand Junction Pilot Plant which is operated by the National Lead Company. Of the 79 employees who were studied, all but three had exposures which were less than 50 $d/m/M^3$. Only one of the remaining three had a really significant exposure. This man was exposed to uranium dust of concentrations of approximately 350 $d/m/M^3$.

Direct radiation and radium concentrations were found to be insignificant. Several recommendations were presented with the report. These recommendations were largely of a procedural nature. A drawing was submitted, however, which shows a suggested modification of the yellow cake barreling and sampling operation.

Nuclear Metals, Inc.

A visit was made to examine the status of moving the major portion of the operations from the Hood Building to 224 Albany Street. At the time of the visit a relatively insignificant portion of the move had been completed. As a result of the visit which was made by Messrs. Neil, Solon, and Harris, strong recommendations have been made to Nuclear Metals to accelerate the removal of personnel and hazardous operations from the dangerous location of the Hood Building. Particular attention was paid to the proposal to erect a single-level, fire resistant building in the parking area of the Albany Street building for the storage of special nuclear material.

Redwing

Correlation of rainfall and gummed paper fallout data is being made in an effort to tie down some of the factors relating to the deposition of activity during the Redwing periods. The reports are still being written.

University of Michigan Accelerator Survey

Members of the Radiation Branch conducted measurements of stray radiation at the cyclotron and electron synchrotron of the University of Michigan on December 3-6. Preliminary evaluation of the measurements indicate that supplementary shielding is required at the cyclotron site. A detailed report is in preparation.

USDOE 001092

Projects

Background Measurements

A 20 liter air atmospheric ion chamber with fully guarded collecting electrode has been designed and will be assembled for use by the Radiation Branch in January.

DTR System

Generally speaking the relays and other short supply components are now being received and will permit assembly of the central station; one beta tape unit and inter-wiring of the system for check during February. Work is proceeding satisfactorily with no major difficulties developing.

The chassis for accepting modules for the time, the time plus count and control are now practically designed with prototypes in preparation for quantity wiring by an outside vendor.

The following installation is planned:

1. Central Station, punch card station, and a single beta tape counter to permit close check of the system.
2. Installation of the pair of beta tape counters.
3. Installation of the dial counters.
4. Approximately simultaneous installation of the radon equipment with dial counters.
5. Installation of low level counting equipment.
6. Other miscellaneous equipment.

Energy Distribution of Background Radiation

The spectral distribution of terrestrial background radiation has been investigated and preliminary curves calculated for certain idealized models which it is believed bound the actual distribution. The two limiting distributions have been derived for plane isotropic and uniformly distributed full-space source geometries. Work is continuing on obtaining a more precise dose distribution for a half-space geometry with the necessary computational work being performed on a digital computor, either the NYU UNIVAC or the National Bureau of Standard's Seac.

USDOE 001093

Image Intensifier Scanning Tube

The 16" conical structure has been built but did not operate satisfactorily due to improper placement of the focusing hemisphere which was located too close to the face plate. The structure has been torn down and will be rebuilt with the focusing hemisphere approximately 12" away from the face plate. By use of a sistorting electrical field it may be possible to focus the image without excessive "pin cushioning" or barrelling.

Radon Background Sampling

Approximately 40 flask samples have been obtained in various locations for the measurement of radon background. An attempt has been made to vary the samples both temporally and geographically. Unfortunately, however, it has not been possible to do both simultaneously. Samples have also been collected for the measurement of radon daughters. It is believed that within another month a significant amount of information will be available for making a preliminary definition of the radon background in this area.

Total Body Radiation Measurements

Planning has been continued on the design of a system. Visits will be made to operating installations to get ideas for formulation on types of shielding. In an effort to eliminate liquid phosphor construction, vendors have been asked to submit quotations on 18" sq. x 3" or 6" thick plastic phosphors with a 40" radius of curvature concavity molded in to accept a 16" Dumont multiplier phototube face plate directly coupled. Because of the reduced finish specifications it is feasible to cast the part directly in simple molds. With the ease which these phosphors can be formulated it is expected that for the quantity involved it may be possible to select the solid phosphor over the liquid.

An 8" dia. x 4" thick sodium ionide phosphor is to be ordered with a guaranteed potassium content less than 1 part per million.

US. Coast Guard

Tentative arrangements were made with the Captain of the Port's Office, US Coast Guard for the itilization of an eighty-three foot Coast Guard vessel in order to make radiation measurements in the rivers and channels of the NY Metropolitan area. First such measurements are planned for early January.

Laboratory Work

Fallout

5,394 fallout samples were processed during this period.

USDOE 001094

Sample Analyses

The Analytical Branch analyzed 345 samples of the following:

Uranium - Urinary 19, Misc. 108
Beryllium - Air Dust 119, Misc. 25
Radium - Urinary 3, Misc. 4
Radon - 47
Miscellaneous - 20

Miscellaneous

Meetings

H. Blatz, Chief of the Radiation Branch presented a paper entitled "Radiation Hygiene Aspects of Surface Contamination" before the Radiological Society of North American meeting in Chicago, December 4-7.

J. Harley, Chief, Analytical Branch spoke on fallout at the Hotel Roosevelt, New York City on December 6 before a group on Industrial Medicine. He also attended a meeting in DBM offices in Washington with respect to decontaminating the Marshall Islands on December 17.

Ira Whitney, Analytical Branch visted the ORNL Analytical Division on December 5 and also attended the American Chemical Society meeting in Memphis, Tennessee on December 6-8.

Publications

"Open Field Burning of Low Level Radioactive Contaminated Combustible Wastes" by WB Harris and M.S. Weinstein, "The Generaltion ofA Solid Sub-Micron Test Aerosol," by H. Glauberman and A.J. Breslin were published in the December issure of the AIHA Quarterly.

Visitors

Pere Loysen, Metals & Controls, Attlebor, Mass, to discuss industrial hygiene and analytical methods.

Dr. Lyle T. Alexander of the Soil Survey Service, Beltsville, Md. to discuss the strontium program as well as the pot sampling program.

Dr. Herb Volchok of Isotopes, Inc. to discuss the strontium contracts.

Dr. Scott Russell, Harwell-Agricultural Research Council re analytical methods and the strontium program.

USDOE 001095

Perry Armangac of POPULAR SCIENCE to discuss the chart he has prepared in connection with his proposed article.

Dr. Takeo Szuzuki of the Japanese Public Health Institute with respect to industrial hygiene and analytical methods.

Gordon Cameron, Physicist, NYC Hospitals to discuss state regulations pretaining to radiation protection.

Dr. Morris Shamos, Acting Chairman, NYU Physics Dept. to discuss background measurements with ionization chambers.

George Morton, Project Engineer with Airborne Instruments to discuss techniques of evaluating nuclear-track film used for neutron monitoring purposes.

Messrs. Frederick Brech and RK Brehm of Jarrell-Ash Co with respect to fluorimetric Analyses.

USDOE 001096

SECTION II

BROOKHAVEN NATIONAL LABORATORY MONTHLY STATUS AND PROGRESS REPORT FOR DECEMBER 1956

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

During the month, the Tunnel Shell was completed along with the north conjunction section and retaining wall. Seven cars of structural steel for the Linear Accelerator Bldg. which is approximately 1/4 of the total, were received at month's end. It is anticipated that structural steel erection will be started on January 3, 1957. A general construction subcontract between AUI and the Malan Construction Corp., low bidder at $2,872,000 for construction of the Linear Accelerator and Target Bldgs. was prepared and transmitted to the AEC for approval.

Synchrotron design continued. BNL has recommended award of the Main Magnet Power Supply to the Westinghouse Electric Corp. after evaluation of the proposals submitted by General Electric and Westinghouse. The contract documents and documentation were received by the Brookhaven AEC office and submitted to NYOO for approval on December 20, 1956.

Medical Research Center

During the month, the contractor made the initial pour of the laboratory main floor slab, continued forming for the laboratory main floor slab, made initial pour on Reactor Bldg. foundation wall. Structural steel erection was completed on the hospital nursing unit structures. Additional basement slab was poured during the month. The Reactor shutters were completed and have been received at the job site.

Engineering Works Area

At month's end, all of the building excavation was completed. All concrete has been installed except the floor slab which is 45% complete and curbing and mats for the transformer station. Power, water, gas, storm and sanitary sewers are 100% complete. All yard work is complete except for the Ricwil steam main which is 40% installed. It is anticipated that structural steel will arrive and erection be started during the week of January 7, 1957.

Liquid Metal Fuel Reactor Experiment

The Babcock & Wilcox Company has issued the first Quarterly Technical Report summarizing their work on the LMFRE for the period July 1, 1956 to November 15, 1956 under contract AT (30-1) - 1940.

USDOE 001097

Brookhaven Research Reactor

On December 21 the reactor was shut down for extended maintenance and reloading during the Holiday period. A central core of normal fuel elements was ejected and 35 channels were reloaded with highly enriched U_{235} fuel elements. The reactor was placed in operation on January 1, 1957 without any serious difficulties arising. The next months will be used to study the effect of these elements on reactor operation in preparation for the conversion of the entire reactor to enriched fuel.

Brookhaven Mid-Year Review

The Mid-Year Review FY 1957 Financial Plan was sent to NYOO on December 7, 1956. A brief summary is as follows:

B&W proposed an increase of $900,000 in order to push forward the research program at a rate required to meet the projected schedule. BNL proposed an increase of $32,000 for the entire Laboratory, which would involve the following program changes:

4000 Program	+$220,000.
5000 Program	- 320,000.
6000 Program	+ 132,000.
Net Increase	+$ 32,000.

Detailed justification for the changes was submitted by both contractors.

Management Actions

Laboratory officials informed the Area Office on December 20 of their intention to revise the Retirement Plan. The revision would increase pension costs about 30%. Organization & Personnel Division, NYOO, was informed of the pending revision.

B&W submitted a draft of its proposed procurement policy for review. With the concurrence of B&W on several additions desired by AEC, the policy will be approved by the Area Manager.

Contract Actions

The Contract Review Board, NYOO, on December 14, approved Area Office negotiations with AUI for a Management Allowance of $150,000 for FY 1957. A supplement to the AUI Contract, AT-30-2-GEN-16, is pending, which increases the Contract by $10,000,000 as a result of the approved Financial Plan dated October 26, 1956.

USDOE 001098

Visitors

Visited BNL during the month of December, among others:

December 3-7, 1956, Dr. Vohra and Mr. Vaze, Indian Nationals visited Brookhaven for a one week training course in instrumentation.

Dr. Anil Ganguly, an Indian National, visited Brookhaven December 3-14,1956.

On December 5, 1956, the Atomic Industrial Forum made an unclassified tour of the Laboratory.

December 6, 1956, Jens C. Hauge visited Brookhaven National Laboratory. He is the Norwegian Representative to the Organization for European Economic Cooperation.

USDOE 001099

3/21	Dr. Norton Nelson	Harley	Ruthenium Project
3/21 3/22	Col V. H. Hudgins, DMA J. S. Kelly, DMA D.L. Gale, USNRL W. Rohe, NRL	Blatz	
3/22	Mr. Gilbert, Washington AEC	Harris	Mercury vapor detec
3/25	Dr. E. Tajima, UN Scient. Com. on Eff. of Atom. Rad.	Harley	fallout collection
3/26	Miss M. Shapiro, Am. Cancer Society, NYC Div.	Lough	preparation of chapter for Society' book
3/27	Dr. Paul Pearson, Washington DBM	Harley	collection & analys of food samples
	Prof. Joseph Steigman Bklyn. Polytechnic Inst.	Harley	Strontium analysis
	Dr. Bernard Altshuler, NYU	Blatz	

USDOE 001100

SECTION II

BROOKHAVEN NATIONAL LABORATORY MONTHLY STATUS AND PROGRESS REPORT FOR MARCH 1957

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

Detailed design continued on the Synchrotron, and solicitations were issued for proposals for the Magnet Coils and the Ferrites. Proposals for the Magnet Core procurement are now due on April 22, 1957.

The General Contractor engaged in construction of the Linear Accelerator and Target Bldgs. and electrical and mechanical work for the Tunnel. Excavation for the Target Bldg. slab and the pile caps was started. The Target Bldg. crane was raised into position during the month. Bids were received for three large cooling water wells, the low bid was $26,000. The High Density Shielding Block proposals received on the second submission were so nearly equal at about $800,000 that it was decided to procure four proto-type blocks from each of the two low vendors to demonstrate their ability to meet density and other requirements.

Overall project reevaluation is under way. Due to lag in procurement of main components for the machine, it is anticipated that the final reevaluation will be delayed sufficiently to give effect to the results of solicitations for the larger critical items.

Medical Research Center

This project is now 24% complete. The main Laboratory floor slab should be completed by April 15, 1957. The Reactor Container foundation was completed and miscellaneous foundation work was started in the Reactor wing.

The erection of roof bar joists was completed up to the Laboratory Sector and erection of structural steel started in the Laboratory Sector. The brick contractor is continuing to make good progress in the Hospital Sector and should complete up to the Laboratory around May 1, 1957.

The Daystrom Company continued fabricating and testing Reactor components and instrumentation. Delivery of some of the components is expected to start during April.

USDOE 001101

Engineering Works Area

This job is now 60% complete. During the month, the contractor installed concrete curbs for roof fans and started the waylite block partitions, window sash and roof cant strips and rolling steel doors. The various contractors continued the installation of aluminum wall panels, steam and condensate piping, plumbing and electrical work inside the building. The installation of the Sub-Station slab was started.

Liquid Metal Fuel Reactor Experiment
(Babcock & Wilcox Co.)

LMFRE work is progressing in fabricating of the prototype loop which should be completed shortly. The Deming bismuth pump has been returned to the vendor for dynamic balancing and checking of seals.

The parametric study for U-Bi-C reactors has been completed, and the results converted to fission densities. Reactivity effects have been calculated to evaluate the control problems. Reactor kinetic equations have been coded and tried out on the computer. The experimental physics test program for the operational LMFRE has been revised.

Four possible reactor sites for the experimental reactor have been visited and information obtained on facilities and meteorology.

Design parameters for initial power (20MW) operation of LMFRE were established by using 750 F. reactor inlet and 885 F. reactor outlet with a possibility of increasing power to 33 - 1/3 MW by raising the reactor outlet to 975 F. keeping the flow rate constant.

Calculations have been made regarding temperature distribution for various channel sizes and power levels at normal flow and for plugged channel conditions. Pressure drop was calculated for various core hole sizes.

An outline of tentative remote maintenance and containment ground rules has been developed to provide a source of maintenance planning information. Remote maintenance mechanics and philosophy for the LMFRE have been reviewed with ORNL personnel.

Cosmotron

The repair of the coil of Quadrant 2 is proceeding. One half of the lower nose coil and one quarter of the back coil (in the gap) have been installed. The remaining bars are being tested and repaired as necessary. The bar which failed and the similar ends in the lower nose coil (four ends in all) were replaced with a redesigned end. The new end has a greater thickness at the bend and a larger radius of bend. Some of the ends of the back coil had relatively deep scorings which were made in the initial construction of the coil. They have been replaced.

USDOE 001102

Along with the repair of the coil, new adjustable "kicker" bars have been installed in Quadrant 1. These new "kicker" bars wedge the back coil tightly against the back of the gap and are adjustable from the outside of the Cosmotron magnet. The original "kicker" bars could be adjusted only by removing the vacuum chamber which is a very time-consuming operation.

A new coil clamp for the end returns of the main winding was tested along with the new "kicker" bars. As a result, the motion of the coil has been limited to something less than 1/2 of what existed previously, thus reducing the strain experienced by the ends of the conductor bars. The chance of a break occurring under these new conditions would seem to be greatly lessened. The new "kicker" bars and coil end clamps will also be placed on all four quadrants.

The machining of the vacuum chamber of Quad rant 2 for the proposed meson beam has been completed. The chamber is being reassembled. It is expected that it will be tested and ready for installation during the next month. Resumption of the research program is now scheduled for the two weeks between June 15 and July 1.

18" Cyclotron

During this period, the studies of the Cu^{65} (p,n)Zn^{65} reaction have been continued. A very careful series of measurements were made of the proton energy from the machine, with the result that $E_p = 3.037 \pm 0.028$ Mev. With this proton energy and the neutron energies observed from the reaction, the energy balance gives Q = -2.148 Mev which is to be compared with the published value Q= 2.132 Mev. Some measurements have been made of the angular distribution of the neutrons from the above reaction. In order to interpret these measurements properly, the neutron detection sensitivity-function has been measured by observing the angular distribution of neutrons from a tritium target.

The cyclotron has operated quite satisfactorily for these measurements. A small degree of beam instability was experienced during the attempts to obtain a precise measurement of the proton energy. Some of this instability was traced to variations in the magnet current, and a considerable improvement was achieved by increasing the radio-frequency shielding of the magnet regulator circuit. It is expected that further improvement in beam stability will be realized by the incorporation of automatic oscillator-frequency control in the near future.

A graphic recorder has been added to the output of the 100 channel analyzer. This recorder gives a plot of the number-of-counts versus channel-number in addition to the numerical print-out which had been used before. Such a plot is sufficiently precise to show the trend of the data in some detail and eliminates the need for manual plotting of the data in most cases. For those instances in which a more precise plot is required, as for example when area under the curve is desired, the data recorded on the numerical print-out has to be plotted manually point by point. This graphic recorder will, however, be a great time-saver.

USDOE 001103

Contract Actions

Negotiations were started on March 20, 1957, between Associated Universities, Inc. and AEC, for renewal of AUI's Prime Contract for the operation of BNL which expires on June 30, 1957.

Union Carbon and Carbide Corporation continued its review of the draft subcontract under the Babcock & Wilcox Company prime contract for the LMFRE Project.

The budget call for preparation of FY 1959 budget estimates was sent to AUI and B&W.

Requests have been forwarded to the Washington Office for approval of the use of the BNL reactor and related facilities in cooperative research projects with the Westinghouse Electric Corporation and General Dynamics, Inc.

18" Cyclotron Building - Reclamation Facility & Hot Laundry

Contracts for Architect-Engineer services for these projects were entered into on February 25, 1957 with the firm of Jenks and Ballou, Providence, Rhode Island. Design work was started March 4, 1957.

Declassification Action

The declassification of the Liquid Metal Fuel Reactor project made it possible to designate the Nuclear Engineering Department Building, T-197, as an unrestricted area. However, as the Classified Library is still in this building, access during the day will be controlled by a receptionist and special arrangements with the Laboratory Police Department will be made for entry after working hours.

Research Reports

During this period 36 papers were approved for publication. This number included 29 on physical sciences, and 7 on life sciences.

Visitors

The Laboratory was visited by the following, among others:

Paul R. Jolles, Swiss, Executive Secretary, Preparatory Commission for International Atomic Energy Agency, and Dr. Robert B. Von Meren, U.S., member of Jolles' staff, on February 28.

Willem L. Van Lakerveld, Netherlands, Director for Industrial Investments of Ministry for Economic Affairs, and Joseph P. Bourdrez, General Manager of Netherlands Industrial Instititute in New York, on March 4.

USDOE 001104

Anthony W. Pereira, Sadanand V. Kasargod, and Gavaraputtu S. Krishnaswamy, staff members of the Indian Atomic Energy Establishment, Bombay, on March 4.

Yasushi Nakai, Mitsubishi-Nippon Heavy Industrial Manufacturing Co., and Hirogi Shimamune, Japanese Atomic Energy Research Institute, on March 7.

George K. C. Yeh, Foreign Minister of China, accompanied by Hsioh Ren Wei of Chinese Mission, U.N., on March 15.

Two members of the Japanese Atomic Energy Research Institute and three representatives of the Japanese government and universities, on March 18.

Y. Goldschmidt-Clermont and Louisella Goldschmidt-Clermont, Belgians, from European Organization for Nuclear Research, on March 18-20.

USDOE 001105

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U. S. ATOMIC ENERGY COMMISSION
Health & Safety Laboratory

Received 4-22-57
attached to
NYOO Status + Progress
Report for March 1957

EXTERNAL ENVIRONMENTAL RADIATION LEVELS IN NEW YORK STATE

Leonard R. Solon
Harris D. Le Vine
Albert V. Zila
Hanson Blatz

for RH 3

ABSTRACT

Preliminary measurements have been made of external environmental radiation levels in New York City and upper New York State using an air-filled ionization chamber inside an automobile. The purpose of these measurements was to establish the approximate range of population exposures to the penetrating environmental radiation component - cosmic radiation and terrestrial gamma radiation -- but excluding terrestrial beta radiation.

Measurements indicate a substantial degree of uniformity in the environmental radiation level over areas of widely different geological structures provided measurements are made somewhat removed from outcroppings of naturally radioactive rock.

Aside from special situations described in the table accompanying this note, levels in upper New York State ranged from a low of 7.2 microroentgens/hr to a high of 10.4 microroentgens/hr. One situation of elevated activity was in a Mineville lot with the high level apparently attributable to mine tailings used as fill. Several blocks away on an occupied street of the same town, the measured radiation dose rate was 10 microroentgens/hr.

A measurement inside an Alexandria Falls church built of solid granite block furnished a radiation level of 18.5 microroentgens/hr compared with 9.5 microroentgens/hr in the street outside the church.

USDOE 001106

INSTRUMENTATION. Measurements were made with a 20-liter ionization chamber filled with air at atmospheric pressure. The resulting ionization current was measured with a vibrating reed electrometer (Applied Physics Laboratory Model 30). The wall of the chamber was 3/32" polyethylene. To suppress completely the beta response, the chamber was positioned in a solid 1/8" aluminum frame so that, including the polyethylene wall, the gas volume was enclosed by 1.08 $\frac{g}{cm^2}$ of material corresponding to a Feather range of a 2.26 MEV beta particle.

The ion chamber was calibrated with an encapsulated radium standard which had in turn been calibrated at the National Bureau of Standards. The measured calibration factor for the ion chamber was 1.79×10^{-15} $\frac{\text{ampere}}{\text{microroentgen/hr}}$ though for certain of the measurements, a small quantity of freon-12 mixed with the air filling increased this sensitivity to 2.08×10^{-15} $\frac{\text{ampere}}{\text{microroentgen/hr}}$. Power for the vibrating reed electrometer and an Esterline-Angus graphic recorder was obtained from an alternating current inverter operated from the 12-volt automobile storage battery.

CONCLUSION. Insofar as the measurements reported here indicate, the outdoor penetrating environmental radiation level in New York City and New York State lies mainly in the interval of 7 to 11 microroentgens/hour with appreciable departures from this range probable only at points within several feet of exposed minerals having an elevated radioactive content.

It is the opinion of the writers that this substantial uniformity in the penetrating radiation component from natural sources suggests that any physiological variations in population groups dwelling in the different parts of New York State measured are not attributable to differences in the external environmental radiation.

USDOE 001107

	LOCATION	RADIATION LEVEL (microroentgens/hr)
March 12, 1957		
1.	New York City, Central Park Boathouse Parking Field	8.2
2.	New York City, Central Park; near rock outcroppings	9.3
3.	New York City, 132nd Street & 12th Avenue; over Belgian block paving*	13.3
4.	New York City, West Side Highway, west of Grant's Tomb and Riverside Church - Belgian block paving.	11.7
5.	New York City, 96th Street; parking area off West Side Highway, over asphalt paving.	8.5
6.	New York City, between 71st and 72nd Street on West End Avenue, over asphalt or macadam paving.	10.2
7.	New York City, between 67th and 68th Street over Belgian block paving.	14.6
8.	New York City, basement, garage of New York Operations Office, 70 Columbus Avenue, between 62nd and 63rd Street.	7.0

* Frequently referred to by New York City residents as "cobblestones".

March 26, 1957		
1.	New Jersey, outside Lincoln Tunnel, about 200 feet from N. J. portal.	9.9
2.	New York City, inside third tube of Lincoln Tunnel at mid-river.	6.4
April 1, 1957		
1.	7.7 miles north of Saugerties on U. S. 9W; 0.3 miles east of 9W on dirt road	9.5
2.	Off same road; 0.8 miles east of 9W on plowed field.	9.5
3.	Off same road; 1.2 miles east of 9W	9.0

USDOE 001108

	LOCATION	RADIATION LEVEL (microroentgens/hr)
April 1, 1957 (Continued)		
4.	Blenheim; off N. Y. 30; near cemetery and farm house.	9.2
5.	West of Sharon Springs on U. S. 20; in road cut through black shale	10.5
6.	2 miles east of (5) off U. S. 20	9.0
7.	Albany; intersection of Fuller Rd. and Washington Avenue; over sand.	8.0
April 2, 1957		
8.	Between Warrensburg and Lake George; on U. S. 9, 1.4 miles north of junction U. S. 9 and N. Y. 9N; near granite outcroppings; P. 44 TEI-70+	12.5
9.	Same as (8); 2.4 miles north of junction U. S. 9 and N. Y. 9N; granite and basic rock; P. 44 TEI-70	15
10.	Same as (8); 3.2 miles north of junction U. S. 9 and N. Y. 9N; basic intrusions in gray granite; P. 44; TEI-70	11.5
11.	0.2 miles north of (10); near farm house; removed from outcroppings nearby	9.2
12.	4.1 miles west of Warrensburg on N. Y. 418; near glacial bank of granite and gneiss, P. 43, TEI-70	11.5
13.	1.1 miles south of Silver Bay, off N.Y. 9N	10.2
14.	Hague; town parking lot	9.5
15.	1 mile north of Ticonderoga, off N. Y. 9N	8.2
16.	Crown Point, near St. Frederick Hotel	8.0
17.	Port Henry; near Lake Champlain	6.0

+ Unpublished report; TEI-70, Reconnaissance of Radioactive Rock of the Hudson Valley and Adirondack Mountains, New York, Perry F. Barten, Francis A. McKeown; May, 1952.

USDOE 001109

	LOCATION	RADIATION LEVEL (microroentgens/hr)
April 2, 1957 (Continued)		
18.	Port Henry; adjacent to Republic Steel mine tailings pile.	40.0
19.	Mineville; on vacant lot with mine tailings for fill.	17.0
20.	Mineville; on occupied street of frame houses; first street south of (19)	10.0
21.	Elizabethtown; off U. S. 9	7.2
22.	Keene; in sand quarry of N. Y. 9 N	7.5
April 3, 1957		
23.	Benson Mines; on mine tailings dump	12.4
24.	Star Lake; across from church	10.4
25.	Oswegatchie; across from church	10.0
26.	Fine; town sand pit; 0.8 miles west of Oswegatchie off N. Y. 3; sand pit contains some pink granite.	10.5
27.	Fine; adjacent to pink granite outcroppings near intersection of N. Y. 3 and N. Y. 58	12.2
28.	Between Fine and Edwards; off N. Y. 58; 2.2 miles south of junction of N. Y. 3 and N. Y. 58, pink granite outcroppings	10.8
29.	Edwards; center of town; in street	8.0
30.	Gouverneur; approx. 1/4 mile south of airport; over fine sand, off N. Y. 11	8.0
31.	Between Gouverneur and Brasie Corners; off N. Y. 58; 2.5 miles east of Brasie Corners; adjacent to red granite outcroppings.	14.0
32.	Essentially same location as (31) except further away (approx. 60 feet) from outcroppings; several hundred yards along road.	9.8
33.	Hammond; near town house; 0.5 miles south of intersection, N. Y. 185 and N. Y. 37	8.5

USDOE 001110

	LOCATION	RADIATION LEVEL (microroentgens/hr)
April 3, 1957 (Continued)		
34.	Alexandria Bay; village Park near granite outcroppings	11.8
35.	Alexandria Bay; across street from (34) away from outcroppings	9.0
36.	Alexandria Bay; in street outside R. C. church	9.5
37.	Alexandria Bay; in R. C. church vestry.	18.5
38.	Stone Mills; 6.4 miles along N. Y. 180 south of Lafargeville; near pasture.	7.2

ACKNOWLEDGEMENTS

The writers would like to express their thanks to Dr. John T. Gentry, District State Health Officer of Syracuse, New York, for his cooperation in selecting areas of upper New York State for measurement and accompanying us during the survey.

We should like to acknowledge the assistance of Mr. Herbert Kaul, New York Port Authority for arranging entrance into the unfinished third tube of the Lincoln Tunnel.

We acknowledge the customary effective aid of the Health and Safety Laboratory Instruments Branch, in particular Mr. Robert Graveson and members of the machine shop.

Professor Morris Shamos of the New York University Physics Department has contributed helpfully in several discussions of low radiation level measurements.

USDOE 001111

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UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

JANUARY, 1957

Prepared by the Staff of the New York Operations Office

February 2[illegible], 1957

USDOE 000374

DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

JANUARY 1957

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USDOE 000375

SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Procurement and Traffic

A recapitulation of purchasing activities for calendar year 1956 showed a total of 2,555 transactions for $432,094. The average number of purchase transactions per month was 213, totalling approximately $36,000 or $169 per transaction, with an average of 2.25 items on each order.

Property

Arrangements were made with the U. S. Naval Ammunition Depot, Earle, New Jersey for the disposal of 526.54 tons of contaminated wastes at sea for the Chicago Operations Office (Westinghouse Atomic Power Division, Pittsburgh Area). Approximately 5.175 tons of contaminated wastes were also disposed of at Earle for Nuclear Metals, Inc., Contract AT(30-1)1565.

During the quarterly reporting period arrangements were made for the acquisition of $87,920.75 worth of excess property for utilization by contractors and direct operations at a cost of $16,764.29. This represented approximately 19% of acquisition cost and resulted in savings of $71,156.46.

Further excess property utilization was effected from NYOO excess lists (Contractors and HASL) by other Operations Offices and their Contractors in the amount of $14,035.36 at an average cost of approximately 5% for a savings of $13,442.34.

There were 106 trips made by 6 vehicles for a total of 9,746 miles travelled.

There were 5,335.334 troy ounces of contaminated and uncontaminated platinum received for processing during the quarter worth approximately $533,533.40. Shipped out during the same period were 1164.314 troy ounces of pure platinum for a total value of approximately $116,431.40.

Records Management

One access permittee visited this office during the month and approximately 15 telephone calls were received from access permittees requesting information.

USDOE 000376

...lecommunication

...breakdown of telephone and teletype traffic for the months of November, ...ecember and January showed the following:

	November	December	January
...cal Calls	8,827 cost $400.97	9,428 cost $428.02	8,964 cost $407.14
...ng Distance	655 cost $1,076.60	623 cost $1,055.05	644 cost $1,028.40
...letypes	702	707	768

Contracts

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909

Negotiations of the definitive contract terms were concluded when the University accepted a fixed overhead allowance of $350,000 for a four year period beginning April 2, 1956, with provision for adjustment should the construction require more time. The contract document, and supporting record, were sent to Headquarters for review and approval on January 18th.

The proposals for the 20 MEV linear electron accelerator, are still under review by Harvard which is seeking a change in the technical features of the proposal of the lowest bidder in order to take advantage of possible future developments in high power vacuum tubes.

Harvard allowed bids for the laboratory building substructure to lapse on January 30th because it was unwilling to break ground before the definitive contract was approved by the Commission. The Project Director now expects to issue bid invitations in mid-March for the overall laboratory building.

Members of the Divisions of Technical Liaison and Contracts visited the Area Office at Brookhaven to review cost control procedures used at the AGS project as background for similar controls for the Harvard and Princeton machines.

Massachusetts Institute of Technology

The Director of Contracts visited MIT's Office of Sponsored Research to discuss the master type contract requested by the Institute.

Material Loan Contracts

Contracts have been signed with the College of the City of New York, Yale, and the University of Maryland for loan of source material and neutron sources. The contract with NYU is still held up on a patents question; the contract with MIT is in final stages of preparation; that with Rensselaer Polytechnic Institute awaits some further information from the contractor. The contract with Pennsylvania State University for loan of the fuel loading for their reactor is still incomplete because of open questions on patents and reporting requirements.

USDOE 000377

New York University Computing Center, Contract AT(30-1)-1480

Approval was received from Headquarters on the preliminary proposal for modification and alteration of the building acquired by the University to house the AEC's IBM-704 computer, and to install the machine. The University was authorized on January 25th to proceed with alterations and modifications. June 1st is now the tentative installation date for the computer instead of March 15th as reported last month.

Nuclear Development Corporation of American, Contract AT(30-1)-862

The letter concerning overhead disallowances, mentioned last month, has been drafted in NYOO for mailing in the near future. The contract is being modified to add Process Heat Reactor and Shielding Studies for the Division of Reactor Development.

Nuclear Development Corporation of American, Chugach.

NYOO comments, drawn from Counsel, Budget and Finance, and Contracts, were sent to the Director of Reactor Development on January 25th.

Nuclear Metals, Inc., Contract AT(30-1)-1565

The final draft of the modification to sell the AEC equipment and permit Nuclear to use the Hood Building while it builds its own new laboratory was agreed to by the contractor. The document, with supporting justification, was then sent to Headquarters on January 14th for review and approval. Nuclear's request for a hold-harmless also was sent to Headquarters. During the month Nuclear made further progress in relocating parts of its activities from the Hood Building to another nearby government owned building.

Princeton University, Project Matterhorn, Contract AT(30-1)-1238

A redraft of a modification for guaranteed amortization of the Matterhorn complex at the Forestal Research Center has been reviewed and the final document is being prepared.

A definitive extension of the contract has been prepared and sent to the contractor and to Washington for review and approval.

Proposals from architect-engineer firms for design of buildings related to the new site for the Model C program are being received. Princeton has submitted it's proposal for the design of the device and buildings to house it and the associated power supply. These will be sent to Headquarters for information.

Princeton University, Accelerator Project, Contract AT(30-1)-1916

A discussion draft of the definitive contract will be sent to Princeton early in February.

USDOE 000378

Pursuant to the Accelerator Staff Paper, and arrangements made with the Division of Research, proposals for preliminary design of all components, detailed design of the injector system and magnet, and advance procurement of the Van de Graaff machine and magnet iron have been submitted to Headquarters for approval of the Director, Division of Research.

Sylvania Electric Products, Inc., Contract AT(30-1)GEN-366

Sylvania informally discussed with NYOO the possibility of reviving the plutonium laboratory, project work on which was stopped by NYOO following the thorium accident last July, and setting the project up at Brookhaven. NYOO is waiting for a more definite proposal. A meeting was held to discuss Sylvania's claim for reimbursement of costs resulting from the July accident. Tentative agreement was reached as to the division of costs between the Commission and the Insurance Carrier. These costs relate mainly to disposal of contaminated debris and equipment damaged beyond repair. Sylvania will submit a formal request shortly.

Inspection Division

As of the end of January, the Inspection Division had received for inspection, 692 licenses. Of these, 97 are source material licenses (10 CFR 40), and 595 are byproduct material licenses (10 CFR 30). In addition, one complaint case was received for investigation.

To date, 10 source material licensees and 60 byproduct material licensees have been inspected and the one complaint has been investigated.

The Director, Inspection Division, and representatives of the Inspection and Civilian Application Divisions, Washington, held formal meetings with representatives of the States of Connecticut and New Jersey. Informal meetings were held by a representative of the Civilian Application Division, Washington, and the NYOO Inspection staff with officials of the States of Massachusetts, New York and Pennsylvania. All of these meetings were for the general purpose of establishing liaison and a cooperative program with the states concerned.

Manager's Office

Dr. Robert Holmes, Director, Atomic Bomb Casualty Commission, Japan, visited Manager.

Dr. C. W. Shilling, Deputy Director, Division of Biology and Medicine visited NYOO to discuss Biology and Medicine organization plans.

USDOE 000379

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Re: Re Agreements

Modification No. 26
Supplemental Agreement to
Contract No. AT-30-1-GEN-366

Modification No. 16
Supplemental Agreement to
Contract No. AT(30-1)-1293

THIS SUPPLEMENTAL AGREEMENT, entered into as of April 1, 1957 (hereinafter referred to as "the effective date"), by and between Sylvania Electric Products Inc., a corporation duly organized and existing under the laws of the State of Massachusetts, with its principal offices in the City of New York, New York (hereinafter referred to as the "Transferor"); The Sylvania-Corning Nuclear Corporation, a corporation organized and existing under the laws of the State of Delaware, with its principal offices in the City of New York, New York (hereinafter referred to as the "Transferee"); and the United States of America (hereinafter referred to as the "Government"), acting through the United States Atomic Energy Commission;

WITNESSETH THAT:

WHEREAS, the Government, represented by various contracting officers of the United States Atomic Energy Commission, has entered into certain contracts with the Transferor, namely, Contract AT-30-1-GEN-366 and Contract AT(30-1)-1293, and the term "Contracts" as hereinafter used means the above contracts, including without limitation all amendments and supplements and change orders thereto, heretofore made by the Government, represented by various contracting officers of the United States Atomic Energy Commission, or by Sponsors, as defined in said contracts, and the Transferor (whether or not performance and payment have been completed and releases executed, if the Government, Sponsor, or Transferor has any remaining rights, duties or obligations thereto), and including amendments, supplements and change orders thereto hereafter made between the Government and the Transferee, or the Sponsor and the Transferee;

WHEREAS, as of the effective date, the Transferor has assigned, conveyed and transferred to the Transferee all of the property described in Exhibit "A" attached hereto as a part hereof;

WHEREAS, the Transferee, by virtue of said assignment, conveyance and transfer, has acquired all the assets and liabilities of the Transferor relating to the performance of the Contracts;

WHEREAS, by virtue of said assignment, conveyance and transfer, the Transferee has assumed all the duties, obligations and liabilities of the Transferor under the Contracts;

WHEREAS, the Transferee is in a position fully to perform the Contracts, and such duties and obligations as may exist under the Contracts;

WHEREAS, it is consistent with the Government's interest to recognize the Transferee as the successor party to the Contracts; and

WHEREAS, there has been filed with the Government, through the Savannah River Operations Office of the Atomic Energy Commission, evidence of said assignment, conveyance and transfer, as is more fully described in Exhibit "B", which is attached hereto as a part hereof;

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and undertakings contained herein, the parties hereto agree as follows:

1. The Transferor hereby confirms said assignment, conveyance and transfer to the Transferee as of the effective date, and does hereby for itself alone, release and discharge the Government from, and does hereby waive any claims, demands, and rights against the Government and/or Sponsor(s), as defined in the Contracts, which it has as of the effective date or may thereafter have under, or in connection with, the Contracts; provided, however, that nothing in this paragraph 1 shall be deemed to preclude the Transferee from exercising, making and/or enforcing, on and after the effective date, any of such claims, demands or rights which the Transferor would have been entitled to exercise, make and/or enforce but for the provisions of this paragraph 1.

2. The Transferee hereby assumes, agrees to be bound by, and undertakes to perform each and every one of the terms, covenants, and conditions contained in the Contracts. The Transferee further assumes all obligations and liabilities of, and all claims and demands against, the Transferor under the Contracts, in all respects as if the Transferee were the original party to the Contracts.

3. The Transferee hereby ratifies and confirms all actions heretofore taken by the Transferor with respect to the Contracts with the same force and effect as if the action had been taken by the Transferee.

4. The Government hereby recognizes the Transferee as the Transferor's successor in interest in and to the Contracts. The Transferee hereby becomes entitled to all right, title and interest of the Transferor in and to the Contracts

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in all respects, including without limitation all claims, demands and rights thereunder or in connection therewith, as if the Transferee were the original party to the Contracts. The term "Contractor" as used in the Contracts shall be deemed to refer to the Transferee rather than the Transferor.

5. Nothing in this agreement shall be construed as a waiver of any rights of the Government or the Sponsor(s), in case of a sponsor agreement, against the Transferor in connection with the Contracts.

6. Notwithstanding the foregoing provisions, all payments and reimbursements heretofore made by the Government or the Sponsor(s), in case of a sponsor agreement, to the Transferor and all other action heretofore taken by the Government, pursuant to its obligations under any of the Contracts, shall be deemed to have discharged pro tanto the Government's or, as the case may be, the Sponsor's obligations under the Contracts. All payments and reimbursements made by the Government or the Sponsor, in the case of a sponsor agreement, on or after the effective date of this agreement in the name of or to the Transferor shall have the same force and effect as if made to said Transferee and shall constitute a complete discharge of the Government's or, in the case of a sponsor agreement, the Sponsor's obligation under the Contracts to the extent of the amounts so paid and reimbursed.

7. The Transferor and Transferee hereby agree that no claim for payment by, or reimbursement from, the Government shall be made by either or both of them with respect to any costs, increased taxes or other expenses arising directly out of or attributable directly to (i) said assignment, conveyance, and transfer, or (ii) this agreement, other than those which the Government, or the Sponsor, in the case of a sponsor agreement, would have been obligated to pay or reimburse under the terms of the Contracts in effect prior to the effective date of this agreement.

8. The Transferor hereby unconditionally and irrevocably guarantees payment of all liabilities and the performance of all obligations which the Transferee assumes under this agreement, or may hereafter undertake under the Contracts; provided, however, that this guarantee shall not apply with respect to ~~any contract term or period of performance~~ subsequent to March 31, 1959; provided further that the Transferor hereby irrevocably waives notice of any and all intervening amendments, supplements and/or change orders to the Contracts or either of them.

9. Except as herein modified, the Contracts shall remain in full force and effect.

3/31/59

SYL00001998

IN WITNESS WHEREOF, each of the parties hereto have executed this Supplemental Agreement as of the date and year first above written.

UNITED STATES OF AMERICA
By: UNITED STATES ATOMIC ENERGY COMMISSION

_____

Title: _____
(Representing Contract No. AT-30-1-GEN-366)

_____

Title: _____
(Representing Contract No. AT(30-1)-1293)

WITNESSES:

SYLVANIA ELECTRIC PRODUCTS INC.

_____ By: _____

_____ Title: _____

_____ SYLVANIA-CORNING NUCLEAR CORPORATION

_____ By: _____

Title: _____

CERTIFICATE

I, _____, certify that I am Secretary of Sylvania Electric Products Inc., named above; that _____, who signed this agreement on behalf of said corporation, was then _____ of said corporation; and that this agreement was duly signed for

SYL00001999

and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

Witness my hand and seal of said corporation this _____ day of _____, 1957.

_____

(Corporate Seal)

CERTIFICATE

I, _____, certify that I am Secretary of Sylvania-Corning Nuclear Corporation, named above; that _____, who signed this agreement on behalf of said corporation, was then _____ of said corporation; and that this agreement was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

Witness my hand and seal of said corporation this _____ day of _____, 1957.

_____

(Corporate Seal)

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UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

APRIL 1957

Prepared by the Staff of the New York Operations Office

May 31, 1957

USDOE 001169

DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

APRIL 1957

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USDOE-001170

SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Office Management

A visit was made to the Princeton Security Office to inspect changes in the building necessary to maintainance of security without a guard force. Arrangements were made with the General Services Administration to accomplish this work.

Procurement

The annual appraisal of procurement and traffic at Nuclear Metals, Inc. was conducted during the week of April 22 for fiscal year 1957 activities.

While in Boston, the Chief of the Procurement and Traffic Branch also met with the Business Manager and Purchasing Agent of the Cambridge Electron Accelerator to discuss developments in the purchasing program for this project.

Property

Arrangements were made with the U. S. Naval Ammunition Depot, Earle, New Jersey for the disposal of contaminated wastes as follows:

Chicago Operations Office

Westinghouse Electric Corp.(Pittsburgh, Pa.)	229.273 tons
Nuclear Metals, Inc.	
Contract 1565	14.9875

Visits were made to Princeton University Contract AT(30-1)-1238 re acquisition of excess property.

A Property Management Appraisal was conducted of Sylvania Corning Nuclear Company Contract AT(30-1)-461.

Contracts

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909

After review of Headquarter's comments on the proposed definitive contract for design and construction of the 6 BEV electron accelerator at Cambridge, NYOO met with Harvard representatives on April 9th, and negotiated for a number of changes. Harvard accepted NYOO proposed changes on April 26th. The revised contract and supporting justification was sent to Headquarters on the same day. NYOO recommended approval as submitted. Harvard has continued firm in its position to invite no bids for construction until the contract has been approved.

USDOE 001171

NYOO received a qualified approval from the Director of Research on Harvard's proposals to proceed with detailed design of all buildings, except the laboratory structure which had been approved earlier, and the detailed design of the machine itself. Some additional information is needed from Harvard before the formal approval can be given.

Harvard has requested authority to purchase several major items for the construction phase of the buildings. The Director of Research approved these procurements but suggested that NYOO withhold approval until acceptance of the contractterms seemed sure. Following Harvard's agreement to the revised final terms on April 26th, NYOO authorized the advance procurement of three cranes and an electrical substation.

Harvard was represented by the CEA Project Director at the Conference on Shielding of High Energy Accelerators. Following the meeting, the Project Director increased earth shielding at one side of the experimental building and over the magnet tunnel.

Material Loan Contracts

Negotiations with New York University, (for loan of the fuel loading for its subcritical assembly) and with Pennsylvania State University (for the fuel loading of its reactor) continue suspended pending outcome of Commission action on a proposed staff paper to deal with revised terms for such loans.

New York University Computing Center Contract AT(30-1)-1480

Renovation of the University furnished building for the IBM computer are in progress and should allow installation in June. The laboratory space for AEC use on the eighth floor has been revised, following the decision of the Director of Research to provide space there for Project Sherwood work. The University's subcontractor for the building modifications has submitted a revised cost estimate which is being reviewed by NYU for submission to NYOO.

Nuclear Development Corporation of America Contract AT(30-1)-862

NYOO and NDCA met on April 4th to discuss our position on allowable overhead costs. NYOO's position is before NYOO Contract Review Board.

Nuclear Metals, Inc., Contract AT(30-1)-1565

NMI met with NYOO on April 5th to discuss final changes to modification of the contract to sell Nuclear the AEC equipment there, and permit them use of the present buildings for private purposes. Nuclear reserved decision, and about a week later informed NYOO that the Board of Directors decided against any further changes in agreements reached in good faith after long negotiation. NYOO Acting Manager refused to recommend Washington approval unless the more important changes developed by Washington review were given substantial effect. Agreement was reached on this basis. The final modification has now been recommended to the Director of Biology and Medicine as in the best interests of the Government.

USDOE 001172

Partial relocation of personnel and activities from the Hood Building to space at 224 Albany Street in Cambridge is nearly complete. Decision on repairs to second and third floor of Hood Building awaits more information from Nuclear.

Princeton University, Project Matterhorn Contract AT(30-1)-1238

The definitive modification to the contract that extended the term, added funds, and provided for financial plans, was approved by Headquarters and signed during the month.

Negotiations were begun and completed with the Walter Kidde Constructors, Inc., who were chosen as the architect-engineer for site preparation and buildings not associated with the device. All reviews of the subcontract negotiations are completed, and an interim authorization was issued to the University. The work involves preliminary services, design services and supervision of construction for approximately 53,000 square feet of usable space for laboratories, offices, cafeteria, warehouse, and shops, plus the development of utilities. A master plan, plot and utilities for the ultimate project needs of approximately 700,000 square feet of various buildings on a 62 acre site will also be developed.

The Project overhead remains a problem. The issues involve the part of the University's overhead costs which should be passed on to the Forrestal Research Center, where the work of this contract is progressing. A provisional overhead rate has been established. The fixing of actual overhead rates for 1954 and 1955 must await the completion of a General Accounting Office audit of the University now in progress.

Princeton University, Accelerator Project Contract AT(30-1)-1916

Discussions on the definitive draft continued, but negotiations with Harvard, Nuclear Metals and Princeton-Matterhorn had priority. A concentrated effort can probably be made during May to conclude these negotiations. Project personnel attended the Shielding Conference on High Energy Accelerators.

Radio Corporation of America Contract AT(30-1)-1958

Negotiations have been completed and the definitive draft is in preparation.

University of Rochester, Cyclotron Project Contract AT(30-1)-875

Bids for additional laboratory space for the cyclotron project were opened on April 16th. The low bid of $80,285 was accepted. A staff review of overhead for the calendar years 1954, 1955 and 1956 was completed and will serve as a basis for setting final contract rates for these periods.

Sylvania Corning Nuclear Corporation Contract AT(30-1)-GEN-366

SCNC's proposal to set up a small plutonium laboratory at Brookhaven is still under review there. The assignment of this contract from Sylvania to the new corporation was accomplished.

USDOE 001173

Inspection Division

During April, one hundred sixty-two CFR 30 (Byproduct Material) licenses, and thirty-seven 10 CFR 40 (Source Material) licenses were received for inspection. This makes 1,041 Byproduct Material licenses and 197 Source Material licenses - a total of 1,238.

Sixteen Byproduct Material licenses and two Source Material licenses were investigated.

Manager's Office

Mr. Marcelino E. Calinawan, an Eisenhower Exchange Fellow from the Philippines, and Vice-Chairman of the Interdepartmental Committee on Atomic Energy (Phillipines) spent the week of April 8th in New York.

Two days were spent at NYOO devoted to contracting, public relations, and problems of health and safety. The remaining three days were used for visits to Universities and other non-profit research institutions in the area. These included Columbia University, New York University, Cornell Medical School, Sloan Kettering Institute for Cancer Research, and the Columbia-ONR Cyclotron at Nevis on the Hudson.

A task force on university research contracting, invited by Dr. T. H. Johnson, Director, Division of Research, met in NYOO on April 3rd.

On April 25th and 26th a Committee established by Mr. A. Tammaro met in NYOO to formulate recommendations concerning the relocation of NYOO and HASL.

Personnel

Federal Personnel Statistics

During the month the following personnel activities took place:

45	interviews with prospective candidates
17	screening, preliminary or courtesy interviews
15	interviews with candidates and operating officials
5	job evaluations completed
6	selections of candidates
4	persons entered on duty

April 5th a member of the O & P staff participated as chairman of a workshop on the problems of recruiting engineers and scientists; which was sponsored by the Second U. S. Civil Service Region.

On April 24th members of the O & P staff met with representatives of Walter Kidde Constructors, Inc. to review and discuss the company's personnel policies and insurance arrangements as applicable to the proposed Princeton A-E subcontract.

USDOE 001174

A representative of the O & P Division visited the New York University Computing Facility and the Sylvania-Corning Bayside Facility on industrial relations matters in connection with Contracts AT(30-1)-1480 and AT(30-1)-GEN-366.

Public Information

Considerable time was spent in cooperation with Brookhaven National Laboratory and the Division of Information Services, Washington in planning press coverage for the Inter-American Symposium on the Peaceful Uses of Nuclear Energy to be held at Brookhaven.

Public Information assisted Brooklyn Public Library and Abraham and Strauss in final plans for the Atomic Energy Exhibit held at the store and the Library, and also arranged for two speakers for Library events held in conjunction with the exhibit.

The Director, Public Information and HASL representatives worked with high school teachers during the week of April 22nd to develop and annotate experiments for the purpose of updating the publication "Laboratory Experiments with Radioisotopes for High School Science Demonstrations."

At the request of the Division of Information Services, Washington, the Director, Public Information escorted Norwegian reporter, Trygve Ramberg to Brookhaven National Laboratory.

Considerable time was spent in helping two free lance reporters research and authenticate stories for national publications. They were Paul Jacobs of The Reporter Magazine and John Lear of The Saturday Review of Literature.

Routine press and general public requests for films was higher than usual. The film library of Public Information made available 372 films which were shown to approximately 16,500 people. This was a substantial increase over other monthly figures.

Security

During April, 195 clearances for access to secret data and 107 for access to confidential data were granted. Requests for 126 secret and 193 confidential clearances were received for processing in the same period.

Technical Liaison

Access Permit Program

During April, 16 new access permits were assigned to NYOO. Eleven have access to Secret Restricted Data. There was one ammendment to include Secret Restricted Data. One access permit assigned to NYOO was reassigned from the Division of Civilian Application in Washington. Two access permits were terminated. This brings total number of NYOO access permits to 420 - 219 have access to Secret Restricted Data, and 201 have access to Confidential Restricted Data.

USDOE 001175

Accountability

Second transfer of 5S nuclear material between U.S.A. and the Netherlands was accomplished with NYOO representation. Fabrication of fuel elements for BNL reactor started at Sylvania, Hicksville.

Construction and Engineering Branch

1. Attendance at Staff Conferences of the Cambridge Electron Accelerator Project.

2. Visits to the offices of Chas. T. Main, Inc., Boston, Mass. and Gibbs and Hill, New York, N. Y. for the purpose of reviewing architect-engineer being furnished by these firms in connection with the Cambridge Electron Accelerator and Princeton Proton Accelerator.

3. Participation in negotiations with Walter Kidde Constructors prior to the commencement of A/E design work on the Model "C" site development.

4. Visit to Rochester University for the purpose of attending the bid opening for the construction contract for additional space for the large cyclotron laboratory.

5. Computer Installation visits to 4-6 Washington Place to determine progress of construction of IBM-704.

6 Visits to Nuclear Metals, Inc. to discuss moving equipment and personnel from Hood Building to 224 Albany Street, Cambridge, Mass.

USDOE 001176

HEALTH AND SAFETY LABORATORY

Environmental Health Services

Health Protection Study Committee

A report has been prepared by the Chief of the Industrial Hygiene Branch covering visits which were made by a specially appointed Health Protection Study Committee to the Portsmouth and Paducah Gaseous Diffusion Plants. This report has been submitted to Mr. Sapirie at whose request the study committee was assembled.

Detailed recommendations are presented with the report. The primary emphasis of these recommendations is to point out the differences between health practices and procedures at the two plants and the inconsistencies which exist, and to advise the Commission that there be considerable standardization in health procedures from plant to plant.

As a consequence of these investigations, discussions have been held with Dr. Western and Dr. Beard of the Division of Biology and Medicine on the advisability of convening a symposium on the subject of health practices in uranium handling. Such a symposium will be probably called sometime in November; the result of which should be a set of standard recommended health procedures to be published by the Commission.

Uranium Mill Surveys Study

A meeting was held in Washington with the Division of Civilian Application, Inspection, Raw Materials, and Biology and Medicine. The meeting was called by L. D. Low of the Inspection Division for the purpose of coordinating ideas on health surveys in uranium concentrating mills.

No final conclusions were reached, but some responsibilities and desires were clarified. Another meeting will be called in the near future to bring the matter to a final conclusion.

Sea Disposal of Wastes

A meeting called by Lester Rogers of the Division of Civilian Application in Washington was held with various operating branches of the Navy Department on the subject of sea disposal of wastes. Major purpose was to begin the establishment of uniform procedures for packaging, handling and reporting waste materials disposal between the Navy and the AEC. Since HASL is the only group in the country which is following a consistent procedure of reporting sea disposal, the packaging procedures and the reporting forms which are used by this office were presented to the group. It was suggested that the form adopted should be drawn in such a way that the information can readily be transferred to a business machine card.

USDOE 001177

Nuclear Metals, Inc.

A visit was made to NMI to establish pre-occupancy radiation levels at the 224 Albany Street Building. Some of the areas are already processing uranium, and as a result background was found to be somewhat elevated. However, no significant activity was measured.

Sylvania-Corning Nuclear Corporation

A visit was made to Sylvania-Corning to observe the disposal of a drum of thorium powder. The powder was slurried and pumped into a 15 foot deep hole without incident.

Safety Activities

The NYOO Health and Safety activities report for the first quarter of 1957 was submitted to Washington. The report covered safety visits to NMI, Sylvania Electric, Princeton University, and NYOO during this period. Consultation was provided to some other contractors.

Analytical Support for Field Surveys

SUMMARY	RECEIVED	RUN	BACKLOG This Month	BACKLOG Last Month
Uranium				
Air Dust	22	22	0	0
Urinary	149	200	96	147
Misc	21	31	21	31
Beryllium				
Air Dust	75	278	64	267*
Misc	0	0	50	50
Radium				
Urinary	6	9	10	13
Misc	6	6	0	0
Fluoride	0	0	97	97
Misc	1	1	0	0
U-235-Urine	0	0	12	12
U-233-Urine	0	0	3	3
TOTALS	280	547	353	620*

*A physical re-check on the backlog of Be Air Dust Samples was completed and revealed 5 additional samples that were not accounted for at the end of March 1957.

Weapons Effects

Plumbbob

HASL participation in Program 32.1 in connection with Plumbbob series has suffered many serious changes. However, it is still planned that the program

USDOE 001178

will go forward with minor modifications. The program has no chance of providing the data originally desired because of changes in the weapon design and placement. In addition, the present best estimate is that even the limited data which might be achieved have about a 20% chance for success. This has been made abundantly clear to the Civil Effects Test Group, but it has been agreed with them that it is preferable to proceed even with this limited objective than to withdraw this very important program.

The Instruments Branch has completed negotiations with the Jordan Electronics, Inc. for the equipment required for this program. The contract has been written to assure delivery in time for the shot.

Program 32.2 - Aerial Survey Equipment - The unit consisting of a head and a separate control box is practically completed; the unit which contains both the detector and the control is completed, calibrated and is undergoing temperature runs.

Monitoring Equipment for loan of Program 30 - Circumstances beyond control of this office created delays in delivery by the shippers of the units destined for Program 30. The lost shipment has been located and forwarded via air express. It is in Mercury and a member of the Instruments Branch staff is at NTS preparing these units for use by unpacking them and taking check calibrations and to assure that in-transit damage is rectified.

The Chief, Analytical Branch, at the request of the Department of State, attended the Third Session of the U.N. Scientific Committee on the Effects of Atomic Radiation in Geneva, Switzerland, as an advisor, during the period April 5 through 21.

The Assistant Chief, Analytical Branch, attended a meeting at DBM, Washington, on April 30, to discuss stratospheric sampling.

7,560 fallout samples were processed during the period April 1 through April 30, 1957.

Fundamental Studies

During the week of April 1, three members of the Radiation Branch were joined by Dr. John Gentry in making radiation measurements in various upstate New York regions. These data combined with other measurements made in the New York City area, have been prepared in the form of a brief report to be submitted to SCIENCE with the request that they be published concurrently with the proposed report of congenital malformations by Dr. John Gentry.

Consultation and Educational Services

Conference on Shielding and High-energy Accelerators

A conference on shielding and high-energy accelerators sponsored jointly by the Division of Research and the Radiation Branch of the Health and

USDOE 001179

Safety Laboratory was held April 13 through April 15, 1957 in New York. The meeting was attended by approximately 75 scientists and engineers from the major accelerator sites in the United States. A preliminary report of approximately 360 pages has already been prepared and distributed to the authors for comment prior to final publication.

High School Teachers

As arranged by the Assistant to the Manager for Public Information, and under the supervision of the Acting Chief of the Analytical Branch, six high school science teachers conducted experiments with radioisotopes at HASL during the week of April 22 to update the publication, "Laboratory Experiments with Radioisotopes for High School Science Demonstrations."

Isotopes Training Program

The Chief of the Radiation Branch participated in an isotopes training program under the sponsorship of the New York City Department of Hospitals at the Queens General Hospital.

NYU Physics Colloquium

The Assistant Chief of the Radiation Branch presented a talk on the subject of "Personnel Protection for Installations Using Sources of Radiations" at the NYU Physics Colloquium on April 5.

Industrial Health Conference

A number of staff members of the Health and Safety Laboratory attended the American Industrial Hygiene Association meeting in St. Louis, April 22 - 26, and plants of the Mallinckrodt Chemical Works. The following papers were presented:

"A Survey of Radiation Hazards at 36 Accelerators of Different Types," James E. McLaughlin, Jr.

"A System of Film-Badge Interpretation," Keran O'Brien, Leonard R. Solon, Hanson Blatz (Presented by Wayne M. Lowder)

"Gonadal Dose in Roentgen Examinations," Hanson Blatz

"Industrial Hygiene of Beryllium Plant Design and Operation," A. J. Breslin and W. B. Harris

"Nuclear Safety Considerations in the Processing of Fissionable Materials," W. B. Harris and Leonard R. Solon

"The Industrial Hygiene of Uranium Fabrication," W. B. Harris and Irving Kingsley (NY State Dept. of Labor)

"Variations in Ambient Radon Background Concentrations," H. Glauberman, A. J. Breslin, and W. B. Harris

"Fallout Monitoring," John H. Harley

USDOE 001180

Training of Foreign Scientists

The training period for U.S. and foreign scientists in radio-chemical procedures continued throughout the month of April. At the request of the Chief, Analytical Branch, the Chief, Radiation Branch addressed the students on AEC coding regulations on April 9, and the Director, Inspection Division, addressed them on the AEC civilian application program and AEC inspection regulations on April 10.

Publication

Report NYO-4889, A Study of Fallout in Rain Collections March Through July, 1956, by William R. Collins, jr., and Naomi A. Hallden was prepared on April 30.

Technical Consultation in Industrial Hygiene

Dr. Anna Baetjer, Johns Hopkins University	Specifications for handling beryllium materials.
L. B. Leppard, Department of Health, Toronto, Ontario	Radon detection in mines
G.N. Howatt, Gulton Industries	Use of thoria in ceramics operations.
T.W. Fluhr, NYC Board of Water Supply	Geologic and Hydrologic effects of waste disposal
Mr. Collins, American Machine and Foundry	Maximum permissible levels

Instrumentation

DTR System

One unit has been placed on the line and is now making repetitive counts on six samples. By this means, approximately 8 to 10 counts are made per day per sample. No major failure problems have been encountered in the system. The troubleshooting work has been rigorous, and modifications of inter-connecting wiring is approximately all that is needed to assure proper operations. Some delay still exists in delivery of components but it is expected that near the end of May the tape counting equipment will be checked out and will be ready for use by the Analytical Laboratory.

Radon Equipment for DTR

A transistorized preamplifier has been constructed and thoroughly tested. It is far superior to any vacuum tube design previously made here for the pulsed ion chamber; and, in fact, provides 80 to 100 to one signal to noise ratio in contrast with the 30 to 35 to one previously obtained as an optimum. Further circuit design will permit full transistorization of the system.

USDOE 001181

Mercury Vapor Detector

The past month has been spent in modifying the circuit which operated very well for wide environmental changes. Since the unit is to be used in a plant operation 120° to 130°F is essential as well as operation down to 0°F. The unit is stable except for temperature and has now been stabilized from approximately 120° down to 50°F. Extension of the range below this temperature is feasible.

Strontium-90 Counting Equipment

Libby Proportional Counter - This system has been placed into operation but has an unreasonably high background. A careful investigation is to be made into the circuitry to determine what can be done to assure stability in the anti-coincidence array, and the elimination of sensitive adjustment procedures reported by other users.

Geiger Tube Counting Equipment for Strontium 90 - Additional metal window geiger tubes have been received, and although they have not as low background as the first model, they all range at 1 second per minute background with high geometry for K-40. The equipment is still giving trouble due to drift in the univibrator circuits, but this problem can be solved by some circuit changes of minor nature. Because of the interaction of the anti-coincidence circuitry new circuits will be designed to eliminate these problems.

Nuclear Safety

The following feasibility reports were reviewed and approved by the Nuclear Safety Review Board:

Supplement No. 5 to Feasibility Rpt. No. 36 (Sponsored Task C-36)

Feasibility Rpt. for Fabrication of Coextruded Enriched Uranium Aluminum Alloy Tubes for Westinghouse (NMI-FR-7)

Modification of Feasibility Report NMI-FR-6 for Fabrication of Enriched Uranium-Molybdenum Alloy Pin Stock for Atomic Power Development Associates (NMI-FR-6B)

Visitors to the Health and Safety Laboratory

Date	Name of Visitor	Visited	Subject of Discussion
4/1	Dr. Dan Bennisen, UN Scientific Committee on Effects of Atomic Radiation	Harley	Fallout collections
	Dr. Wolfgang Eichler, Agfa Film Co., West Germany	Harley	Effects of fallout on film
4/2	Mr. I.W. Ruderman, Isomet Corp.	LeVine	Scintillation Phosphors

USDOE 001182

4/3	J. E. Foreshew, Div. of Construction, Washington	Lough	Tour of HASL to note space requirements
	H.C. Brown, Div. of B&M. Washington	Lough	HASL move
4/9	Marcelino E. Calinawan (Eisenhower fellow from Phillippines) Vice-Chairman, Interdepartmental Commission of Atomic Energy Phillippines	Lough	HASL tour and lecture session
	Dr. Tabershaw, Nuclear Development of America	Harris	Health and safety problems at NDA
4/12	Dr. Koven, Beryllium Corp.	Harris	Out-plant sampling at Hazelton, Pa.
4/15	Mr. Vincegurra, State University, Kings County Hospital	Lough	Setup of isotopes lab at the State University
	Claude Sill, Idaho Operations	Whitney, Alercio	Visit HASL, discuss analytical methods
4/16	Wade Jones, UCRL	Whitney	Analytical methods
4/17, 4/18	Paul Zigman, NRDL	LeVine	Laboratory instrumentation
4/17	Dr. Constantine Maletskos Reactor (MIT)	Radiation	Radiation monitoring and surveying
4/25	Br. William Bernard, Mt. St. Michael Academy, Br. Julian Ernest, Mt. St. Michael Academy, Brs. Paul Wilfred and Linus Richard of St. Anne's Academy. Br. Paschall Emile of St. Mary's Academy, and Br. Michael Urban of St. Helena's Academy	Whitney	Tour of Health and Safety Laboratory
4/26	Drs. L.T. Alexander and F. Dever, Soil Survey Center. USDA. Beltsville, Md.	Harley, Hardy	Samples collected for HASL by USDA
4/29	Dr. Chapman, Dow Chemical Corp.	Harris	Beryllium operations
4/29,	Drs. Flo Ward and Benjamin Bruckner, Walter Reed Army Research Center	Harley Hardy, Welford, Baxter	Strontium analysis problems

USDOE 001183

4/29	George Anton, Div. of B&M, Washington	Whitney, LeVine	Analytical methods, instrumentation
	R. Brehm and H. Beam. Jarrala-Forster Cc.	Alercio	Beryllium fluorimeter loaned to HASL

USDOE 001184

SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR APRIL 1957

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

During the month, four proposals were received for the magnet cores and five proposals were received for the fabrication of the magnet's coils. These are now being evaluated.

On the magnet enclosure, approximately 750 running feet were completed, nine special concrete pile caps were placed, steam distribution piping was received and installation started.

On the Target Building, the steel roof deck, shielding foundation excavation and forming were completed.

Linac Building - The roof deck was completed and 70% of the siding installed. Three thousand feet of 12" diameter cooling water line was installed and is now under test. Invitations were issued for the cooling water recharge basin and a contract was awarded for drilling of the three wells to supply water for machine cooling. The Laboratory awarded a contract to Precast Building Sections, Inc. of New York City, for the high density shielding blocks.

18" Cyclotron Building

Title I work was completed to the extent that a Title I Report for review was submitted to the AEC on April 23, 1957. At month's end, review had been virtually completed and the contractor instructed to make necessary revisions to the Title I Report before proceeding with Title II work.

Reclamation and Hot Laundry Facility

Preliminary drawings for this facility were presented for review by Jenks & Ballou at month's end.

Engineering Works Area

This job is now 83% complete. During the month the contractor completed the waylite block partitions, roof cant strips, rolling steel doors and the sub-station slab. The installation of the sub-station, heating units, fixtures and concrete curbs were started. The installation of aluminum wall panels, steam and condensate piping, plumbing and electrical work were continued inside the building.

USDOE 001185

Medical Research Center

This job is now 28% complete. During the month the main laboratory floor slab was completed. The concrete walls for the high and low level counting rooms were poured. Formwork for the hot therapy room, Reactor foundations, the Reactor-Laboratory connecting wing and the emergency operating room were continued.

The erection of structural steel was continued in the laboratory sector. The roofing contractor started installing roof purlins in the hospital sector. The brick contractor has substantially completed the exterior of the hospital sector and this work has now been slowed pending further erection of structural steel. Some interior partition work was started in the hospital sector.

The installation of underground and exposed utilities was continued in the hospital sector. The installation of utilities in the laboratory basement and outside underground were continued.

The Daystrom Company continued fabricating and testing Reactor components and instrumentation. Delivery of some components was about to start at the end of the month.

Liquid Metal Fuel Reactor Experiment
(Babcock & Wilcox Co.)

Reactor design #8, which incorporates an integral core and core tank, has been completed. Work is now progressing on preliminary details and specifications, for a quadrant type core and side reflector. Sodium has been selected as an intermediate fluid. Evaluations of the design were made as to safety, physical characteristics, handling problems, and related costs. Work is also progressing on the plant arrangement, component arrangement, the handling system, and plant shielding design.

The necessary materials and equipment for four high velocity test loops has been ordered. Preliminary design for the out-of-pile loop is proceeding, with final design on many of the components initiated. Space allocation is being developed with MTR and ETR for possible installation of in-pile radiation loops. Preliminary tests have been conducted which indicate the capsule test specimens will give measurable mass transports.

A study of the change in critical concentration and critical diameter with small changes in the physical and nuclear parameters of the reference design has been completed. The criticality calculations were checked against critical experimental data on high energy uranium-graphite systems. A series of calculations of the effect of various blankets and reflectors-blankets components on the critical size-density, and conversion ratio of the LMFRE has also been made.

Cosmotron

The repair of the Cosmotron is progressing satisfactorily. The copper conductor bars have been replaced in the damaged quadrant, and in the other

USDOE 001186

quadrants the conductor bars have been tightened by the installation of the new "kicker" bars. The assembly of the entire machine is now underway.

Several modifications have been made to improve the reliability and usefulness of the Cosmotron. End connections on the pole face windings have been altered to correct a condition in which these connectors frequently worked loose during pulsing causing a loss of the beam. A second exit port for an external proton beam has been machined in quadrant two. This second external beam will be used to produce high energy π^+ and π^- beams. A new pulsing circuit for the deflecting magnet of these external beams has been constructed to permit one portion of a single pulse of the internally circulating protons to be directed out of one exit port and then another portion out of the other port. This will permit experiments to be performed simultaneously with both external beams.

Test borings made of the sand beneath the floor of the Cosmotron have shown that this sand will not support the heavy shielding being planned. Consequently, the region under the shield will be grouted by forcing a cementing liquid under pressure into the sand, the resulting mixture then hardening into a solid mass.

Operation of the Cosmotron for test purposes is now scheduled for the first week in June.

60" Cyclotron

During the past month difficulty developed with the magnet cooling of the 60" Cyclotron. The aluminum coils have, from time to time, shown evidence of corrosion. The attempts made to eliminate this by means of a water purification system have not proved adequate. Apparently, a pinhole leak occurred inside the magnet coil. This introduced enough water into the coil so that considerable corrosion, aided by the potential difference across the magnet coil, took place on the outside of the conductors, resulting in several larger leaks. All of these leaks appear to be at the ends of the conductors. The conductors at the outside of the coil have been repaired but the conductors on the inside of the coil are inaccessible without extensive disassembly of the magnet. The water cooling on one of the 10 pie windings which leaked at the inside has been cut off. This pie is adequately cooled by adjacent windings.

In the meantime, the Laboratory has been advised that the use of sodium chromate at a controlled pH will stop any further corrosion. Bench tests over 3 weeks with thin aluminum foil confirm this. (Corrosion can be demonstrated in tap water in one day). Sodium chromate is being added to the magnet cooling water and it is expected that there will be no further trouble of this sort. Attempts will be made to repair the winding that leaks without disassembly. Since the cooling of the magnet coil was overdesigned, further reduction of the number of windings cooled is possible without adversely affecting the operation of the machine.

USDOE 001187

Contract Actions

The AEC continued negotiations with AUI for renewal of the AUI prime contract, which expires on June 30, 1957. During the month there was one meeting with the Contractor and a meeting of the Contract Board. As a result of these meetings, a draft contract will be prepared.

Negotiations continued between Babcock & Wilcox and their subcontractor, Union Carbide & Carbon Corporation. Indications are that negotiations will lead to U.C. & C.C. acting as consultants to the B&W Company on the LMFRE.

The approved Financial Plan--Mid-Year Review was received and forwarded to AUI. The approved Financial Plan seems to be adequate except for the Biology & Medicine program. This program is going forward at a rate in excess of the cost ceiling, and the Area Office has requested the Contractor to furnish their best estimate of FY 1957 costs for this program. This might result in a request for a change in the Financial Plan.

Research Reports

During this period, 32 papers were approved for publication. This number included 13 on physical sciences, 3 on applied sciences, and 16 on life sciences.

Visitors

The Laboratory was visited by the following, among others:

8 engineers from Argentina, on April 1.

Trygve F. Ramberg, a science writer on the staff of Aftenposten, Oslo, Norway, on April 1.

Herbert De Laboulaye, Technical Consultant to Preparatory Committee, IAEA.

Peter Graf, representative of Reaktor AG, Switzerland.

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Office Memorandum • UNITED STATES GOVERNMENT

TO: Those Listed Below

DATE: APR 26 1957

FROM: J. C. Clarke, Acting Manager, New York Operations Office

619

SUBJECT: NOTIFICATION OF ASSIGNMENT OF CONTRACT NO. AT-30-1-GEN-366 WITH SYLVANIA ELECTRIC PRODUCTS INC.

SYMBOL: OC:SS

Effective April 1, 1957 prime contract No. AT-30-1-GEN-366 with Sylvania Electric Products, Inc. was assigned to Sylvania Corning Nuclear Corporation, a new company formed by Sylvania Electric and Corning Glass Works. NYOO has approved this assignment.

Sylvania Electric has advised us that all Sponsors of Appendix "C" work under Contract #366 have been notified, and that their approval has been requested.

If you have any further questions in this matter, please do not hesitate to contact me.

Distribution: (3 each)

K. F. Hertford, Manager, Albuquerque Operations Office
J. J. Flaherty, Manager, Chicago Operations Office
Allan E. Jones, Manager, Grand Junction Operations Office
James E. Travis, Manager, Hanford Operations Office
Allan C. Johnson, Manager, Idaho Operations Office
S. R. Sapiric, Manager, Oak Ridge Operations Office
H. A. Fidler, Manager, San Francisco Operations Office
Robert C. Blair, Manager, Savannah River Operations Office
Jon D. Anderson, Manager, Schenectady Operations Office
E. L. Van Horn, Area Manager, Brookhaven

CONTRACTS
Sylvania

469

NARA II
RG 326
Accession 4NN 326-87-007
AEC Feed Materials D.V. Corr. 1947-1964
Box 42
F: Contracts - Sylvania

USDOE 001189

DOE History Division
NYOO Monthly Reports
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NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

MAY 1957

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SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Property

Arrangements were made with the U. S. Naval Ammunition Depot, Earle, New Jersey for the disposal at sea of contaminated wastes as follows:

Chicago Operations Office: (Westinghouse Electric Corporation - Pittsburgh, Pa.)	407.255 tons
Sylvania Corning Nuclear Corporation Contract AT-30-1 Gen-366	2.2 tons
Bendix Aviation Corporation Contract AT-30-1 Gen-1059	2.25 tons

Visits were made to Harvard University, Contract 1909, regarding acquisition of machine tools, etc., from excess.

A visit was also made to the Boston Navy Yard with representatives of Harvard University, Contract 1909, to arrange for possible assistance from the Navy in precision work for the Magnet.

A representative of Administrative Operations and a representative of Princeton University (Contract 1238) visited The RCA Corporation, Lancaster, Pennsylvania, regarding acquisition of Capacitors, etc., excess to the Navy Contract with RCA.

Property management appraisal was made of the Sylvania Corning Nuclear Corporation Contract 366.

Records Management

The Records Officer and the Director of Administrative Operations Division attended the annual Records Management Meeting in Washington.

A visit was made to the Brookhaven Area Office in order to review the NYOO vital records stored at the ERC.

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A records management appraisal was made at Nuclear Metals, Inc.

Contracts

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909

Final changes were made in the definitive contract and Headquarters' approval obtained. On May 2nd, the Project requested authority to proceed with construction of the laboratory-control building. The cost estimate is:

Advanced procurement of items such as steel, air conditioning	$ 75,000.00
Construction subcontract	325,000.00
CEA project costs	5,000.00
Architect-Engineer costs	20,000.00
TOTAL	$425,000.00

Harvard was informed of Commission approval on May 23rd and agreed to issue invitations for bids to construct the laboratory-control building. The bids are returnable by June 21st. Invitations were sent to eight qualified Boston-Cambridge firms; two others have requested invitations and will receive them; the invitation also will be announced in Dodge Reports. Washington-Research approval also will be required.

The project also has requested authority to order structural steel for the experimental area and the magnet tunnel in advance of general construction authorization. This has been referred to Headquarters-Research for approval. As a result of the shielding conference mentioned last month, the amount of earth shielding was considerably increased. The effect ot this upon the vertical stability of the magnet tunnel was not fully clear until mid-May. It was then apparent that it is mandatory to support the tunnel circumference with piles.

The project was authorized to proceed with detailed design of the machine proper following approval by the Director of Research.

Massachusetts Institute of Technology

In anticipation of the transfer of the Institute's contract for the High Energy Physics research from the Office of Naval Research to the Commission in F. Y. 1959; the Director of Contracts initiated discussions with the Chief of the Physics and Mathematics Branch, Division of Research. It was agreed that a joint meeting with the Institute, the ONR and the Commission would be called to work out a smooth transfer. This program is closely related to the research that will be undertaken in the Cambridge Electron Accelerator. Work on a master contract with the Institute has been set aside until the peak load

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of contract actions has passed by.

New York University Computing Center, Contract AT(30-1)-1480

The IBM 704 computer will be ready for delivery on about June 18th. Alterations of the second floor of the NYU building where the computer is to be installed should be completed by then. NYU has been requested to reduce the operating staff. Effective June 1st the number of shifts will be reduced from four to three.

Nuclear Metals, Inc., Contract AT(30-1)-1565

NYOO received final comments of the Controller on proposed Modification No. 9 which, in essence, transforms Nuclear from the operator of an AEC owned laboratory to an independent research organization working in its own facilities. NYOO reviewed and submitted a statement on these comments. In addition, NYOO provided further information to show why it has become impracticable to compare costs of the building that Nuclear proposes to build at Concord with the building they had proposed originally to erect in Cambridge.

Relocation of some personnel and operations to another building at 124 Albany Street in Cambridge was completed. This will reduce the number of people in the Hood Building, and remove from it the most potentially hazardous operations.

Princeton University Project Matterhorn, Contract AT(30-1)-1238

The joint NYOO-Princeton Contractor Selection Board interviewed General Electric, Allis-Chalmers-RCA and Westinghouse before selecting from among their proposals for design and fabrication of the new experimental device for the thermonuclear program. The Board recommended to the Manager that negotiations be initiated with Allis Chalmers Mfg. Co. for design, fabrication and installation of the Model C Stellerator, together with its housing and components. The Acting Manager has requested Princeton to initiate negotiations with Allis Chalmers for design, fabrication and installation of the device, but to omit design and construction of the buildings, contingent upon Headquarters approval of the selection and appropriation of funds by the Congress.

Early in May the Acting Manager and Director of Contracts met with the Division of Research and other interested Headquarters staff concerning administrative aspects of Project Matterhorn and for planning of the expanded activity.

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Princeton University Accelerator Project, Contract AT(30-1)-1916

Two principal items under discussion are AEC rights of use for the machine and the overhead. The NYOO Audit Branch is preparing a detailed statement of its analysis of the University's overhead and those elements chargeable to research activities. This should be ready early in June.

The Project requested authority for advance procurement of structural steel for the administration building of the Project. Approval was given after NYOO had obtained the concurrence of the Director of Research. Requests have also been received for advance procurement of air conditioning and office furniture.

University of Rochester Cyclotron Project, Contract AT(30-1)-875

The Manager authorized the expenditure of $100,000 for design and construction of the Elementary Particle Physics Building for the project. NYOO recommended to Washington-Research the University's proposal for disposition of title to the building. The arrangement proposed is currently in force for the building erected at the Atomic Energy Project under Contract W-7401-eng-49. In essence this would give the Commission use and occupancy of the land for 25 years, give the University a right to purchase the building if not in use for AEC work, and give the AEC a right to occupy and use the buildings subject to a restriction upon hazardous uses.

Sylvania Nuclear Corning Corporation, Contract AT-30-1GEN-366

Sylvania Corning informed NYOO of its decision to postpone the planned move of its atomic energy activities to Andover, Massachusetts.

Following an unfavorable report from the Brookhaven Area Manager, Reactor Development turned down Sylvania's proposal to resume construction of a plutonium laboratory for AEC work, and to relocate the laboratory at Brookhaven. Work on this stopped after the thorium explosion.

Material Loan Contracts

Negotiations for the loan contracts with New York University (for a subcritical assembly loading) and with Pennsylvania State University (for the loading of its reactor are still suspended. Reactor Development expects to have a paper to the Commission soon that will revise the loan terms.

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Other Notable Contract Actions

NYOO began draft of an equipment loan contract with a zoological station in Naples, Italy. The equipment is being ordered by NYOO and is scheduled to be delivered to Naples early this fall. The procurement of the equipment is being done through formal advertising. NYOO also drafted a cost-sharing-lump-sum contract with the Inter-American Institute of Agricultural Sciences in Turrialba, Costa Rica. The contract was sent to the State Department for their concurrence before it is sent to Turrialba.

Inspection Division

During May, one hundred three 10 CFR 30 (Byproduct Material) licenses, and thirty-three 10 CFR 40 (Source Material) licenses were received for inspection. This makes a total of 1,144 Byproduct Material licenses, and 227 Source Material licenses, which is a grand total of 1,371 licenses.

Twenty-nine Byproduct Material licenses, and four Source Material licenses were inspected.

The Director and his Assistant attended a 3-day Inspection Division personnel meeting at Augusta, Georgia. The meeting included a tour of one of the reactors, and the chemical separation plant.

Personnel

Federal Personnel Statistics

During the month the following personnel activities took place:

69 interviews with prospective candidates
32 screening, preliminary or courtesy interviews
28 interviews with candidates and operating officials
23 job evaluations completed
5 selections of candidates
2 persons entered on duty

Five one-hour training conferences were held to inform supervisory personnel of the change in the NYOO time and attending reporting procedure, and to discuss supervisory problems and practices in time and attendance administration. Thirty-six supervisors at all levels participated. A training course was held for division timekeepers and alternates in the revised reporting procedure; 28 employees participated.

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Four training sessions on the conduct of employees in travel status were held under the joint auspices of the Budget and Finance and O & P Divisions; 34 employees attended. Organization and methods reviews were made of organizational units in the Budget and Finance Division and the Administrativ Operations Division.

The Director and the Personnel Officer of the Division participated in the Annual Conference of the Federal Personnel Associations, 2nd U. S. Civil Service Region, held May 2-3 at Bear Mountain, N. Y.

The Deputy Director of the Division participated in an American Management Association Insurance Conference held May 8-10 in New York.

Contractor Personnel

The "standard" Appendix A for contracts with the Vitro Corporation of America has been revised as a result of extensive negotiations among representatives of Washington Organization and Personnel Division, Vitro, and this office.

Approval was granted to extend to monthly exempt employees of the Brookhaven National Laboratory, who are regularly assigned to shift work, the same overtime and compensatory time benefits that are accorded weekly and hourly employees.

Fifteen renewals and 4 letters of designation were processed in connection with NYOO Personal Services Contracts.

Discussions were held with representative of IBM Co. on industrial relations and issuance matters relating to a proposed cost-sharing contract.

Public Information

The considerable advanced planning and the follow-through operations required for prompt distribution of material (press releases, digests of papers, full texts of speeches, etc.) to insure thorough press coverage of the Inter-American Symposium on the Peaceful Uses of Nuclear Energy held at Brookhaven National Laboratory took top priority during May.

The Director, Public Information Service, was named Symposium Information Officer and spent May 12-17 at Brookhaven National Laboratory. NYOO was set up as the Press Office for the New York area under the direction of the Assistant, Public Information. Daily hand delivery of press releases and

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and other printed data was made to a selected media list, and many specific information requests on Symposium happenings were answered.

Several papers and news agencies had reporters at the Brookhaven National Laboratory. Director, Public Information guided them -- getting necessary facts, setting up interviews with scientists, etc. She also wrote news releases from the Laboratory and teletyped them to NYOO for distribution to the list. A survey made after the Symposium indicated a much heavier coverage of the event than had been anticipated. It also showed that the press people felt that they were well serviced, and that the material was well prepared.

A chemical explosion which occurred at the Brookhaven National Laboratory during the Symposium proved to be a complicating factor. Because there were reporters on the scene when the incident took place, the stories got to the papers before a full statement was issued by the Laboratory. NYOO was flood with requests for explosion facts and as soon as they were forthcoming, the Public Information Service began answering the many inquiries. By noon the next day, interest in the accident had subsided and press attention returned to the subject matter of the conference.

Director, Public Information Service conferred with John Langeman for a projected story in Popular Science Magazine, and with Harvey Cort, Columbia Broadcasting System, who is doing research for an "atomic age" television series.

Press inquiries on fallout and strontium were outstandingly high. Much time was spent obtaining information for local as well as out-of-town reporters.

Routine requests for films were somewhat lower owing to the end of school terms and cessation of club programs. The film library of Public Information made available 290 films which were shown to approximately 14,000 people.

Security

Personnel Security Branch

A total of 398 clearance actions were completed. 136 were under contracts, and 262 were under Access Permits.

Four applicants for security clearance were informally interviewed at the request of other Operations Offices.

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Fifteen applicants for security clearance under activities administered by NYOO were informally interviewed.

Two formal hearings were held for applicants for security clearance within NYOO jurisdiction, in accordance with the Commission's Administrative Review Procedures. During this period, the Division was not called upon to conduct hearings for other Operations Offices.

One hundred forty-five contractor clearances and 35 Access Permit clearances were terminated.

Physical Security Branch

During the month, an initial security inspection was conducted at one contractor installation for another Operations Office. This inspection resulted in a recommendation that this contractor installation be approved as a security facility.

Twenty-nine established contractor installations were re-inspected.

Initial security inspections were conducted at 15 Access Permittee locations and approval for the receipt of classified documents is being withheld pending compliance with Commission requirements. 10 of the Permits are "Secret", and 5 "Confidential".

The Chief, Physical Security Branch, met with representatives of the AEC Computing Facility to discuss security requirements under their expanded program.

Technical Liaison

Access Permit Program

During May 7 new access permits were assigned to NYOO. Three have access to Secret Restricted Data. There was one amendment to include Secret Restricted Data. One access permit has been terminated. This brings total number of access permits assigned to NYOO up to 426 -- 224 have access to Secret Restricted Data and 202 have access to Confidential Restricted Data.

Accountability

There was a transfer of special nuclear materials between Denmark and the U. S. on 5/31/57, and a transfer of special nuclear material between the

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United Kingdom and the U. S. on 5/29/57. NYOO personnel were present at the transfer of this material as Representatives for the USAEC on behalf of the USA.

Construction and Engineering Branch

Included in the activities of the Construction and Engineering Branch were the following:

1. Attendance at staff conferences of the CEA and PPA Projects.

2. Visits to the offices of C. T. Main, Inc., Boston, Massachusetts, and Gibbs and Hill, New York City for the purpose of reviewing A/E services being furnished by these firms in connection with the CEA and PPA Projects.

3. Visits to the office of Walter Kidde, Constructors, to discuss the master plan for the Model "C" Site Development.

4. Visits to 4-6 Washington Place to determine progress of construction in connection with the installation of the IBM-704 Computer Facility.

5. Visits to the office of the Director of Plants and Property for New York University relative to negotiations of a change order in the subcontract with McCann, Inc.

6. A/E selection completed for Title I work for NYOO housing at 201 Varick Street. Selected A/E was Lockwood Greene Engineers, Inc. Liaison with Headquarters, with local GSA and coordination with all divisions of NYOO in connection with this project.

Visitors to Administrative Offices

Date	Name of Visitor	Staff Member Visited	Subject of Discussion
5/1-3	Milton Klein, COO Ellison C. Shute, SFOO H. A. Fidler, SFOO C. Vanden Bulck, OROO W. Hughes, RES, Wash. Dr. T. H. Johnson, RES, Wash.	J. C. Clarke	Research Contract Study Task Force

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5/1	Mr. Charles C. Eckles General Motors Corporation	M. Durso	Review of research and development reports
5/2	Mr. Mathen J. Letich American Bureau of Shipping	M. Durso	Review of research and development reports
5/6	Dr. J. E. Flynn - ONR	J. C. Clarke W. H. Donnelly	Briefing on local organization of ONR
5/7	P. Burgard - IBM	H. J. O'Neill	Issuance and Industrial Relations
5/7	Mr. William Seaman American Cyanamid Company	M. Durso	Review of research and development reports
5/7	Mr. S. Wallach Universal Winding Company	M. Durso	Review of research and development reports
5/13	Mr. R. W. Burnett, Business Mgr Cyclotron Project, University of Rochester Contract AT-30-1-875	L. Graup H. Baum	Property management activities
5/21	Wm. Satterfield, Jr. AEC Washington, Insurance Section	H. J. O'Neill	Insurance
5/21	J. Richtmyer New York University	H. J. O'Neill	Issuance and Industrial Relations
5/23	John Langemann	G. Urrows	Popular Science Story
5/27	Mr. C. R. Wilson, Purchasing Agent - Yale University Contract AT-30-1-1691	L. Graup H. Baum	Property Management activities
5/28 29	Mr. Milton B. Wenger Vitro Corporation of America	M. Durso	Review of research and development reports

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HEALTH AND SAFETY LABORATORY

Consultation and Educational Services

Technical Consultation

G. R. Finlay, Norton Co., Niagara Falls, Canada	Sampling of uranium oxide and thorium oxide fusions
E. C. J. Urban, Wayne State University	Background radiation level measurements
B. S. Goodwin, U. S. Army Ordnance	Analysis of soil samples from area of destructive testing of uranium weapon
H. Miller, Bethlehem Steel	Instruments and calibration for radiation surveys in steel mill
N. W. Edmund, Edmund Scientific Corp.	Laboratories for measurements of radiation from eye pieces containing thorium bearing glass
R. W. Brenneman, Lockheed Aircraft	Hazards involved in the machining of beryllium
Dr. N. A. Baily, Radiation Therapy Dept., Roswell Park Memorial Institute - Buffalo, New York	Hood designs for use with isotopes

Bureau of Mines Respiratory Committee

At the request of the U. S. Bureau of Mines, U. S. Department of Interior, the Chief, Industrial Hygiene Branch has been appointed to an advisory committee for the development of requirements for testing and approval of personal respiratory protective equipment.

Civil Defense Exercise

The Chief, Radiation Branch participated in a Federal Civil Defense Administration exercise at Binghamton, New York on May 23, 1957.

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Meetings

The Chief of the Radiation Branch attended the regular meeting of the AEC Advisory Committee on Biology and Medicine at the University of Rochester; the Radiation Research Society Meeting in Rochester; a meeting of the National Committee on Radiation Protection Subcommittee No. 9 on gamma emitting materials at Columbia University, and a meeting called by the New York State Health Commissioner Hilleboe to discuss the feasibility of pilot study of medical x-ray exposures in upstate New York.

Radiation Lectures

The Chief, Radiation Branch, gave a talk to the Jamaica High School Science Club on May 3, 1957.

The Chief, Radiation Branch, addressed the annual meeting of the New Jersey Society of Professional Engineers at Atlantic City on May 4, 1957.

The Assistant Chief, Radiation Branch, gave two talks at the New York City Fire College on May 10 and 23.

Safety and Fire Protection Conference

The Chief, Industrial Hygiene Branch, Assistant Chief, Radiation Branch, and an Industrial Hygienist participated in the Annual Safety and Fire Protection Conference at Rensselaer Polytechnic Institute, May 15. Discussions of health hazards in uranium mining, milling, refining, and fabrication, and Pu, Be and U powder handling were presented.

Environmental Health Services

Avco

A report has been transmitted covering beryllium operations at the Avco Manufacturing Corporation in Lawrence, Massachusetts. Avco is machining large beryllium blocks for the Air Missiles Command of the USAF. Copies of the report have been transmitted to the Air Missiles Command and to the Lockland Area Office for their information.

Babcock and Wilcox

A report has been transmitted to the Division of Civilian Application covering a survey which was performed at the B&W Nuclear Facilities Plant, Lynchburg, Virginia. The study was part of the general investigation of health

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hazards in fuel element processing plants.

Norton Company

A report has been transmitted forwarding the results of air samples which were taken at the Norton Company in Worcester, Massachusetts. These samples were part of the general program of obtaining information on health and safety practices in fuel element fabrication operations.

Nuclear Metals

A fire and safety survey was made of the Nuclear Metals, Inc. facilities in Cambridge. Several recommendations were transmitted in a report to the Contracts Division. These recommendations were minor in nature and reflect the unsettled situation at the plant which has been created by the move to Albany Street. As soon as the move has been completed, another survey will be performed.

Metals and Controls

A report has been transmitted covering a survey of the fuel element processing facility of Metals and Controls, Inc. The study was conducted as part of the general investigation of health hazards in fuel element processing plants. Inasmuch as the Attleboro shop of Metals and Controls is a mixed facility, a survey of the contract operations was performed at the request of Schenectady Operations Office, and copies of the report have been forwarded to Schenectady and also to the Division of Civilian Applications.

Surveys

Accelerator Survey Reports

Reports of accelerator surveys at the University of Michigan and the University of Chicago were completed and distributed during May.

Preoperational Survey at Harvard - MIT Reactor

The Health and Safety Laboratory was requested to conduct a preoperational background survey in the Harvard - MIT reactor area. After consultation with the Director, Division of Civilian Application, it was felt that this survey should not be undertaken by HASL, and Dr. Manson Benedict of MIT was notified accordingly.

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Survey at Privately Owned Betatron

The Radiation Branch was requested by the operator of a privately owned betatron used for medical purposes to conduct a radiation survey. In line with established Commission policy, this was refused since it is believed that private sources of such services are reasonably available.

Analytical Support for Field Surveys

SUMMARY	RECEIVED	RUN	BACKLOG This Month	BACKLOG Last Month
Uranium				
Air Dust	607	179	428	0
Urinary	228	254	70	96
Misc	0	21	0	21
Beryllium				
Air Dust	36	85	15	64
Urinary				
Misc	18	68	0	50
Radium				
Urinary				
Misc	0	10	0	10
Radon				
Thorium				
Thoron				
Fluoride	9	0	106	97
Misc	2	2	0	0
U-235-Urine	0	0	12	12
U-233-Urine	0	0	3	3
TOTALS	900	619	634	353

Instrumentation

DTR System

The tape counting equipment has been checked out; one module, the present data unit, is not completed by the contractor. However, the duplicate model unit has been used for check out. All the units have been tested into the system and await the last component.

The behaviour of the equipment is completely predictable statistically and it operates generally within good limits. The background subtraction principle and the mode of securing reliability through electronic circuitry is satisfactory.

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Radon Equipment for DTR

The initial design permits conversion of the equipment to transistorized operation with recording into the DTR set up. The equipment will be assembled for full testing during June and then turned over to Electronic Construction group for apparatus fabrication and assembly.

Low Level Counting Equipment for Strontium 90

Two Libby counters are in operation with backgrounds within the normal reported limits on this type of equipment.

The six position geiger counter unit has been successfully reworked with backgrounds stabilized. The Anton 1007 type tubes which in standard version are delivered to us with 1.4 milligram per sq. centimeter mica windows are used in three of the positions, the other three positions utilize tubes with thin steel diaphrams having a density of 12 milligram per sq. centimeter. These tubes, with steel faces have a lower average background count than the mica window tubes. Moreover, they display an improved counting efficiency even though their higher absorption reduces the beta flux. In contrasting the ratio of potassium 40 to strontium 90 beta rays each of the types of windows displays a ratio commensurate with the absorber character.

Negotiations are still continuing with the Anton Electronic Laboratories to determine whether the background can still be reduced by improved tube fabrication techniques.

Mercury Vapor Detector

The unit has been completed and now awaits calibration by the Industrial Hygiene Branch. It is operating in accordance with requirements and after the calibration with mercury vapor will be given a field trial.

Nuclear Safety

The following feasibility reports were reviewed and approved by the Nuclear Safety Review Board:

SYLVANIA-CORNING NUCLEAR CORPORATION - FEASIBILITY REPORTS NOS. 1 and 2; FABRICATION OF BROOKHAVEN FUEL ELEMENTS

FEASIBILITY REPORT FOR THE SWAGING OF ENRICHED URANIUM-ZIRCONIUM ROD SUPPLIED BY GENERAL ATOMICS UNDER LICENSE SNM-69 (NMI-FR-8) - WITH MODIFICATION NMI-FR-8.

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NMI-JJP-1A: MODIFICATION OF FEASIBILITY RPT. NMI-JJP-1 FOR FABRICATION AND HEAT TREATMENT OF ZIRCONIUM CLAD ENRICHED URANIUM-MOLYBDENUM IRRADIATION SPECIMENS FOR APDA

SYLVANIA-CORNING NUCLEAR CORPORATION ACCOUNTABILITY STATION MSH FEASIBILITY REPORT NO. 1 - FABRICATION OF BROOKHAVEN FUEL ELEMENTS

NORTON COMPANY FEASIBILITY REPORT NOR-1 MODIFICATION OF MARCH 27, 1957

SUPPLEMENT TO FEASIBILITY REPORT NMI-JW-2 FOR THE FABRICATION OF PRATT AND WHITNEY STAINLESS STEEL FUEL ELEMENTS (NMI-JW-2A)

Weapons Effects

Congressional Hearings

The Director, HASL, and Chief, Analytical Branch, attended the Senate House Atomic Energy Subcommittee Hearings on fallout hazards in Washington, D. C., on May 28 and 29.

Discussions of Fallout

A meeting was held in Washington, D. C., on May 6, to discuss the current soil analysis program, attended by the following:

Dr. W. F. Libby and Dr. J. C. Potts -- Commissioner and Assistant

Dr. C. L. Dunham and Dr. F. Western -- Division of Biology and Medicine

Dr. S. A. Lough, Dr. J. H. Harley, E. P. Hardy, Jr., and Gerald H. Hamada HASL

Dr. L. T. Alexander, Dr. R. Rietemeier, Dr. R. Menzel and Dr. R. Overstreet -- Department of Agriculture Soil Survey Center, Beltsville, Maryland

Dr. P. Kruger, Nuclear Science and Engineering Corp., Pittsburgh, Pa.

Dr. H. Volchok, Isotopes, Inc., Westwood, New Jersey

The HASL representatives at the above meeting met with Mr. Eisenbud on May 7th to review the discussions on the soil analysis program and to bring Mr. Eisenbud up to date on the current Sunshine Program.

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Merril Eisenbud, Lester Machta, Allan Lough, and John Harley met on May 10 to discuss the present fallout monitoring program.

Fallout

8,820 fallout samples were processed during this period.

Operation Plumbbob

Program 30

The Monitoring Equipment has arrived in Mercury, has been checked out completely, and been turned over to the Public Health Service representative for installation. As of this report, the equipment is operating satisfactorily.

Program 32.1

The Countermeasures System has been designed, and contracts for instrumentatior will assure delivery as required.

Program 32.2

The Aerial Survey Equipment has been taken to Nevada and the trials have been unusually promising. The instrument has operated satisfactorily, except for a minor stability problem in circuitry, which will be worked out when the instrument is returned to New York in June. The project is complete insofar as test work is concerned. An operating instrument will be left in the hands of the FCDA representative at Mercury so that he can arrive at his own opinions on the device. A primary report will be started in June.

Visitors to the Health and Safety Laboratory

Date	Name of Visitor	Visited	Subject of Discussion
5/1-57	Mr. Kanji Takahashi, Atomic Energy Bureau, Science and Techniques Agency of Japan	Lough Blatz	Plan and design of radi isotope handling facili ties; film badge progra
5/2	Dr. Lester Machta, Weather Bureau	Harley	Fallout Program
5/6	W. C. Hoth, J. L. Burhans, W. H. Deckers and A. D. Turissini, General Chemicals Co.	Harley	Regulations governing t use of radioactive substances commercially

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5/7	Mr. Frank Huke, Nuclear Metals	Harris Solon	Hazards in beryllium ceramics; nuclear safety
5/8	Mr. Charles Roessler, Curtiss-Wright Research Division	Harley	Beryllium analysis, air filters
5/10	Mr. Bartholomew Puma, General Chemicals Co.	Harley	Uranium fluorimeters
5/10	Dr. E. Tajima, U. N. Committee	Harley	Sr-90 standard samples to be made available by HASL to U.N. members
5/13	Prof. Titterton, University of Canberra, Australia	Lough	Fallout
5/14	Father Cullen, Fordham University	Solon	Background radiation
5/16	Dr. A. Seymour, Div. of Biology and Medicine, Washington	Le Vine Harley Whitnah	Naples Symposium on marine biological applications of radioisotopes
5/17	Dr. Norton Nelson, N.Y.U.	Lough	Research programs at HASL
5/20	Mr. L. G. Grinnell, Nuclear-Chicago	Le Vine	Instrumentation for Naples Laboratory
5/21	Mr. C. R. Beaton, American Traidair Co.	Le Vine	Vibrating reed electron meter
5/28	Mr. Huston, MIT	Harris	Beryllium machining
5/28	Mr. Mont Mason, Mallinckrodt Chemical Works	Harris	Instrumentation, health and safety

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SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR MAY 1957

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

BNL is completing work on reevaluation of the entire AGS Project for submission to AEC early in June. A subcontract for the AGS Magnet Cores was received during the month from BNL and has been forwarded to the NYOO for review and transmission to Washington. The contract amount is $3,100,929. and the proposed sub-contractor is BALDWIN-LIMA-HAMILTON CORP. of Philadelphia, Penna. Final negotiations for the Magnet Coil procurement are being completed by BNL with National Electric Coil Co. and it is anticipated that this procurement action will be forwarded for AEC approval early in June. A Cockroft-Walton machine, pre-accelerator for the Linear Accelerator, has been received and work started on pre-assembly of this unit.

Work on the Synchrotron structures proceeded well with percentage completion of the general contract increasing from 13% to 27% during the month. 900 running feet of Magnet Enclosure floor, 21 special pile caps, the second floor of the Linac Bldg. and 75% of the 4' thick mat for the Target Bldg. shielding were formed, reenforced and poured. Siding on the Linac Bldg. was 95% completed and 50% completed on the Target Bldg. Masonry partitions in the Linac Bldg. were 50% completed. Overhead traveling crane in the Linac Bldg. was erected. Electrical and mechanical work proceeded with wire way installation about 50% complete, the compressed air and water piping mains were completed in the Magnet Enclosure and 85% of the well water supply and diffusion piping installed.

Bids were received 5/8/57 for the two large diffusion basins and a contract awarded to Mike Stiriz, Inc. The test well was completed and its log is being analyzed. Final negotiations were completed with Pre-Cast Bldg. Sections, Inc. for the high density concrete shielding and a contract forwarded for approval.

18" Cyclotron Building

Title I work is complete. It was reviewed and submitted to the Architect/Engineers for minor changes. The contractor was instructed to make the necessary minor changes before proceeding with Title II work.

Reclamation and Hot Laundry Facility

Preliminary drawings were submitted by the contractor for review. The necessary changes were made and the contractor was instructed to proceed in making the necessary changes.

UNCLASSIFIED

USDOE 001210

Engineering Works Area

This project is now 97% complete. During the month of May, the contractor completed the curbs and roadways, the erection of wall panels, installation of steam line insulation, and required painting. The substation is complete with the exception of testing and trial running.

Medical Research Center

This job is now 31% complete. During the month, substantially all the concrete work below grade was completed in the Reactor Wing. The erection of structural steel was continued in the Laboratory Sector and was approaching completion at the close of the month. The roofing contractor substantially completed the roof purlins in the Hospital Sector. Both the roofing and brick contractors were awaiting completion of structural steel in the Laboratory Sector to resume their work. The installation of utilities is progressing well in all areas of the job.

The Daystrom Co. encountered some minor difficulties with reactor components. These are being corrected and delivery of all but one item is under way. The fabrication of the aluminum reactor tank has been completed and shipment is imminent.

Cosmotron

Pulsing of the Cosmotron began on May 28, 1957. The vacuum chamber has now been replaced in the damaged quadrant in order to permit observation during pulsing of the newly installed conductors. The vacuum chambers have been replaced in the other three quadrants and pumped down to a satisfactory pressure. During this shut-down period the injector Van de Graaff has been used to study the effects of various modifications in the ion source. Changes in the probe geometry and a modification in the potential gradient along the column has resulted in an increased proton beam and better focus. It is now believed that the charge drained from the high voltage terminal of the Van de Graaff generator is so great that the energy droop in the injected protons prevents a large fraction of them from being accepted by the Cosmotron. The cure suggested is a pulsed liner in the Van de Graaff to keep the injected energy constant. This modification is being designed.

The grouting of the floor inside and outside the ring for shielding support has been completed. On the outside, for some unknown reason, the condition of the sand in some locations was such as to prevent the absorption of an appreciable amount of concrete-water mixture. Inside the ring, however, and at certain points outside the ring the sand accepted up to nine bags of concrete per hole. It is the opinion of Mr. Jacob Feld, a Consulting Engineer who is an authority on foundations, that if the sand does not accept concrete mix it is a satisfactory support for the shielding. If the sand accepts concrete mix it is then converted into a satisfactory condition. BNL believes that the floor will now accept the loads needed to support the proposed new shield.

USDOE 001211

Electrostatic Generator

An increase in the voltage limit and stability of operation of this machine has been experienced during the past month. It is attributed to repeated applications of Glyptol, principally to the newly installed textolite support column and more recently to the other three columns. A voltage of 3.8 Mev has been achieved, with very little sparking, and it is anticipated that operation at 4.0 Mev or slightly higher will soon be feasible for experimental work.

Liquid Metal Fuel Reactor Experiment
(Babcock & Wilcox Co.)

The reactor design No. 10 has been selected as the LMFRE preliminary reference design. A helium system of cooling the core and side reflectors after dumping is being studied to remove decay heat from absorbed or adsorbed fission products.

Various shielding designs have been studied with the Barytes design appearing to be the optimum on an effectiveness and cost basis. Calculations indicate that two feet thickness of concrete will be required for the building assuming a 200,000 curie source of fuel held up in a heat exchanger when transported by a building crane.

Specifications were prepared for the primary U-Bi pump. Specifications call for 2860 gpm to deliver 25 ft. head. Test pumps will be ordered at earliest possible date so that test results can be applied to similarly designed pumps for the LMFRE. Containment for the primary system was established calling for piping and components to be doubly contained in a close fitting, gas tight secondary containment system.

A steam heat rejection system with a throttling condensing setup is being prepared for the preliminary reference design.

Plant layout and elevation designs have been prepared and released.

Comparisons were made of expected chemical processing costs for breeder and burner LMFR power stations.

The fabrication of the utility test loop has been completed and the loop placed in service. No difficulties with the Deming pump and system have been experienced after 350 hours operating at temperatures between 800 and 900 F. The apparatus for the tilting capsules test has been completely fabricated and awaits test specimens.

A preliminary general arrangement drawing of the BNL Radiation Loop No. 1 based on space allocations was completed. Final design of the out-of-pile components of the loop is proceeding.

USDOE 001212

A visit was made to the Engineering Test Reactor for determining exact space available for a U-Bi loop experiment. Details of the ETR pertinent for providing information required for engineering approval were obtained and preliminary design of the system initiated.

Determined the Materials Testing Reactor could not schedule a U-Bi loop at this time due to long-term irradiation program previously planned.

Hot Laboratory Incident

During the afternoon of May 15, 1957 a series of related explosions occurred in the dissolver section of the Fluoride Volatility Process Engineering Test Facility in the BNL Hot Laboratory. This facility is designed to investigate the feasibility of processing spent fuel elements by dissolution in fluoride based interhalide compounds. The basic solvent, bromine tri-fluoride, is a highly corrosive compound reacting readily with most elements. One worker was seriously burned but is expected to recover. Several others were treated at the BNL hospital and returned to work the next day. Exclusive of personal injury the loss is estimated at $50,000. The incident is currently under investigation and a report will be forthcoming.

Contract Actions

AUI subcontract with the Sylvania-Corning Nuclear Corporation has been approved for the fabrication of 5,000 enriched fuel elements for the conversion of the BNL research reactor.

Research Reports

During this period, 50 papers were approved for publication. This number included 19 on physical sciences, 3 on applied sciences, and 28 on life sciences.

Visitors

The Laboratory was visited by the following, among others:

36 representatives from computer installations conferring on computer machine developments and computational problems, on April 29 and 30.

119 members of the Northeastern Section of the American Society of Plant Physiologists, on May 3 and 4.

21 members, representing 9 European countries, of Organization for European Economic Cooperation, on May 21.

In addition to the above, 72 representatives of 23 different nations visited the Laboratory, most of them for 1 day, a few for several days. They include the following:

16 from Japan

4 each from Denmark and Portugal

USDOE 001213

8 from Switzerland

7 each from Germany and Great Britain

3 each from Italy, Australia, Greece, and The Netherlands

and one each from the following countries:

Argentina
Belgium
Brazil
China
Iceland
India
Norway
Pakistan
Poland
Sweden
Thailand
Turkey
Yugoslavia

An Inter-American Symposium on the Peaceful Application of Nuclear Energy, sponsored by the Government of the United States, was held at the Laboratory under the auspices of the Atomic Energy Commission, the Department of State, and the International Cooperation Administration, May 13 through May 17. The Symposium was attended by 99 representatives from 19 different Latin-American countries and 132 citizens of the United States.

USDOE 001214

UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

JUNE 1957

Prepared by the Staff of the New York Operations Office

July 12, 1957

USDOE 001215

DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

JUNE 1957

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USDOE 001216

SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Office Management

A breakdown of telephone and teletype traffic for the months of April, May and June showed the following:

	April	May	June
Local Calls	10,477 - $ 473.87	9,294 - $ 421.99	10,503 - $ 476.31
Long Distance	815 1,369.85	739 1,217.05	923 1,615.35
Teletypes	861	813	789

The increase in telephone traffic during June was caused by the accelerated workload in the Contracts Division, Assistant General Counsel's Office, Finance Division and Procurement Branch, due to the close of the fiscal year.

Property Management

Arrangements were made with the U. S. Naval Ammunition Depot, Earle, New Jersey for the disposal of contaminated wastes as follows:

Chicago Operations Office		Tons
Westinghouse Atomic Power Div. (Pittsburgh Area)		780.933
New York Operations Office	**Contract**	
Nuclear Metals, Inc.	1565	14.9875
Sylvania Corning Nuclear Corp.	366	2.2
Bendix Aviation Corp.	1059	2.25

The third annual contaminated waste disposal program for Brookhaven National Laboratory has been completed. There were 708 drums of contaminated wastes dumped at sea amounting to approximately 300 tons. With the cooperation of the Dept. of the Navy, Third Naval District, New York, the LST "CALHOUN COUNTY" was made available and the facilities at Floyd Bennett Field were again utilized. The entire operation was handled without incident.

USDOE 001217

During the quarterly reporting period arrangements were made for the acquisition of excess property, as follows:

	Acquisition	Fair Value	Savings
From other AEC Installations	$139,463.72	$51,450.22	$88,013.50
Other Federal Agencies	106,083.10	6,961.81	99,121.29
	$245,546.82	$58,412.03	$187,134.79

Among the acquisitions were: Machine tool equipment for Cambridge Electron Accelerator, Harvard University, Contract AT(30-1)1909 in the amount of $18,000 at a savings of $15,000 — Graphite and Bismuth for BNL in the amount of approximately $59,000 at a savings of approximately $29,500; machine tools for Project Matterhorn, Contract 1238 in the amount of $25,000 at a savings of approximately $18,000. Arrangements were also made with the Dept. of the Navy, Office of Inspector of Naval Material for the transfer of approximately $70,000 worth of electronic equipment at no charge for use by Yale Ion Accelerator; Princeton Project Matterhorn and Carnegie Institue of Technology.

Arrangements were made to conduct a meeting of representatives of Harvard University (Cambridge Electron Accelerator) and the Boston Navy Yard Division of Operations for the purpose of determining the Navy's willingness to undertake certain machining operations for the Magnet. These would consist of punching 500,000 Magnet Laminations (24" on sides) for approximately 300 tons of transformer iron. There would also be coil windings for large electro-magnets (48 coils of 1 ton each). The Navy has our proposition under advisement and will notify the Harvard representatives of their decision in a few weeks.

There were 195 trips made by 6 vehicles for a total of 15,824 miles travelled.

There were 1102 troy ounces of contaminated and uncontaminated platinum received for processing during the reporting period worth approximately $110,200.00. Shipped out during the same period were 982 troy ounces of pure platinum for a total value of approximately $98,200.00.

During the reporting period there were a total of 11 contract closeouts completed.

During the Fiscal Year 1957, there was a total of $45,960.88 worth of excess personal propery disposed of. These included transfers to other AEC Installations, other Government agencies and donations to Health and Educational Installations.

Property Management Appraisals were made of Columbia University, Contract GEN-72 and Sylvania Corning Corp., Contract GEN-366.

USDOE 001218

Records Management

A Records Management Appraisal was performed at Sylvania Corning Nuclear Corporation.

A visit was made to the Princeton Area Office and Project Matterhorn to assist them in establishing mail and records procedures.

The task of bringing the technical reports card indices up to date has commenced.

Procurement

Purchasing activity in June was heavy. This was due in part to the invitations to bid which were issued to cover term contracts proposed for Fiscal Year 1958.

During Fiscal 1957 the Procurement and Traffic Branch purchased a total of 6010 line items. 2407 requisitions were converted to 2696 purchase transactions, totalling $426,594. This represented a slight increase over the previous fiscal year's activity.

The total number of Government bills-of-lading issued in Fiscal Year 1957 was 71. Cost of transportation approximated $6,000 for movements totalling 46,000 pounds. We were able to effect savings of $1,828 in our traffic operations.

Contracts

Columbia University, Contract AT(30-1)GEN-72

NYOO approved the purchase of a 256 channel-analyser for the physics research program of Dr. Havens. The approved price was $22,774.

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909

On June 12th, the definitive contract for development, design and construction of the 6 BEV electron accelerator was executed by NYOO. This completed the negotiations that began in April of 1956.

Bids for the laboratory-control building were opened on June 21st. On June 24th, the Deputy Director of Contracts visited Harvard with a staff engineer to examine the bids and to bring them to NYOO for review. The NYOO Contract Review Board completed its review on June 27th and endorsed Harvard's recommendation of award to the low bidder, the Tredennick-Billings Company at $364,463. The architect-engineer had estimated a fair price of $408,000 and a minimum price of $351,600. Harvard was informed of NYOO approval on the same day and proceeded to execute the subcontract. Work began on July 1st. Bids ranged from $444,183 to $364,463.

USDOE 001219

On June 19th, Harvard requested authority to buy 340 tons of steel for the magnet. This request was referred to the Division of Research for approval as an item of advance procurement.

Harvard also submitted during June its proposal for future operations. NYOO staff review has been requested as a basis for planning negotiations. The Division of Research expects to have some operating funds available for January 1958. Harvard has been requested to describe in detail what services and costs it intends to cover through overhead since it requested its usual University research rate in the proposal.

Inter-American Institute of Agricultural Sciences, Contract AT(30-1)-2043

This contract for support of agricultural research and demonstration work at the Institute in Turrialba, Costa Rica, was executed late in June following completion of State Department review and a visit from the Institute's Administrator to Washington and New York. A typical cost-sharing, lump-sum type action was used with some modification to fit it for foreign use.

Lockwood Greene Engineers, Inc., Contract AT(30-1)-2046

Negotiations were completed and a letter contract executed with this firm for Title 1 work required for the proposed new office for NYOO at 201 Varick Street, New York. The contract provides an option for the AEC to proceed with Title II work. The estimated cost of this architect-engineer service is $28,000 and the fee negotiated is $6,000.

Nuclear Metals, Inc., Contract AT(30-1)-1565

NYOO had received the approval of the acting General Manager for modification No. 9 to this contract, which transforms Nuclear from the operator of an AEC laboratory to an independent research organization, the Treasurer of Nuclear visited NYOO to seek a revision of the ceiling on new building operating costs to be shared by AEC because of a significant increase in costs for the building special features. He was informed that NYOO could not consider such a change now, nor could we give any assurance that these increased costs would be recognized in the future. At a following meeting of Nuclear's Board of Directors, the modification was approved. Final execution is expected in July following a few minor nonsubstantive changes. Nuclear began construction of their laboratory building during June.

New York University Computing Center, Contract AT(30-1)-1480

The IBM 704 has been installed and will be in operation sometime next month.

USDOE 001220

Princeton University, Project Matterhorn, Contract AT(30-1)-1238

It was decided that architect-engineer work for site preparation for the Model "C" work would be obtained through a prime contract with Walter Kidde Constructors, Inc. and NYOO, rather than through subcontract with Princeton; and a letter contract has been executed with Walter Kidde for this work. Discussions with Headquarters and Princeton continue as to how the University and NYOO will contract for the design and fabrication of the device and for necessary buildings. The estimated cost is about $206,000 and a negotiated fee of $37,000. The contract covers work beginning in April.

Princeton University, Proton Accelerator, Contract AT(30-1)-1916

Negotiations are continuing for the definitive contract. The principal points in issue are overhead and the relative rights of AEC and Princeton for access to and use of the machine.

University of Rochester, Cyclotron Project, Contract AT(30-1)-875

The University received bids on June 21st for construction of the Elementary Particle Physics Building. Bids are now being analyzed by the University preparatory to recommending award.

Yale University, Heavy Particle Linear Accelerator, Contract AT(30-1)-2052

A definitive contract was executed with Yale for research and development utilizing the accelerator previously designed and constructed under Contract AT(30-1)-1691. The Commission has the right to determine the research for half the operating time of the machine and has a voice in use of the remaining time, through a requirement for mutual agreement. The Commission also has the right to determine the emphasis to be placed upon various projects under this contract.

Material Loan Contract

Negotiations for the loan contract with New York University for its subcritical assembly material continued suspended pending Commission action upon revised terms for such loans. As for the reactor fuel loan to the Pennsylvania State University, following discussions with the Division of Reactor Development, the University was requested to sign the contract at once or to state its objections without further delay so that the issue can be brought to a head. The University attorney said that the contract would be signed in its present form.

Inspection Division

During June, sixty-eight 10 CFR 30 (Byproduct Material) licenses and five 10 CFR 40 (Source Material) licenses were received for inspection. This made a total of 1,212 Byproduct Material licenses and 232 Source Material licenses which is a grand total of 1,444 licenses.

USDOE 001221

Twenty Byproduct Material licenses and five Source Material licenses were inspected.

One minor incident involving the accidental discharge of 50 curies of tritium was investigated.

The Assistant to the Director attended a three day meeting of the Health Physics Society in Pittsburgh, Pennsylvania.

Personnel

Federal Personnel Statistics

During the month the following personnel activities took place:

46	interviews with prospective candidates
11	screening, preliminary or courtesy interviews
22	interviews with candidates and operating officials
34	job evaluations completed
7	selections of candidates
25	persons entered on duty

An O & M study and classification review of positions in the Accounting Branch, Budget and Finance Division was completed in connection with a reorganization of that Branch.

The Personnel Officer attended a meeting with Army Classification Officers to discuss the wage board jobs in NYOO. A subsequent meeting is to be arranged.

An O & M study of the Mail and Records activities of the Administrative Operations Division was completed. This review was made to determine staffing needs.

A Training Program for secretaries is being developed by Records Management and the O & P Division for presentation in the early fall.

The Director met with the Brookhaven Area Manager on June 10th to discuss salary administration matters of the Brookhaven National Laboratory.

On June 12th, the Deputy Director met with staff of the Industrial Relations Branch, O & P Division, Headquarters to discuss contractor industrial relations matters.

The Director met with several members of Headquarters Divisions on June 26th to discuss various O & P matters.

Reimbursement authorization was issued approving new salary ranges for administrative and scientific employees of Brookhaven National Laboratory.

USDOE 001222

Ten college juniors and four high school teachers began work in HASL as part of the summer work and training program.

Public Information

Considerable time was spent planning press coverage for the installation of the IBM 704 Computer at New York University. The Director and Assistant, Public Information Service, met early in the month with representatives of NYU and IBM for an initial planning session and several successive meetings were also held. Open House for the Computer is set for August 15.

Newspaper requests for information was high. Representatives of the Syracuse Herald, Cleveland Plain Dealer, New York Times and New York Mirror were among those serviced.

Assistant, Public Information Service, had several conferences with Harvey Cort, CBS-TV, to further research an "atomic age" television series for the fall. Mr. Cort and Howard Robman, also of CBS, visited NYOO and spoke to the Manager and HASL Director. Director, Public Information Service, left in late June to assist in Public Information plan at Las Vegas.

Routine requests for films were approximately the same as in May. The Film Library made available 260 films which were shown to approximately 12,000 people. Much time was spent, however, in film consultation and future booking for fall programs.

Technical Liaison

Access Permit Program

Secret Permits	2
Confidential Permits	2
Total New Permits	4
Terminations	1
Converted from Confidential to Secret	1
Secret on hand	226
Confidential on hand	203
Total Permits	429

Accountability

Several visits were made to the Sylvania Corning Products, Inc., Plant B, Hicksville, L. I., to inspect and consult with S & C personnel on matters pertaining to the fabrication of the Brookhaven National Laboratory Reactor Fuel Elements.

Sylvania Corning Products, Inc., Metallurgical Laboratory, Bayside, L. I. was visited for the purpose of consulting and assisting S & C personnel in rewriting and revising their Source and Special Nuclear Materials Accountability and Measurement Manual.

USDOE 001223

Technical Liaison representatives attended the seventh annual AEC - Contractor SS Materials Management Representatives Meeting in Washington, D. C.

On behalf of the Division of International Affairs, Washington, a Technical Liaison representative participated in the transfer of special nuclear material to the Canadian and Belgium Governments.

Technical Liaison representatives, the NYOO Deputy Manager, and personnel from the NYOO Legal Division met with representatives from Sylvania Corning Products, Inc., Daystrom Corporation and Brookhaven National Laboratory to discuss a contract for the fabrication of fuel elements for the BNL's Medical Reactor.

Construction and Engineering Branch

Attendance at staff conferences of the CEA and PPA Projects. Visits to the offices of C. T. Main, Inc., Boston, Mass. and Gibbs and Hill, New York City to review A/E services being furnished by these firms in connection with the CEA and PPA Projects.

Review of plans prepared by Walter Kidde Constructors for development of Model "C" Site.

Visits to 4-6 Washington Place to determine progress of construction in connection with the installation of the IBM 704 Computor Facility.

Participation in discussions preliminary to selection of Theobald Smith House for Model "C" contractor personnel office space.

Visit to Yale University Linear Accelerator Project to observe progress on erection of equipment.

Visits to University of Rochester to attend bid opening for construction of Elementary Particle Physics Building.

Liaison with GSA to coordinate planning in connection with NYOO housing at 201 Varick Street.

Participation in negotiations with A/E Lockwood Greene Engineers, Inc.

Security

Personnel Security Branch

A total of 496 clearance actions were completed. 183 were under contracts, and 313 were under Access Permits.

Six applicants for security clearance were informally interviewed at the request of other Operations Offices.

USDOE 001224

Fifteen applicants for security clearance under activities administered by NYOO were informally interviewed.

Additional actions were completed on three pending formal hearing cases.

Twenty-five indoctrination interviews were given to new employees of NYOO.

Six exit interviews were given to terminating employees of NYOO.

Fifty-four contractor clearances and 30 Access Permit clearances were terminated.

Physical Security Branch

During June, an initial security inspection was conducted at two contractor installations for other Operations Offices. Both resulted in recommendations that they be approved as security facilities.

Twelve established contractor installations were re-inspected.

Initial security inspections were conducted at fifteen Access Permittee locations and approval for the receipt of classified documents is being withheld pending compliance with Commission requirements. Nine of these permits are "Secret" and eight "Confidential".

Two approved "Secret" Access Permittees were re-inspected for other Operations Offices.

During the week of June 3rd, a Security representative attended a meeting at Washington Headquarters Office on Intrusion Alarm Systems, which was attended by representatives of each Security Division of the Commission.

Visitors to Administrative Offices

Date	Name of Visitor	Staff Member Visited	Subject of Discussion
6/3	John Kelly, MA, Wash. H.C. Brown, Jr., B&M, Wash. H.S. Traynor, GM, Wash.	M. Eisenbud	Radiation detection
6/5	Cathy Covert, Syracuse Herald	G. Urrows	Radiation story
6/6	Edward Macy, Personnel Director, BNL	G. Hubbell	Salary administration at BNL
6/10-14	G.E. Stewart, S. Milligan, R.W. Pearson, all of C & S, Wash.	Graup, Baum, Maffucci, Merola	Appraisal (Property Management)

USDOE 001225

6/10-14	G.E. Stewart	Hodnett, Chomiak	Traffic Appraisal
6/18	Rodney Stahl, N.Y. Mirror	M. Mangan	N.Y. Mirror story
6/28	Harvey Cort & H. Robman, CBS-TV	M. Eisenbud, M. Mangan	Background for CBS-TV series

USDOE 001226

HEALTH AND SAFETY LABORATORY

Consultation, Educational and Other Staff Services

Handling of Beryllium Machining

At the request of Massachusetts Institute of Technology Instruments Laboratory, a representative of the Industrial Hygiene Branch visited their laboratory. The purpose of the visit was to present H & S considerations in handling of beryllium machining to a group of potential manufacturers of a directional sensing device. In addition to the oral presentation, copies of various documents prepared by HASL were distributed.

Technical Assistance - Industrial Hygiene Branch

Dr. Anna M. Baetjer, John Hopkins University	Beryllium machining and ventilation (letter)
Mr. John L. Donavan, Curtiss-Wright, Quehanna, Penna.	beryllium fabrication (letter)
Dr. Robert Verhaaren, Ford Instrument, L. I. C., N. Y.	beryllium hazards (letter)
Mr. Lionel Lewis, Combustion Engineering, Windsor, Conn.	beryllium oxide wash and induction melting of uranium (letter)
Mr. R.J. VanVonderen, Hardware Mutuals, Milwaukee, Wisc.	beryllium toxicity (letter)
David O. Lintz, Wright Air Development, Center, Ohio	collection of fallout samples (letter)
Dr. Newmark, Allied Chemical, Morristown, New Jersey	air pollution and waste disposal (phone)
Arch Epstein, Beryllium Corporation	effluent problems (phone)
Mr. Gella, Bridgeport Brass	extrusion of ingots (phone)

Consultation Services - Radiation Branch

New York State Department of Labor: regarding the accumulation of radiation exposure data for test cases involving violation of Industrial Code Rule No. 38.

Department of Labor and Industry of New Jersey: regarding hazards involved in the establishment of research laboratories at Princeton, New Jersey.

USDOE 001227

North American Philips: regarding possible medical treatment for over-exposure to radiation.

Bell Laboratories, Murray Hill, New Jersey: regarding the use of cobalt-60 in a civil defense test.

New York State Department of Labor: regarding radiation hazards in television picture tube boosters.

The Electric Boat Company: regarding neutron instrumentation.

Consultation - Schools

The Laboratory summer training program for college juniors and high school science teachers was again activated during June.

Mr. Samuel Hirschman, a science teacher from Great Neck, Long Island, N.Y. visited the Laboratory with approximately 20 students.

Meetings

The Chief, Radiation Branch, attended a special meeting of the AEC Advisory Committee on Biology and Medicine which met with Commissioner Strauss.

HASL representatives attended a meeting of the American Nuclear Society in Pittsburgh. A portion of a paper entitled "Theoretical Possibilities and Consequences of Major Accidents in Large Nuclear Power Plants" was presented by a member of the Radiation Branch.

HASL representatives attended a meeting of the Health Physics Society in Pittsburgh.

Symposium on Analytical Progress in the Nuclear Field, at Purdue University, Lafayette, Indiana, June 13 - 15 was attended.

Seminar on Sr-90 in Milk at the National Dairy Research Laboratories, Inc., Oakdale, Long Island, June 19th. Chief, Analytical Branch spoke.

The Deputy Director represented the AEC at the dedication of the I T & T Standards Laboratory at Clifton, New Jersey on June 11th.

Meeting in Washington re: Stratospheric Sampling on June 24th was represented by HASL.

Publications

Report NYO-2065, "Measurement of the Scatter Component from a Kilocurie Cobalt-60 Source" by Leonard R. Solon was completed and submitted to the Technical Information Service for reproduction and distribution.

USDOE 001228

Environmental Health Services

Aeroprojects, Inc.

The report has been submitted covering thorium air concentrations at Aeroprojects, Inc. Aeroprojects is carrying on a development program to evaluate the liquid metal fuel components. Analysis of the samples for thorium indicated minimal concentrations.

Brookhaven National Laboratory

At the request of the Manager of Operations, an extensive investigation was made of an explosion which occurred at BNL on May 15th. The results of this investigation were prepared for the presentation of the Manager to the General Manager. The report contained a detailed explanation of the causes and effects, together with recommendations for the improvement of operations of this type at BNL.

Calibration

A number of instruments were calibrated for the New York State Department of Labor.

Middlesex Sampling Plants

A report has been transmitted to the New Brunswick Laboratory covering a survey of approximately 150 surplus items presently being stored at the Middlesex Sampling Plant. These items were surveyed for surface alpha and beta-gamma activity. It was recommended that all items be disposed of according to various sections of AEC Manual 5170-1411 and 5182.

Nuclear Metals

A Fire and Safety Protection survey was made of the Hood Building and the Albany Street Building of Nuclear Metals. In general, fire and safety hazards appear to be under good control. Several recommendations of a relatively minor nature were made to improve the safety status of the operation.

Rocky Flats

At the request of the Director of Biology and Medicine, a representative of the Industrial Hygiene Branch visited the Rocky Flats plant of the Dow Chemical Company to investigate an explosion which occurred at that plant. Purpose of the investigation was to provide a critical review of the procedures followed by health personnel and operating personnel immediately after the incident. A report has been transmitted forwarding the findings.

USDOE 001229

Meetings and Conferences

Waste Disposal Meeting

Mr. Daniel Lynch, Consultant of HASL, presented a talk to the Laboratory staff on his attendance at the waste disposal meeting recently held at Johns Hopkins.

Radiation Conferences

The Chief of the Radiation Branch visited the Cambridge Electron Accelerator Site to discuss the employment of movable shielding blocks with Dr. Livingston.

The Chief of the Radiation Branch visited the Yale Linear Accelerator which is nearing completion to discuss the radiation protection program.

The Chief of the Radiation Branch visited the Sloane-Kettering Institute at Dr. Laughlin's request to review recent development in the calorimetric measurement of radiation.

Nuclear Metals in Cambridge was visited to discuss certain hazards. Feasibility Reports to be reviewed by the NYOO Nuclear Safety Committee.

A visit was made to Washington at the request of Dr. C. Beck of the Division of Civilian Application to review research proposals involving reactor safety.

At the request of Dr. D. Worf from the Division of Reactor Development, a representative of the Radiation Branch visited him in Washington to discuss a radiological survey of New York Harbor proposed by the DRD in cooperation with the Coast Guard.

Syracuse Herald Journal Article

Radiation background measurements were discussed with Cathy Covert, a feature writer on the staff of the Syracuse Herald Journal, at the suggestion of Dr. Bentley Glass of Johns Hopkins. She has expressed an interest in writing a series of articles on Dr. John Gentry's proposed report on the relationship between congenital malformations and radiation background.

Washington Conferences

HASL representative participated in a meeting held in Washington called by Commissioner Libby on the subject of radiation background measurements.

USDOE 001230

Surveys

Analytical Support for Field Surveys

SUMMARY	RECEIVED	RUN	BACKLOG This Month	BACKLOG Last Month
Uranium				
Air Dust	140	485	83	428
Urinary	266	214	122	70
Misc	14	0	14	0
Beryllium				
Air Dust	218	46	187	15
Urinary				
Misc	61	0	61	0
Radium				
Urinary				
Misc	14	0	14	0
Radon	50	50	0	0
Thorium	13	6	7	0
Thoron				
Fluoride	18	106	18	106
Misc				
U-235 Urine	0	0	12	12
U-233 Urine	0	0	3	3
TOTALS	794	907	521	634

Survey of Uranium Mills

At the request of Mr. Robert Barker of the Division of Civilian Application, Washington, a meeting was called to discuss the Health and Safety Laboratory surveys of the uranium mills. The meeting was attended by Dr. Tom Ely, B&M, Richard Kennedy and Ernest Van Blarcom of the Division of Raw Materials, Kenneth Orski, Ralph Borlick and Robert Barker of the Division of Civilian Application. The Division of Civilian Application has requested that several items of investigation be carried out in the course of our studies in order that more complete information may be obtained. There was general agreement on all aspects of the meeting.

Fundamental Studies

Background Measurements

Background radiation measurements were made by the Radiation Branch at the proposed Health and Safety Laboratory location at 201 Varick Street, New York.

USDOE 001231

Instrumentation

DTR System

Additional statistical data has been taken on the first unit and is normal. The principles of operation checks out as designed. On the addition of two more counters some interaction (transfers spurious pulses) was encountered and is being eliminated from the operation. Equipment is moving towards routine operation, however, it is being thoroughly checked to eliminate any possible maintenance problems.

Radon Equipment - DTR

The transistorized circuitry has been assembled and tested with the chamber and operates completely satisfactorily. A final layout will be made before investigation of background counting can be completed.

Low Level Counting Equipment for Strontium-90

The test Libby Counter tube which has a stainless steel wall is operating at approximately 0.3 counts per minute background. The Mylar counter tubes, which were operating satisfactorily showed an appreciable rise in their background to approximately 0.9 counts per minute. These are being rebuilt and further tests must be performed.

The six position geiger counter unit has been operating satisfactorily during this period.

Nuclear Safety

The following feasibility reports were reviewed and approved by the Nuclear Safety Review Board:

NMI-FR-7A: MODIFICATION OF FEASIBILITY REPORT NUM-FR-7 FOR FABRICATION OF COEXTRUDED ENRICHED URANIUM ALUMINUM ALLOY TUBES FOR WESTINGHOUSE

SYLVANIA CORNING FEASIBILITY RPT. NO. 42 (SPONSORED TASK C-60) AEC, SCHENECTADY SUPPLEMENT NO. 6 TO FEASIBILITY REPORT NO. 35 SPONSORED TASK C-36

Weapons Effects

Operation Plumbbob

Monitoring equipment for Project 32.1 has been installed at the Nevada Test Site and will be calibrated prior to the first countermeasures event. Personnel of the Industrial Hygiene, Radiation and Instruments Branches participated in the field. Equipment for off-site monitoring by the Public Health Service is operating satisfactorily.

Fallout

6,940 fallout samples were processed during this period.

USDOE 001232

Visitors to the Health and Safety Laboratory

Date	Name of Visitor	Visited	Subject of Discussion
6/3	Mr. Harry Traynor, Howard Brown, John Kelly: AEC, Wash.	Blatz, Solon	HASL participation in Inter-Agency Trouble-shooting program; visit to one troubleshooting location
	Capt. R.H.Smith, US P&I Agency	Harris	Radioactivity shipboard hazards
6/4	Dr. Merton Beeler, New England Deaconess Hospital, Boston	Lough	Cosmetic uses of isotopes and regulations
	Dr. Chas.E.Miller, ANL	Lough LeVine	Whole body counter
6/5	Dr. D.Beninsen, UN Scientific Committee on the Effects of Atomic Radiation	Harley	UN report on radiation
	Mr. Carlos Martinoya, Chief, Lab. of Nuclear Physics, Santiago, Chile	Lough	Purchase of electronic equipment
6/6 18	Mr. R. Stahl, NY Daily Mirror, L. Hoffman, photographer	Harley	Article on radiation
6/7	Dr. Frank Owings, TIS, Wash.	Blatz	Draft of book on shielding by Dr. H. Goldstein
6/11	Mr. Less Crawley, Alcoa	Harris	Magnesium thorium alloy cutting and machining
6/12	Mr. Ladd, Cooper Development Corp., Monrovia, Calif.	Harris	High altitude sampling
	Dr. Herbert Goldstein, NDA	Blatz	Resolution of controversial aspects of book on shielding
	Dr. Elda Anderson & Mrs. D. Bolton, NYU	Eisenbud Lough Blatz	Aspects of the cooperative HASL-NYU training program

USDOE 001233

6/13	Mr. John Kelly, MA, Wash. Don Gale, Naval Research Lab.	Solon	Plan for the Inter-Agency training program
	Mr. Frank Brannigan, O & P, Wash.	Harris, Weinstein	Training aids
6/14	Dr. D. Sharpe, American Nuclear Science Corp.	Whitnah	Contract for radiochemical analyses
6/17	Mr. Kailo, City Administrator's Office, Radiological Advisory Committee	Lough	Radiological Unit in NYC
	John Kelly, MA, Wash. and Dr. K.Spangenberg, Stanford University	Solon, LeVine	Image converter
6/20	Dr. R. Boss, Dr. W.Chapman, Dept. of the Navy	LeVine	Instrumentation
	Dr. Udell, NYS Dept. of Labor	Blatz	NY State Industrial Code
	Mr. O'Hara, NYC Police Dept., Bomb Squad	Blatz, Solon	Unclassified matters of radiation and nuclear safety
	Prof. Morris Shamos, NYU	Blatz	Radiation protection and use of byproduct material
6/21	Messrs. Thaxter and Morrow, UCLA	Harris	Health hazards of beryllium and uranium
6/24	Mr. John Evans, Lockwood Greene	Lough	Varick Street plans
	Mr. Walker, Dow Chemical, Denver, Colorado	Harris	Beryllium engineering
6/25	Dr. H. Snyman, Univ. of Praetoria, So. Africa	Lough, Harris, Harley	Epidemiology of non-communicable diseases
6/26	Mr. Battis, Fed. Metals Div., American Smelting & Refining	Harris	Scrap processing
	Mr. Allan Hughes, Hughes Organization, New York	Lough	Fallout during last 45 days
6/28	Mr. H. Cort and H. Robman, CBS-TV, N. Y.	Harley	Laboratory tour
6/14	Mr. G.H.Cameron, NYC Dept. of Hospitals	Blatz	Sampling and evaluation of airborne radioactive contamination

USDOE 001234

SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR JUNE, 1957

BROOKHAVEN AREA OFFICE

Alternating Gradient Synchrotron

The re-evaluation of the AGS Project has been received and reviewed by the Area Office and is being forwarded to Washington. The overall schedule for completion of the project remains the same, but the cost, exclusive of contingency, exceeds the presently approved amount of $26,000,000 by $826,000. As to schedule, internal schedules for components of the project are being examined and new curves for the overall project will be submitted to Washington upon receipt of instructions from the Division of Biology and Medicine as to action to be taken in connection with the revised project estimate.

An AUI subcontract for the Magnet Cores was forwarded during June to Washington for approval. Subcontracts for the Magnet Coils, Target Building Shielding Blocks and RF Ferrites were forwarded during the month to New York Operations for approval.

During June the floor slab of the Magnet Enclosure and the thick shielding foundation mat were completed. Sixty-one special pile caps were poured, making a total of 91 of 120 completed. Metal siding was substantially completed on both the Target and Linac Buildings. Magnet Enclosure overhead crane was erected. Waterproofing the exterior of the Magnet Enclosure was 50% completed, and a substantial start was made on the earth backfill. The Linac Building ground floor slab and 50% of the Linac Tunnel were poured.

At the end of the month the steam fitters, the sheet metal workers, and the ornamental iron workers left the job; and the local concrete plant has advised it will be forced to cease operations if the cement plants remain shut down. The job will be seriously delayed if these strikes are not settled during early July.

18" Cyclotron Building

During the month of June the A/E submitted Title II drawings and specifications which have been given final review by AEC and AUI. Advance notice was mailed to approximately 80 construction contractors.

Hot Laundry and Reclamation Facility

Title I work was submitted by the A/E to AEC for review. Review of changes and specifications of Title I work is being made and will be returned to the A/E so the necessary changes can be made.

UNCLASSIFIED

USDOE 001235

Engineering Works Area

This project was completed on June 19, 1957, with a small list of exceptions. On this date the building was transferred to Brookhaven National Laboratory for operation and maintenance.

Medical Research Center

This job is now 35.6% complete. During the month the Hot Therapy room, the High-Low Level Counting Room roof, and miscellaneous foundations and walls in the Reactor Wing were poured. Form work for the Hot Source Area and the first floor slab in the Reactor Wing were started.

The installation of electrical, plumbing, sprinkler and heating, ventilating and air-conditioning utilities are making substantial progress in all areas. The installation of pipe insulation and HVAC instrumentation was started.

Daystrom has solved their previous difficulties with the reactor control rod drives and has started manufacture of these components. Complete shipment should be made in the near future.

Liquid Metal Fuel Reactor Experiment
(Babcock and Wilcox Company)

Construction of four test loops for investigation of the suitability of Croloy 2¼ for use with liquid bismuth is progressing. Two loops will be fully annealed, and two will be normalized and tempered.

The Research and Development section of the Phase I report was completed. A sampling system suitable for use on the LMFRE was also completed.

Shielding calculations were made to determine the gamma spectrum at the core surface, fission product activity in the various component cells, and required fitness of the reactor cell plugs. Reactor start-up studies were completed for various rod withdrawal speeds at various fuel circulation times. No difficulty is expected in obtaining a perfectly safe operating procedure.

The tilting capsule program is under way and is now checking chemical cleaning methods. Results to date indicate that sand blasting and cleaning with inhibited 5% HCL solution followed by treatment with 5% iodine solution in methanol provide a metal surface which is most easily wetted by bismuth alloy. Procedures are being developed for analyses of uranium, zirconium, magnesium, iron and bismuth by both wet chemical and spectrographic methods. The determination of rare earth and thorium has been initiated.

USDOE 001236

A study of Radiation Test Loop No. 1 indicates the system containment requires cooling in the event of a vise in ambient air during operation. The preliminary design of Radiation Test Loop No. 2 is progressing. Facilities for Radiation Test Loop No. 3 have been offered in the MTR. Evaluation of these facilities based on the available flux is in process.

Cosmotron

Assembly of the Cosmotron was completed on or about June 18, and preliminary attempts were made to obtain a high energy proton beam. Unfortunately, oil vapor from the diffusion pump was admitted to the accelerating tube of the Van de Graaff Generator on June 27. Contamination was so severe that the accelerating tube has had to be replaced. Conditioning of this new tube will begin the latter part of this week, and it is expected that test operation of the Cosmotron will be resumed shortly after the July 4 holidays.

In the meantime the shielding is being replaced. The South Straight Section is much better shielded than ever before. The grouting of the floor permits a loading of six tons per square foot. Iron shielding plates from Oak Ridge are also being installed. Several bubble chambers are being tested so as to be in readiness for experimental runs. Improvements are being made to the radio-frequency system, the magnet cooling system, and in the motor generator room.

60" Cyclotron

A two-week shutdown period had to be scheduled during the past month in order to repair a shorting bar and a diffusion pump. Three or four additional days may be needed because of difficulties experienced in welding on the pump. Except for these repairs the Cyclotron has been operated satisfactorily for the use of the Physics and Chemistry Departments, for Princeton University, and in connection with a joint project involving the Medical Department, Mt. Sinai Hospital, and Johns Hopkins University.

18" Cyclotron

Lack of stability in the oscillator radio-frequency has been a nuisance and in some instances the source of error in measurements. To improve matters in this direction, the machine has been opened and the copper liners over the pile tips fastened in a large number of places. The heating of these liners and attendant mechanical warping during operating changed the dee to ground capacity, and therefore the frequency. A new circuit was also incorporated into the control system to stabilize automatically the oscillating frequency. These modifications have resulted in a marked improvement in the energy stability of the machine. Measurements indicate that the proton energy variation is now only about $\pm$ 9 kev at 3 mev. Other improvements during the shutdown were also introduced with the result that a focused beam of 100 μa is available, as compared with 50 to 60 μa previously.

USDOE 001237

Contract Actions

A letter contract between Babcock and Wilcox Company and Union Carbide Nuclear Corporation for LMFBR consulting services was signed and approved by AEC. Negotiations between the two companies are continuing with indications that a definitive will be signed before September 30.

A change to the Brookhaven National Laboratory financial plan was requested during the early part of the month. From all indications year-end cost for the entire Laboratory will be approximately $400,000 under the cost ceiling. The changes requested are as follows:

Reactor Development Program	- $400,000
Physical Research Program	- $100,000
Biology and Medicine Program	+ $100,000
Net Total for the Laboratory	- $400,000

Summer Program

The usual influx of visitors who will work at the Laboratory this summer has occurred. There will be over 250 in all.

Summer Student Program

Applications for this program were received from:
90 graduate students from 47 universities
336 undergraduate students from 102 universities
Appointments were awarded to:
41 graduate students from 24 universities
63 undergraduate students from 37 universities
80 of these appointments were accepted, as follows:
35 graduate students from 20 universities
45 undergraduate students from 26 universities
or, 80 students from 40 universities
In addition to the above about 12 graduate students have been appointed as research assistants.

Radiological Physics Fellows

Twenty-four AEC Radiological Physics Fellows are at the Laboratory for the usual nine weeks of field experience following an academic year's course at the University of Rochester.

Research Participation Program

One hundred scientists and engineers from 56 different universities, including four foreign universities, together with five from non-university research centers, are either here or will be here to engage in research programs with the Laboratory's facilities.

USDOE 001238

The Summer Institute in Nuclear Science and Engineering

Thirty faculty members from 28 different engineering schools reported July 1 for an eight-week course in the general field of nuclear engineering similar to that given in the summer of 1956. This summer institute is being sponsored by the Atomic Energy Commission and the American Society for Engineering Education. Five scientists and engineers from other universities have been given temporary appointments and will assist in the instruction given in this institute.

Research Reports

During this period twenty papers were approved for publication. This number included eleven on physical sciences, three on applied sciences, and six on life sciences.

Visitors

The Laboratory was visited by the following, among others:

12 New York University post graduate students, on May 28.

16 County Agricultural Agents of Southeastern New York, on June 3.

30 members of a course given at the Queens Hospital Center on the Medical Uses of Radioactive Isotopes, on June 4.

14 officers from U. S. Naval Air Development Center, on June 10.

108 members of the Society of Tool engineers, on June 15.

25 individuals attending a meeting of the Subcommittee on Acute and Chronic Effects of Atomic Radiation, on June 15.

19 members of the Indonesian Parliament, on June 21.

50 doctors taking a special course in Radiation Therapy at Columbia University, on June 25.

14 nurses from Creedmoor State Hospital, on June 26.

64 members of the American Public Power Association, attending their annual meeting in New York City, on June 28.

In addition to the above there were 103 scientific and technical visitors from other countries during this report period.

The Fifty Annual Naval Reserve Nuclear Sciences Seminar was held at the Laboratory May 26 - June 8 on the general subject of "Life Sciences and Atomic Energy." Fifty-eight officers from the Navy and Air Force attended.

The Tenth Annual Biology Symposium on the subject of "Hemeostatic Mechanisms" was held at the Laboratory on June 12, 13, and 14. Eighty-two representatives from forty-one different institutions attended.

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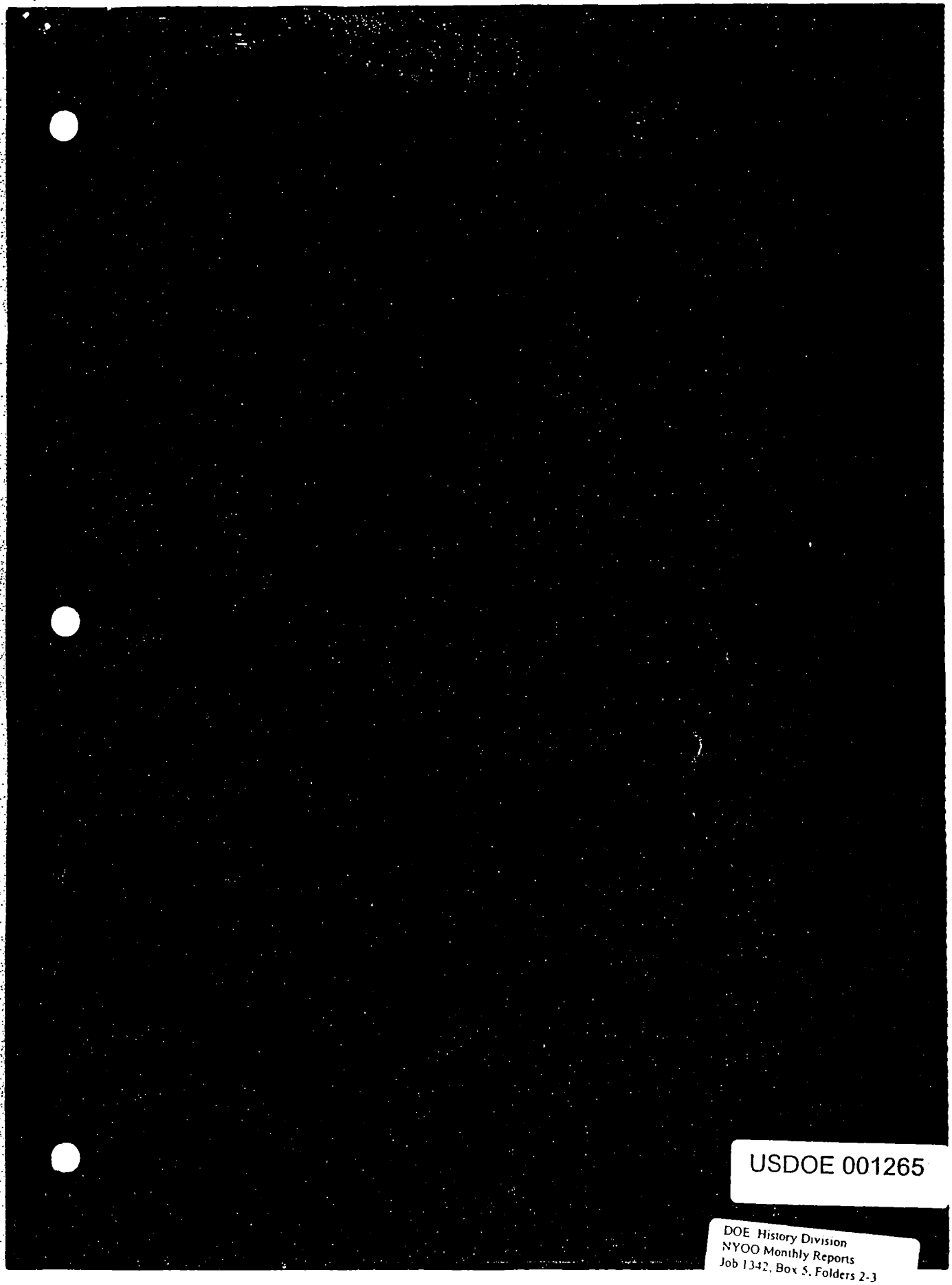

USDOE 001265

DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

JULY 1957

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SECTION I

NEW YORK OFFICE

ADMINISTRATION

Administrative Operations

Property

Sea immersion activities were coordinated by the Branch for the following:

Chicago Operations Office

Pittsburgh Area Office (Westinghouse)	148.8825 tons
Chicago Area Office (Pratt & Whitney)	9.45 tons
Total for July	158.3325 tons

New York Operations Office

Nuclear Development Corp. of America Contract 862	4.1475 tons

Contracts

Harvard University, Cambridge Electron Accelerator, Contract AT(30-1)-1909.

Work has begun on construction of the laboratory-control building for the accelerator project. The Headquarters' technical representative, Dr. C. E. Falk, has requested NYOO to begin preparation for negotiation of the operating contract. NYOO staff comments have been requested for Harvard's proposal for operations. NYOO referred a proposal from the Project to Research-Headquarters to extend the dates for definitive design of the magnet and the injector components. The Project issued bid invitations for four motor control units, and recommended award of an order for two electrical substations to the I. T. E. Circuit Breaker Co. at a fixed price of $93,000, subject to an escalator clause if shipment was delayed by the Project.

New York University Computing Center, Contract AT(30-1)-1480.

The IBM-704 computer is now in operation and its first AEC customer is receiving service. Machine time is available at the rate of approximately $450 per hour. The Manager announced availability of this service by memorandum of July 1st to all AEC operations offices and Headquarters Divisions with computing interests. The personnel for operating this equipment will be supplied by the University. The Center's technical staff is available for consultation in connection with problems of computation; and the analytical

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and numerical formulation of problems. The Center's research program includes methods and codes in Monte Carlo, neutronics, continum neutronics, reactor mechanics, accelerator design, numerical analysis; and general studies in elasticity, fluid mechanics and partial differential equations.

The modifications of other floor areas in the Computer building, to provide more space for the center, has been delayed somewhat by the cement strike in this area. The new space should be ready for use by mid-September.

Princeton University, Project Matterhorn, Contract AT(30-1)-1238.

AEC-Princeton joint negotiations have begun with Allis-Chalmers and RCA for the contract to design and fabricate the experimental Model C Stellerator device. NYOO is represented at these negotiations by the Director of Contracts and the Assistant Deputy Manager.

Princeton University Proton Accelerator, Contract AT(30-1)-1916.

Negotiations continue for the definitive contract. NYOO has submitted to Research-Headquarters the Project's request for a revision in the cost estimate and schedule for the RF power supply.

University of Rochester, Cyclotron Project, Contract AT(30-1)-875.

The construction subcontract for the elementary particle physics building was approved by NYOO and award made by the University.

Radio Corporation of America, Contract AT(30-1)-1958.

RCA's proposal to extend the term of this contract for photomultiplier tube development has been approved by Headquarters. Negotiations for the extension are in progress.

Sylvania-Corning Nuclear Corporation, Contract AT-30-1-GEN-366.

Since it has been decided not to install a plutonium laboratory for SCNC at the BNL site, SCNC has been requested to prepare the equipment purchased for this project for disposal. NYOO is informing other offices that may need special fume hoods and ventilating equipment. During the month, Sylvania gave discharge notices to a number of its staff employed on contract work.

Other.

A representative of the Contracts Division attended a meeting at Chicago, concerning fee negotiations and a proposed revision of the AEC Manual concerning overhead. The Division also was represented at the NYOO emergency relocation center during "operation alert" for this year.

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Inspection Division

During the month of July, 189 10 CFR 30 (Byproduct Material) licenses, and 6 10 CFR 40 (Source Material) licenses were received for inspection. As of the end of the month, this totaled 1,401 Byproduct Material licenses, and 238 Source Material licenses: a grand total of 1,639.

Personnel

The Division Director was granted a three months leave of absence to serve as AEC representative to a special Presidential committee studying the Federal civilian personnel salary and classification structure.

Ten NYOO employees completed a six week reading improvement course conducted by the Organization and Personnel Division. Subsequent courses are planned for other employees in the fall.

Public Information

During the month of July, the Public Information Service issued one press release reporting the shipment of uranium for a reactor in Frankfurt, Germany. Special assistance was given to the Public Affairs Division of Columbia Broadcasting System which is planning a fall one-hour program on radiation and to the New York Times which is preparing a series of articles on the Sunshine Project. A meeting was held with George Glasheen of the Public Information staff in Washington and Samuel Schenberg, Science Supervisor for the New York City Board of Education, to clarify problems involved in the editing of the booklet "Laboratory Experiments with Radioisotopes for High School Science Demonstrations" now under revision.

Arrangements were completed with New York University regarding a press conference on the new 704 Computer. The press release has been written and submitted to Washington for approval and the present schedule calls for the press conference to be held early in September.

A claim of possible eye injury as a result of viewing a test detonation from a road in Las Vegas was made to the Public Information Service by a Mr. Samuel Grad of Brooklyn, New York. He was advised to consult his eye doctor who in turn could discuss his findings with Dr. Lee Farr, Chairman, Medical Department, Brookhaven National Laboratory, if there was any need for consultation. Mr. Grad himself called Dr. Farr who offered to contact a Colonel Byrne, an expert in this field. Since Colonel Byrne was not immediately available and Mr. Grad wanted to be examined as quickly as possible, he was advised to see Dr. Conrad Berens of New York City, a retinal burn expert. Mr. Grad advised the Public Information office that Dr. Berens had said there was eye damage but that he could not be certain that it was due to retinal burn. Dr. Berens sent a report to Dr. Farr indicating that in his view Mr. Grad was suffering from transient ambly opia, not associated with the test.

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The Director, Public Information Service, served on the staff of the Joint Office of Test Information in Las Vegas for a period of two weeks.

A report of activities from January 1st through June 30th of the Public Information Service film library indicates that 1,724 showings were made to approximately 75,000 people. Use of these films was 3½ times greater in this six month period than in a seven month period reported in 1956.

Security

The Director, Security Division, the Branch Chief, and the Assistant Branch Chief of the Physical Security Branch met with representatives of Project Matterhorn, at Princeton, for the purpose of developing an appropriate physical security program for the Theobald Smith House, which will be used by the RCA and Allis-Chalmers group. As a result of this meeting, a program acceptable to all concerned is being established.

Technical Liaison

Wesley M. Johnson has been appointed Director of the Technical Liaison Division. Mr. Johnson transferred to NYOO from the Kansas City Area Office where he served as Manager under the Albuquerque Operations Office. The Director spent considerable time during July visiting major contractors under NYOO familiarizing himself with their programs.

The Director participated in Operation Alert at the local ERC as Operations Officer and the exercise moved smoothly.

The scientific staff participated in a review meeting at New York of various programs under the Washington Reactor Development Division. Mr. Roddis and members of his staff attended this meeting.

Access Permit Program

During July, 13 new access permits were assigned to NYOO; of these, 7 have access to Secret Restricted Data and 8 have access to Confidential Restricted Data. Three access permits have been terminated. This brings the total number of access permits to 441--233 have access to Secret Restricted Data and 208 have access to Confidential Restricted Data.

Nuclear Materials Management

1. An SS Materials survey was performed at Brookhaven National Laboratory as required by AEC Chapter 7404 SS Materials Surveys.
2. On behalf of the Division of International Affairs, Washington, a representative of this group participated in the following transfer of special nuclear material:
   a. One shipment to the government of the Dominion of Canada.
   b. One shipment to the government of the Federal Republic of Germany.

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c. One shipment to the government of Denmark.

Since the first shipment on February 18, 1957, there have been nine overseas shipments of special nuclear material from the New York Port of Embarkation in connection with President Eisenhower's Atoms For Peace Program.

3. Two shipments of 125 fuel elements each, were sent to Brookhaven National Laboratory by Sylvania-Corning Nuclear Corporation, Hicksville, Long Island. These represent the initial shipments of the 5,000 fuel elements which are being fabricated for Brookhaven National Laboratory.
4. Sylvania-Corning Nuclear Corporation, Plant B, Hicksville, Long Island. was visited by a representative of this group to inspect the performance of work pertaining to the fabrication of BNL elements.

Construction and Engineering

1. Consultations with C. T. Main, Inc., Boston, Massachusetts, and Gibbs and Hill, New York City in connection with A/E services being furnished by these firms to the Cambridge Electron Accelerator and Princeton Proton Accelerator projects, respectively. At CEA, a contract has been awarded and construction of a laboratory-office building has begun. At PPA, bids for the construction of the administration building are scheduled to be opened during August.
2. Submission to Headquarters of preliminary plans and specifications prepared by Walter Kidde Constructors, Inc. for the development of the Model "C" Site. Consultations with Princeton personnel and Headquarters Divisions of Research and Construction and Supply concerning these plans and specifications.
3. Supervision of the activities of Lockwood Greene Engineers, Inc. in the preparation of plans and specifications for NYOO housing at 201 Varick Street.
4. Visits to 4-6 Washington Place to determine progress of construction of the IBM-704 Computer Facility.
5. Coordination and control of University and A/E activities in connection with two additional buildings at University of Rochester, both of which are now under construction.

Technical

Harvard - MIT Electron Synchrotron AT(30-1)-1909

The MkIV Magnet is being assembled for testing this fall, and final results will be used in design and construction of 102 magnets. Work on magnet coils and cooling coils is proceeding satisfactorily. At a staff meeting on July 8th, the present status of the components which will make up the accelerator was discussed at length. During the summer, technicians from nearby colleges have been working on the project.

Princeton-Pennsylvania Proton Accelerator AT(30-1)-1916

Project leaders reported on their assigned components at a staff meeting

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held on July 2, at the Palmer Physical Laboratory. After contacting sources of supply of ferrite, ferroxcube was selected as having the best quality for the cost. The ferrite is to be utilized as an inductor for the RF cavities and possibly for the rotating condenser in the RF Power Supply. Probes are being developed to make static and dynamic measurements on the magnet scale model. This will assist in the final design of the magnets.

MIT - High Energy Physics (ONR-AEC)

This work is being transferred to AEC (NYOO) for administration in Fiscal '58. Periodic visits are made, since many of the projects are directly connected with the Cambridge Electron Synchrotron. Projects such as Bubble Chamber Development and Particle Physics Experiments are in progress.

Nuclear Development Corp. of America (NDA)

Much of NDA's time during July has been devoted to the preparation of annual and topical reports on the 862 draft projects. A draft of Dr. Goldstein's Sheilding treatise has been submitted to Washington.

Sylvania-Corning Nuclear Corporation

Early July operation was limited due to exhaustion of funds and internal organization problems. The Bayside laboratory shut down for vacation during the last two weeks.

Aeroprojects, Incorporated

Ultrasonic breakup of large thorium bismuthide needles in liquid bismuth to produce equiaxed crystals has been successful on a laboratory scale. Brookhaven is interested in the extension of this technique to LMFRE. The compacting die used in Aeroprojects powder metallurgy work developed a crack, and a new die has been fabricated and is being heat-treated.

Princeton (Matterhorn)

A basic report, describing the Model "C" Machine (Project Sherwood) to contractors Allis Chamers and R. C. A., is scheduled to be issued in September.

N. Y. U. (Sherwood)

Assembly of the experimental group's plasma machine has been completed. Work will begin when the machine is relocated at 4-6 Washington Square. Plasma will be generated, using Bostick ion sources and experiments will be programmed to assist the N. Y. U. theoretical group.

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Operation Writer's Cramp, a series report on the work of the theoretical group since 1954 is expected to be in print early this fall.

General Electric Capacitor and M. I. T.

A meeting with the G. E. capacitor group at Syracuse and the M. I. T. dielectric materials group, was held at M. I. T. to discuss development of a high energy storage capacitor. The M. I. T. group was under the direction of Professor Von Hippel. G. E. Representative, D. Lupfer, said that the proposed ceramic dielectric, a 40% weight addition of Strontium titanate to Barium titonate, had withstood fields of 300 volts per mill without breakdown at densities of 98.7% of the theoretical densification. He felt that further densification would permit this material to quickly operate at the goal of 500 volts per mill. Both groups benefited from the meeting. Von Hippel's group confirmed many of the results arrived at by G. E. Further exchange of data and materials has been agreed upon.

M. I. T. (Plasma Physics)

Plasma are being generated in microwave cavities and energy is transferred to the electrons, utilizing the principle of cyclotron resonance. A large part of the effort involves development of diagnostic methods of studying plasma. At present, the diomagnetic effect of the plasma is being examined for the above utilization. A report on the project since 1956 has recently been issued.

Visitors to Administrative Offices

Date	Name of Visitor	Staff Member Visited	Subject of Discussion
7/8	Dr. Allen Butterworth Sr. Medical Officer Springfield UK	Eisenbud	Nuclear hazards
7/9-10	Mr. C. Vanden Bulck OROO	Clarke	Draft AECM 9500
7/23	Prof. Bancora	Eisenbud	General discussion
7/31	Chairman Strauss	Eisenbud	General discussion

USDOE 001273

HEALTH AND SAFETY LABORATORY

Environmental Health Services

Nuclear Metals, Inc.

An air dust survey was made of the Albany Street and Hood buildings at NMI. In addition, radioactive surface contamination measurements were taken at the Hood building. All samples were below maximum allowable concentrations, and surface contamination was not significant in the areas processing radioactive materials.

Brush Beryllium, Cleveland

A decontamination survey was conducted at Brush Cleveland. Results of smear samples indicated that decontamination could be accomplished by dry wiping of contaminated areas with subsequent spray painting. These recommendations have been transmitted to the contractor.

Brush Beryllium, Luckey

A report has been transmitted to Brush covering the survey of the occupational exposure of 198 employees at the Luckey plant to beryllium dust during the wee of January 21, 1957. The report noted a significant improvement at the plant and included general recommendations.

Fire and Safety

Safety and fire protection surveys were conducted at the Cyclotron Laboratory and the AEC Project of the University of Rochester and at the Sylvania-Corning Nuclear Corp., Bayside. The general condition of the areas appears to be good although minor recommendations were transmitted to the contractors. A quarter ly report on these and previously conducted surveys, including a summary of th report of the committee which investigated the recent Brookhaven explosion, was submitted to the Safety and Fire Protection Branch.

Background Radiation

Preparations were continued for a trip through the western United States to obtain measurements of background radiation. Members of the Radiation Branch performed field tests of the large ionization chamber designed in HASL in the New York City area to be used on the trip. Discussions were held with members of the Division of Raw Materials concerning geological aspects of the proposed route.

USDOE 001274

Analytical Support

SUMMARY:	RECEIVED	RUN	BACKLOG This Month	BACKLOG Last Month
Uranium				
Air Dust	949	199	833	83
Urinary	274	224	172	122
Misc.	180	14	180	14
Beryllium				
Air Dust	14	195	6	187
Urinary				
Misc.	0	43	18	61
Radium				
Urinary	16	0	16	0
Misc.	190	14	190	14
Radon	10	10	0	0
Thorium	0	0	7	7
Fluoride	0	0	18	18
Misc.	124	0	124	0
U-235- Urine	0	0	12	12
U-233- Urine	0	0	3	3
TOTALS	1757	699	1579	521

WEAPONS EFFECTS

Operation Plumbbob

Eight Laboratory personnel from the Industrial Hygiene, Radiation, Analytical and Instruments Branches participated in the fallout countermeasures and offsite monitoring projects at the Nevada Test Site during July.

The sampling and analysis of soil samples in the Sunshine project was the subject of a conference attended by the Chief of the Analytical Branch in Dr. Libby's office on July 22.

A total of 6,300 fallout samples were processed at HASL during the reporting period.

CONSULTATION, PUBLICATION AND OTHER STAFF SERVICES

Operation Alert

The Deputy Director of HASL participated in Operation Alert 1957, at the Federal Civil Defense Region 1 Headquarters, Harvard, Massachusetts.

Two members of the Radiation Branch served as damage assessment officers and AEC representatives to the Regional Mobilization Committee of Region 2 in Binghamton, New York; one member of the Industrial Hygiene Branch served in a similar capacity for the Regional Mobilization Committee of Region 3 at University Park, Pennsylvania. - 9 -

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The Chief of the Analytical Branch represented HASL at the Emergency Relocation Center, Brookhaven National Laboratory.

U. N. Scientific Committee

The Analytical Branch, in cooperation with the U. N. Scientific Committee on the Effects of Atomic Radiation, has prepared strontium standards for distribution by the Scientific Secretary of the U. N. Scientific Committee to Member Nations interested in beginning strontium analyses in their own laboratories. Dr. Dan Beninsen, of the Scientific Secretary's office, was accompanied by Mr. A. Fox, photographer from the U. N. press office on July 3 and 12, to receive the standards and prepare a press release with pictures of the various steps in sample preparation.

University of Oregon

Together with Dr. Bonner, the Chief, Biometrics Branch reviewed the work being done by Dr. E. E. Osgood of the University of Oregon Medical School, Portland, Oregon, on the control of peripheral blood counts, in patients suffering from leukemia, by exposure to whole body X-radiation or administration of P-32. In addition he consulted with them on their statistical problems.

Lithographic Film

At the request of G. V. Beard of the Division of Biology and Medicine, the Chief of the Radiation Branch investigated an inquiry received through U.S. Representative J. Harry McGregor of Ohio, from the Shaw-Barton Company of Cincinnati, regarding the possibility of fallout producing black specs which had been discovered on lithographs. No similar complaints were made by Kodak, Ansco or Du Pont. Representatives of the latter three companies indicated that lithographic film would probably be the last photographic product affected by fallout because of its low sensitivity emulsion. This information was transmitted to the Division of Biology and Medicine.

Licensing Activities

The Chief of the Radiation Branch advised Mr. Kieffer of the Sperry Company of AEC licensing requirements for obtaining irradiation services at Brookhaven for electronic components.

The Deputy Director discussed licensing procedures for handling radioactive isotopes with Mr. Vinciguerra of the State University of New York, and with Mr. Higgins of the Port of New York Authority.

At the telephone request of L. R. Rogers, Division of Civilian Application, rough radiation measurements were made of Army optical eyepieces received from the Edmund Company. Materials like these Army surplus items are at present exempt from AEC licensing provisions. The question was raised whether radiation levels were high enough to warrant licensing. Measurements

USDOE 001276

indicating levels of about 10 mr/hr at contact were reported to DCA.

Research in Japan

The Deputy Director participated in discussions with the Manager and Deputy Manager of NYOO; Mr. Saito, Member of Japanese Diet; Mr. Isawa, Interpreter; and Dr. Tajima, U. N. Secretariat, Scientific Committee on the Effects of Atomic Radiation, concerning research in Japan.

Cobalt-60 Irradiation

Copies of drawings of a cobalt-60 irradiator designed jointly by HASL and a private company several years ago, as well as other information on shielding requirements were supplied to W. J. Blair of the Hanford Atomic Products Operation.

Textbook by Dr. H. Goldstein

The Chief of the Radiation Branch recommended changes of statements regarding AEC policy and National Committee on Radiation Protection philosophy on radiation exposures in a forthcoming textbook by Dr. H. Goldstein, in a memo to A. F. Owings, Division of Information Services.

Inquiry from New Rochelle Civil Defense

A call was received by the Chief of the Radiation Branch from A. H. Brooke of the New Rochelle Civil Defense, regarding an increase in background radiation during July. He was advised that a normal instrument reading corresponding to 0.02 - 0.03 mr/hr had changed to 0.25 mr/hr on July 23.

Waste Disposal at Earle Ammunition Depot

Mr. R. Young of the Safety Office of the Picatinny Arsenal, Dover, N. J., inquired concerning radioactive waste deliveries to the Earle Naval Ammunition Depot. Young stated that a shipment from Picatinny was refused by Earle because it did not meet AEC specifications. The Chief of the Radiation Branch advised Mr. Young that these specifications applied only to an agreement between NYOO and Earle and covered only wastes produced by AEC contractors. Copies of the NYOO packaging specifications were forwarded to Mr. Young by the Property Branch, New York Operations Office.

Beryllium Control

An inquiry was received from Mr. James F. Trosch of Columbia University concerning the control of Beryllium exposures. Information concerning Industrial Hygiene and Analytical procedures of the Laboratory were furnished to Mr. Trosch.

USDOE 001277

INSTRUMENTATION

DTR System

Eight beta tape counting machines are now in stages of final test prior to release to the Analytical Branch. Of the eight units, five are completely satisfactory; the balance of three require minor circuit adjustments to insure meeting engineering specifications for this part of the system.

The central station is in final wiring form. Work is proceeding on installation of the paper tape punch which will eventually replace the direct card punch. The paper tape punch was selected finally because it has a storage capacity for 3,000 sets of data in contrast to the 500 card storage for the card punch and because the mechanical reliability is far greater. It is feasible to feed the paper tape data directly into the computer of the Alwac Corp.; if the IBM Service Bureau is used the paper tape data can be recorded on cards at minor cost.

The radon preamplifier and amplifier in transistor version are complete and ready for printed circuit layout.

Design has been started on control circuitry for insertion of dial and automatic counters into the DTR system.

Whole Body Counter

Shielding studies have been completed using steel and water. In general it is indicated that 20% of the radiation seen by sodium iodide phosphor appears in the horizontal, that 5% comes from the vertical toward the ground, and that approximately 10% comes from the ground upward.

Steel shielding cylinders six feet and eight feet long have been ordered from Idaho and should arrive during August, at which time a decision will be made on the method of final assembly. The six-foot cylinder with doors and end plug should weigh in the order of 16 tons; the eight-foot cylinder should weigh approximately 4 tons more. On this basis the long shield can be mounted either on one of the upper floors of the 70 Columbus Avenue building or in an existing small ramp area on the ground floor. Mechanical design of the shielding system is continuing.

The 4" thick by 8" diameter NaI phosphor has arrived and will be mounted on a 12" photomultiplier tube as soon as spinnings are received for assembly. Initial designs are under way for housing the tube.

Low Level Counting System

The six position geiger counter set used for strontium-90 measurements has performed reasonably well with but two minor breakdowns which were corrected

USDOE 001278

within a very short time. In the meantime a more reliable transistorized anticoincidence circuit has been completed and has been converted to printed circuit technique for fabrication.

The Libby Counter equipment has been operated for reliability checks. A steel wall tube has been installed as well as a mylar window tube. The steel wall tube is consistent at 1/2 count per minute background; the mylar window tube is inconsistent and operates with a background rate of from .4 to 2 counts per minute in a completely erratic manner. It is assumed that our technique of making contact to the aluminum on the mylar is at fault, since circuit checks reveal that the anticoincidence circuit is operating properly and that the high count is within the mylar tube. Studies are now under way to improve the contact procedure for the mylar tube.

Transistor Circuit Studies

In addition to the work described above, a transistorized binary array has been designed, checked and converted to printed circuit techniques. Based on test results, this binary circuit will be utilized in constructing the storage bank of a multichannel analyzer. It is expected, as well, that the basic blocks now designed will be applicable to several other instruments; satisfactory tests have been made of the following:

a. A slit analyzer using the gates of the multichannel arrangement.
b. A single channel analyzer with good stability characteristics.
c. Scaler blocks for routine counting operations.

A passive component log count ratemeter has been constructed and completed. Its present scale range covers somewhat more than four decades; it is operated from seven RM-12 mercury cells at a drain which permits 400 hours of life it has a built-in direct reading discriminator which can be adjusted to operate from a 3 to 5 volt pulse discrimination level.

A linear ratemeter circuit based on complementary pair trigger has been tested. It has seven scale ranges from 1 through 1000 counts per second full scale. Calibration is maintained within plus or minus 5% with a battery voltage span from 4 to 6 volts.

Nuclear Safety

The following feasibility reports were reviewed and approved by the Nuclear Safety Review Board:

1. SYLVANIA-CORNING NUCLEAR CORPORATION - FEASIBILITY REPORT NO. 43, CONTRACT C-207, PHILIPS PETROLEUM COMPANY.
2. NMI-FR-9, FEASIBILITY REPORT, AND NMI-FR-9a, SUPPLEMENT, FOR THE FABRICATION OF ENRICHED URANIUM ALLOY EBR-I, MARK III, FUEL ELEMENTS.
3. AMENDMENT NO. I TO SYLVANIA-CORNING FEASIBILITY REPORT NO. 41, SPONSORED TASK FORCE C-36 (PRATT & WHITNEY), DATED JULY 19, 1957.

USDOE 001279

It was brought to the Manager's attention that Sylvania-Corning possesses a special nuclear material license, No. 82, permitting the processing of unlimited quantities of uranium of any enrichment. Such a license does not appear to afford a means for review of individual fuel processing jobs by the NYOO Nuclear Safety Review Board or anyone else in the AEC. Clarification was requested.

The Board was reorganized effective July 29, with L. Solon replacing H. Blatz as a Board member and J. McLaughlin replacing L. Solon as Secretary.

VISITORS TO THE HEALTH AND SAFETY LABORATORY

Date	Name of Visitor	Staff Member Visited	Subject of Discussi
7/1	K. Speh, W. Horvath and R. C. Bostrom, Airborne Instruments Lab.	Radiation Branch	Method of scanning microscope slides in the counting of bilobed lymphocytes as related to small doses of radiation, and studied by Dr. M. Ingram of Roch Rochester.
7/3	K. Speh, W. Horvath and R. C. Bostrom, Airborne Instruments Lab.	Glauberman Christafano	Air sampling.
7/8,18	Dr. Dan Beninsen, U. N. Scientific Committee on the Effects of Atomic Radiation	Harley	Final edition of radiation report of U. N. Committee.
7/9	Mr. William Johnson, Wm. B. Johnson Associates, Inc.	Lough	Instrumentation.
7/9,29	Mr. Harold Smeck, N. Y. Times	Harley	Fallout measurement
7/10	Dr. Kiyoshi Kodaira, Nat'l. Inst. of Agricultural Sciences, Tokyo, Japan	Harley Hardy Hamada	Tour of HASL; soil analyses.
7/10	Mr. B. Miller, Henry W. Smith Co.	Weinstein	Hoods and dry boxes
7/10-12	J. Kelly, DMA: Don Gale and Mr. Onohundro, NRL	Solon	Interagency training program.
7/11	Dr. Norton Nelson, NYU-Bellevue Medical Center	Lough	HASL-NYU relationship.

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Date	Name of Visitor	Staff Member Visited	Subject of Discuss:
7/19	Lt. E. Epstein, NYC Police Dept.	McLaughlin	Training and equipping members of NYCPD as radiological surveyers; permissible levels recommended by NCRP; survey instrumentation.
7/23	Dr. Dan Beninsen, U. N. Scientific Committee	Harley	Strontium standards
7/23	Lt. Bower, U. S. Army	Glauberman	Beryllium hazards.
7/24	Mr. Martin Oulton, Army Signal Supply Agency, Philadelphia, Pa.	Lough	Availability of radioactive material for large-scale production of radioactive batteries. Referred to Division of Civilian Application.
7/25	Dr. Herbert Volchok, Isotopes Inc.; Dr. Paul Kruger, Nuclear Science and Engineering Corp.	Harley Whitney	Status of samples under strontium contracts.
7/31	Dr. Charng Ratanarat, Thai Atomic Energy Committee for Peace, Miss Chorumi Ratanarat, Maj. Gen. Sathit Vladyasastre, Rear Adm. Sombandhu Bonnag	Lough Harley	Tour of HASL and discussion of fallout collection methods.
7/31	Dr. Masashi Suzuki, Tokyo, Japan	Whitney Harley	Tour of Laboratory and discussion of analytical procedures.
7/31	Dr. T. D. Benjamin, Instructor, Teaching of Science, Columbia University and 15 students	Lough and HASL staff	Tour of HASL.

USDOE 001281

SECTION II

BROOKHAVEN NATIONAL LABORATORY
MONTHLY STATUS AND PROGRESS REPORT
FOR JULY, 1957

BROOKHAVEN AREA OFFICE

CONSTRUCTION PROJECTS

Alternating Gradient Synchrotron

Re-evaluation was forwarded early in July to the Washington office. The revised curves for the Construction Status Report have been developed and are to be forwarded early in August.

AUI subcontract for the Magnet Cores was approved by the AEC as were subcontracts for the Magnet Coils and the Target Building Shielding Blocks and purchase order for the RF Ferrites.

During the month floor slabs in the Magnet Enclosure, Linac Tunnel and Target Building were completed as was the siding on both the Linac and Target Buildings. Roof is substantially completed on the Linac Building and 60% complete on the Target Building. Fifteen Special Pile Caps were poured, bringing the total to 106 out of 120. Two large retaining walls at the end of the west experimental area were poured. Painting was completed in the Magnet Enclosure and Access Tunnels. Electrical work consisted of the hanging of all fixtures in the Magnet Enclosure, placing wireway trays and conduit and pulling wires. Erection of duct work was started and the running of steam and chilled water mains neared completion. Fabrication of special aluminum piping for the Magnet Cooling System was begun in shop. Eight-inch fire main to Linac Building was completed.

Trade union and cement workers strike reduced general contractor's work force from an average of 172 men in June to 136 in July. At one point the general contractor laid off all carpenters, laborers, and other cement trades in anticipation of a teamster's strike. This situation was quickly righted under pressure of Stone and Webster and Brookhaven National Laboratory. General contractor's work advanced only 8% during the month as contrasted with 12 - 15% in previous months. Work on the diffusion basins was substantially completed, and the well contractor completed the second test well and began work on one of the main production wells.

18" Cyclotron Building

During the month of July the A/E mailed plans and specifications to approximately thirty construction contractors.

USDOE 001282

Hot Laundry and Reclamation Facility

During the month of July Title I work was reviewed by AEC and BNL and was returned to the A/E to make the necessary changes.

Medical Research Center

This job is now 37.2% complete. During the month the Hot Source Area walls were poured and stripped. Formwork for the Reactor floor slab was completed, and reinforcing steel and utilities were being installed in the forms.

The structural steel contractor has substantially completed erection in the laboratory sector. The built-up roof was completed in the hospital sector. The masonry contractor continued laying out partitions throughout the project.

The installation of electrical, plumbing, sprinkler and HVAC utilities were continued in all areas as were the pipe insulation and HVAC instrumentation. Strikes held up the HVAC piping for about one week and the sheet metal work for approximately two weeks.

Daystrom has substantially completed fabrication of all parts of the Reactor.

CONTRACTS AND CONTRACTORS' ACTIVITIES

AUI Prime Contract, AT-30-2-GEN-16

A draft of the AUI definitive contract for the operation of Brookhaven National Laboratory was forwarded to the contractor. The draft covers the extended period July 1, 1957, to June 30, 1962, with an option to renew for an additional five years.

Industrial Safety Program

A BNL organizational change has been put into effect which combines the industrial and radiation safety programs. By this means health physicists would become more alert to industrial safety problems and industrial safety would get more consideration through the presence of additional safety minded people on the site. A new safety engineer has also been appointed.

RESEARCH FACILITIES

Cosmotron

The damage to the Van de Graaff generator reported last month has been repaired. It is now injecting into the Cosmotron 4 to 6 milliamperes of protons, 2 to 3 times greater than before shutdown.

USDOE 001283

The Cosmotron has been producing a beam of protons at 3 Bev during the past week. However, the beam intensity has only been about 5×10^9 protons per pulse, as compared to 10^{11} protons per pulse anticipated. Consequently, daytime operations are now being devoted to seeking the source of the proton loss. From 4:30 until midnight the machine is being operated for research purposes.

The shielding is in place except for a portion containing iron plates which might disturb the magnetic field in the gap of the Cosmotron. Experimental equipments have been assembled, placed in position, and given preliminary tests.

18" Cyclotron

Most of the past month has been spent in getting a track fabricated and installed, so that the carriage for the neutron-detector shield can be moved without disturbing the line-up from the detector to scatterer. It was found to be impractical to adjust the floor of the existing wooden platform precisely enough to maintain proper detector positioning for all azimuthal angles in a semi-circle about the scatterer. A semi-circular tract was fabricated from 1" steel plate. By supporting it from the concrete floor with a number of jacks, it has been possible to level the entire 190° of track to within a few thousandths of an inch.

For the first time this Cyclotron has been operated for a research project from the Medical Department. It involved the irradiation of a group of mice with neutrons.

60" Cyclotron

Repairs to the machine required that tubes be replaced. They had been in continuous service since September, 1953, and were not new at that time. Maintenance time required during this report period was 3½ days. Otherwise, the Cyclotron has been operated on a schedule of about 60 hours/week for research by the Physics, Chemistry, and Medical Departments, and for groups from Princeton University and the University of Pennsylvania. Other projects include those jointly sponsored by the Laboratory and the following institutions: Columbia University, Yale University, and Johns Hopkins University and Mount Sinai Hospital.

SCIENTIFIC ACTIVITIES

Experiments to Determine the Relative Biological Effectiveness of Fast Neutrons to Produce Acute Lethality in Mice

A number of scientific investigators have performed experiments to determine the relative biological effectivness (RBE) of fast neutrons to produce acute lethality in mice. Conflicting values have been reported, ranging from 1.5

USDOE 001284

to 5.0. An investigation intended to throw more light on these discrepant results has recently been completed. Measurements have been made of the doses of X rays and neutrons required to produce a lethal effect of 50% in 30 days in female mice. Two hundred and fifty KVP X rays were used. The fast neutron irradiations were performed with the fission neutrons produced in a U-235 converter plate placed in the thermal column of the Brookhaven reactor. Tissue equivalent ionization chambers were employed to measure the neutron dose. The X-ray $LD_{50/30}$ dose was determined to be 636 rad, and the neutron dose, 366 rad, giving an RBE of 1.7. This confirms the low RBE values obtained by other investigators at the Oak Ridge, Los Alamos, and Naval Radiological Defense Laboratories, and indicates that there is no difference between cyclotron pulsed neutrons and continuously produced neutrons from a reactor in producing a lethal dose of 50%. (Biology Department)

Degradation of Organic Acids to Determine the Distribution of Isotopic Carbon

Procedures have been devised for the degradation of organic acids to determine the distribution of isotopic carbon in the original compounds. The procedures consist of performing the appropriate chemical reactions in vacuo, and subsequent collection of the various fragments in a form suitable for direct and reliable isotope assay. The method offers the advantages of high precision, and freedom from outside contamination. (Chemistry Department)

Prevention of Thrombocytopenic Purpura Produced by Whole Body Irradiation

The prevention of thrombocytopenic purpura produced by whole body irradiation can be prevented by transfusion of fresh platelets. In recent experiments the survival, distribution, and fate of platelets transfused into the irradiated thrombopenic rat were studied, using the radiosulfur platelet labeling method of Odel et al., and appropriate counting and high-resolution autoradiographic techniques. A potential mechanism of platelet hemostatic activity has been demonstrated. Historadioautographs of tissues of irradiated thrombopenic rats sacrificed one hour after transfusion of "homozygous" platelets in number sufficient to raise the circulating platelets levels from 5000 to $1.5 \times 10^6/mm^3$ strongly suggested that either intact platelets, or radiosulfur-labeled material from the platelets adhered to and lined the thrombopenic endothelium. In rats sacrificed four days after transfusion, the radiosulfur activity was found almost exclusively in the splenic macrophages. The survival times of platelets in the normal and irradiated rats were indistinguishable, approximately four days. Definitive interpretation of the adherence to capillary endothelium at 24 hours of the radiosulfur-labeled material involves mathematical considerations of the resolving power possible with S^{35} beta particles (0.165 Mev). It is believed that the thrombopenic endothelium has selectively taken up the radiosulfur-labeled material of the platelet, or perhaps the intact platelet. Whether this means that platelets contribute some sulfur-rich macromolecular substance (presumably an acid mucopolysaccharide) that is essential for small vessel integrity, or whether platelets play a more secondary role by initiating fibrin formation at a submicroscopic level is a matter for conjecture and further investigation. (Medical Department)

USDOE 001285

Existence of Isotopes Produced by Spallation in Meteorites

The existence of isotopes produced by spallation in meteorites has been well established by the measurements of a number of investigators on the content and ratios of the isotopes found in these meteorites. Little work, however, has been done on the depth variation of the spallation isotopes. Such studies should give information on the energy of the incident cosmic rays and on the ablation of material from the meteorites during their passage through the atmosphere. For these purposes the H^3 produced by 0.16, 1.0, 3.0, and 6.2 Bev protons and the A^{37} by 0.16, 1.0 and 6.2 Bev protons in long iron targets has been measured as a function of depth. The maximum effective H^3 cross-section found is 7.2 mb at 0.16 Bev, 60 mb at 1.0 Bev, 100 mb at 3.0 Bev, and 130 mb at 6.2 Bev. The maximum effective A^{37} cross-section is 0.19 mb at 0.16 Bev, 4.7 mb at 1.0 Bev and 6.7 mb at 6.2 Bev. The depth variation of these isotopes is quite energy-dependent. At the higher energies a small transition effect occurs. At the lower energies there is an exponential decrease with depth. The comparison of these measurements with the depth variation of He^3 in the Carbo meteorite indicates that the cosmic rays that produced the He^3 in this material were very similar to the protons with 6 Bev energy. The H^3 to A^{37} ratio is not very energy- or depth-dependent. The ratio is 15 at 1 Bev and 20 at 6.2 Bev. However, for 0.16 Bev protons the H^3 to A^{37} ratio increases from 40 to 1000 in 4 cm depth. The H^3 to A^{37} ratio has been compared with the He^3 to A^{36} ratio found by other investigators in four iron meteorites. The small variation of the He^3 to A^{36} ratio in meteorites is believed to be related to the fact that the H^3 to A^{37} ratio is not very energy- or depth-sensitive for protons in the Bev range, and the He^3 to A^{36} ratio also favors the 6 Bev irradiation. (Visiting Scientists in the Physics Department)

Liquid Metal Fuel Reactor Experiment
(Babcock and Wilcox Company)

The Babcock and Wilcox Company reported the following progress on the Liquid Metal Fuel Reactor Experiment:

Preliminary conceptual work has been initiated on a control rod system and a wet core-sample transfer mechanism.

An alternate scheme for the remote maintenance of the LMFRE has been prepared.

A test procedure has been developed which will permit the creep-rupture testing of Croloy 1-1/4 and Croloy 2-1/4 materials in liquid bismuth.

A spectrographic method is being developed for determination of rare earths in thorium and zirconium and magnesium in bismuth.

Initiated work regarding experimental facilities in the LMFRE reactor. Data for shielding calculations is being accumulated. Developing ways and means of inserting and removing direct immersion core samples.

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Reached agreement with BNL that their loop "N" would provide much of the data on chemical processing required for the LMFRE.

A preliminary test program was written for the BNL 4" utility test loop from the standpoint of B & W requirements. A preliminary review of the loop and an operational cost estimate were made.

The proposed graphite research and development program has been submitted to the Production Planning Group for ultimate transmittal to the various graphite vendors.

The specification for LMFRE Reactor and System analogue studies was discussed with interested vendors. All proposals should be received by the first of next month. The vendor will be chosen and preliminary subcontract negotiation should commence by August 1.

The various factors that enter into the estimate of 41.3 inches as the diameter of the reference design core have been analyzed for sources of error. The maximum reasonable error in this calculation is $\pm$ 5 inches. This margin of uncertainty will be reduced as more is learned about the properties of the graphite to be used in the actual reactor and a critical experiment is run.

Four test loops of Croloy 2-1/4 are under construction. Two of these have been normalized and tempered, and two have been fabricated from the mill annealed tubing and stress-relieved. The two normalized and tempered loops are in place now and are being leak tested, fitted with heater wire and copper tubing to the instruments, sampling pots and the gas pressure regulators. Fabrication of the other two loops is nearing completion.

Billets, required for the plate to be used in the next four test loops (Croloy 1-1/4), have been flattened, rolled and heat treated. Sufficient tubing to fabricate four Croloy 1-1/4 loops of normalized and tempered material has been sent to Barberton for this heat treatment. Of the next four loops, two will be fabricated from mill annealed tubing and two from normalized and tempered tubing. Construction of the mill annealed loops is under way.

A completely new Croloy 2-1/4 utility test loop has been installed. The original pump with the variable speed pulley has been replaced with the newer design pump utilizing a variable frequency generator outfit. This allows the pump motor speed to vary from about 600 rpm to 1800 rpm, which also varies the bismuth fluid velocities in the test loop. The loop has been leak tested and is ready to be chemically cleaned internally.

Research Reports

During this period twenty-four papers were approved for publication. This number included fourteen on physical sciences, eight on life sciences, and two on applied sciences.

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VISITS

The Laboratory was visited during this period by the following, among others:

Fifty-seven delegates of the 16-nation working group which had under consideration the establishment of a Regional Nuclear Center in the Philippines visited the Laboratory July 9 - 12. This group first convened in Washington on July 8. Working papers covering the scientific and technical aspects of their discussions, as well as annotated agenda had been prepared by the Brookhaven staff. Dr. Haworth served as Senior Scientific Advisor to the group in their deliberations. Their visit to Brookhaven was arranged in order that they might obtain a first-hand acquaintance with a cooperative nuclear research center, its facilities and operations. The group reconvened in Washington on July 15 for the final week of their discussions pertaining to the establishment of an Asian Nuclear Research Center.

The sixteen nations of this working group, which are also members of the Colombo Plan Consultative Committee are: Australia, Burma, Cambodia, Canada, Ceylon, Great Britain, India, Indonesia, Japan, Laos, New Zealand, Pakistan, Philippines, Thailand, Viet-Nam, and the United States.

Three Ordnance Engineering Officers, postgraduate students, from the Department of the Navy, on July 11.

Twenty-five teachers attending Workshop for Science Teachers at the University of Connecticut, on July 15.

Sixteen Christian Brothers attending courses at the Catholic University of America, on July 24.

USDOE 001288

UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

AUGUST 1957

Prepared by the Staff of the New York Operations Office

September 24, 1957

USDOE 000445

DOE History Division

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

AUGUST 1957

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USDOE 000446

SECTION I

NEW YORK OFFICE

CONTRACT ADMINISTRATION

Columbia University

NYOO is assisting in closing out the Minerals Beneficiation Laboratory administered by the Division of Raw Materials. During August, Contract representatives of Columbia University, A. U. I. and New York University visited this Laboratory to select excess property needed for their work.

Harvard University, Cambridge Electron Accelerator, Contract AT-30-1-1909

Progress on construction of the laboratory-control building is good. The basement floor slab has been poured, and the mold and reenforcing steel is in place for the basement walls.

Building complex design is about 95% complete and completion is scheduled for August 31, 1957. Machine design has been delayed slightly due to the vacation period. The Project's request for approval to purchase in advance four motor control centers at a fixed price of $10,825, almost $2,000 under the cost estimate, was referred to the Division of Research. The Project's request for advance purchase of substation equipment was also sent to Washington for approval. The Deputy Manager approved the Project's order for 400 tons of steel from Armco Corporation for the magnet at a price of $152,000.

The Property Management Branch arranged for the Project Machine Shop foreman to visit the Brooklyn Navy Yard to look over the excess tools and materials.

Items ordered in advance of the construction phase of the work now total $650,000.

The Project's subcontract for architect-engineer services was modified to add $30,000 to the estimated costs, with no increase in fee.

Negotiations for the operating contract are planned to begin after the Division of Research has reviewed and worked out with Harvard-Massachusetts Institute of Technology and the Cambridge Electron Accelerator Project the division among them of AEC supported high-energy physics research.

USDOE 000447

Lockwood-Greene, Contract At-30-1-2046

This firm is the architect-engineer for title I work connected with preparation of space at 201 Varick Street in New York to which NYOO will move in 1959. The title I work is virtually complete, except for revisions required by changes in the space assignment from GSA. The title II and title III work of detailed design and construction will be performed by GSA.

Massachusetts Institute of Technology

Acting upon informal information that the Joint Committee had agreed to waive the waiting period involved in the loan of fuel and waiver of related charges for the MIT reactor, NYOO arranged with Oak Ridge for the immediate release of five kilograms of fuel. It was shipped to Sylvania Corning Nuclear Corporation for fabrication. Since most of the contractual arrangements have already been reviewed by both the Institute and the Technical Assistance Branch of Reactor Development, it is expected that the only point requiring detailed negotiation by NYOO will be the method of payment to the Institute for fabrication costs.

New York University--AEC Computing and Applied Mathematics Center, Contract AT-30-1-1480

Renovation of the building furnished by the University to provide space for related Project Sherwood work should be completed during September. Both the UNIVAC and the IBM 704 have significant blocks of unused time. Of 552 hours available time for the UNIVAC during July, 123 hours were idle; for the IBM 704, of 135 hours available, 24 were idle. NYOO has made allocations of time to various AEC users, but actual problem assignments have lagged.

Nuclear Metals, Inc., Contract AT-30-1-1565

Nuclear signed modification nine to the contract and thereby became an independent research and development organization rather than an operator of a government-owned laboratory. Nuclear will be allowed use of the old Hood Building and space at 224 Albany Street in Cambridge for contract and private work while its new laboratory building is under construction. Nuclear reports that ground will be broken the week of September 9th. The long term benefits to the Commission are twofold. First, it will be relieved of responsibility and costs for sustaining operations of an important laboratory. Second, the work will benefit by transfer from ancient and make-shift quarters into new and modern facilities

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specifically designed for the operations involved. The Commission also will recover its investment in equipment.

Princeton University, Project Matterhorn, Contract AT-30-1-1238

The Manager reported to the Director of Reactor Development his analysis of the question of whether the contract with Allis-Chalmers and RCA should be an AEC prime contract or a Princeton subcontract. His review reflected relevant AEC experience at Brookhaven and his recommendation was that negotiations should proceed toward a subcontract.

Princeton continued negotiations with Allis-Chalmers and RCA for a subcontract to design and fabricate the experimental Model C Stellerator device. NYOO is represented in these meetings. The immediate objective is a letter contract for a three months study by Allis-Chalmers which will provide a definitive statement of the scope of work for the subcontract and which also would serve as a basis for fee negotiation. Separate meetings are also being scheduled with Allis-Chalmers to review personnel policies, procurement policies and practices, and accounting principles.

The University has begun to strengthen its administrative staff for the Matterhorn work. In August the Project Business Manager, Mr. Robert Von Verdo reported for duty. Formerly he had served as administrative officer of the electronic research laboratory at Columbia University. The master plan and preliminary design for buildings and utilities have been approved by the Division of Construction and Supply and the Division of Research; authorization from the Division of Reactor Development for detailed design is now awaited.

Walter Kidde Constructors continued architect-engineer work for the immediate construction of buildings and site development for the Project. The total space for immediate construction is about 54,000 square feet. This includes 30,000 square feet for the laboratory building, 7,200 for administration, 2,500 for cafeteria, 3,600 for shops, garage and firehouse, 10,000 for warehouse. A press release, prepared by Walter Kidde, announcing award of this contract to them was approved for release.

Princeton University, Proton Accelerator, Contract AT-30-1-1916

Princeton and NYOO reached agreement on the terms for the definitive contract. The last open item, overhead, was resolved when the University accepted the Manager's proposal for a provisional overhead rate of 53 percent of salaries and wages. NYOO intends to discuss the overhead with the

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Navy auditors to reconcile differences in the interpretation of the "Blue-Book" formula for determining university overhead rates. On August 23rd the Project opened bids for construction of the Administration and Service Building. Thirteen bids were received which ranged from a low bid of $686,700 by the Belli Company to a high bid of $802,000. The Project archietect-engineer, Gibbs and Hill, Inc., investigated the Belli Company, found uniformly favorable reports, and recommended award. The government estimate for the job was $748,972. Princeton in turn requested AEC approval for award to Belli on August 30th. Division of Research approval for this construction, required by the staff paper on the accelerators, will be requested shortly.

During the month, with Division of Research approval, Princeton was authorized to start procurement of steel for the magnet. At the request of the University, the Property Branch entered into negotiations (through the Special Assistance Branch, Division of Construction and Supply, Washington) with the Department of the Navy (BUORD AND BUSHIPS) to acquire parts from a six inch gun turret from the USS "Topeka" to be used for a rotating shield for the proton-synchrotron. A meeting arranged at the New York Naval Shipyard on August 23, 1957 was attended by representatives of BUSHIPS, New York Naval Shipyard, Princeton University, Gibbs-Hill, Inc., NYOO Technical Liaison Division and Property Management Branch.

It was agreed that NYOO would formally request BUSHIPS to provide a cost estimate for removal of the turret parts from the ship, packaging for shipment, shipment and technical assistance during reinstallation to assure satisfactory operability. A formal request was made on August 27th.

On August 12th, a meeting was held at the New York Naval Shipyard to discuss possible acquisition of approximately 4,500 tons of steel scrap to be used for shielding for the proton-synchrotron. No definitive commitment could be made, but it was indicated that NYOO can formally request acquisition when scrap is available. The Property Branch also arranged, through the General Services Administration, to acquire 110 tons of steel scrap, without reimbursement from the Frankford Arsenal, Philadelphia, Pennsylvania. Arrangements are now being made for the shipment of this material.

University of Rochester, Cyclotron Project, Contract AT-30-1-875

Construction continues on the elementary particle physics building and the additional laboratory space. The former is now about ten percent complete and should be complete by mid-February 1958. The latter is about eighty percent complete.

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Sylvania-Corning Nuclear Corporation, Contract AT-30-1-GEN-366

During the month, the Contracts Division, in collaboration with the Technical Liaison Division and the Health and Safety Laboratory, began to gather information about the explosion at Sylvania on July 2, 1956, for use by the Government in defense against the damage suits brought against the Government by those injured. Sylvania has been requested to provide a substantial amount of additional detailed information about the project involved, its history, origin, processes, and so on. Declassification of pertinent records and reports in connection with the litigation is nearing completion.

Yale University, Contract AT-30-1-1691

Construction stage of the Heavy Ion Linear Accelerator at Yale University is substantially completed.

Educational Grants Program

A representative of the Contracts Division attended the briefing session called by the Director of Reactor Development during the week of August 26th to review this program and to prepare to decentralize it to the field.

CIVILIAN APPLICATION AND INSPECTION

Access Permits

The summary of Access Permits issued to NYOO through August 31, 1957 is as follows:

New Secret Permits issued	1
New Confidential Permits issued	3
Total New Permits	4
Permits terminated	0
Permits expired	2
Permits converted from Confidential to Secret	1
Total Permits	443
Confidential-Restricted Data	208
Secret-Restricted Data	235

During the month of August, 14 initial inspections of Access Permit facilities were made; 184 QX clearances and 119 LX clearances were granted to Access Permittees.

The Division of Reactor Development has decided to centralize in the NYOO responsibility for administration of all

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UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

NOVEMBER 1957

Prepared by the Staff of the New York Operations Office

December 23, 1957

USDOE 001384

DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

NOVEMBER 1957

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SECTION I

NEW YORK OFFICE

CONTRACT ADMINISTRATION

Boston University

Dr. F. Marott Sinex, newly appointed Chairman of the Department of Biochemistry of Boston University and formerly of the Brookhaven National Laboratory, visited NYOO to discuss University-AEC relationships and several pending contracts in his Department.

Harvard University, Cambridge Electron Accelerator, Contract AT[30-1]1909

Accelerator groundbreaking ceremonies took place on November 5th. President Killian of Massachusetts Institute of Technology and President Pusey of Harvard presided, stressing the joint nature of the undertaking. The Project Director, Dr. Livingston, explained that the machine would be made available to faculty members and research students at both institutions. It will also be utilized by other colleges and universities.

NYOO requested the Division of Construction and Supply to review and make comments on a draft subcontract with the Cambridge Electric Light Company submitted by Harvard. Initial average power is estimated at 550 KVA with a peak of 1600 KVA. Assuming later, two-shift operation, this is expected to increase to 2,500 KVA average, and a 4,500 KVA peak by 1961.

NYOO met for a second time with Harvard for negotiation of the operating contract. By the end of this meeting the only open items were overhead, indemnification from radiation hazards, and clearance of reports for foreign patent protection. The NYOO Director of Budget and Finance has begun a review of the University overhead with the Navy Cost Inspector in Cambridge. The University is to submit its views on indemnification for radiation hazards. NYOO is exploring the workings of AEC requirements for foreign patent protection.

By the end of November, Harvard had received bids for construction of the remainder of the buildings for the Project. Of nineteen invitations issued, there were ten responses. Bids ranged from the acceptable low bid of $1,188,000 to a high of $1,348,568.

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The architect-engineer had estimated $1,306,000 as the average bid estimate and $1,155,000 as the low bid estimate. Harvard recommended award to the low bidder, the S & A Allen Construction Company of Boston, Massachusetts, and the Manager approved this subcontract after it had been reviewed and approved by the Contract Review Board. Construction should start within two weeks and is scheduled for completion March 1, 1959. Harvard also requested an increase of $26,000 for the architect-engineer subcontract. This is now under review.

The construction of the Laboratory-Control Building is continuing at a satisfactory rate. All concrete work has been completed. The brickwork has been raised to the second floor sill height on the back and east ends of the building. There have been some delays on the west and the front, but a considerable amount of mechanical work has been done. The air conditioning equipment, which was ordered in advance, is in place in the basement and the heating and air conditioning ducts are being installed.

Inter-American Institute for Agricultural Research, Contract AT[30-1]2043

NYOO has arranged for shipment of the 200 curie gamma irradiation source to the Institute at Turrialba, Costa Rica.

Massachusetts Institute of Technology

Reactor Material Loan Contract: NYOO continued drafting a contract to lend fuel and heavy water for the Institute's research reactor, and to pay for fabrication cost of fuel elements. The Institute received 10,000 pounds of heavy water for the moderator, which is in storage.

Copies of the Institute's contract with the American Car and Foundry Company for the reactor, and the ACF-Sylvania Corning Nuclear Corporation subcontract for fabrication of the active part of the fuel elements have been obtained. Reimbursable costs of fabrication must be precisely defined.

High Energy Physics Research: The Division of Research informally requested NYOO to begin negotiation of a contract for support of all high energy physics work at MIT. This would transfer the work now going on for the Navy and the Commission under an ONR contract, to an AEC contract. The annual operating level would be in excess of 1.5 million dollars for the AEC and the Navy combined.

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Master Contract: The drafting of a master contract continues. Current Institute contracts contain a provision for transfer of the work from individual contracts to the master contract once it is ready.

Property Management: A meeting was held with the Division of Industrial Cooperation, MIT, to discuss their responsibilities for the acquisition, utilization and disposal of excess personnel property. NYOO wants the Institute to undertake more responsibility in this field.

National Academy of Sciences, Atomic Bomb Casualty Commission, Contract AT[49-1]GEN-72

During a recent ceremony, President Morito of the University of Hiroshima Medical School said that he hoped to cooperate with the Atomic Bomb Casualty Commission, and to reorganize the Medical School into a new medical center.

New York University, AEC Computing and Applied Mathematics Center, Contract AT[30-1]1480

Means of financing the operation of the recently installed IBM 704 Computer have been under consideration by Washington since October. The University proposes that all operating costs be financed through the NYOO contract, and that no charges be made by NYU to AEC customers. NYOO met with the University on November 12th to negotiate a settlement of overhead for fiscal years 1954 and 1955. NYU still feels that the rate developed by the Army Audit Agency should be used. NYOO is continuing investigation to determine the rate which would represent the actual cost for these years.

The contract statement of reimbursable personnel costs was entirely revised and the new version agreed upon by NYOO and the University.

Nuclear Development Corporation of America, Contract AT[30-1]862

As part of the close-out for this contract, the actual overheads for periods following April 1, 1956 have to be negotiated. The contractor has submitted its closing inventory of AEC equipment, and NYOO is reviewing this. Once the inventory has been reconciled, the administrative responsibility for the equipment will be transferred to the Schenectady Operations Office as requested by the Director of Reactor Development. Meanwhile, NDA has use of this equipment for work for Schenectady.

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Nuclear Metals, Inc., Contract AT[30-1]1565

Negotiations continue to settle the final "use-charge" for the two and a half years ending December 1956. The overhead for the four semi-annual periods ending December 1956 was agreed to, and will be incorporated in the contract. The new President of Nuclear visited the Research Division to discuss the AEC philosophy of expecting joint participation or waiver of fee for AEC sponsored basic research work.

Princeton University, Project Matterhorn, Contract AT[30-1]1238

Construction: On November 18th, Walter Kidde Constructors, Inc., the architect-engineer for the site development and general purpose buildings for the Model "C" Stellerator, issued bid invitations for the construction of the first phase of the Matterhorn building complex, known as phase 1a. These bids for construction of an office and laboratory building, cafeteria and warehouse were sent to 34 general contractors and are due back by December 16th. The Manager appointed a panel to select the architect-engineer for the construction of a power house, substation and housing for the device. They considered 68 possible firms, and invited proposals from 18. Final selection is scheduled by December 20th. A Contract Board has also been designated to negotiate the contract for work to start in January 1958.

Power: NYOO and Princeton are exploring the possibility of supplying electricity, by means of a new 132/26 KV substation, for the Model "C" Stellerator and the Princeton Proton Accelerator at the Forrestal Research Center.

Contract: An overall contract revision is in process by NYOO because there has been a change in the nature of the work. The University has requested a number of contract changes which are being reviewed by the Chief of the Thermonuclear Branch, Research Division, and by NYOO.

The question of a thirty-year lease to the Commission for the Model "C" site was considered. There was preliminary agreement to issue a contract modification requiring the University to provide a lease, if at any time, Princeton is no longer operating or constructing the Model "C" device.

The Navy Cost Inspector resident auditor at Princeton has submitted his study of the University's overhead for 1957.

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Subcontracts: Negotiations for definitive subcontracts with Allis-Chalmers and RCA continued. Several meetings regarding CSA purchasing procedures and the terms of their proposed purchase order forms were held and substantial agreement on procurement policies, personnel policies and principles of cost reimbursement were reached. "Ground rules" confirming these agreements will be written and made part of the contractual agreements. Procurement policies and procedures were reviewed by Washington on November 21st. No major objection was raised.

Allis-Chalmers reported its preliminary study of the work, and and estimate of cost and time. This is being reviewed by NYOO as a basis for fee negotiations.

Financial Aspects: Revised schedule estimate by Allis-Chalmers and RCA indicate the possibility of a six-month saving in delivery of a usable, although uncompleted device. The funding problems which would be incurred by the new schedule are being considered by Washington.

Princeton University, Accelerator Project, Contract AT[30-1]1916

The definitive contract is still under consideration, so work is being continued under the letter contract. NYOO has replied to comments made by the Comptroller's office and by Counsel. Discussions held by NYOO with the Navy Cost Inspector regarding overhead on Project Matterhorn also have applications to the accelerator contract.

Construction of the administration and services building is proceeding satisfactorily. Steel erection is about a week behind schedule; on November 30th, it was about 65 per cent complete. Grading of the site has been completed. NYOO found that current estimates for the building to house the accelerator may be substantially greater than the original estimate of about $900,000. The architect-engineer, Gibbs and Hill, should complete their preliminary design shortly. NYOO will then review the estimates to determine the reasons for the increase. NYOO and Princeton representatives visited the Naval Ordnance Plant at Charleston, West Virginia, to inspect excess armor plate for possible use in shielding the accelerator. NYOO is attempting to acquire about 4,000 tons for this use.

Princeton Area Office

Approval to establish an area office is under consideration by the Division of Reactor Development.

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University of Rochester, Cyclotron Project, Contract AT[30-1]875

Additional laboratory space was completed, and should be accepted early in December. The Elementary Particle Physics Building is three-quarters complete.

Sylvania-Corning Nuclear Corporation, Contract AT[30-1]GEN-366

When the contract was transferred from the Sylvania Electric Products Company to the new Sylvania-Corning Nuclear Corporation, work for the Division of Research remained at SEP under a Sylcor subcontract. Following discussion with that Division, NYOO is arranging to contract directly with SEP for this work.

An NYOO representative observed the burning of about 33 kilograms of uranium scrap turnings and sludge which contained 2.78% of U-235. This is the first enriched uranium burned by Sylcor and the first burning of any nuclear material since the thorium explosion at Sylvania in July of 1956.

A revision of reimbursable personnel costs which revised cost of living allowances and changed Sylcor's educational benefits policy was approved.

Yale University, Heavy Ion Linear Accelerator, Contract AT[30-1]2052

Work to bring the machine into full operation is continuing. Further modifications and tests were made to bring an ion beam through the accelerator tanks. The Project Director expects to do this after the changes are completed. The University has submitted a revised reduced budget for operation from October 1, 1957 to September 30, 1958. The figure is still about $27,000 over that made available by Research. After visiting the Project, NYOO reviewed the budget in detail and is recommending to the Director of Research that the additional amount be provided, which would give the Project a budget of about $597,000 for the year.

Property Management

NYOO continued to supply excess equipment to contractors yielding considerable savings. During November, for example, excess equipment was again furnished to Brookhaven, Columbia, Franklin Institute, Harvard University, Princeton, and Rochester, totaling $10,559. Since initial cost was $42,802, it was a saving of about 75%. The items included machine tools, office furniture and equipment, and laboratory equipment.

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Through the Property Branch, NYOO contractors selected approximately $86,000 worth of excess property from the Columbia University Mineral Benificiation Laboratory in New York City now being closed by the Division of Raw Materials. The acquisition represented about 40% of the total property being disposed. The excess cost, approximately $16,000, represented a savings of about $70,000 to NYOO contractors.

CIVILIAN APPLICATION AND INSPECTION

Access Permits

The summary of Access Permits issued to NYOO through November 30, 1957 is as follows:

New Secret Permits issued	4
New Confidential Permits issued	3
Total New Permits	7
Permits Expired	2
Total Permits	532
Confidential-Restricted Data	234
Secret-Restricted Data	298

56 LX clearances and 71 QX clearances were granted to Access Permit Holders during this period. During the month of November, 4 inspections of Access Permit facilities were made; 6 facilities were approved for storage of classified Restricted Data.

Inspection Incidents

The clean-up of the contaminated laboratory of Patterson-Moos, Division of Universal Winding Corporation, has progressed without incident to the point where it is approximately 95% completed.

Investigation by the Post Office Department regarding the loss of 25 microcuries of Cs^{137}-Ba^{137} [Mock Iodine Capsule] while in transit to Francis Delafield Hospital, New York, N. Y., revealed no trace of the missing source. No appreciable hazard is involved in this loss.

One over-exposure was reported by Bethlehem Steel Company, Quincy, Massachusetts, to one of their employees who was performing industrial radiography on steel castings with two

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250 milligram units of radium and one 730 millicurie unit of Cobalt 60. Investigation is in progress.

Investigation regarding the over-exposure at Isotope Products, Inc., Buffalo, New York is pending.

A loss of one sealed light source containing 550 millicuries of tritium at the Atomic Fair was reported. Investigation revealed that the loss occurred on the day that numerous school children were touring the exhibit at the Coliseum. Due to the lack of hazard and the delay of the reporting of this loss by U.S. Radium Corporation, Morristown, New Jersey, no special effort was made to ascertain its location.

Licenses for Inspection

Total active licenses at beginning of month	2,170
Licenses added during month	60
Licenses cancelled during month	61
Total active licenses end of month	2,164
Net change from end of previous month	6
Number of licenses inspected this month	26

GENERAL ADMINISTRATION

Arrangments were made with the U.S. Naval Ammunition Depot, Earle, New Jersey, for disposal at sea of 162.74 tons of contaminated wastes for the Chicago Operations Office: Pittsburgh Area Office [Westinghouse Atomic Power Division].

A visit was made to the New York Regional Office, GSA, to formulate plans for the orderly disposal of surplus property located at ACF Industries, Buffalo, N.Y. NYOO will act for the Albany Office when called upon to do so.

Inoculations against Asian Flu were given to NYOO employees in accordance with the Commission's program for protection of AEC employees against a possible influenza epidemic.

A survey of the military reserve status of NYOO employees was completed.

During November, the Public Information Service assisted:

James Culligan, in preparation for CBS TV's "Let's Take A Trip" show which emanated from BNL

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Dr. John Bugher, Rockefeller Foundation, data and visual aids for speech

Jill Goldstein, Pageant Magazine, information and photos for a story on computers

Lee Ames, Doubleday Publishers, background and photos for forthcoming high school science book

Pat Allen, Science World, high school science publication, photos and background

Janet Sakolowski, MD Medical News, data and photos for medical reactor story

Arthur Morse, and Edward Jones, CBS TV, data for forthcoming "See It Now"

Morris Berkowitz, United Nations Review, film consultation

Harold Cahan, WBZ TV, Boston, film consultation and film provided -- used for atomic energy day TV show seen by over one million viewers

Harvey Cort and Al Wasserman, CBS TV, continuing aid for forthcoming atomic energy segment of Twentieth Century series

Many requests for speakers on atomic energy were received and several talks were assigned during the month. On November 5th, the Chief of the Radiation Branch participated in a seminar for AFL-CIO plumbers in Greenfield, Massachusetts. On November 13th, a representative of the Radiation Branch spoke before the Valley Stream Parent Teachers Association on the Peaceful Uses of Atomic Energy. On the same day, the Deputy Director of the Contracts Division spoke before the National Council of Jewish Women, Wildwood, New Jersey on the same subject.

Requests for routine information and for future film bookings increased. The film library arranged for 423 showings. These were viewed by approximately 1,027,499 people, including the million viewers of the Boston TV show mentioned above.

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MANAGER'S OFFICE

Date	Visitor	Visited	Subject
11/19	Dr. A. Ruark, RES and H.J. Morton, C&S, Wash.	C.H.Sullivan, Acting Mgr.	Discuss Matterhorn Project
11/20	H.S. Traynor, Asst. Gen. Mgr. and J.G. Adams, Consultant to AEC	NYOO	To meet with Dr. L.J. Haworth, Director, BNL

USDOE 001395

HEALTH AND SAFETY LABORATORY

ENVIRONMENTAL HEALTH SERVICES AND STUDIES

Background Radiation Studies

Background measurements made by members of the Radiation Branch in the Denver, Colorado area were essentially identical to those made in that area last summer. This second survey eliminated the possibility that fallout had been present during the earlier measurements.

Tests using various phosphors to augment the response of photographic emulsions to ionizing radiation were made. With Co^{60} as a source, film packets were placed in contact with Pilot B, a commercial plastic phosphor and NaI[Tl]crystals. It was found that enhancements of the order of two were achieved with the plastic phosphor while enhancements of 100 to 1,000 were obtained with the NaI[Tl]. It was found, however, that the response is subject to reciprocity law failure reducing the enhancement considerably at lower dose rates. In the range of ten microroentgens per hour, the approximate environmental dose rate in New York City, the enhancement was only between fifteen and twenty for NaI[Tl].

An instrument was assembled employing a 20-liter ionization chamber and a Lindemann-Ryerson electrometer in order to provide a lighter and more readily portable ionization instrument for radiation background measurements. Preliminary tests indicate that the use of this instrument is feasible and that leakage currents are very low.

Preliminary discussions with the Naval Air Station at Lakehurst, New Jersey, indicate the feasibility of conducting radiation background measurements in an airship at high altitudes for comparison with measurements in the Rocky Mountains. This can be done on a non-interference basis during routine flights of airships.

General Services Administration Warehouses

In accordance with the terms of a contract between the GSA and the AEC, surveys were performed at four national stockpile warehouses in New York and New Jersey to evaluate potential radiation hazards originating from stockpiles of certain ores and minerals. Measurable radiation intensities were found in the vicinity of several kinds of materials in the four warehouses, but exposures to personnel were small in all cases. A report

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of the surveys was forwarded to GSA.

National Beryllia Corporation

The New Jersey State Department of Health held a meeting in Newark to review beryllium control procedures to be followed at a new plant being activated by the National Beryllia Company in Haskell, New Jersey. The HASL complied with a request to send a representative to the meeting to assist in the evaluation of the beryllia dust hazards and control. Officials of the company described in detail proposed control methods which, in general, were accepted as being satisfactory. The presiding member of the Department of Health group stated his intent to request assistance from HASL in performing an occupational exposure study at the plant after operation has begun.

Sylvania-Corning

An inspection and survey was made of the Sylvania-Corning plant, Hicksville, by representatives of the Inspection Division and the Radiation Branch to consider certain aspects of nuclear safety in plant operations.

Princeton University

A safety and fire protection survey was made of AEC facilities at Princeton. In general, the status was satisfactory. Several specific recommendations were submitted to the Chief of the Princeton Field Office.

Summary of Analytical Support

Item	Received	Run	Backlog This Month	Backlog Last Month
Uranium				
Air Dust	63	359	0	296
Urinary	284	129	256	101
Misc	65	15	172	122
Beryllium				
Air Dust	24	41	4	21
Urinary				
Misc	14	15	7	8
Radium				
Urinary				
Misc	65	15	186	136
Radon				
Thoron				
Fluoride	7	0	54	47
Misc	95	0	108	13
U-235 Urine	0	0	12	12
U-233 Urine	0	0	3	3
Totals	617	574	802	759

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WEAPONS EFFECTS

Proposal to Use Point Sources for Structural Attenuation Measurements

In response to a request from the Chief, Civil Defense Liaison Branch, Division of Biology and Medicine, the feasibility of using point sources for fallout attenuation measurements was examined. It is understood that the Commission has an interest in providing FCDA with a simple field method of evaluating attenuation in buildings and shelters. It was concluded that point sources, used in any practical number, will not yield accurate attenuation data. However, it was suggested that a point source system might be useful for FCDA exercises if approximate data are acceptable and the inherent inaccuracies are recognized. An excerise employing a simplified source pattern was developed and submitted to Headquarters for consideration.

Operation HOTSPOT

A proposed set of operating procedures for OPERATION HOTSPOT was prepared jointly by the Industrial Hygiene Branch and the Radiation Branch.

At the request of the Deputy Manager, NYOO, contractors at MIT and at the University of Rochester each designated two representatives to participate in the HOTSPOT program.

Fallout

During this period 9,040 fallout samples were processed at HASL.

Strontium Samples

Completed during this period:

Isotopes, Inc.		
Rainfall and Pot Samples	39	
Miscellaneous	4	
		43
Nuclear Science and Engineering Corp.		
Rainfall and Pot Samples	37	
Miscellaneous	5	
		42

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HASL		
Milk	1	
Miscellaneous	2	
		3
		88

In process as of 12-1-57:

Isotopes, Inc.		
Human Bone	332	
Rainfall and Pot Samples	6	
Milk	6	
Miscellaneous	46	
		390
Nuclear Science and Engineering Corp.		
Human Bone	248	
Rainfall and Pot Samples	49	
Milk	1	
Miscellaneous	30	
		328
HASL		
Animal Bone	7	
Rainfall and Pot Samples	3	
Milk	120	
Soil	37	
Miscellaneous	29	
		196
		914
Prepared for Contractors		0

CONSULTATION, PUBLICATION AND OTHER STAFF SERVICES

Consultation

The report of the LMFRE Site Selection Committee on which a member of the Radiation Branch participated, has been transmitted to the Manager for consideration.

The Laboratory assisted representatives of the State of New York in the evaluation of certain radiation measurements made at the Mt. Kisco plant of the Canadian Radium and Uranium Corporation.

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Representatives of the Brooklyn Navy Yard visited the Radiation Branch to discuss Carbon-14 measurements.

Conferences

The Director, HASL, and Chief of the Radiation Branch attended the meeting of the Advisory Committee on Biology and Medicine in Chicago, November 7-9.

The Chief of the Radiation Branch attended the meeting of the Radiological Society of North America in Chicago.

The Chief of the Analytical Branch and a Chemist attended the Annual Bioassay Meeting conducted at Mallinckrodt Chemical Works in St. Louis.

The Assistant Chief of the Analytical Branch attended a meeting at the Weather Bureau's Office of Special Projects, Washington, to discuss IGY fallout problems.

The Chief of the Analytical Branch discussed a proposed Atlantic seawater sampling program with Dr. Vaughn Bowen of Woods Hole Oceanographic Institute of November 5th.

Lectures by HASL Staff Members

Name	Subject	Conference or Place
Lough	Bases for Maximum Permissible Dose [MPD] of Ionizing Radiation	N.J. Section of the American Industrial Hygiene Association
Blatz	Radiation Safety	AFL-CIO, Greenfield, Massachusetts
O'Brien	Radiation Safety	New York City Fire College
Lough	Environmental Control of Radiation	Conn. Public Health Assoc., Fairfield State Hospital

Nuclear Safety

Feasibility Report NMI-FR-5B was reviewed and approved, Nov. 27, 1957.

USDOE 001400

INSTRUMENTATION

DTR System

The DTR system has progressed to the point where most of the functional difficulties have been resolved. The glow decade failures should cease with the completion of some circuit modifications.

Difficulties with the punch card equipment have been minimized; however, punched paper tape equipment has been installed to parallel the storage function of the cards. When a tape to punch card conversion apparatus is available in the Biometrics Branch the punch card machine at the DTR will be removed, unless unforseen difficulties arise with the punch paper tape.

The Radon equipment is moving toward completion, with installation of the gas systems practically finished. Some study has been applied to determine which components are most adequate for controlling the pass band characteristics of the amplifier so that this response can be properly maintained in the circuit design. The system has been arranged so that the count will be reported each two hours. The timing accuracy need not be greater than $\pm$ 2%.

Modular equipment is being tested for application of low level counting systems to the DTR.

Multi-channel Analyzer

The control mechanisms of the multi-channel analyzer have been assembled and tested. The basic control is a stop count unit, a read clock, a 2^{16} binary fill strip and a series of controlled triggers. The clock operates at 100 kc per second with a gate cut-off time of less than 10 microseconds. By virtue of this speed the gate closes with sufficient rapidity so that no pulses are transferred during the grating operation. In addition to the control system a read conversion unit has been layed out. The unit consists of a decimal scaling device with a capacity of 10^5 counts. The read-out provides 5 decimal scales which are displayed by decades on the analog. It is possible to bring out the 50 individual digits or, by a binary coded decimal system, it can be put on tape in 20 digit form. Channel drives, preamplifiers, and other needed parts of the system are in practically final form. The preamplifier may be improved by use of the RCA 2N384 since the present transistor, a 2N247, has a rise time of from 50 to 100 millimicroseconds whereas the 2N384 is at least twice as fast in rise.

USDOE 001401

Low Level Counting

Development work is practically complete on a transistorized anti-coincidence circuit for the Libby gas flow counting equipment. For minimal counting background the gas flow must be in the order of 50 milliliters per minute.

The geiger counter units have been returned to proper operating condition. Development work is proceeding for adaptation of this equipment to the DTR assembly. Instead of the original transformer coupling arrangement, a transistor preamplifier will be used since it is a far better pulse impedance conversion unit.

Whole Body Counter

The specifications are complete for fabrication of the shield. Bid requests are out for preparation of the room in which the counter will be housed; negotiations are underway for canning of the crystal onto the tube face; castings have been purchased but not yet delivered for the tube housing.

Transistor Circuits

An automatically driven slit single channel analyzer with window analyzer capabilities, a transistorized binary scaler, a log ratementer and a regulated power supply are in the process of construction.

Mercury Vapor Detector

This project has been resumed with promising results from a study of means of lamp stabilization. It is expected that a reliable unit will result without the need to monitor light intensity but by monitoring the UV lamp current. This can best be judged by the zero stability of the instrument with a clean air supply.

Alpha Scintillation Counter

A prototype large area alpha scintillation counter has been fabricated and has the useful sensitivity of the Sampson ionization survey meter. The instrument can also measure beta-gamma radiation by bias lead adjustment.

USDOE 001402

VISITORS TO HASL

Date	Name	Staff Member Visited	Subject of Discussion
11/1	Dr. I. Berstein, Controls for Radiation, Inc.	Lough	Current developments and techniques in instrumentation
11/1	Dr. P. Kruger, Nuclear Science & Eng. Corp.	Harley Whitney	Strontium analyses
11/1	Messrs. A. Rebold, Special Labs, Inc., M.Jackson, Ball Bros., W.H.Johnston, Standard Oil Co.	Harley Whitney	Uranium, beryllium fluorimeters
11/1	Mr. Roger Miles, NDA	Weinstein	Safety Reports
11/4	Dr. R.C. Bader, Texas A&M	Whitney	Mississippi River Samples
11/6	Dr. F.Western & Dr. T.Ely, DBM, Wash.	Lough & HASL Staff	Review of HASL program
11/7	Mr. William Belser, Study Center of Atomic Risks, Zurich, Switzerland	Blatz & Radiation Branch	Fundamental aspects of radiation safety
11/7	Messrs. H.B. Perry, H.W. Rapp, Travelers Insurance	Breslin	Radon sampling & radiometric lab. equipment
11/12	Commissioner W.F. Libby	Harley	Strontium program & film badges
11/12	Mr. C.F.Berghout, Army Chemical Center	Breslin	Beryllium machining control measures
11/13	Mr. L. Costrell, NBS	LeVine	Transistor Circuits
11/14	Drs. J.Z. Holland. DBM and H.Volchok, Mr. R.Carr, Isotopes, Inc.	Harley	Strontium analyses

USDOE 001403

11/20	Dr. Dan Beninsen, U.N. Scientific Comm. and Dr. M.B. Crespi, AEC, Buenos Aires, Argentina	Harley Breslin	U.N. Radiation reports; beryllium analyses; industrial hygiene
11/21	Dr. E.J. Kilkawley, RPI	Harley	Equipment required for environmental engineering course at RPI
11/21	Mr. James Richardson, Bendix, Eatontown, Pa.	Breslin	Thorium urine sampling
11/25	Mr. P. Byrne, Sales Mgr., Tracerlab, Western Div., & Mr. Michael Aquinas, Jr.	Lough	Discussion of fission product analysis at Tracerlab
11/26	Dr. J. Silverman, Mr. M. Pofcher, Radiation Applications	Harris	Beryllium control measures
11/27	Mr. A. Lieboff, NYU	Radiation Branch	Construction of chamber for background measurements
11/29	Mr. Manual Carierus, Bolivia	Harris	Industrial hygiene program at HASL

USDOE 001404

SECTION II

BROOKHAVEN NATIONAL LABORATORY MONTHLY STATUS AND PROGRESS REPORT FOR NOVEMBER 1957

BROOKHAVEN AREA OFFICE

ADMINISTRATION

Associated Universities, Inc., Contract Negotiations

The draft definitive contract sent to Associated Universities, Inc., on October 28, 1957, is being negotiated. The negotiators are endeavoring to reach agreement on the contract before December 31, 1957.

FACILITIES AND RESEARCH

Cosmotron

During routine operation on November 5th the coil of the Cosmotron failed at the injection end of Quadrant No. 1. Disassembly of the coil in this quadrant has shown that the failure is identical to the previous one in Quadrant No. 2 of nine months ago. At that time it was recognized that the existing coil configuration in combination with small motions due to the cyclic pulsing of the magnet resulted in very high stress concentrations. Indeed, in addition to the member which failed, other similar members in the same quadrant exhibited fatigue cracks. At that time the cracked members in that quadrant were replaced, minor changes made in all members of that quadrant to help relieve the stresses, and clamping arrangements were improved in all four quadrants in the hope that fatigue cracks in the other quadrants had not progressed too far. It was decided not to remove the copper in the other three quadrants because of the large increase in down time required.

However, the present failure is clear indication that the fatigue cracking in Quadrant No. 2 was not an isolated instance and that major modification of the coil end design is required. Because of the difficulty and expense in handling and reinsulating the present copper, it will be best to start with new copper. A new design is presently under detailed study and representative samples of the old design are being subjected to metallurgical examination. The new design avoids all of the known difficulties of the present coil and in addition will be considerably easier to install. The replacement of the coil will interact with the already planned program for completely shielding the Cosmotron and adding to the experimental area. The original plans would have forced complete shutdown for a few months and elimination of daytime operation for an additional six months during the calendar year 1958. By careful planning it will be possible to dovetail this program with the coil repairs in such a manner that only the erection time of the shield need

UNCLASSIFIED

USDOE 001405

be added to that required for the coil repair itself. It is believed that there will be a net gain in time by overlapping the two programs.

18" Cyclotron

This machine was operated successfully throughout this period to complete the measurements of the angular distributions of elastic and inelastic neutron scattering from Pb^{206}.

60" Cyclotron

During the past month the Cyclotron has been in steady operation for research of the Physics, Chemistry, and Medical Departments. It has also been used by the University of Pennsylvania, Johns Hopkins and Columbia Universities, and by Mt. Sinai and Walter Reed Hospitals either for collaborative work with the Laboratory or for service irradiations.

Electrostatic Generator

During this period the Van de Graaff has been operated without any breakdowns at the rate of nine shifts per week (two per day except Friday). Projects being continued include the study of C^{14} and N^{14} levels occurring in the deuteron and proton bombardment of enriched C^{13} targets, development of the pulsed beam technique, and a study of the scattering of 6 Mev gamma rays from various materials. Further improvements have been made, and tests have been completed on the new pair spectrometer detector.

Nuclear Reactor

The Reactor has been operated on a routine basis for research and the irradiation of samples. 48,618 m.w. days of reactor operation were accumulated to midnight, November 24, 1957. Maximum power level during this period was 17.0 m.w.

LIQUID METAL FUEL REACTOR RESEARCH AND EXPERIMENT

LMFR Program--Brookhaven National Laboratory

Investigations for ultimate use of sodium in the 4" Loop plans for use of one pump in each Loop, and elimination of many valves are proceeding. High Velocity Loops 3 and 4, Loop "N", and Exponential Experiments are getting into the final stages of design.

Outgassing graphites G, EY9, R, and HLM at 900°C produced an increase in their bismuth uptake in 1000 hours at 550°C. Other types were not markedly affected. Bismuth and Bi + Mg have not been observed to wet graphite.

USDOE 001406

Of twenty-four thermal convection loops now in operation, seven now show corrosion in the hot leg. Four of these pitted after approximately 5000 hours of operation. Heat treatment after welding is believed to have caused pitting of the other three. Low inhibitor concentrations are being investigated.

A 1-1/4 Croloy pumped loop has now operated for 1500 hours at 75°C bulk bismuth temperature differential (520-445°C) without evidence of corrosion and only slight precipitation in the cold leg. The 2-1/4 Croloy pumped loop has now operated for 5050 hours with no observable corrosion except in the 502 welds in the hot test section.

After accumulating 1800 hours on its present 3000-hour test, Loop G had to be shut down on November 15th as a result of a leak in a Bi-filled vent line. The pipe was corroded through.

The plugged slurry loop is being re-assembled, and a new loop designed to permit stirring in the dump tank and better drainage of the slurry particle upon dumping. A loop to study ThO_2-Bi is being designed.

Results of the in-pile capsule experiments show that fission-product iodine and xenon buildups on the walls of graphite containers from U-Bi solutions is independent of the types of graphite studied.

Measurements with e.m.f.-concentration cells have been useful in explaining the thermodynamics of the Na-Bi system. By similar techniques the thermochemistry of $MgCl_2$ in NaCl-KCl solutions has been established. In searching for a method of achieving Th-U separation in Bi solution, special $NaAlI_4$ salt has been prepared for equilibration experiments. Continuing studies show that in Bi-salt systems rates of approach to chemical equilibrium are rapid. In bench-scale equipment and in the first controlled experiment of its type, it was demonstrated that U and Zr once oxidized into the salt phase can be brought back quantitatively into the metal phase by Mg reduction.

The final analysis of diffusion length in the 2:1 graphite-to-bismuth stack has been finished. Age measurements in the same stack are nearly completed.

LMFRE Program—Babcock and Wilcox Company

From a list of all test variables within the LMFRE Materials Test Program, prime variables were selected for possible application to a statistical analysis.

Arrangements were made with Brookhaven National Laboratory to use their 3 Mev Van de Graaf and counting facilities for the delayed neutron shielding experiment.

An analysis of the hazards connected with a sodium leak was made; dose calculations yielded negligible values at all distances from the plant.

USDOE 001407

Work by the A. D. Little Company to find a practical method for continuous uranium monitoring of the primary stream has indicated a promising method using magnetic susceptibility.

A study of thermal convection cooling for the LMFBR reflector indicates that it is feasible but more costly than a pumped circulation system.

Proposals for uranium solubility studies were received from Battelle Memorial Institute, Stanford Research Institute, and Armour Research Foundation.

Two capsules of 250- and 500-hour duration have been completed. Microscopic examination of the specimen and capsule wall surfaces of known surface conditions indicates little or no attack on Croloy 2-1/4 material due to liquid-metal solution.

The Utility Loop (prototype testing) has been in continuous operation for two months, and a total of 1600 hours has been accumulated. It is planned to operate this loop isothermally until the Mg and Zr concentrations reach the specified equilibrium conditions and can be maintained at that level.

Three different welding inductors have been made and tried under various conditions of heat and pressure. All work was done on 3-inch schedule 80 pipe in carbon steel and Croloy 2-1/4, better results being obtained with Croloy.

An H&M pipe beveling and cutting machine, a welding head, and a constant potential DC welding transformer have been purchased for the investigation of butt-welding pipe using the gas-shielded metallic-arc process.

PROJECTS UNDER CONSTRUCTION

Alternating Gradient Synchrotron

Synchrotron Machine: Detailed design is 87 per cent completed, and construction is considered 3 per cent completed overall.

Status of Major Procurements:

Magnet Cores: Approximately 400 tons of steel sheets were received at Baldwin-Lima-Hamilton, and 600 tons additional were melted and cold rolled during the month by Allegheny-Ludlum. The press has been shipped from Hamilton Division to Baldwin-Lima-Hamilton, and all machine tools required are set up in area and wired. Stacking assembly fixture designed and released for construction.

Magnet Coils: The building addition for the coil work at National Electric Coil has been completed. Special machinery is being set up, and prototypes are due to be started December 9th, about a week later than previously scheduled.

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Magnet Power Supply: A large quantity of drawings has been processed by Westinghouse Electric for approval. Brookhaven National Laboratory engineers visited the Buffalo plant of Westinghouse to review the design of the liquid rheostats.

Klystrons: Eimac has most of the material required on hand and has machined a large portion of the parts for subassemblies. Eimac experienced high voltage failures on two more of the Air Force tubes which are serving as development types for the BNL types.

Ferrites for RF Cavities: The first forty rings were received and checked, and forty more have been shipped by Ferroxcube Corporation. The latest schedule shows that all rings will be shipped by June 1958.

General On-Site Work: The first prototype drift tube has been roughed out and the contour cut by the AGS shop. A complete assembly is being made to check procedures. Templates for all the drift tube contours (124) have been fabricated and checked. All components for the Magnet Test Facility have been placed on order either with outside vendors or the central shops. Arrangements have been started for setting up this facility in the Target Building in order to be ready for the first pilot Magnet Core due in February.

Synchrotron Buildings: Construction is 90 per cent completed. At the end of the month the electrical substations were ready to be energized, and the steam piping was ready for steam around the ring. Power wiring to the distribution panels has been completed, the Linac Building wiring essentially completed, and the connections to equipment being done. All structural concrete work is finished and the Cockroft-Walton Enclosure in the Linac Building has been completed.

Magnet Guides and Pedestals were moved into Tunnel and roughly placed. The aluminum piping for magnet cooling water in the Tunnel has been completed and partially tested. Chillers and Magnet Cooling Water Pumps have been set and grouted in the Service Building mechanical room. It is hoped that part of the Linac and Target Buildings can be occupied by December 15th.

Pre-Cast Building Sections: Twenty per cent complete. During the month 269 high density concrete shielding blocks were poured. To date none have been accepted pending clarification of weights and specifications.

General: The AGS warehouse has been held up pending delivery of the paneling for roofing and siding which is due to be delivered the first week in December.

18" Cyclotron Building

A contract was signed with J. C. Felton Contractors, Inc., and Dorald Engineering Company which will permit construction to start on this project.

USDOE 001409

Medical Research Center

This project is now 69.2 per cent complete. The erection and welding of the Reactor Container cylinder was completed. The erection of the roof has been delayed by some necessary cutting and refitting of the plate segments. The form work for the Reactor wings was started and well along at the close of the month. A few small heavy shielding concrete pours were made in the Reactor area.

The masonry contractor has completed approximately 75 per cent of the partition work in the laboratory. The main substation and transformer has been delivered, and installation is under way. The contractor has placed the heating system in operation.

Daystrom is now fabricating the Reactor control rod drives, and testing is expected during December. All other Reactor items except the fuel elements have been shipped.

Reclamation Facility and Hot Laundry

The advance notice of construction was mailed to approximately eighty contractors. Detail design drawings were completed and mailed out to bidders on November 23, 1957. The bid opening date for this project is December 23, 1957.

SELECTED SCIENTIFIC ACTIVITIES

Interactions of High Energy Protons with Various Targets

High energy protons interacting with various targets create few readily measured radioactive isotopes with Z 5. Cross sections have already been obtained for H^3 and Be^7 production from several target elements and reported. The excitation functions of He^6 formation by protons of 1 to 3 Bev have been measured for five target elements in order to extend the information on low-Z products of such reactions. The cross sections have been measured by a new technique based on nuclear recoil, which obviates the difficulties introduced by the 0.82 sec. half-life. This has been accomplished by using a target composed of alternating plates of the target element and gas spaces filled with a "catcher" gas. The proton beam passed through both the plates and gas spaces, and the recoil energy of the isotopes produced in the plates carried some of each species into the gas. Immediately after production of the radioactivity, the gas was allowed to flow through a liquid nitrogen trap into a nearby evacuated counter chamber, and the decay was followed with a scaler and Brush recorder. This counter chamber was specially designed to hold 400 cm^3 of gas in the center space of a sandwich arrangement, where it was counted with good efficiency by the two outer spaces operating as proportional counters. Under typical conditions, with helium as the catcher gas, the decay curves were readily analyzed into He^6 and one or more long-livedcomponents. The identity of the latter was not always clear, but often contained 19.1 second C^{10} (presumably as CO) and the neon isotopes Ne^{19} and Ne^{23}. In every case the He^6 decay stood out clearly, enabling an accurate measurement of its

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activity. The activity due to He^6 (and to any other isotopes present) was determined for targets made of graphite, aluminum, copper, silver and lead, at several energies from 1.0 to 3.0 Bev. The computed cross sections rise both with increasing energy and with increasing Z, varying between 0.5 mb for C at 1.0 Bev and 29 mb for Pb at 3.0 Bev. (Chemistry Department and Visiting Scientists from the University of Kansas and Yale University)

Measurement of the Total Absorption Co-Efficient of Long-Lived Neutral K Particles

A measurement of the total absorption co-efficient of long-lived neutral K particles has been completed recently. Establishment of the existence of the theta-2 component of the neutral K meson scheme as proposed by Gellman and Pais has been accomplished here and previously reported. In the measurement now reported the theta-2 decay process was recorded by a direct counting method. The arrangement provides a characteristic signature of the decay event which signals a time coincidence of two particles decaying out of a neutral beam; one of the particles is then followed by a further particle in a time characteristic of the muon-electron decay interval. The results obtained add further evidence to that already available concerning the existence of the long-lived theta-2 component. Its total absorption cross section in copper has been measured in good geometry to be 1.12 ± 0.25 barns. Comparison of this value with those for positive and negative K mesons indicates that the observed absorption is compatible with the strangeness mixture; but this experiment cannot be taken as evidence to indicate the conversion of the initially-produced positive-strangeness particle into a particle mixture. Improved accuracy should make such a decision possible. The present results are compatible with a four-component parity-conjugation theory of the neutral K complex. (Visiting Scientists from Stanford and Princeton Universities and the Cosmotron Department)

Bacterial Nucleus

For many years bacteria were considered to have no formal nucleus. Speculations on the mechanism by which their heritable characteristics were transmitted to progeny were many and diverse. The demonstrations in recent years of nuclear-like bodies containing DNA, the genetic material, only magnified the problems, as disagreements arose concerning their similarity to those of higher organisms. One group maintained that the bacterial nucleus was merely an amorphous blob which grew to a certain size, and then in a random manner, divided. Another group believed that mechanisms analogous to those in higher organisms, including all the phases of mitosis and meiosis, occurred.

Recent work using the unique tracer for DNA, tritium-labeled thymidine, has gone a long way towards settling the argument. Using a strain of Escherichia coli, the bacterium commonly found in the human intestine, it was observed that when cells whose DNA was completely labeled with tritium were grown for two or three generations in a nonradioactive medium, many of the progeny contained no tritium. If the labeled DNA had been randomly divided among the

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progeny, all would have been labeled. Since such random distribution did not occur, the DNA obviously remained in large "pieces." Extensive analysis of the data showed that there was only a small number of such pieces per cell, probably no more than an average of two. Thus it appears that the mechanism by which the bacterial DNA replicates is similar to that occurring in higher plants, suggesting that there is a standard pattern in nature by which genetic material is made and transferred to progeny. In simplest terms this would involve a self-complementary inheritable unit in which replication occurred by separation of the halves with each half acting as a template for the formation of its complement. (Medical Department)

Research Reports

During this period thirty-one papers were approved for publication. This number included twenty-one on physical sciences, eight on life sciences, and two on applied sciences.

VISITS

The Laboratory was visited during this period by the following, among others:

72 members of the American Nuclear Society following their annual meeting in New York, on October 30th;

12 members of the German Radiation Safety Training Group, on October 31st;

12 Japanese who attended the U. S. Atomic Industrial Forum Conference in New York City, on October 31st;

53 members of the Society for the Advancement of Management, on November 15th;

17 engineers from Connecticut Light and Power Company, on November 19th;

23 management personnel and engineers from the Long Island Lighting Company, on November 20th;

6 postgraduate officers in nuclear chemistry from Webb Institute of Naval Architecture, on November 25th;

Commissioner John Forrest Floberg and Commissioner John S. Graham, accompanied by L. H. Roddis, G. H. Kavanagh, and Mr. Naiden, from the Commission staff visited Brookhaven, on November 26th.

In addition to the above there were 77 visitors from foreign countries during the month.

USDOE 001412

UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

DECEMBER 1957

Prepared by the Staff of the New York Operations Office

January 22, 1958

USDOE 000477

DOE History Division
NYOO Monthly Reports
Job 1342, Box 5, Folders 2-3

NEW YORK OPERATIONS OFFICE

STATUS AND PROGRESS REPORT

FOR THE MONTH OF

DECEMBER 1957

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USDOE 000478

SECTION I

NEW YORK OFFICE

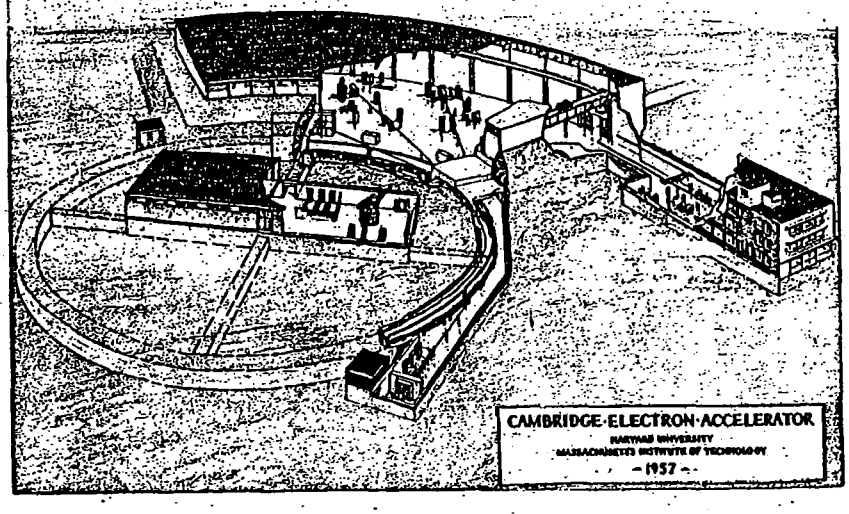
CONTRACT ADMINISTRATION

Harvard University, Cambridge Electron Accelerator, Contract AT[30-1]1909

A draft contract for operation of the accelerator was submitted to Harvard from NYOO. Work is to begin January 1st. Settlement of overhead must await completion of the NYOO-Navy Cost Inspector's review of the University's costs for last year. NYOO has informed Harvard that indemnification cannot be granted and a meeting concerning pre-publication patent clearance of reports is scheduled with the contractor early in January. All other points are settled.

The contractor for the experimental area, magnet housing and associated structures began work in December. Excavation, removal of trees and erection of fencing was begun, and a pile driving rig was moved onto the site.

The architect-engineer reports that total construction is 14.3% complete, which is about two weeks behind schedule, and that A/E work is 86.8% complete.



USDOE 000479

Bid invitations on 712 magnet blocks for the magnet sectors were issued to 12 firms. Bids are returnable by January 30th.

The fabrication of the R.F. power supply unit is now behind schedule because of some engineering difficulties. The Project has arranged for experimental work on the injection system, which will be done at Yale.

Massachusetts Institute of Technology

High Energy Physics Research: A meeting with MIT to review transfer of contract responsibility for this work from the Office of Naval Research to the AEC is scheduled for January.

MIT Master Contract: A draft of a master set of terms for future contracts has been sent to the Institute for comment.

New York University, AEC Computing and Applied Mathematics Center, Contract AT[30-1]1480

The Army Audit Agency has been requested to determine an overhead rate for fiscal years 1954 and 1955 which will be applicable to the Center.

Nuclear Development Corporation of America, Contract AT[30-1]862

Instructions for disposal of some radioactive wastes and special nuclear material have been issued to NDA as part of this contract closeout. The closing inventory is under review and the office has also submitted a statement of overhead computation for the final term of the contract to NDA.

Nuclear Metals, Inc., Contract AT[30-1]1565

Agreement to settle "use charge" for the two and a half years ending December 1956 has been reached. Inventory of stores will be the basis for negotiating recovery of the Commission's equity in stores purchased through overhead accounts. Nuclear has requested that NYOO review plans for this inventory.

Foundations are in for Nuclear's North building. The steel and roof are in, and the brick work is almost complete. Foundations are in for the South building and 90% of the structural steel is up. The corridor between the buildings is also under construction.

USDOE 000480

Princeton University, Project Matterhorn, Contract AT[30-1]-1238

Construction - Bids for the first phase construction at the Model "C" site have been received. Low bidders are in the range of $1,900,000 to $2,000,000. Bids are being evaluated in conjunction with the architect-engineer, and award is expected early in January. The selection panel for the architect-engineer for the second phase construction has recommended Commonwealth Associates of Jackson, Michigan. Approval of the selection, and negotiation of the contract are expected early in January. The work is to start about the middle of January.

Power - NYOO is working out details to include the Project's proposal to install a 132/26KV substation for the Model "C" Stellerator and the Proton Accelerator in the second phase architect-engineering contract.

Contract - NYOO is still at work on revision of the contract. NYOO and the University have agreed on a contract modification which requires the University to provide a lease if at any time the University is no longer operating or constructing at the Model "C" site. The document is being prepared.

On December 20th, representatives of NYOO and Washington met with representatives of the office of the Navy Controller to discuss audit submittal for 1957. The Navy requested additional information for use in studying the recommendations of the local cost inspector which are being submitted to this office.

Subcontracts - The Allis-Chalmers and RCA subcontracts have been extended through January 31. The definitive documents should be prepared by this time, but further extensions of the subcontract will still be necessary to allow time for the review procedure. Allis-Chalmers' report on preliminary study of the scope of work has been sent to Washington.

Louis H. Roddis, Jr., Deputy Director, Division of Reactor Development, visited Project Matterhorn for a review of progress and plans of the Project.

Princeton University, Accelerator Project, Contract AT[30-1]-1916

The definitive contract is under consideration by Washington. NYOO has replied to all comments of Washington staff divisions, and work continues under the letter contract.

NYOO has received a revised proposal for project buildings indicating a substantial overrun. Some of the factors affecting cost are: tight construction criteria; increase in shielding; increased working space, and a general "beefing-up" of the building to support increased loads. Copies of the proposal have been sent to Washington with NYOO comments to follow. Princeton has been requested to review estimates for the entire device and bring them up-to-date.

USDOE 000481

Due to bad weather, construction of the administration and services building is 11% complete, instead of the scheduled 25%. Structural steel is complete, and permanent bolting is proceeding. Excavation for the storm drain is complete.

University of Rochester, Cyclotron Project, Contract AT[30-1]-875

The additional laboratory and shop space is completed and should be accepted by the Commission during January. The Elementary Particle Physics Building is 85% complete and on schedule.

Sylvania-Corning Nuclear Corporation, Contract AT[30-1]-Gen-366

Effective January 1, the part of the work under Sylcor contract being performed by SEP, will be transferred to a direct contract, per NYOO agreement with Sylcor and Sylvania Electric Products, Inc.

Overhead costs have risen sharply due to heavy direct labor personnel cut-backs. NYOO is following Sylcor's efforts to reduce the overhead.

Property Management - NYOO continued to supply excess materials, equipment, and supplies to contractors. The screening of excess property lists by NYOO contractors has resulted in the acquisition of many important items of equipment at savings of approximately $113,213. This has also been an excellent utilization of government excess.

CIVILIAN APPLICATION AND INSPECTION

Access Permits - The summary of Access Permits issued to NYOO through December 31, 1957 is as follows:

Total New Permits	3
Permits Expired	5
Total Permits	531
(Confidential-Restricted)	230
(Secret-Restricted)	301

40 LX and 36 QX clearances were granted to Access Permit Holders, Requests for 29 LX and 30 QX clearances were received. Five Access Permit facilities were surveyed; and eight storage facilities were approved.

USDOE 000482

HEALTH AND SAFETY LABORATORY

ENVIRONMENTAL HEALTH SERVICES AND STUDIES

Background Radiation Studies

The Laboratory staff conducted tests of background radiation in the Flushing Meadow Apartments area.

A two month study of the Lindemann-Ryerson ionization chamber combination for measuring background has been completed. This study concluded that the equipment was more easily portable than the vibrating reed electrometer system and found to offer certain advantages in portability. The Instruments Branch has begun work on construction of a model for field use.

A member of the Radiation Branch conferred with the staff of the Naval Air Station at Lakehurst, New Jersey, on arrangements for radiation background measurements to be made from an aircraft at altitudes of approximately one mile. These flights, authorized by the Chief of Naval Operations, are scheduled to begin in January 1958.

Further research on the enhancement of photographic film sensitivity to ionizing radiation by placing film packets in contact with phosphors has revealed that such systems are subject to reciprocity law failure depending upon the dose rate. Development of a reliable dosimeter for uniform dose rates may, however, be possible.

Bridgeport Brass, Adrian, Michigan

A report on a dust study at the Bridgeport Brass Company in Adrian, Michigan has been transmitted to the contractor, the Division of Biology and Medicine and the Production Division at Oak Ridge. The study had examined air contamination problems resulting from the first large scale, gamma-phase extrusion of uranium ingots. These ingots were being heated in a eutectic salt bath and extruded without jackets. Although extrusions were of very hot bare metal, none of the personnel had been overexposed during the period covered by the study. Nevertheless, the report contains several recommendations for improved operations, in response to findings that permissible radiation levels would be exceeded under full operating conditions.

USDOE 0004831

Beryllium Corporation

A dust study was performed at the new Beryllium Corporation metal plant in Hazelton, Penna. There have been several cases of lost time injury due to acute beryllium poisoning, some of which have been quite severe.

Some of the production equipment, which requires frequent entry for maintenance and adjustment, has caused unusually high short-term exposures. Although respirators were in general use, medical information indicated that further control measures were required.

Operation of the beryllium fluoride production furnace raised particularly troublesome problems. It caused a large amount of fuming requiring frequent entry by personnel. In view of the high degree of hazard involved in fluoride operations, a call was made to the Beryllium Corporation suggesting that immediate action be taken to improve exposure conditions at the fluoride furnaces. The company assured the Commission that it would take corrective steps immediately and that the furnaces would not be operated until procedures had been improved.

Sylvania-Corning Nuclear

A test has been conducted of the burning hood, outside of the Bayside laboratory building, that had been redesigned following the July '56 explosion at the plant. The test included burning 2.8% enriched uranium sludge and powder. Air samples taken in the vicinity showed negligible air contamination.

Summary of Analytical Support

Item	Received	Run	Backlog This Month	Backlog Last Month
Uranium				
Air dust	306	4	302	0
Urinary	183	185	254	256
Misc	22	42	152	172
Beryllium				
Air dust	242	14	232	4
Urinary				
Misc	0	0	7	7
Radium				
Urinary				
Misc	34	68	152	186

USDOE 000484

CONSULTATION, PUBLICATION AND OTHER STAFF SERVICES

Consultation

The Chief of the Industrial Hygiene Branch has been appointed to two sub-committees of the ASA N-7 Committee which is studying radiation protection in the handling of radioactive materials from ores through reactor operations. The sub-committees of primary interest to the Industrial Hygiene group are those concerned with mining and milling of uranium and thorium ores, and refining of uranium and thorium. Other sub-committees of the N-7 Committee are uranium isotopic separation, fuel element fabrication, and routine reactor operations.

The Chief of the Radiation Branch met with the Medical Director of the New York State Department of Labor, Industrial Hygiene Division, to discuss modification of the New York State Labor Code.

The Assistant Chief of the Radiation Branch presented a talk on radiation protection techniques at the In-Service Training Institute for High School Teachers of Science at New York University.

The Chief of the Radiation Branch presented a paper on the current status of maximum permissible doses at the AIHA Tr-Section Meeting in New York.

Conferences

The Director of the Laboratory and the Chief, Analytical Branch, attended conferences in Washington on the ground level monitoring and milk sampling programs of the U.S. Public Health Service.

The Chief of the Analytical Branch attended a conference at AFOAT-1 headquarters on upper air sampling and analysis.

Publication

The report [TID-7545] of the Conference on Shielding of High Energy Accelerators, held April 11-13, 1957, sponsored by the AEC Research Division and the Health and Safety Laboratory, has been printed and sent to conference participants and others on the particle accelerator distribution list.

The report entitled "Beta and Gamma Dose Rates for Terrestrially Distributed Sources," HASL-3, has been sent to those on the physics distribution list.

USDOE 000485

The final draft of the HASL section of the Reactor Handbook, Volume 3, was submitted to the editor, Dr. Clyde R. Tipton of Battelle Memorial Institute.

Nuclear Safety

A total of ten feasibility reports were reviewed and approved by the Nuclear Safety Review Board in the month of December. Of these, eight were from Sylvania-Corning Nuclear Corp., one from Nuclear Metals, Inc., and one from Schenectady Operations Office.

INSTRUMENTATION

DTR System

The beta tape counting set up of the DTR system has been released to the Analytical Branch for production use. On the basis of Instruments Branch criteria the system is operating in accordance with design specifications. Both the paper tape punch machine and the card punch are operating at present, but the card punch will be removed from the line soon.

The glow decade tube failures should now be eliminated and no further short life failures are expected.

The radon apparatus has been tested and is equivalent to the engineering prototype. The transistorized version, with a band pass of 1.4 to 33 kc and a 34 microvolt input noise level may be compared with the vacuum tube unit in service for the past eight years with a band pass of 7.7 to 22½ kc and an input noise level of 44 microvolts. This contrast shows the superior design of the new unit which has simplified transistorization. The sensitivity of the unit to electrical background noise generated in the DTR system must be reduced, however, but this noise emanates from the central station and should be eliminated there. The counting geometry and the counting background are equivalent to those of the best vacuum tube types of present radon systems.

An initial shipment of equipment has been made to Mallinckrodt Chemical Works; the beta tape units are now on test. Mr. Burr of Mallinckrodt visited the Laboratory for one week to familiarize himself with the system.

In order to avoid interruptions of production counting on the beta tape units, a test central control will be constructed. The power supplies will be less elaborate than those of the

USDOE 000486

SECTION II

BROOKHAVEN AREA

CONTRACT ADMINISTRATION

Negotiations with Associated Universities, Inc., for renewal of Prime Contract No. AT-30-2-GEN-16 were completed and the required number of copies transmitted to Washington headquarters for approval.

PROJECTS UNDER CONSTRUCTION

Alternating Gradient Synchrotron

Synchrotron Machine--Detailed design is 88.5 per cent and construction 3.9 per cent complete.

Status of Major Procurements:

Magnet Cores--One thousand tons of steel have been received by Baldwin-Lima-Hamilton ready for shuffling. The shuffling fixture is completed, limit stops are being set, and the press has been received and erected. All tooling is completed. The inspection surface plate has been erected, and all inspection gages released for production.

Magnet Coils--National Electric Coil rejected the first copper received and has since received replacement material which is acceptable. The brazing fixture and technique have been approved. To date the four short prototype coils have been bent, and brazing of joints is to start January 6, 1958.

Magnet Power Supply--Westinghouse Electric Corporation has essentially finished the engineering except for the liquid rheostats. Material is being procured with satisfactory progress being made to date.

Klystrons--Eitel-McCullough has made unsatisfactory progress, and their proposal to Brookhaven National Laboratory for a supplement to their contract for additional funds has been tabled. BNL has asked Eimac to review their work and submit a realistic proposal for the required tubes. Failure of Eimac to provide an acceptable proposal will necessitate cancellation and a redesign of the Linac RF System using available conventional power tube components with commensurate greater operating costs.

Linac Tanks--Four tanks are 30 per cent complete, formed, and welded. The first tank (no. 2) is to be shipped to Cleveland Diesel on January 6, 1958, for final machining and finishing for delivery to BNL at the end of February. All carbon steel material is on hand at the contractor, Lukenweld.

Ferrites for RF Cavities--To date 125 rings have been received, 85 during December from Ferroxcube Corporation.

UNCLASSIFIED

USDOE 000487

General--All of the magnet coil mounting hardware has been placed on order with the first portion due early in February to be available when the pilot model cores and coils are due for initial testing.

Synchrotron Buildings--Construction is 90.7 per cent completed. During the month Brookhaven occupied a portion of the Target Building to be used for the Magnet Test Facility and moved in some equipment. Stone and Webster recommended that Brookhaven accept the area in the Target Building noted above, the Target Building crane, steam headers in the Target Building including unit heaters, fire mains outside the Target and Linac Buildings, the electrical substations, and most of the lighting system. The contractor continued work on the heating with temporary operation of some systems; steam had been on in all the fan houses as well as Linac and Target Buildings; controls are being installed together with insulation. Equipment is being set in the Service Building Machine Room and piping continued. Target Building crane has been connected to power and tested. Magnet girders in Target Building have been set to grade and leveled.

Pre-Cast Building Sections, Inc.--40 per cent completed. The following shielding blocks have been poured: 230 side blocks, 231 plug blocks, and 78 cover beams. About one-third of these have been accepted. A supplement to the contract was prepared to incorporate revised specifications and permitting a lower rejection limit on unit weights and also extended completion date to May 1, 1958. It is planned to erect shielding in April.

General--The siding and roofing for the AGS Warehouse arrived and has been 75 per cent installed during the month. Now scheduled for completion during January. The electrical work for the warehouse is about 50 per cent completed.

Motor Generator Foundation--Plans are nearly complete, and it is planned to take bids during January.

Cosmotron Experimental Area

The Area Office recommendation for the final selection of the Architect-Engineer for this project was submitted to New York Operations Office for review on December 23, 1957.

18" Cyclotron Building

Notice to proceed was issued to the contractor on December 31, 1957. The required excavation work and preparations for pouring concrete footings and retaining wall are under way.

Medical Research Center

This project is now 71.5 per cent complete. The fabrication and erection of the steel roof for the reactor enclosure has been resumed. The contractor

USDOE 000488

started to pour the reactor basement slab, the balcony, and the walls for the north connecting wing at the close of the month. The installation of utilities in the reactor was well under way during the month.

The masonry contractor has substantially completed the partitions in the laboratory and the finish white plaster coat throughout the job. The installation of ceramic tile continues, and all glazing work was completed except at entrances. The installation of acoustical tile ceilings was started.

The installation of the main substation and transformer has been completed, and it is awaiting tie-in to the main Laboratory feeders.

Daystrom has satisfactorily solved the design problems on the control rod drive for the MRR. On December 9, 1957, satisfactory tests of a rod drive were witnessed by BNL people at their plant.

The graphite filled dummy fuel elements have been completed but are being returned by Daystrom to Sylvania for repairing some leaks that Daystrom discovered in the aluminum cans. Shipment of the special nuclear material was made to the Sylvania-Corning Nuclear Corporation for fabrication of the fuel elements. Thus, the final delivery of the Daystrom contract is expected within a few weeks.

The three gas-tight doors and their frames being supplied by BNL for the MRR building have been delivered to BNL.

Spraying of the bismuth blocks with magnesium in BNL shops is approximately 75 per cent complete. The aluminum air-tight membrane and the boron carbide cans also being fabricated in BNL shops are approximately 50 per cent complete.

Reclamation and Hot Laundry Facility

Thirteen construction bids were opened for this job on December 23, 1957. No award will be made until a further study of the bids has been made.

ASSOCIATED UNIVERSITIES INC., CONTRACT NO. AT(30-2)GEN-16

Liquid Metal Fuel Reactor Program

The final analysis of diffusion length in the 2:1 graphite-to-bismuth stock has been finished. Age measurements in the same stock are nearly completed.

Measurements with e.m.f.-concentration cells have been useful in explaining the thermodynamics of the Na-Bi system. By similar techniques the thermochemistry of $MgCl_2$ in NaCl-KCl solutions has been established. In searching

USDOE 000489

SYLVANIA

ELECTRIC PRODUCTS INC.

File - Beyond Sylcor AEC subcontract -

INTER-OFFICE CORRESPONDENCE

BAYSIDE - ADMINISTRATION

WRITTEN FROM

SUBJECT SUBCONTRACT UNDER AEC CONTRACT AT30-1-GEN-366

DATE December 26, 1957

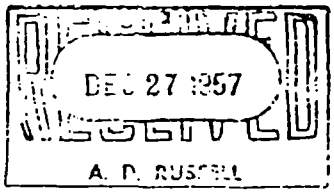
TO A. D. Russell - Batavia

Attached are the five last pages of the subcontract entered into between Sylvania Corning and Sylvania Electric on 18 December 1957. These sheets add an additional article to the body of the contract which incorporates the changes requested by the Atomic Energy Commission. These were discussed with you in our telephone conversation of 18 December 1957. This document will expire on the 31st of December.

The original subcontract was reviewed and commented upon in your letter of 29 October 1957.

J. F. O'BRIEN

JOB/ed
Attach.



Materials Received from Client

USDOE 023341

ARTICLE XXXVII - ALTERATIONS IN CONTRACT

The following alterations have been made in this subcontract:

1. Cover sheet - delete section entitled amount and substitute the following:

Estimated Cost	$75,440
Fixed Fee	2,045
Total	$77,485

2. Article I - in concluding paragraph, add to the end of the text "all such amendments shall be subject to the written approval of the Commission".

3(a) Article III - in the first sentence, delete the amount appearing on the third line - $77,665 - and substitute the following: Seventy-Seven Thousand Four Hundred Eighty-Five Dollars ($77,485).

(b) Add the following sentence at the end: "Notwithstanding any other provision of the subcontract, the total liability of the Contractor under this subcontract shall be limited to the said ceiling amount, as same may be increased by the Contractor, in its discretion but subject to the approval of the Commission, by unilateral written amendment to this subcontract".

4(a) Article IV - delete paragraph 2. and substitute "the Contractor shall reimburse the Subcontractor for all items of direct cost which are identifiable as such in accordance with the Subcontractor's normal accounting practices consistently applied (referred to in Article XIII) and are hereinafter referred to (said items being included in the term (allowable costs" sometimes used in this subcontract)".

(b) Delete the balance of subparagraph (a)(1) of paragraph 2. commencing with the word "providing" on the third line and placing a period after the word "subcontract".

(c) Delete subparagraphs 2(e) and (g).

(d) Add on the third line of subparagraph 2(j) after the word "Contractor" the phrase "with the written concurrence of the Commission".

(e) Delete in its entirety paragraph 3. and substitute the following:

3. The Subcontractor shall be reimbursed for its overhead expenses (without duplication or reimbursement made pursuant to 2.(a) above) on the following basis:

(a) During the term of the subcontract, the Subcontractor shall receive the following provisional allowance or allowances, subject to adjustment pursuant to (b) next following:

Metallurgy Laboratory	120%
Divisional Administrative Expenses	9.7%
Home Office General and Administrative Expenses	2.0%

(b) Upon conclusion of all work under this subcontract (including close-out work), the Contractor and the Subcontractor shall review the actual overhead costs of the Subcontractor on which provisional allowances were theretofore made and shall mutually agree with the written concurrence of the Commission upon the total amount of such costs which they consider allocable for reimbursement under this subcontract. Any failure to agree shall be resolved under Article XVIII of the subcontract. Following this determination, the necessary adjustments shall be promptly made, in manner agreeable to the Contractor, with respect to the pertinent amount or amounts provisionally paid.

(f) Delete in the third line of paragraph 4., the amount "$2,235" and substitute $2,045". Also place a period after the substituted amount and delete the remainder of the paragraph in its entirety.

(g) Delete the last sentence of paragraph 5. and substitute "all such payments will be tentative and subject to subsequent audits and adjustments to assure that reimbursement and fee payments are properly effected in accordance with the provisions of this subcontract".

5. Article V - in the last paragraph, the last word "Subcontractor" should read "Contractor".

6(a) Article X - delete the second sentence and substitute "if any such change results in a material change in the amount or character of the work described in Article I, the parties shall mutually agree in writing, which agreement shall be subject to the written concurrence of the Commission, upon such adjustment of the fixed fee as they consider to be equitable".

(b) In the third sentence, the phrase "with the written approval of the Commission" should be inserted following the word "may".

7(a) Article XI - delete from paragraph 2. the language after the word "basis" on the sixth line.

(b) In paragraph 3., add the following to the end of the paragraph "and also includes agreements under this subcontract for the personal service of third parties or the employees of third parties".

8(a) Article XII - precede paragraph 1. with the words "The Contractor and".

(b) In paragraph 2., the following clause is added at the end of the present text: ", unless the Commission authorizes their prior disposition".

(c) Precede paragraph 3. with the following: "Subject to paragraph 2 above".

(d) Delete the last sentence of paragraph 3 and substitute the following: "the cost of preservation by the Subcontractor following final payment under this agreement is not reimbursable. The Commission shall at all reasonable times, prior to and after the date of final payment under this agreement, have the right to examine and make copies of any such books, papers and records".

9. Article XIV - deleted in its entirely and the following new article substituted:

XIV Safety, Health and Fire Protection

The Subcontractor shall take all reasonable precautions in the performance of the work under this subcontract to protect the ealth and safety of employees and of members of the public and to minimize danger from all hazards to life and property, and shall comply with all health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission. In the event that the Subcontractor fails to comply with said regulations or requirements of the Commission, the Commission may without prejudice to any other legal or contractual rights of the Commission issue an order stopping all or any part of the work; thereafter a start order for resumption of work may be issued at the discretion of the Commission. The Subcontractor shall make no claim for an extension of time or for compensation or damages by reason of or in connection with such work stoppage.

10. Article XVI - delete from paragraph 1. the term "and the Contractor" in the eleventh and sixteenth lines.

11. Article XVIII - the words "to the Subcontractor" in the fifth line is changed to "to the parties"; in the sixth line the words "the Subcontractor is changed to "either party".

12(a) Article XIX - in the first line, the term "Subcontractor" is changed to read "Contractor" and in the fourth line delete the word "or" and substitute the words "with the concurrence of".

(b) In the concluding sentence, the following phrase is inserted after the word "protection": "at cost directly or indirectly reimbursable under this subcontract".

13. Article XX - deleted in its entirely and the following new article substituted:

XX Title to Drawings and Other Data

All technical data (including, but not limited to, notes, drawings, designs, specifications, reports, and memoranda) furnished or prepared by the Subcontractor pursuant to, or developed in connection with, the Subcontractor's understandings under this subcontract, shall be the property of the Government, and the Government shall have the right to use (and have used) said data in any manner and for any purpose without any claim on the part of the Subcontractor for additional compensation therefor).

14. Article XXIII - deleted in its entirety and the following new article substituted:

XXIII Claims and Legal Proceedings

a. The Subcontractor shall give the Contractor and the Commission immediate notice of any claim, or suit, action, or other legal proceeding, asserted or brought against the Subcontractor by reason of or in connection with the performance of its undertakings under this subcontract.

b. If in the opinion of either the Contractor and the Commission it appears that the claim, or suit, action, or other legal proceeding, would, if successful, be a reimbursable item under paragraph 2. of Article IV, the Subcontractor shall, unless otherwise directed by the Contractor or the Commission, furnish the Contractor and the Commission without delay all pertinent papers received by the Subcontractor in regard thereto, or such copies thereof as the Contractor and the Commission may request. Nothing provided in this paragraph shall preclude or otherwise prejudice any subsequent determination, by mutual agreement or resolution under the Disputes Article, regarding the question of reimbursement.

c. To the extent requested by the Contractor or the Commission in connection with any claim, or suit, action, or other legal proceeding which it appears would, if successful, be a reimbursable item under paragraph 2. of Article IV, the Subcontractor shall promptly and in good faith (i) defend or otherwise handle the matter, in manner and by means agreeable to the Contractor and the Commission, (ii) permit the Contractor or the Government to defend or otherwise handle the matter, (iii) assign to the Contractor or the Government all of the Subcontractor's rights as against the claimant which are properly for assignment to the Contractor or the Government hereunder under all the circumstances involved, and (iv) consult with, and otherwise cooperate fully with and assist, the Contractor and the Government to help protect the rights of the Contractor and the Government. It is understood that all such Subcontractor efforts in connection with claims, suits, actions, or other legal proceedings which, if successful, would constitute reimbursable items, shall be reimbursable under paragraph 2. of Article IV.

d. If the Contractor or the Government so requests, the Subcontractor shall initiate litigation and other legal proceedings, and shall take such measures in connection therewith as the Contractor or the Commission requests, including steps similar to those referred to in (i), (ii), (iii), and (iv) of c. above in connection with defense. The Subcontractor shall be reimbursed under paragraph 2. of Article IV for its expenses incurred with the approval of the Contractor and the Commission in connection with this subdivision.

15. Article XXVII - the word "Commission" is replaced by the word "Contractor" throughout.

16. Article XXVIII - the word "fissionable" is replaced by the term "special nuclear" and the reference to the Act is changed to 1954.

17. Article XXXII and XXXV - the terms "contract and Contractor" are replaced by "subcontract and Subcontractor" where necessary.

IN WITNESS WHEREOF, the parties hereto have executed this subcontract the day and year first above written.

ATTEST: SYLVANIA-CORNING NUCLEAR CORPORATION

S/M. C. CULLEN
CONTRACT ADMINISTRATOR

By /S/ GARTH W. EDWARDS
Title
CONTROLLER

ATTEST: SYLVANIA ELECTRIC PRODUCTS INC.

/S/ HELEN SANLESS
SECRETARY TO DR. ELLEFSON

By /S/ B. S. ELLEFSON
Title
VICE PRESIDENT

APPROVED:
U. S. ATOMIC ENERGY COMMISSION

Authorized Representative

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Facility: Sylvania Corning Nuclear Corp.

INTRODUCTION

This report results from a regularly scheduled security survey of this class "B-AP" Facility, conducted on February 25, 1959 in accordance with AEC MC 2403. The following individuals were present and furnished the necessary information for this report:

Mr. Timothy J. O'Connor, Security Officer
Mrs. Mary Morris, Document Custodian
Mr. John R. Zambrow, Engineering Manager
Mr. Eugene M. Mazza, Assistant to Mr. Zambrow
Mr. Martin C. Cullen, Contract Administrator
Mr. William J. Donahue, Accountability Officer

Inspection, examination of systems and procedures, including spot checks of records and discussion with various key personnel revealed Facility's security program could still be improved upon. However, the composite security rating of "Satisfactory" is continued. Deficiences noted during this survey and recommendations that were previously reported (NYOO SSR dated 7/15/58), and as yet to be complied with, are included within this report.

Facility performs classified metallurgical research and development work on alloys for fuel rods under NYOO Contract AT(30-1)-366. In addition, various projects or tasks for other AEC offices, under the sponsor program, are performed by Sylcor under the NYOO contract. They are as follows: Appendix C arrangement

LAROO-HARAO (Pratt & Whitney):

Task C-36: Research and development on dispersion type fuel elements. Material, composition, testing, technological techniques, end product, all are classified "Secret-RD". (Feasibility Report #49, Task C-36).

Task C-54: Fabrication of hydrides (Moderator). This task is in the process of closing out.

LAROO (GE-ANP):

Task C-4: Preparation of ceramic type fuel elements. TERMINATED.

COO (Argonne National Laboratory):

Task C-19: Research and Development on wafer type fuel elements. TERMINATED

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Task 0-61: Army Low Power Reactor; TERMINATED

HOOO (Phillips Petroleum):

Task 0-46: Research and Development pertaining to MTR fuel elements.

SROO (e. i. Du Pont):

Task 0-33: Reduction of Thorium Oxide.

SAN (UCRL):

Task 72: In addition to work under the Pluto Program, Facility will be required to do shop fabrication classified "Secret".

ALOO(LASL):

Task 71: Facility has been retained by LASL for material development. Work, documents, and material are classified "Secret-RD".

SAVANNAH RIVER OPERATIONS OFFICE:

AT(30-1)-1293: Origination, storage and transmittal of documents classified to "Secret-RD" of a management interest relating to the SROO project performed at Sylvania Hicksville, LI location, a project inspected and reported by SROO. At the time of this survey Facility was retaining only the "Secret" contract.

LOCKLAND AIRCRAFT REACTOR OPERATIONS OFFICE:

P. O. ANPO-210025 with General Electric Co., ANPD, Evendale, Ohio, to fabricate special fuel elements. Security interest includes the performance of classified work and the receipt and retention of classified documents. Work under this project will also be performed at Sylvania Corning's Hicksville, LI, NY location, a facility inspected and reported by SROO. Mr. T. J. O'Connor advised that under this interest Dr. C. I. Whitman has been appointed Classifying Authority. He believes this should be changed and Dr. John L. Zambrow be appointed instead. The reason being that Dr. Whitman is primarily concerned with sales and Dr. Zambrow has already been appointed COD by OROO.

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NYOO is requested to submit appropriate FDR to establish their interest under the F.O. (See COMMENTS & RECOMMENDATIONS).

NEW YORK OPERATIONS OFFICE:

AT [redacted]373 (Secret): To determine the commercial potential of nuclear fuel recovery and reprocessing which the company is now studying. Categories approved: O-4, 7, 10, 20, 25, 26, 37, 40, 41, 46, 47, 55, 66, 68, 70, 76, and 78.

Restricted Data is also located at Facility's Hicksville, LI, NY location, which is inspected by SROO.

OTHER INTERESTS:

OROO: "C" interest of Dr. John Zambrow, who has been appointed COD for Sylvania-Corning's declassification program.

Security interests at Sylcor concern the receipt, storage, handling and transmittal of SS materials and documents classified through Secret. Facility presently has under custody a Category I amount of [redacted]435.

Under the NYOO contract AT(30-1)-366, Facility is an authorized 2/A Station and included is an Accountability Station established for Dr. Morris Cohen, a Consultant to Sylcor, located at MIT, Cambridge, Mass.

Sylcor, which is jointly owned by Sylvania Electric Products Company and the Corning Glass Company, occupies rented space in facilities owned by Sylvania Electric. Sylvania Electric Products Company uses the Classified Mail Address indicated on P. 1, Item #11, for NYOO contract AT(30-1)-2102. This Facility is inspected and reported separately.

As previously noted, recommendations listed in NYOO SSR dated 7/15/58 are, in some instances, repeated again in the report. A letter from the NYOO Contracts Division was sent to Facility on July 17, 1958 listing the major recommendations found as a result of the previous survey. The following recommendations were offered to Facility at that time and to facilitate reading, the action taken is also listed:

1. "Appointment of COD to review AEC matter for classification or declassification".
   (Dr. John Zambrow was appointed COD by OROO on 11/25/58).

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2. "Maintenance of an Access List of cleared persons authorized to have access to R/D matter and the categories to which each is authorized, together with monthly review of such Access List".
   (Facility established an Access List by categories of individuals authorized access to Research & Development Reports in accordance with AEC MC 2109.08a, a copy of which has been furnished this office. The List is maintained on a current basis. Changes are noted by the Security Officer and Document Custodian).

3. "Separation of classified from unclassified matter including AP from R/D Reports".
   (Facility, within its Classified Document Library, has established two separate sections for AEC documents; one side classified and the other unclassified).

4. "Identification and accountability of classified documents".
   (The Classified Document Librarian, Mrs. Morris, is maintaining a classified document register, a monthly record of all incoming classified reports and cross reference index cards).

5. "Periodic review of clearances for termination, reaffirmation, etc.".
   (Clearances are on a continuing basis for review, termination and reaffirmation, according to the Security Officer).

6. "Proper stamping of all AEC R/D Reports".
   (The Document Custodian, since the last survey, has reviewed all classified AEC reports in her possession for proper marking and documentation. A spot check revealed no discrepancies and documents were properly downgraded or declassified).

7. "Proper marking of all classified documents authorized for downgrading or declassification."
   (Same as #6).

8. "Reduction in the number of individual classified file locations and a montly inventory of all classified documents to be submitted to the Classified Library Document Control or the person responsible for the classified documents at each such point."
   (Since the previous survey, Facility has eliminated six individual classified file locations.

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Declassified at the National Archives

Facility: Sylvania Corning Nuclear Corp.

The Security Officer stated that additional locations will be, in time, eliminated).

9. "Decisive follow up action on classified documents which continue to remain missing or unaccounted for". (Although the Security Officer stated that Facility was actively investigating the loss of classified documents, it is apparent that additional effort could be exerted in this regard. At the time of the last survey, Facility had 11 unaccounted for documents. Since that time Facility has notified this office on 1/13/59 that one "Secret" document had been located. However, on 11/3/58 Facility notified NYOO that three more "Secret" documents were reported missing. See DOCUMENT CONTROL & COMMENTS & RECOMMENDATIONS).

Facility, as a result of this survey, has again been notified of the deficiencies in its security program. A date will be established within the next few weeks to return to Facility and determine the action taken on recommendations and deficiencies found during this survey, as well as recurring problems of Facility's security program.

COMPLIANCE WITH PART 25

Section 25.15: There have been no changes in activities or pursuits of the Access Permittee to warrant revision of the original application. Although a recent merger of Sylvania Electric Products Co. and the General Telephone Company was accomplished, it in no way affects the corporate status of Sylvania Corning Nuclear Corp.

Section 25.22(b): Since all of Facility's classified data has been received from TISE, Oak Ridge, according to O'Connor, it is assumed that classified data retained by Facility corresponds with the categories authorized by the Permit.

Section 25.24(b): Changes that have occurred in Facility's security program have been noted by Facility's Security Officer in letters to NYOO amending the original Security Plan on file in this office.

Section 25.30: There are no exceptions, additional conditions or requirements connected with this Access Permit. O'Connor reiterated his desire to comply with any recommendations or revisions deemed advisable by this office.

NARA
NA 14070 (9-87)

USDOE 021903

James Weiss, Adm. Div., Savannah River Operations

This document consists of 2 pages.
No. 13 of 16 copies. Series A .

UNITED STATES
ATOMIC ENERGY COMMISSION
New York Operations Office
376 Hudson Street
New York 14, New York

LETTER MODIFICATION NO. 35 effective as of the 30th day of September, 1959
- to -
CONTRACT NO. AT-30-1-Gen-366 entered into as of the 1st day of July, 1948

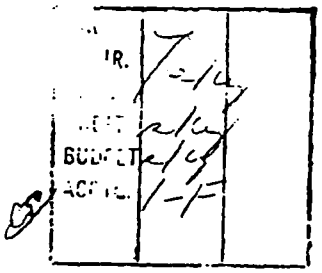
Sylvania-Corning Nuclear Corporation
Willets Point Boulevard
Bayside, Long Island, New York

Gentlemen:

1. This letter, subject to your written acceptance, sets forth the initial agreement between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), acting through the ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA-CORNING NUCLEAR CORPORATION (hereinafter referred to as the "Contractor"), in anticipation of a definitive modification to Contract No. AT-30-1-Gen-366 under which the Contractor would continue the performance of the work presently provided for under paragraph 1 of Article II of said contract.

2. Pending the execution of said definitive modification and, in the manner, and to the extent, requested by the Commission from time to time, the Contractor shall continue performance of said work. Said performance hereunder shall commence on October 1, 1959.

3. All of the provisions of said contract, as heretofore modified, shall apply to performance of, and compensation for, said work, except paragraph 2 of Article II (other than the first sentence thereof), paragraph 1 of Article III, paragraphs 1 and 2 of Article IV, and subparagraphs a, b, c, g and i of paragraph 4 of Article IV; provided, however, that the reference in subparagraph e of paragraph 4 of Article IV of said contract to "monetary ceiling" shall be deemed to refer to ceilings in subparagraph d of said paragraph and to the amount in paragraph 5 of this Letter Modification.



IR.	7-2-49	
[illegible]	2/49	
BUDGET	2/49	
ACCTG.	1-F	

M. Murray
By

USDOE 016613

4. Negotiations have been undertaken, and will be continued, for the execution of said definitive modification which will supersede this Letter Modification. It will provide for a fixed fee or fees to the Contractor and will include such detailed terms and conditions as the parties agree upon which may or may not be at variance with the provisions of this Letter Modification.

5. Pending the execution of said definitive modification, the Contractor's actual costs in its performance hereunder shall not exceed Four Hundred Forty-Four Thousand Dollars ($444,000.00) in the aggregate which sum shall be the limit of the liability of the Government in connection with said performance hereunder whether or not this Letter Modification is terminated pursuant to paragraph 6 hereof or by notice pursuant to Article III of said contract.

6. In case said definitive modification is not executed by April 30, 1960, (or any subsequent date mutually agreed upon in writing) this Letter Modification will terminate on the stated date or on such subsequent date, as the case may be. Such eventuality shall be deemed to be a termination covered by paragraph 4 of Article III of said contract.

7. This letter, executed in duplicate on behalf of the Government, is forwarded to you for your consideration. If satisfactory, it is requested that the following acceptance form on Copy No. 1 hereof be executed on behalf of the Contractor and returned to this office as promptly as possible. Copy No. 2 is for your retention.

Very truly yours,

UNITED STATES OF AMERICA

By: UNITED STATES ATOMIC ENERGY COMMISSION

By: /s/ Joseph L. Smith
Contracting Officer

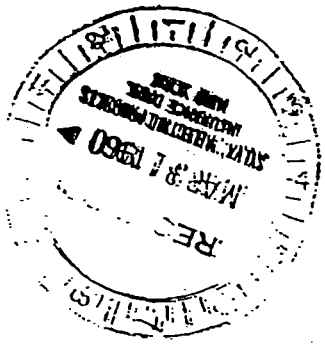
Accepted:

SYLVANIA-CORNING NUCLEAR CORPORATION

By: /s/ H. C. Cullen

Title: Contract Administrator

USDOE 016614



Irradiation programs.

March 29, 1960

List - see below *

Howard M. Cohen

It has just come to my attention that Sylcor is committed to obtaining irradiation services in connection with two programs which we are conducting for the AEC under Contract 366.

It has been Sylcor's policy that we will not permit any items which we have produced or on which we have worked to be used in or in connection with a reactor or critical facility without first obtaining protection for Sylcor against resulting potential liability to Sylcor. This policy is based on the assumption that our potential liability could exceed by far the value of the contract and conceivably even the assets of our company. The protection which we require normally takes the form of insurance and/or governmental indemnity against liability to third parties and a waiver of any claims which the owner-operator himself might have against us; claims of the reactor owner-operator for damage to property at the reactor site are not normally covered by liability insurance and there is at least some question as to whether they would be covered under our government's usual form of indemnity.

Unfortunately, we do not have any direct indemnity under Contract 366. Modification No. 25 to that contract merely provides that the Commission will consider whether or not to amend the contract to provide for express indemnity to cover any future aspect of our activities under the contract which in the Commission's opinion may give rise to a probability, or any remotely possible existence, of a nuclear hazard. I have discussed with Jack Hart of NYOO the possibility of obtaining an indemnity and waiver of consequential damages under this clause with respect to our existing programs. He indicated that any such request would have to be processed through Washington; he noted that the timing, at least with respect to the Chalk River project, is such that it could result in cancellation of that entire program. Under the circumstances we have agreed to go ahead with the irradiation of the four capsules already sent to Chalk River, with the understanding that NYOO would agree to try to negotiate adequate coverage for us on the Chalk River job both with respect to any future irradiation and also retroactively to cover us with respect to the present irradiation. Jack Hart has also agreed to reimburse us for any additional cost of

*M. Cullen
A. Master
W. Ruzicka
S. Strauss

obtaining private insurance coverage for these risks. Our insurance people have just informed me that they have been able to obtain 5 million dollars of such coverage at least against third party claims. The cost will be nominal at most. However, damage to the reactor site will not be included.

I also reviewed with Jack Hart the possible methods which we might have of protecting ourselves in connection with potential liability resulting from irradiation of the items being encapsulated by NDA. Again it is possible that we may be able to obtain an indemnity directly from the Commission under Contract 366. It is at least questionable, however, whether such an indemnity would cover damage to the reactor site. It would appear that the simplest and quickest way of protecting ourselves with respect to the NDA and other irradiation jobs to be done in U. S. reactors would be to provide for such protection in our contractual agreements for the actual irradiation.

Under the Price-Anderson Act a governmental indemnity is made available to the owner-operator of all U. S. reactors, obtaining such an indemnity and carrying any related insurance which may be required would be a condition to the reactor operator's license. The indemnity and related insurance would in turn cover the liability of anyone who might be liable. Under present AEC policies a contract operator is entitled to similar indemnity protection. Thus no serious problem would be presented if, as a condition to any irradiation agreement, we were to request evidence that the reactor operator is covered by a Price-Anderson indemnity and has obtained and will maintain insurance in the type and amount required as a condition to the effectiveness of such indemnity. Evidence which we would require under such a contractual provision would consist of a copy of the indemnity agreement itself and a certificate of insurance running to Sylcor. Since there is at least some question as to whether Price-Anderson indemnity would cover damage to the reactor operator's facility and the related liability insurance clearly would not cover this, a waiver of consequential damages from the reactor operator would have to be obtained in addition to the foregoing evidence.

Specifically, with respect to the NDA job, I understand that pursuant to our arrangements with NDA it has issued an invitation to U. S. reactor operators to bid on the contemplated irradiation service. In a separate note to Bill Ruzicka I am including a few paragraphs which should be added to our proposed written agreement with NDA. I have reviewed the general nature of the problem involved with Jack Hart and I believe that he is agreeable to this proposed procedure.

Finally, with respect to any future jobs involving irradiation in the U. S. provision should be inserted in our basic agreement with the reactor owner-operator or with the contractor who will arrange for the irradiation service, substantially in the same form as that which I am proposing for the NDA job. On work involving possible irradiation in a foreign reactor, I believe it would be best to contact me for appropriate

wording well in advance of entering into any formal commitment for performance of the work; Bob Hagel or Bob Gyory would also have to be informed of these jobs well in advance in order that we may arrange for appropriate insurance coverage. Furthermore, in our future renewals of Contract 366 we should insist upon inclusion of a provision to the effect that we will not be obligated to proceed with delivery of any items which are to be used in or in connection with a reactor or critical facility unless we have first obtained assurance that Sylvac shall be adequately protected against both third party liability claims and claims for consequential damages which may arise from the use of our products in or in connection with the reactor or critical facility. I assume that Marty Quilez will be in touch with me at the appropriate time in order that we may agree upon applicable language for insertion in next year's renewal amendment to 366.

CC: Dr. Davenport
G. Edwards
R. M. Powers
J. Zasorow
R. Gyory ✓

DELETED VERSION

CONTRACT NO. AT-30-1-GEN-366

AMENDMENT NO. 14 TO APPENDIX "D"

This is Amendment No. 14, to Appendix "D" referred to in Modification No. 35 to this contract.

The following paragraphs are added, effective July 1, 1961:

43. During the period July 1, 1961 through September 30, 1961 the Contractor's research and development work and related services shall pertain to:

A. Irradiation of Uranium-Yttrium Alloys. Paragraphs 12 through 16 of the Contractor's proposal (Form NYOO 230), captioned "Irradiation of Uranium-Yttrium Alloys" dated January 4, 1961, a copy of which is on file in the Commission's New York Operations Office, specify the details of this project.

B. Direct conversion of UF_6 to UF_4 to UC. Paragraphs 12 to 16 of the Contractor's proposal (Form NYOO 230) captioned, "Direct Conversion of UF_6 and UF_4 to UC", dated January 6, 1961, a copy of which is on file in the Commission's New York Operations Office, specify the details of this project.

44. Also during the period July 1, 1961 through September 30, 1961, the Contractor shall perform research and development work and related services, in accordance with the technical aspects of the Contractor's classified proposal to the Commission, captioned [redacted] b2 a copy of which is on file in the Commission's New York Operations Office.

DELETED VERSION

USDOE 016606

IN WITNESS WHEREOF, the parties hereto have executed this document.

Witnesses as to execution by the Contractor:

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

_____

BY: _____

_____

(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

_____

BY: _____

_____

TITLE: _____

(Address)

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____ who signed this document on behalf of the Contractor was then _____ of said corporation; that said document was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

_____

(Corporate Seal)

USDOE 016607

Copy No. 13 of 17 copies.

MODIFICATION NO. 39
SUPPLEMENTAL AGREEMENT TO
CONTRACT NO. AT-30-1-GEN-366

MODIFICATION NO. 39

CONTRACTOR AND ADDRESS:	SYLVANIA ELECTRIC PRODUCTS, INC. Willets Point Boulevard Bayside, Long Island, New York
MODIFICATION FOR:	ADDITIONAL CONTRACT ACTIVITIES AND OTHER CHANGES
INCREASE IN MONETARY ESTIMATE:	$33,357.00
TOTAL MONETARY ESTIMATE:	$10,749,930.00 (inclusive of fee)
SUBMIT INVOICES TO:	UNITED STATES ATOMIC ENERGY COMMISSION New York Operations Office 376 Hudson Street New York 14, New York

THE ORIGINAL COPY OF THIS DOCUMENT
HAS BEEN EXECUTED BY BOTH PARTIES.

USDOE 016603

THIS MODIFICATION, effective the 1st day of July, 1961, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and SYLVANIA ELECTRIC PRODUCTS, INC. (hereinafter referred to as the "Contractor"),

WITNESSETH THAT:

WHEREAS, as of the 1st day of July, 1948, the Government and Sylvania Electric Products, Inc. entered into Contract No. AT-30-1-GEN-366 for the performance of certain research, development, and related work; and

WHEREAS, said contract has been modified heretofore in a number of respects, and the parties desire to modify said contract further, as hereinafter provided; and

WHEREAS, this modification is authorized by law, including the Atomic Energy Act of 1954;

NOW, THEREFORE, said Contract No. AT-30-1-GEN-366, as modified previously, is hereby modified further as follows:

1. The following is added as item (4) of paragraph (b) of Article IV FIXED FEES

   "(4) 43 and 44 $2,946.00"

2. In Article V - INITIAL ESTIMATE OF COST, the amount $10,749,930.00 is substituted for the amount $10,716,573.00, which amount is inclusive of all fixed fees under this contract, except as provided in paragraph (a) of Article IV.

3. Pursuant to the pertinent provisions of this contract, with respect to the period January 1, 1960 to December 31, 1960, both dates inclusive, it is agreed between the parties hereto: that the fixed rate for the allowance of the Engineering Laboratory overhead shall be 148.5% of the direct salaries and wages (excluding overtime premium payments) reimbursable under this contract with respect to said period; that the fixed rate for the allowance of General and Administrative overhead shall be 7.4% of the total of (i) the direct items of expense reimbursable as such under this contract with respect to said period (but excluding costs for equipment and cost or expenses pertaining to any litigation) and (ii) the amount determined by application of the 148.5% rate referred to above in this sentence.

USDOE 016604

IN WITNESS WHEREOF, the parties hereto have executed this document.

Witnesses as to execution by the Contractor:

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

_____

BY: _____

_____

(Address)

SYLVANIA ELECTRIC PRODUCTS, INC.

_____

BY: _____

_____

TITLE: _____

(Address)

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____ who signed this document on behalf of the Contractor was then _____ of said corporation; that said document was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation.

_____

(Corporate Seal)

USDOE 016605

B

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THIS IS NY 1-2659 GAPLS

[illegible] NR 89 [illegible]

TEM PALMETER USAEC LOCKLAND AREA OFFICE CINTI OHIO [illegible]

TO USAEC DIRECTOR OF BUDGET AND FINANCE DIVISION NYOO

ATTN DEL VECCHIA

GENERAL ELECTRIC HERE IN LOCKLAND IS NEGOTIATING WITH SYLVANIA ELECTRIC TO DO WORK FOR GENERAL ELECTRIC DURING THE PERIOD MAY 1954 THROUGH FEBRUARY 1955 ON A CPFF BASIS AND PLAN TO UTILIZE THE APPENDIX [illegible] UNQUOTE FORM TO YOUR CONTRACT 366 PD THE COST ESTIMATE FROM SYLVANIA PROVIDES FOR TOTAL COSTS OF $48,973 WHICH INCLUDES A FIXED FEE OF $2,659 OR 6 PER CENT OF TOTAL OPERATING COST ESTIMATE AND $2,000 FOR EQUIPMENT PD OVERHEAD HAS BEEN ITEMIZED AS 120 PER CENT OF TOTAL DIRECT LABOR AND G&A AT 10.6 PER CENT OF TOTAL OPERATING COSTS PD

VERIFICATION IS REQUESTED FROM YOUR OFFICE THAT THE OVERHEAD G&A G&A AND FEE RATES ARE ACCEPTABLE AND IN LINE WITH YOUR CURRENT CONTRACT RATES WITH SYLVANIA UNDER NYOO CONTRACT 366 PD [illegible] THAT THE OVERHEAD AND G&A RATES ARE PROVISIONAL SUBJECT TO [illegible] DETERMINATION BY AUDIT PD PLEASE ADVISE BY RETURN TELETYPE [illegible]

CONT NOS PD

1954	1955	366	$48,973	$2,659	6 PER CENT [illegible]
$2,000	10.6 PER CENT	366			

INFORMATION COPY

NR 89 SENT 5404/1340 Z ML

R 1 OK M V OK THX M

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PROPOSED SUBCONTRACT NO. AT-24 WITH
SYLVANIA ELECTRIC PRODUCTS, INC.

T. R. Clark O-5
A. E. Fecke O-3
H. W. Holliday O-4
W. A. Jeffrey O-5
S. J. Sakas O-4
B. J. Sevold O-2
VJN - File
VJN - F.U.

Cincinnati 15, Ohio, February 25, 1954

R. E. VanAusdal
ACCOUNTANT

Enclosed for your review and approval is a draft copy of proposed Subcontract No. AT-24 with Sylvania Electric Products, Inc. under Prime Contract AT (11-1)-171.

This instrument is identical to a similar agreement we have with Sylvania Electric Products, Inc. for work that is also classified, which was previously approved by your office, except that the subject Agreement has been altered to reflect the change in the scope of work, date of completion, fixed fee, allotted sum, and subparagraphs (a), (b), (c) and (d) of paragraph 2 have been added.

The predecessor to the subject Agreement shall hereinafter be referred to as Subcontract No. AT-23.

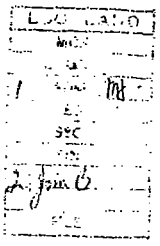
Your comments or approval at an early date will be appreciated.

Original Signed By
V. J. NICHOLAS

V. J. Nicholas, SUPERVISOR - SUBCONTRACTS, Bldg. D, Ext. 269

VJN:ro

Enclosure



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SUBCONTRACT CHECK LIST

ADMINISTRATIVE BRANCH

Subcontract No. AT-24 (Appendix C)

Date Rec'd by A. B. 4/26/54

Reviewed by [illegible]

Date Release by A. B. 5/6/54

Brief Description of Proposed Subcontract: Add additional work to Contract AT-30-1-Gen 366 (See DCF-4480)

Does proposal include:

1. Detailed statement of services, equipment, materials, or supplies to be furnished? yes (✓) no ( ) See DCF-4480 (Cy in file) attached

$44,314.00 2. Estimated cost of the subcontract exclusive of fee? yes (✓) no ( )

3. List and details of firms considered? yes ( ) no ( ) Not applicable

5% = $2,059.00 4. Statement of proposed maximum fee to be paid and basis on which proposed fee is based? yes (✓) no ( )

5. Facilities available? yes (✓) no ( )

6. Time factor involved. yes (✓) no ( )

7. Equipment available, Delivery yes (✓) no ( )

8. Discussion of availability of specifications and drawings. yes (✓) no ( )

9. Is cost element complete - Yes - See DCF-4480 (Revised Cost estimate)
   Cost estimate:
   a. Labor
   b. Materials
   c. Plant & Equipment
   d. Overhead
   e. Fee

Item No.	Remarks
6.	Work shall end on February 28, 1955.
7.	Except Carbon reactor furnace - the cost of this item is provided for in total cost of Subcontract.

On the basis of the above, Administrative Branch recommends: ☐ Approval ☐ Disapproval

Subcontract Exhibit #3
Subcontract Check List - Administrative Branch

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FINANCE BRANCH

SUBCONTRACT CHECK LIST

Proposed subcontract with Appendix C AT-(30-1)- Gen. 3

Proposed subcontract No. Ceramic Density @ Sy Cement

Type of subcontract CPFF

Effective date of proposed subcontract May - Feb 28, 55

Amount of subcontract $48,973

Subcontract reviewed by M. A. Palmeteo

Date: 5/5/54

Item No.	Description	Yes	No	Ref.
	A. GENERAL			
1.	Has the subcontract been reviewed by the Administrative and Technical Branch and indication made as to:			
	a. Approval that Subcontract is necessary?	✓		
	b. Approval in selection of Subcontractor?	✓		
	c. Approval as to type of Subcontract?	✓		
2.	Has any of the standard contract language been changed to fit the requirements of the particular Subcontractor?			See Below
3.	Does the file indicate that all questions have been resolved between the Contractor and the Subcontractor and that no items remain open for negotiation?	✓		
4.	In the case of CPFF Subcontract has the Commission approved this type of action?		✓	
5.	Does the Subcontract adequately stipulate the delivery requirements or the duration of the Subcontract?			R & D
6.	Does the proposed Subcontractor presently have a Subcontract with the Contractor?	✓		
7.	Has the proposed Subcontractor ever had a Subcontract with the Contractor?	✓		
8.	Does the file indicate that the Subcontractor is financially able to perform the work?		✓	

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Item No.	Description	Yes	No	Ref.
	B. SPECIFIC			
9.	The Schedule			
	a. Does the schedule clearly indicate the dollar limitation of the Subcontract and amount of Fixed Fee if any?	✓		
	b. Does the schedule clearly indicate that the costs will be reimbursable in accordance with GM-ACC-17?	✓		
	c. Reimbursable Costs:			
	(1) Does the Contract language clearly segregate direct costs from indirect costs?		✓	
	(2) Are the overhead rates, if applicable, on a Provisional Basis? On a Fixed Basis?			Prov.
	(3) If overhead rates are applicable, does the Subcontract language provide for proper redetermination dates?	✓		
	(4) If applicable, does the Contract language provide that there will be no duplication in the reimbursement of indirect and direct costs?	✓		
	d. Are there any changes provided in the schedule that delete, alter or modify existing standard Contract language?			See Below
10.	The Cost Estimate			
	a. Does the file indicate that a careful review has been performed by the Contractor's accounting department of the Cost estimate and that it meets with their approval?		✓	
	b. Does the Cost estimate give a complete breakdown of the various elements of costs?	✓		
	c. Does the Cost estimate agree with the dollar limitation provided in the Subcontract?	✓		

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Item No.	Description	Yes	No	Ref.
	d. If overhead and G&A rates are applicable, does the file adequately include proper supporting data to carefully evaluate that the overhead and G&A rates are acceptable?	See Wire from NYO		
	e. Were the overhead and G&A rates, if applicable, determined by:			
	(1) Analysis of Contractor records & reports?		✓	
	(2) From overhead rates developed by Cognizant Army Agency?		✓	
	(3) From rates presently existing in similar AEC Contracts with the same proposed Subcontractor?	✓		
	f. Has the Cost estimate been reviewed by:			
	(1) Technical Branch (Manpower)?	✓		
	(2) Administrative Branch (Equip. & Materials)?	✓	✓	
	(3) Security Branch (Security needs)?			
11.	The Fee Schedule			
	a. If applicable, is the Fee Schedule provided?			
	b. Does the Fee Schedule indicate:			
	(1) Total cost of the Work?	✓	[illegible]	
	(2) Elimination of unallowable items from fee basis?		✓	
	(3) Percentage of fee?		✓	
	(4) For review and approval by the Commission?		✓	
	c. Is the fee amount in agreement with the fee provided in the Subcontract?	✓		

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Item No.	Remarks
4	Not presented to Commission for approval.
10 a	Not accomplished by Contractor.
	Jam: I am awaiting a reply from N Joo (Teletype) in regard to the Overhead, G & A and Fee. Of these items one satisfactory I will approve from Finance standpoint. However action should be taken in respect to the above two items.

On the basis of the above, the Finance Branch recommends:

☑ Approval ☐ Disapproval ☐ Additional information required

M. A. Palmeter

M. A. Palmeter
Chief, Finance Branch

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SUBCONTRACT PROCUREMENT CHECK LIST

FOR TECHNICAL BRANCH

Subcontract No. Appendix C - AT(30-1) Gen 326
For: Ceramic Development @ Sylvania
With: S.E.P.
Rec'd. by T.B. 4/27/54
Review submitted by T.B. 4/28/54
Reviewed by: D. Rowe
☑ New ☐ Renewal

Item No.	Question	Yes	No
	A. Description		
1.	Are the ultimate objectives toward which the subcontract is directed adequately described?	✓	
2.	Are the specific objectives of the subcontract reasonably bounded so as to clearly indicate its relationship to the primary effort (i.e. of the prime contractor)?	✓	
3.	Are these objectives appropriate to the time and expense to be devoted to their attainment?	✓	
4.	Has a work schedule been established for the various phases of the subcontract?		✓
5.	Is a specific method of approach given for accomplishing the statement of work?	✓	
6.	Are drawings and specifications clear and concise?	✓1	
7.	Is it anticipated that this subcontract will require renewal?	✓	
8.	~~Is a definite end item required or~~ is contractor's best effort specified?	✓	
	B. Justification		
9.	Has the necessity for the subcontract work been satisfactorily demonstrated?	✓	
10.	Is there a reasonable expectation that the subcontract will meet the technical requirements set forth in the subcontract?	✓	
11.	Have alternate plans been considered for meeting these requirements?	✓	
	C. Contractor-Subcontractor Relations		
12.	Does the procurement require technical liaison between contractor and subcontractor or vendor?	✓	

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Item No.	Question	Yes	No
13.	Is provision made for modifying the objectives of the subcontractor with respect to changes, termination in part or completely, or additions calling for delivery of special items or services?	✓	
	D. Security and Safety		
14.	Does the procurement require the vendors access to classified information or restricted data in the form of drawings, specifications, mock-ups or other information?	✓	
15.	What is highest security classification anticipated on work?	Secret R.D.	
16.	Is it possible to declassify any portions of the work?	✓	
17.	Are radiation or health hazards involved?	✓	
	E. Selection of Subcontractor		
18.	Were all bidders furnished same specifications?	N/A	✓
19.	Were any possible bidders rejected because of lack of "Q" cleared personnel?		✓
20.	Is the subcontractor's bid based on meeting all specifications, including time limit?	N/A	
21.	Does the successful bidder's delivery date depend on priorities?		✓
22.	Are any lump sum purchase orders of a similar nature open to the subcontractor? a. with AEC? b. with other government agencies?		✓
23.	Is there question as to the subcontractor's ability to accomplish this work?		✓

Item No.	Remarks
5.	Due to the research nature of the work a specific method of approach for carrying out work is not applicable.

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Item No.	Remarks (con't)
	It is requested that Monthly Progress Reports be supplied LAO on the work performed under this subcontract.

On the basis of the above, the Technical Branch recommends:

☐ Approval ☐ Disapproval ☐ Additional information required

☐ Alternate Source

Explanation: _____

A. M. Crithsen, Chief
Technical Branch

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CONTRACT NO. AT-30-1-GEN-366

Refer to this Contract as Subcontract No. AT-24 on G.E. internal correspondence.

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the Contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products Inc. (the 'Contractor'), and General Electric Company, ANP Department (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK:

The work hereunder is to be performed in accordance with Sylvania Electric Products Inc. proposal, dated December 31, 1953, GE-ANP Document # DCF 4480.

2. Except as follows, all of the provisions of said contract are applicable with respect to the work added hereby:

(a) The Contractor shall furnish intermediate reports to the Sponsor from time to time, when requested, and in such form and number as may be required by the Sponsor concerning Contractor's activities hereunder, and shall make such final report as may be required by the Sponsor.

(b) Any dispute arising hereunder with respect to financial matters or to the facts upon which a financial dispute is based, which is not disposed of by mutual agreement, shall be decided by representatives of the Commission, who shall reduce their decision to writing and mail copies thereof to both parties. The decision of the Commission's representative shall be final and conclusive upon all questions of fact, but questions of law, or mixed questions

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of law and fact, shall be subject to judicial review.

(c) The Contractor shall incur no expenses in excess of the sum allocated hereunder without the express prior written approval of the Sponsor.

(d) Technical guidance will be derived through conferences attended by the technical personnel of both the Contractor and Sponsor.

3. The fixed fee for the work added hereby is $2,659.00.

4. Performance of the work shall end on February 28, 1955.

5. $48,973.00 has been allocated for the work added hereby. (See 4 b and 4 c of Article IV.)

6. This Agreement will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: /s/ W. E. Kingston

Title: General Manager, Atomic Energy Div.

Date: 4/19/54

APPROVED:

U. S. ATOMIC ENERGY COMMISSION
Lockland Area Office

By: /s/ E. M. Velten
E. M. Velten

Title: Area Manager

Date: May 7, 1954

GENERAL ELECTRIC COMPANY

By: /s/ D. R. Shoults
General Manager
Aircraft Nuclear Propulsion Dept.
Atomic Products Division

Date: 4-14-54

APPROVED:

U. S. ATOMIC ENERGY COMMISSION
New York Operations Office

By: /s/ H. B. Fry
H. B. Fry

Title: Manager

Date: _____

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SUBCONTRACT CHECK LIST

ADMINISTRATIVE BRANCH

Subcontract No. Modification 7 AT-24

Date Rec'd by A. B. 2/26

Reviewed by [illegible]

Date Release by A. B. 3/4/55

Brief Description of Proposed Subcontract: Addition of work set forth in Document DC-55-2-51 and DCF 5615

Does proposal include:

1. Detailed statement of services, equipment, materials, or supplies to be furnished? yes (✓) no ( )
2. Estimated cost of the subcontract exclusive of fee? yes (✓) no ( )
3. List and details of firms considered? yes ( ) no ( ) N.a.
4. Statement of proposed maximum fee to be paid and basis on which proposed fee is based? yes (✓) no ( )
5. Facilities available? yes (✓) no ( )
6. Time factor involved. yes (✓) no ( )
7. Equipment available, Delivery yes (✓) no ( )
8. Discussion of availability of specifications and drawings. yes ( ) no ( ) N.a.
9. Is cost element complete -
   Cost estimate:
   a. Labor
   b. Materials
   c. Plant & Equipment
   d. Overhead
   e. Fee

) See DCF 5615 (#3)

Item No.	Remarks
3.	Modification of existing agreement
6.	Expiration date – February 28, 1956

On the basis of the above, Administrative Branch recommends:

Approval ✓
Disapproval

Subcontract Exhibit #3
Subcontract Check List - Administ

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M. Rosenbad, Manager,
New York Operations Office

March 8, 1955

R. E. Velten, Area Manager,
Lockland Area Office

MODIFICATION NUMBER 1 TO SPONSORED TASK C-4 (SUBCONTRACT AT-24; BETWEEN SYLVANIA ELECTRIC PRODUCTS AND GENERAL ELECTRIC COMPANY)

We are enclosing for your review and approval three (3) copies of Modification Number 1 to Sponsored Task C-4 referred to as Subcontract AT-24 between Sylvania Electric Products and General Electric Company. The New York Operations Office should verify overhead, G&A rates, and fee. The cost estimate as extracted from Sylvania Electric Products' proposal DOF-5615 is as follows:

Cost Estimate

1.	Direct Labor		
	Engineering & Engineering supervision	2500 hours	$ 9,300
	Technician Labor	1750 hours	3,500
	Service Labor: (Metallography, X-Ray Testing Chemistry, Machine Shop, etc.)	2050 hours	5,700
	Total Direct Labor		$18,500
2.	Overhead at 110%		20,350
3.	Direct charges & Prorated Expense Items*		10,650
4.	General & Administrative Expense at 14.1%		6,950
5.	Total Estimated Operating Cost		$56,450
6.	Fee	6.002%	3,420
7.	Total Operating Costs Plus Fee		$59,870

*Direct charges include consumable materials, travel and the cost of irradiation services at Brookhaven. Prorated expense is the share of security, accountability, health and safety, etc., services allocable to this work.

Modification Number 1 to Sponsored Task C-4 attached hereto has been signed by Dr. Kingston of Sylvania, D. R. Shoults, General Manager, ANP Department and myself.

OFFICE ▶	Proc. Ass't.	Ch. Adm. Br.	Ch. Fin. Br.	Area Manager	
SURNAME ▶	Backscheider/mea	Holliday	Bernster	Velten	
DATE ▶	3-8-55	3-8-55	3-8-55	3-8-55	

Form AEC-318 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—62761-3

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Please return two (2) signed copies to this office. We shall furnish you with as many conformed copies of the fully executed agreement as you may require.

Thank you for your cooperation in this matter.

Enclosure:
Subj.Mod.#1 (3)

cc: V. J. Nicholas, GE-ANPD
Finance Branch, LAO

OFFICE ▶						
SURNAME ▶						
DATE ▶						

Form AEC-318 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—62761-5

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NARA 000573

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2/18/55 Modification No. 1 to Sponsored Task C-4

	Fee	Allocation
Original Sponsored Task C-4	$2,659	$48,973
Modification No. 1 to Sponsored Task C-4	3,390	59,870
TOTAL	$6,049	$108,843

Refer to this Contract as [illegible] Subcontract No. AT-24 on G.E. internal correspondence.

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT No. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and General Electric Company, ANP Department, the sponsor (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

As described in Contractor's proposal enclosed with letter from E. S. Norris to Walter Koshuba dated 2/18/55 Document No. DCF #5615.

2. Except as follows, all of the provisions of said Contract are applicable with respect to the work added hereby:

The provisions of the original Sponsored Task C-4 shall apply to this Modification No. 1.

(Note: Insert 'None' if applicable)

3. The fixed fee for the work added hereby is $ 3,390 .

4. Performance of the work shall end on 2/28/56 .

5. $ 59,870 has been 'allocated' for the work hereby. (See 4b and 4c of Article IV).

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6. This Agreement will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: /S/ W. E. Kingston
W. E. Kingston
Title: General Manager, Atomic Energy Div.

GENERAL ELECTRIC COMPANY

By: /S/ D. R. Shoults

Title: 3-1-55 General Manager

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION
By: /S/ E. M. Velten
E. M. Velten
Manager, Lockland Area Office
MAR 1 1955

Approved:

U. S. ATOMIC ENERGY COMMISSION
New York Operations Office

By: /S/ J. C. Clarke
J. C. Clarke
Title: Authorized Representative of the U. S. Atomic Energy Commission
Date:

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[redacted]

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SUBCONTRACT CHECK LIST

ADMINISTRATIVE BRANCH

Subcontract No. AT-24 Amend #2

Date Rec'd by A.B. 2/3/56

Reviewed by B

Date Release by A.B. 2/3/56

Brief Description of Proposed Subcontract: Special work set forth in DCF-6128

Does proposal include:

1. Detailed statement of services, equipment, materials, or supplies to be furnished? yes (✓) no ( )
2. Estimated cost of the subcontract exclusive of fee? yes (✓) no ( )
3. List and details of firms considered? yes ( ) no (·) na
4. Statement of proposed maximum fee to be paid and basis on which proposed fee is based? yes (✓) no ( )
5. Facilities available? yes (✓) no ( )
6. Time factor involved. yes (✓) no ( )
7. Equipment available, Delivery yes ( ) no ( )
8. Discussion of availability of specifications and drawings. yes ( ) no ( ) na
9. Is cost element complete - Cost estimate:
   a. Labor
   b. Materials
   c. Plant & Equipment
   d. Overhead
   e. Fee

   See pp 4 of DCF-6128 for detailed cost bkdn.

Total Est Cost $,550.00

10. Is work classified? Secret - RD yes (✓) no ( )
11. Has Security Branch reviewed subcontract, if classified? yes ( ) no ( )

em No.	Remarks
2.	$59,950.00
4.	$ 3600.00
6.	February 28, 1957 (one year) (Begin 2/28/56)

On the basis of the above, Administrative Branch recommends:

after Tech Br. review.

Subcontract Exhibit #3
Subcontract Check List - Administrative Branch

☑ Approval
☐ Disapproval

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NARA 000655

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PROCUREMENT ACTION CHECK LIST

FOR FINANCE BRANCH

(Purchase Orders)

SUB AT 24
~~Purchase Order No.~~ AMEND #2
For: SYLVANIA

Rec'd by F.B. 2-6-56
Review submitted by F.B. 2-6-56
Reviewed by: L.D. Brower

Item No.	Question	Yes	No.
1.	Does the arrangement come within the contract definitions of allowable costs?		
2.	Is the Account No. or Task No. properly reflected? a. Direct charge _____ b. Overhead charge _____ c. If overhead charge, does it have A/F approval _____?		
3.	Do the terms of payment agree with the Invitation to Bid Form and are the extensions correct?		
4.	Does the F.O.B. point on the Purchase Order form agree with that stated on the bid form?		
5.	Has any of the "Conditions of Purchase" articles appearing on the reverse of the P.O. Form been altered or deleted?		
6.	Is there any government furnished materials and equipment in connection with this arrangement?		
7.	If so, does the order clearly indicate a description of the material and equipment and the method of return of the equipment or residue to the contractor?		

Item No.	Remarks			
	O/H	S&A		FEE
AMEND #1	110.0 %	14.1 %	PROVISIONAL	6.002 %
" #2	125.0 %	14.6 %		6.005 %

SEE DCF 6128 FOR REASONS FOR INCREASED RATES.

On the basis of the above the Finance Branch recommends [X] APPROVAL
[ ]

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Subcontract No. AT-24 Amend #2
For: Special Work -DCF 6128

With: Sylvania
Rec'd. by T. B. 2-3-56
Review submitted by T. B. 2-3-56
Reviewed by: [signature]
☐ New ☒ Renewal

Item No	Question	Yes	No
1.	Are the ultimate objectives toward which the subcontract is directed adequately described, and are they appropriate to the prime contractor's effort?	✓	
2.	Are the specific objectives of the subcontract reasonably bounded?	✓	
3.	Is a specific method of approach and schedule established for accomplishing the statement of work?	✓	
4.	Are drawings and specifications clear and concise?	✓	
5.	~~Is a definite end item required or~~ is contractor's best effort specified?	✓	
6.	Has the necessity for the subcontract work been satisfactorily demonstrated?	✓	
7.	Is there a reasonable expectation that the subcontract will satisfy all technical requirements?	✓	+ ✓
8.	Does the procurement require technical liaison between contractor and subcontractor or vendor?	✓	
9.	Is provision made for technical control by contractor over subcontractor?	✓	
10.	Does the subcontractor require access to classified information? What is the highest classification anticipated? 1. Negotiations - Unclassified 2. Documents - Secret RD 3. Work - Secret RD 4. Material - Secret RD	✓	
11.	Are radiation or health hazards involved?	✓	
12.	Were all bidders furnished same specifications?		NA
13.	Is the subcontractor's bid based on meeting all specifications, including time limit?	✓	
14.	Is the proposed subcontractor competent and reputable?	✓	

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Item No.	Remarks (con't)
7	There is no basis for assuming the work will be successful, however any information obtained will be of extreme importance.

On the basis of the above, the Technical Branch recommends:

☒ Approval ☐ Disapproval ☐ Additional information required

☐ Alternate Source

Explanation: _____

L. R. Standifer, Jr., Chief
Technical Branch

--- subcontractor competent and reputable?

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1/30/56 Modification No. 2 to Sponsored Task C-4

	Fee	Allocation
Previous Total	$6,049	$108,843
Modification No. 2	3,600	63,550
Total	$9,649	$172,393

Refer to this Contract as AMEND #2
Subcontract No. AT-24 on
G.E. Internal correspondence.

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and General Electric Company, ANP Department (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

As described in Contractor's proposal enclosed with letter from E. S. Norris to A. Focke dated 1/30/56, DCF #6128.

2. Except as follows, all of the provisions of said Contract applicable with respect to the work added hereby:

The provisions of the original Sponsored Task C-4 shall apply to this Modification No. 2.

(Note: Insert 'None' if applicable)

3. The fixed fee for the work added hereby is $3,600.

4. Performance of the work shall end on February 28, 1957.

5. $ 63,550 has been (~~insert 'obligated' if the Commission is the party, or~~ 'allocated' ~~if a Sponsor is involved~~) for the work hereby. (See 4b and 4c of Article IV.)

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326 93-006
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6. This Agreement will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. E. Kingston

W. E. Kingston, General Manager

Title: Atomic Energy Division

GENERAL ELECTRIC COMPANY

By: [signature] 2/28/56

Title: General Manager - ANP Department

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION

By: E. M. Velten

E. M. Velten

Area Manager

Lockland Area Office

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION

By: [signature]

J. C. CLARKE

AUTHORIZED REPRESENTATIVE OF THE

U. S. ATOMIC ENERGY COMMISSION

New York Operations Office

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GENERAL ELECTRIC SUBCONTRACT AT-24
AMENDMENT NO. 3

SPONSORED TASK NO. C-4
MODIFICATION NO. 3

CONTRACT AT(30-1)-GEN-366

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

This Modification entered into the 13th day of November, 1958 between SYLVANIA-CORNING NUCLEAR CORPORATION (the "Contractor"), and GENERAL ELECTRIC CO.; AIRCRAFT NUCLEAR PROPULSION DEPARTMENT (the "Sponsor"):

WITNESSETH:

WHEREAS, the parties hereto have heretofore entered into a certain agreement, known and designated as Sponsored Task C-4 and Subcontract AT-24 (hereinafter called the Agreement), such agreement having been entered into on April 14, 1954; and

WHEREAS, the parties hereto are desirous of modifying and supplementing said agreement;

NOW THEREFORE, the Contractor and the Sponsor do mutually agree as follows:

1. Paragraph 5 is modified by allocating an additional amount of $860.31 for the work. The revised amount of the agreement is now as follows:

72K 7/8/60

AGREEMENT AMOUNT

	Estimated Cost	Fixed Fee	Total
Allocated Thru Mod. #2	$162,744.-	$9,649.-	$172,393.-
This Modification No. 3	860.31	-	860.31
Revised Total per this Modification	$163,604.31	$9,649.-	$173,253.31

72K 7/8/60

72K 7/8/60

Except as otherwise provided in this Modification No. 3, all the provisions of the agreement as heretofore modified or supplemented shall remain in full force and effect.

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This Modification will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA-CORNING NUCLEAR CORPORATION

By: Garth W. Edwards

Garth W. Edwards

Title: Controller

GENERAL ELECTRIC COMPANY

By: F. E. Knapp

F. E. Knapp

Title: Purchasing Agent

Date: MAY 27 1960

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION

APPROVED

By: J. L. Wilson

J. L. Wilson, Manager

Lockland Aircraft Reactors Operations Office

Date: U. S. Atomic Energy Commission

JUL 8 1960

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS OFFICE

By: John D. Hart

Date: [illegible]

SEP 8 1960

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Accession 4KR
326 83-006
Records covering the establishment & operation of the Lockland [illegible]
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(Corp Nuclear)

Sponsored Task C-4

SUBCONTRACT CHECK LIST

PROCUREMENT MANAGEMENT BRANCH

Subcontract No. AT-24

Date Rec'd by PMB 6/1/60

Reviewed by [signature]

Date Released by PMB 6/2/60

Brief Description of Proposed Subcontract: Final costs as determined by AEC Auditor

1. Type of contract - CPFF, L/H, TM, Consultant, etc. Sponsored Agreement under AT(30-1)-Gen-366
2. Any changes in standard format? No
3. Does file contain detailed statement of services, equipment, materials or supplies to be furnished? Yes
4. Estimated cost of the subcontract, fee and allotted sum Yes
5. Period of contract Yes
6. Does file contain cost breakdown furnished by vendor? Yes
7. Is work classified? No
8. Has Classification & Information reviewed the subcontract if classified? Yes

---

Remarks

--

On the basis of the above, Procurement Management Branch recommends:

☑ Approval with Finance Dir approval

Form AEC-LAR 51
(Rev. 5-60)

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32693-006
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NARA 000546

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John D. Hart, Contract Administrator
Contracts Division, New York Operations Office

September 13, 1960

M. W. Holliday, Chief, Procurement Management Branch
Lockland Aircraft Reactors Operations Office

MODIFICATION NO. 14 TO GE SUBCONTRACT AT-38 AND AMENDMENT NO. 3 TO GE SUBCONTRACT AT-24

PMB:JHB

As requested in your memorandum of September 6, 1960, we are enclosing one (1) signed and two (2) conformed copies of each of the subject documents for your records.

Enclosure:
Mod. 14 (3)
Amend. 3 (3)

Ast.Ch.PMB Ch.PMB

BACKSCHEIDER/lam HOLLIDAY
9-13-60

NARA II
RG 326
Accession 4kR
32633-006
Records covering the establishment operation of the Lockland Area Office
1950-1961
Box 82
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NARA 000538

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/

AT-3

SUBCONTRACT CHECK LIST

ADMINISTRATIVE BRANCH

Subcontract No. Appendix "C"
Contract AT-30-1-GEN-366
Date Rec'd by A. B. _____

Reviewed by _____

Date Release by A. B. _____

Brief Description of Proposed Subcontract: Special work to be performed in accordance with outline contained in DC-55-4-117

Does proposal include:

1. Detailed statement of services, equipment, materials, or supplies to be furnished? yes (✓) no ( )
2. Estimated cost of the subcontract exclusive of fee? yes (✓) no ( )
3. List and details of firms considered? yes (✓) no ( )
4. Statement of proposed maximum fee to be paid and basis on which proposed fee is based? no yes (✓) no ( )
5. Facilities available? yes (✓) no ( )
6. Time factor involved. yes (✓) no ( )
7. Equipment available, Delivery yes (✓) no ( )
8. Discussion of availability of specifications and drawings. yes ( ) no ( ) Na.
9. Is cost element complete -
   Cost estimate:
   a. Labor
   b. Materials
   c. Plant & Equipment
   d. Overhead
   e. Fee

See attached Cost Bkdn.

Item No.		Remarks
	2.	$ 23,200.00
	4.	$ 1,390.00
		Reference memo to File - J. Brekscheider dated April 14, 1955 - (Last page)
	6.	Expire 4 months after subcontract approved by AEC.

On the basis of the above, Administrative Branch recommends:

5. } See Sylvania Proposal DCF-5802 of 5/10/55
7. }

Subcontract Exhibit #3
Subcontract Check List - Adminis

Approval
Disapproval

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326 83-006
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Box 72

NA 14070 (9-87)

NARA 000525

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SUBCONTRACT PROCUREMENT CHECK LIST

FOR TECHNICAL BRANCH

Subcontract No. Appendix "C" Cont. AT-30-1-GEN-36
For: Special work to be performed in accordnace outline contained in DC-55-4-117
With:
Rec'd. by T.B. 5-27-55
Review submitted by T.B.
Reviewed by: [signature]
☑ New ☐ Renewal

Item No.	Question	Yes	No
	A. Description		
1.	Are the ultimate objectives toward which the subcontract is directed adequately described?	✓	
2.	Are the specific objectives of the subcontract reasonably bounded so as to clearly indicate its relationship to the primary effort (i.e. of the prime contractor)?	✓	
3.	Are these objectives appropriate to the time and expense to be devoted to their attainment?	✓	
4.	Has a work schedule been established for the various phases of the subcontract?	✓	
5.	Is a specific method of approach given for accomplishing the statement of work?	✓	
6.	Are drawings and specifications clear and concise?	✓	
7.	Is it anticipated that this subcontract will require renewal?		✓
8.	Is a definite end item required or is contractor's best effort specified?	✓	
	B. Justification		
9.	Has the necessity for the subcontract work been satisfactorily demonstrated?	✓	
10.	Is there a reasonable expectation that the subcontract will meet the technical requirements set forth in the subcontract?	✓	
11.	Have alternate plans been considered for meeting these requirements?	✓	
	C. Contractor-Subcontractor Relations		
12.	Does the procurement require technical liaison between contractor and subcontractor or vendor?	✓	

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NARA 000526

[redacted]

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Item No.	Question	Yes	No
13.	Is provision made for modifying the objectives of the subcontractor with respect to changes, termination in part or completely, or additions calling for delivery of special items or services?	✓	
	D. Security and Safety		
14.	Does the procurement require the vendors access to classified information or restricted data in the form of drawings, specifications, mock-ups or other information?	✓	
15.	What is highest security classification anticipated on work?	S-RD	
16.	Is it possible to declassify any portions of the work?	[redacted]	✓
17.	Are radiation or health hazards involved?		✓
	E. Selection of Subcontractor		
18.	Were all bidders furnished same specifications?	✓	
19.	Were any possible bidders rejected because of lack of "Q" cleared personnel?		✓
20.	Is the subcontractor's bid based on meeting all specifications, including time limit?	✓	
21.	Does the successful bidder's delivery date depend on priorities?		✓
22.	Are any lump sum purchase orders of a similar nature open to the subcontractor?		✓
	a. with AEC?		✓
	b. with other government agencies?		✓
23.	Is there question as to the subcontractor's ability to accomplish this work?		✓

Item No.	Remarks
[redacted]	[redacted]

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Item No.	Remarks (con't)

On the basis of the above, the Technical Branch recommends:

- [x] Approval
- [ ] Disapproval
- [ ] Additional information required
- [ ] Alternate Source

Explanation: _____

A. R. Frithsen, Chief
Technical Branch

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#6

Refer to this Contract as
Subcontract No. AT-30 on
G.E. internal correspondence.

CONTRACT NO. AT-30-1-GEN-366

Sponsored Task C-34

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the Contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and General Electric Company, ANP Department (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK:

The work hereunder shall be performed in accordance with the requirements and provisions contained in the following documents, which are hereby incorporated by reference and made a part hereof: (1) General Electric Company's Invitation to Bid, dated April 20, 1955, identified as classified document DC 55-4-117, (2) Sylvania's letter proposal, dated May 10, 1955, from Mr. E. S. Norris to Mr. J. F. Patrouch, and (3) Sylvania's technical proposal, identified as classified document DCF 5802.

2. Except as follows, all of the provisions of said contract are applicable with respect to the work added hereby:

(a) The Contractor shall furnish intermediate reports to the Sponsor from time to time, when requested, and in such form and number as may be required by the Sponsor concerning Contractor's activities hereunder, and shall make such final report as may be required by the Sponsor.

(b) Any dispute arising hereunder with respect to financial matters or to the facts upon which a financial dispute is based, which is not disposed of by mutual agreement, shall be decided by representatives of the Commission, who shall reduce their decision to writing and mail copies thereof to both parties. The decision of the Commission's representative shall be final and conclusive upon all

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questions of fact, but questions of law, or mixed questions of law and fact, shall be subject to judicial review.

(c) The Sponsor shall not be liable to the Contractor for any amount in excess of the sum allotted hereunder without the express prior written approval of the Sponsor.

(d) Technical guidance will be derived through conferences attended by the technical personnel of both the Contractor and Sponsor.

3. The Sponsor will pay the Contractor a fixed fee of $1,390.00 for performance of the work hereunder.

4. The Contractor has estimated the cost of the work hereunder to be $23,200.00.

5. The sum of $24,590.00 has been allotted for performance of the work hereunder (See 4 b and 4 c of Article IV).

6. This Agreement shall expire four (4) months after the date on which the Contractor receives the material which is to be furnished by the Sponsor. It is estimated that such material can be delivered to the Contractor on or about June 13, 1955.

7. This Agreement shall become effective on the day it is approved in writing by the New York Operations Office of the Commission. However it shall not be binding unless approved in writing by the Lockland Area Office of the Commission.

APPROVED:

U. S. ATOMIC ENERGY COMMISSION
Lockland Area Office

By: E. L. Velten
E. M. Velten
Title: Area Manager
Date: JUN 29 1955

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W E Kingston
W. E. Kingston, General Manager
Title: Atomic Energy Division
Date: June 23, 1955

APPROVED:

U. S. ATOMIC ENERGY COMMISSION
New York Operations Office

By: J. C. Clarke
J. C. CLARKE
AUTHORIZED REPRESENTATIVE OF THE
Title: U. S. ATOMIC ENERGY COMMISSION
Date: JUL 11 1955

GENERAL ELECTRIC COMPANY

By: D R Shoults
Mr. D. R. Shoults, General Manager
Aircraft Nuclear Propulsion Dept.
Atomic Products Division
Date: 6-14-55

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SUBCONTRACT CHECK LIST

ADMINISTRATIVE BRANCH

Subcontract No. AT-30 amend #1

Date Rec'd by A. B. 11/4/55

Reviewed by B

Date Release by A. B. 11/14

Brief Description of Proposed Subcontract: Extend delivery date and add funds.

Does proposal include:

1. Detailed statement of services, equipment, materials, or supplies to be furnished? yes ( ) no ( )
2. Estimated cost of the subcontract exclusive of fee? yes ( ) no ( )
3. List and details of firms considered? yes ( ) no ( )
4. Statement of proposed maximum fee to be paid and basis on which proposed fee is based? yes ( ) no ( )
5. Facilities available? yes ( ) no ( )
6. Time factor involved. yes ( ) no ( )
7. Equipment available, Delivery yes ( ) no ( )
8. Discussion of availability of specifications and drawings. yes ( ) no ( )
9. Is cost element complete -
   Cost estimate:
   a. Labor
   b. Materials
   c. Plant & Equipment
   d. Overhead
   e. Fee

m No.	Remarks
	This amend #1 was discussed at meeting held on Nov 1 - Nemzek, Holliday, Palmeter Barkschneider = Nicholas, Maloney & Behlen of GE-ANP. Since sylvania had not begun special work until after original expiration date = it was decided to permit

On the basis of the above, Administrative Branch recommends: Sylvania an extension of time, especially affecting delivery dates.

Approval

Subcontract Exhibit #3

Subcontract Check List - Administrativ

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NARA 000514

Sylvania indicated to ISE-AMP that additional funds would be required to complete the work. See tele type from Sylvania to Nicholas dated Nov 11, 1955 showing estimated costs thru Dec.

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NARA 000515

PROCUREMENT ACTION CHECK LIST

FOR FINANCE BRANCH

(Purchase Orders)

AMENDMENT
~~Purchase Order~~ No. 1 TO SUB-CONTRACT AF30
For: ADDITIONAL FUNDS

Rec'd by F.B. 11-16-55
Review submitted by F.B. 11-16-55
Reviewed by: V. D. Brown

Item No.	Question	Yes	No.
1.	Does the arrangement come within the contract definitions of allowable costs?	✓	
2.	Is the Account No. or Task No. properly reflected? a. Direct charge ✓ b. Overhead charge _____ c. If overhead charge, does it have A/F approval _____?		
3.	Do the terms of payment agree with the Invitation to Bid Form and are the extensions correct?		
4.	Does the F.O.B. point on the Purchase Order form agree with that stated on the bid form?		
5.	Has any of the "Conditions of Purchase" articles appearing on the reverse of the P.O. Form been altered or deleted?		
6.	Is there any government furnished materials and equipment in connection with this arrangement?		
7.	If so, does the order clearly indicate a description of the material and equipment and the method of return of the equipment or residue to the contractor?		

Item No.	Remarks

On the basis of the above the Finance Branch recommends [X] APPROVAL
[ ]

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NARA 000512

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Office Memorandum • UNITED STATES GOVERNMENT

TO : J. W. Backscheider, Procurement Assistant, Administrative Branch, Lockland Area Office

DATE: November 16, 1955

FROM : T. A. Nemzek, Acting Chief, Technical Branch, Lockland Area Office

SUBJECT: PROPOSED AMENDMENT NUMBER 1 TO SUBCONTRACT AT 30 WITH SYLVANIA ELECTRIC PRODUCTS

LOCKLAND	
MGR	
AMGR	
ADM	
TEC	
SEC	
FIN	
FILE	

We have reviewed the subject amendment and have no grounds for objection to the extension of the contract dates. However, in our opinion, it is doubtful that Sylvania will meet the November 21 date for delivery of roughly one half of the material ordered.

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NARA 000513

December 19, 1955

Mr. V. J. Nicholas
Supervisor - Subcontracts
GE - ANP Department
P. O. Box 132
Cincinnati 15, Ohio

Subject: AMENDMENT NO. 1 TO SPONSORED TASK C-34 (SUBCONTRACT AT-30) BETWEEN GENERAL ELECTRIC COMPANY AND SYLVANIA ELECTRIC PRODUCTS, INC.

Dear Mr. Nicholas:

We are returning two (2) copies of the subject amendment which have been approved by this office and the New York Operations Office.

Please furnish us with five (5) conformed copies of this amendment number 1 in order that we may make distribution within the AEC.

We should also be furnished with a supplemental 328 card in accordance with Contract Reporting Procedures set forth in Chapter 9127 of the AEC Manual.

Very truly yours,

J. W. Backscheider
Procurement Assistant

Enclosure:
Subject Amendment (2)

OFFICE ▶	Proc. Asst.					
SURNAME ▶	Backscheider/erb					
DATE ▶	12-19-55					

Form AEC-818 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—92761-3

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Amendment No. 1 to Sponsored Task C-34
Subcontract AT-30

	Fee	Allocation
Previous Totals	$1390	$24,590
This Amendment	---	2,500
New Totals	$1390	$27,090

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT No. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and General Electric Company, ANP Department (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

Completion of work described in Sponsored Task C-34, per C. L. Huffine's letter dated November 3, 1955, in accordance with classified documents DC 55-4-117, dated April 20, 1955 and DCF 5802 dated May 10, 1955. A total of 650 units are to be delivered to GE-ANPD by 11-21-55 and the balance by 12-23-55.

2. Except as follows, all of the provisions of said Contract applicable with respect to the work added hereby:

None

(Note: Insert 'None' if applicable)

3. The fixed fee for the work added hereby is $ None.

4. Performance of the work shall end on December 23, 1955.

5. $ 2,500 has been (~~insert 'obligated' if the Commission is the party, or~~ 'allocated' ~~if a Sponsor is involved~~) for the work hereby. (See 4b and 4c of Article IV.)

Encl 3

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USDOE 021944

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6. This Agreement will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. B. Kingston

Title: W. B. Kingston, General Manager
Atomic Energy Division

D R Shoults

By: D. R. Shoults

Title: General Manager
Aircraft Nuclear Propulsion Dept.

Approved:
New York Operations Office
UNITED STATES ATOMIC ENERGY COMMISSION

By: J. C. Clarke

Title: J. C. CLARKE
AUTHORIZED REPRESENTATIVE OF THE
U. S. ATOMIC ENERGY COMMISSION

Date: DEC 13 1955

Approved:
UNITED STATES ATOMIC ENERGY COMMISSION
Lockland Area Office

By: M. W. Holliday

Title: Acting Area Manager

Date: NOV 17 1955

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Accession #kR
326 93-006
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USDOE 021945

Sponsored Task C-31 = Appendix C

SUBCONTRACT CHECK LIST

ADMINISTRATIVE BRANCH

Subcontract No. AT-30

Date Rec'd by A. B. 12/19/55

Reviewed by B

Date Release by A. B. 12/20/55

Brief Description of Proposed Subcontract: Add funds (no fee) To complete work = in amount of $16,000.00

Does proposal include:

1. Detailed statement of services, equipment, materials, or supplies to be furnished? yes ( ) no ( )
2. Estimated cost of the subcontract exclusive of fee? yes (✓) no ( )
3. List and details of firms considered? yes ( ) no ( )
4. Statement of proposed maximum fee to be paid and basis on which proposed fee is based? yes ( ) no ( ) na
5. Facilities available? yes ( ) no ( )
6. Time factor involved. yes ( ) no ( ) na
7. Equipment available, Delivery yes ( ) no ( )
8. Discussion of availability of specifications and drawings. yes ( ) no ( ) na
9. Is cost element complete -
   Cost estimate:
   a. Labor
   b. Materials
   c. Plant & Equipment
   d. Overhead
   e. Fee

Item No.	Remarks
Sylvania	This amendment #2 adds 16,000. in order for Sylvania to complete the work. No additional fee.

On the basis of the above, Administrative Branch recommends:

Subcontract Exhibit #3 ☑ Approval ☐ Disapproval

Subcontract Check List - Administrative Branch

NARA II
RG 326
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326 83-006
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Box 72

NA 14070 (9-87)

NARA 000502

PROCUREMENT ACTION CHECK LIST

FOR FINANCE BRANCH

(Purchase Orders)

AMENDMENT
~~Purchase Order~~ No. 2 SUBCONTRACT A130
For: SYLVANIA ELECTRIC PRODUCTS

Rec'd by F.B. 12-23-55
Review submitted by F.B. 12-23-55
Reviewed by: L. D. Blauer

Item No.	Question	Yes	No.
1.	Does the arrangement come within the contract definitions of allowable costs?	✓	
2.	Is the Account No. or Task No. properly reflected? a. Direct charge ✓ b. Overhead charge _____ c. If overhead charge, does it have A/F approval _____?		
3.	Do the terms of payment agree with the Invitation to Bid Form and are the extensions correct?		N/A
4.	Does the F.O.B. point on the Purchase Order form agree with that stated on the bid form?		N/A
5.	Has any of the "Conditions of Purchase" articles appearing on the reverse of the P.O. Form been altered or deleted?		N/A
6.	Is there any government furnished materials and equipment in connection with this arrangement?		✓
7.	If so, does the order clearly indicate a description of the material and equipment and the method of return of the equipment or residue to the contractor?		

Item No.	Remarks
	THE REASONS FOR REQUESTING AN ADDITIONAL $16,000.00 ARE STATED IN LOCKHEED DCF 6064 AND APPEAR REASONABLE. NO ADDITIONAL FEE IS AUTHORIZED. COSTS ARE TO BE ADJUSTED AFTER COMPLETION. SEE ATTACHED COST ESTIMATE BREAKDOWN.

On the basis of the above the Finance Branch recommends [✓] APPROVAL [ ]

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NARA 000499

SYLVANIA ELECTRIC PRODUCTS INC.
Atomic Energy Division
Bayside, New York

Sponsored Task C-34
GE/ANP Subcontract AT-30

Cost Estimate for Completion of Work - November 20 to December 23

	To Complete First 650 Units		To Fabricate Balance of 550 Units	
Direct Labor				
Engineering and Engineering Supervision	584 hrs.	$ 1,955	352 hrs.	$ 1,228
Technician Labor	468 hrs.	935	432 hrs.	863
Service Labor (Machine Shop)	350 hrs.	875	500 hrs.	1,265
TOTAL DIRECT LABOR		3,765		3,356
Overhead @ 125%		4,705		4,395
Prorated Expenses		940		775
Consumable Materials		--		250
G & A @ 14.6%		1,375		1,170
Machine Shop Charges at Hicksville Plant (100 hrs.)		--		795
TOTAL ESTIMATED COST		$10,785		$ 9,946

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NARA 000503

REPRODUCED AT THE NATIONAL ARCHIVES

Sylvania Elec. Prod.
Subcontract No. AT-30 (12-19-55)

~~XXXX~~ To add funds (no fee) to compelte work in amount of $16,000 (under para 2-~~Art. I, Appendix C - AT(30-1)-GEN-366~~
With: Sylvania Electric Prod.
Rec'd. by T. B. 12-20-55
Review submitted by T. B. _____
Reviewed by: [signature]
☐ New ☐ Renewal

Item No	Question	Yes	No
1.	Are the ultimate objectives toward which the subcontract is directed adequately described, and are they appropriate to the prime contractor's effort?	✓	
2.	Are the specific objectives of the subcontract reasonably bounded?	✓	
3.	Is a specific method of approach and schedule established for accomplishing the statement of work?	✓	
4.	Are drawings and specifications clear and concise?	NA	
5.	Is a definite end item required ~~or is contractor's best effort specified?~~	✓	
6.	Has the necessity for the subcontract work been satisfactorily demonstrated?	✓	
7.	Is there a reasonable expectation that the subcontract will satisfy all technical requirements?	✓	
8.	Does the procurement require technical liaison between contractor and subcontractor or vendor?	✓	
9.	Is provision made for technical control by contractor over subcontractor?	✓	
10.	Does the subcontractor require access to classified information? What is the highest classification anticipated? 1. Negotiations - U 2. Documents - S-RD 3. Work - S-RD 4. Material - S-RD		
11.	Are radiation or health hazards involved?		✓
12.	Were all bidders furnished same specifications?	NA	
13.	Is the subcontractor's bid based on meeting all specifications, including time limit?		
14.	Is the proposed subcontractor competent and reputable?	✓	

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NARA 000500

Item No.	Remarks (con't)
	We insisted that every effort be made to deliver the material as close to the estimated date as possible. TAM bid (60000+) was still higher than the total $43,000 cost of Sylvania

On the basis of the above, the Technical Branch recommends:

☑ Approval ☐ Disapproval ☐ Additional information required

☐ Alternate Source

Explanation: _____

L. R. Standifer, Jr., Chief
Technical Branch

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NARA 000501

E. O. Kunz, Assistant General Counsel
Chicago Operations Office

March 19, 1956

M. W. Holliday, Chief, Administrative
Branch, Lockland Area Office

AMENDMENT NO. 2 - SUBCONTRACT AT-30 - SYLVANIA ELECTRIC PRODUCTS, INC.

I am enclosing three (3) conformed copies of Amendment No. 2 to Sponsored Task C-34 (referred to as Subcontract AT-30) between Sylvania Electric Products, Inc. and General Electric Company.

This Amendment No. 2 adds $16,000 to the cost of work (but does not involve additional fee) raising the total allocation under this agreement to $43,090. Work under this Sponsored Task C-34 was completed effective December 23, 1955.

Enclosure:
Amendment No. 2 to
Sponsored Task C-34 (3)

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REPRODUCED AT THE NATIONAL ARCHIVES

Amendment No. 2 to Sponsored Task C-34
Subcontract AT-30

	Fee	Allocation
Previous Totals	$1390	$27,090
This Amendment	--	16,000
New Totals	$1390	43,090

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT No. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and General Electric Company, ANP Department (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

Completion of work described in Sponsored Task C-34.

2. Except as follows, all of the provisions of said Contract applicable with respect to the work added hereby:

None

(Note: Insert 'None' if applicable)

3. The fixed fee for the work added hereby is $ None .

4. Performance of the work shall end on December 30, 1955 .

5. $ 16,000 has been (~~insert 'obligated' if the Commission is the party, or~~ 'allocated' ~~if a Sponsor is involved~~) for the work hereby. (See 4b and 4c of Article IV.)

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Accession #kR
326 93-006
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6. This Agreement will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. E. Kingston

Title: W. E. Kingston, General Manager
Atomic Energy Division

Approved:
New York Operations Office
UNITED STATES ATOMIC ENERGY COMMISSION
By: U. C. Clarke

U. C. CLARKE
AUTHORIZED REPRESENTATIVE OF THE U. S. ATOMIC ENERGY COMMISSION

By: D. R. Shoults

D. R. Shoults, General Manager

Title: Aircraft Nuclear Propulsion Dept.
Atomic Products Division

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION
By: E. M. Velten

E. M. Velten, Area Manager
Lockland Area Office

VA 1400 (6-87)

72

USDOE 021931

REPRODUCED AT THE NATIONAL ARCHIVES

SUBCONTRACT CHECK LIST

ADMINISTRATIVE BRANCH

Subcontract No. AT-30 Amend #3

Date Rec'd by A.B. 5/15/56

Reviewed by [illegible]

Date Release by A.B. 5/18/56

Brief Description of Proposed Subcontract: add funds (no fee) to original cost of work

Does proposal include:

1. Detailed statement of services, equipment, materials, or supplies to be furnished? yes ( ) no ( ) N/a
2. Estimated cost of the subcontract exclusive of fee? yes (✓) no ( )
3. List and details of firms considered? yes ( ) no ( ) N/a
4. Statement of proposed maximum fee to be paid and basis on which proposed fee is based? yes ( ) no ( ) None
5. Facilities available? yes ( ) no ( ) N/a
6. Time factor involved. yes ( ) no ( ) N/a
7. Equipment available, Delivery yes ( ) no ( ) N/a
8. Discussion of availability of specifications and drawings. yes ( ) no ( ) N/a
9. Is cost element complete -
   Cost estimate:
   a. Labor
   b. Materials
   c. Plant & Equipment
   d. Overhead
   e. Fee
10. Is work classified? yes (✓) no ( )
11. Has Security Branch reviewed subcontract, if classified? yes ( ) no ( )

Item No.	Remarks
	add #7000 to allocated funds = old total #30900 add 7000 50090

On the basis of the above, Administrative Branch recommends:

☑ Approval
☐ Disapproval

Subcontract Exhibit #3
Subcontract Check List - Administrative Branch

NARA II
RG 326
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326 83-006
Records covering the establishment operation of the Lockland Area Office
1950-1961
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NARA 000488

[illegible]

[illegible] CHECK LIST

FOR FINANCE BRANCH

(Purchase Orders)

Purchase Order No. AMEND #3 SYLVANIA

For: adding funds to original cost of work

Rec'd by F.B. 5-21-56

Review submitted by F.B. 5-21-56

Reviewed by: R.E. Kramer

Item No.	Question	Yes	No.
1.	Does the arrangement come within the contract definitions of allowable costs?	✓	
2.	Is the Account No. or Task No. properly reflected? a. Direct charge ✓ b. Overhead charge c. If overhead charge, does it have A/F approval ?		
3.	Do the terms of payment agree with the Invitation to Bid Form and are the extensions correct?		N/A
4.	Does the F.O.B. point on the Purchase Order form agree with that stated on the bid form?		N/A
5.	Has any of the "Conditions of Purchase" articles appearing on the reverse of the P.O. Form been altered or deleted?		N/A
6.	Is there any government furnished materials and equipment in connection with this arrangement?		✓
7.	If so, does the order clearly indicate a description of the material and equipment and the method of return of the equipment or residue to the contractor?		

Item No.	Remarks

The reasons for requesting an additional $7,000.00 are stated in a letter dated Feb 20, 1956 from E.S. Norris (Sylvania Controller) to J.F. Bellen (ANPD Subcontracts Administrator). These reasons appear reasonable. No additional fee is authorized. Costs will be audited after completion. Sylvania would not go along with GE's idea of processing the amendment based on actual costs verified by AEC auditor.

On the basis of the above the Finance Branch recommends [✓] Approval [ ] Disapproval

a/c Payable (E.O'Herrin) stated that expenditures to date have been $29,889.68 + invoice on hand of $169.42 = total of $30,059.10.

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NARA 000485

Subcontract No. AT-30 (Amend #3)
~~XXXX~~ To add funds (no fee) to original cost of work
With: Sylvania Elec. Prod., Inc.
Rec'd. by T. B. 5-18-56
Review submitted by T. B.
Reviewed by: [signature]
☐ New ☐ Renewal

Item No	Question	Yes	No
1.	Are the ultimate objectives toward which the subcontract is directed adequately described, and are they appropriate to the prime contractor's effort?		
2.	Are the specific objectives of the subcontract reasonably bounded?		
3.	Is a specific method of approach and schedule established for accomplishing the statement of work?		
4.	Are drawings and specifications clear and concise?		
5.	Is a definite end item required or is contractor's best effort specified?		
6.	Has the necessity for the subcontract work been satisfactorily demonstrated?		NA See Comments
7.	Is there a reasonable expectation that the subcontract will satisfy all technical requirements?		
8.	Does the procurement require technical liaison between contractor and subcontractor or vendor?		
9.	Is provision made for technical control by contractor over subcontractor?		
10.	Does the subcontractor require access to classified information? What is the highest classification anticipated? 1. Negotiations - 2. Documents - 3. Work - 4. Material -		
11.	Are radiation or health hazards involved?		
12.	Were all bidders furnished same specifications?		
13.	Is the subcontractor's bid based on meeting all specifications, including time limit?		
14.	Is the proposed subcontractor competent and reputable?		

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Item No.	Remarks (con't)

On the basis of the above, the Technical Branch recommends:

☑ Approval ☐ Disapproval ☐ Additional information required

☐ Alternate Source

Explanation: We approved the over run of this contract at the time of Keypunch informally. Unfortunately we could not abandon the work being carried on there because of program considerations. We should be very cautious in placing additional CPFF contracts for dev. work due in the future.

L. R. Standifer

L. R. Standifer, Jr., Chief
Technical Branch

Subcontract Check List - Administrative Branch

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[redacted]

	Fee	Allocation
Previous Totals	$1350	$13,000
This Amendment	---	7,000
New Total	$1350	$20,000

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT No. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and [redacted] (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

[redacted]

2. Except as follows, all of the provisions of said Contract applicable with respect to the work added hereby:

[redacted]

(Note: Insert 'None' if applicable)

3. The fixed fee for the work added hereby is $ [redacted].

4. Performance of the work shall end on [redacted].

5. $ 7,000 has been (insert 'obligated' if the Commission is the party, or 'allocated' if a Sponsor is involved) for the work hereby. (See 4b and 4c of Article IV.)

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6. This Agreement will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. E. Kingston

Title: W. E. Kingston, General Manager
Atomic Energy Division

APPROVED:
UNITED STATES ATOMIC ENERGY COMMISSION
New York Operations Office

By: J. A. Clarke

Title: J. A. Clarke,
Contracting Officer

GENERAL ELECTRIC COMPANY

By: D. R. Shoults

Title: D. R. Shoults, Manager
Aircraft Nuclear Propulsion Dept.
Atomic Products Division

Approved:
LOCKLAND AREA OFFICE
UNITED STATES ATOMIC ENERGY COMMISSION
By: E. M. Velten

E. M. Velten
Area Manager

MAY 23 1956

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STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Charles E. Jones, Assistant Chief, Security Branch, LAROO

DATE: March 2, 1959

FROM : James R. Marin, Chief, Physical Security Branch, Security Division, New York

SUBJECT: SYLVANIA-CORNING NUCLEAR CORPORATION, BAYSIDE, NEW YORK

SYMBOL: SP:JRM

LAROO SECURITY	
W. D. M.	
C. E. J.	
L. W.	
M. L.	
E. O.	

Reference is made to your memorandum dated Feb. 20, 1959, same subject covering Purchase Order ANPG-210025 between your prime contractor GE-ANPD, Evendale, Ohio and Sylvania Corning Nuclear Corp.

This will advise that Sylvania Corning Nuclear Corp., Bayside, Long Island, N. Y. is an approved "B" facility of NYOO eligible to receive and retain documents and material classified through "Secret-RD" and to perform work bearing the same classification. Any classified documents to be forwarded to subject location should be addressed as follows:

Sylvania-Corning Nuclear Corp.
General Engineering Laboratory
P. O. Box 59
Bayside, L. I., N. Y.
Attn: Reports Custodian

With respect to the above interest in which Sylvania Corning has been requested to fabricate special fuel elements, Mr. Timothy J. O'Connor, Sylvania Corning Security Officer, was contacted on Feb 27 and March 2 concerning this work. O'Connor advised that the work will be performed at both Sylvania Corning Hicksville, Long Island, N. Y. and Bayside, Long Island, N. Y. locations. The work to be performed at the Bayside location will be confined to Rooms 135, 221, 225, 238, 241 and 241-A. These rooms are included in the secured area of Bayside and all necessary security safeguards are in effect which will permit performance of your work at this location.

The Hicksville location of Sylvania Corning is surveyed and serviced by SROO which office also covers several NYOO interests at that location. According to O'Connor your interest will be performed at Hicksville in the confines of the machine shop in Building #2 which is presently being utilized for classified work of interest to SROO.

(continued)

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Mr. O'Connor further advised that all individuals in the machine shop at Hicksville who are to be engaged in work of interest to your office are presently "Q" cleared through SROO and that he is taking necessary steps to request extension of clearances through GE for all Sylvania-Corning employees to be engaged in this interest. It is suggested that you contact SROO for copies of security survey reports and to request that office to cover your interest in Sylvania Corning, Hicksville. An SSR covering the Bayside location of subject is being prepared by this office and you will be furnished with an information copy.

Inasmuch as facility will be utilizing the Bayside, Long Island, N. Y. location, correspondence forwarded to this office will be retained. Any correspondence which you feel will assist SROO should be forwarded directly to them.

Contact with Mr. O'Connor this date revealed that it is Sylvania-Corning's opinion that there will be no classified material connected with this project. He advised that if they are incorrect in this belief they should be advised accordingly at which time determination can be made as to where the material is to be shipped initially and a mailing address for material will be established.

If this office can be of any further assistance in this matter, please notify us.

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CONFIDENTIAL

J. H. Jones, Director, Security Division
Savannah River Operations Office

March 6, 1959

Charles E. Jones, Chief, Physical Security Section, Security Branch, LAOO

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SYLVANIA-CORNING NUCLEAR CORPORATION, BAYSIDE, NEW YORK AND HICKSVILLE, NEW YORK

Attention: R. P. Kurtze

Our Prime Contractor, GE-AMPD, Evendale, Ohio, has recently negotiated a purchase order, AMPO-210025, with the subject company to fabricate test fuel elements. Since the work requires the handling of documents classified up to and including "Secret - Restricted Data" and the establishment of a classified work area, NYOO was requested to service this interest and provide information upon which facility approval could be extended.

We have been advised by NYOO that through contact with Mr. Timothy J. O'Connor, Sylvania-Corning Security Officer, the work will be performed at both the Sylvania-Corning's Bayside and Hicksville locations. NYOO further advised that the Bayside facility is an approved "B" facility of NYOO and is satisfactory for the receipt and retention of documents and materials classified through "Secret - Restricted Data" and to perform work of the same classification. However, the Hicksville facility is surveyed and serviced by your office.

According to Mr. O'Connor, LAOO's interest at Hicksville would be performed in the confines of the machine shop in Building #2 which is presently utilized for work of interest to your office. Personnel in the machine shop who are to be engaged in the work of interest to this office are reportedly "Q" cleared through SROO and are now being processed for extension by LAOO. Accordingly, it is requested that we be furnished with the necessary information upon which we can grant an extension of facility clearance of the Hicksville facility and that SROO provide continuing service of our interest when conducting surveys. Information should include both a classified mailing and shipping address.

To provide assistance in evaluating the required security safeguards we are enclosing a copy of the classification guidance prepared by GE-AMPD for application to the referenced purchase order. Your comments and recommendations would be appreciated.

Enclosure:
Cy CRD ltr dtd 2-18-59 to C. I. Whitman fm W. G. Root

OFFICE ▶	SEC. OFFICER	CHF. PHYS. SEC			
SURNAME ▶	LUBLOW/pg	JONES	CONFIDENTIAL		
DATE ▶	3-6-59	Document transmitted herewith contains RESTRICTED DATA			

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[redacted]

SYLVANIA ELECTRIC PRODUCTS INC.

ATOMIC ENERGY DIVISION
P. O. BOX 59
BAYSIDE, NEW YORK

"Document transmitted herewith
contains RESTRICTED DATA."

June 11, 1954

COPY

U. S. Atomic Energy Commission
1901 Constitution Avenue, N. W.
Washington 25, D. C.

File

Attention: A. J. Vanderweyden

Subject: SUBMISSION OF REVISED URANIUM AND THORIUM PROJECT PROPOSALS
SYLVANIA CONTRACT AT(30-1)GEN-366

Gentlemen:

At the suggestion of Mr. W. H. Donnelly of AEC, NYOO, there is submitted herein in revised form a formal proposal (DCF 4958) complemented with a "149" Form (DCF 4963) for a uranium development project and a "149" Form (DCF 4962) for a thorium development project. These projects will be conducted at the Sylvania Bayside laboratory during F.Y. 1955 under Contract AT(30-1)GEN-366.

The aforementioned proposals supercede those issued previously by Sylvania as DCF numbers 4806, 4855, 4856, and 4925.

Very truly yours,

SYLVANIA ELECTRIC PRODUCTS INC.

Documents forwarded to Harris Van (Incu) through Morgan (SLA) by memo dated 7/19/54. [illegible]

E. S. Norris
Manager of Control Department

ESN:LS:nbw
cc: W. H. Donnelly, NYOO, AEC
F. Dowling, AEC, Oak Ridge ← This copy for

"When separated from enclosures, handle this document as UNCLASSIFIED."

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(insert proper classification)

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ORO 43496

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MR DOWLING
(2) MRS. MALONE (File)

W. H. Donnelley, Contract CoordinationDivision
New York Operations

July 6, 1954

John E. Moore, Director, Contract Division, Oak Ridge Operations

CONTRACT NO. AT-30-1-GEN-366 WITH SYLVANIA ELECTRIC PRODUCTS, INC.

SYMBOL: ADr:JEM

Attached are four copies of an authorization for performance of certain work under Contract No. AT-30-1-GEN-366 with Sylvania Electric Products, Inc., which have been executed by Oak Ridge Operations. Notice language we have added in paragraph 2 regarding technical supervision of this work.

While we have not as yet received a copy of the above-mentioned contract, which we understand you are sending Mr. Carberry, we do [illegible] your telegram of July 2 that New York Counsel agree that the form of the attached work order is consistent with the pertinent provisions of the contract.

Will you kindly return for our use one signed copy and one conformed copy of the work order.

John E. Moore

Enclosure:
Authorization under subj. cont. (4 cys.)

CC: Mr. E. S. Morris, Sylvania Electric Products Inc.
Atomic Energy Division, P. O. Box 59, Bayside, N. Y.
Mr. T. F. Carberry, ORO Feed Materials Div.

Moore:lm

AIR MAIL

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Warren H. Donnelly, Contract Coordination Division, New York Operations Office — July 7, 1954

T. F. Carberry, Administrative Officer, Feed Materials Division, Oak Ridge Operations Office

SYLVANIA ELECTRIC PRODUCTS, AT(30-1)-GEN-366

SYMBOL: OF:TFC

By separate memoranda there are being forwarded to you the Appendix C subcontract to the Sylvania-366 contract, covering work under Oak Ridge directions.

Please advise Sylvania to establish cost accounts for this work, separate from other phases of the contract. Further, we would appreciate your requesting Sylvania to report details of such costs on a monthly basis. The first report for the month ending July 31, 1954, should be addressed to:

F. H. Dowling, Director
Feed Materials Division
Oak Ridge Operations Office

T. F. Carberry

CC: N. A. Shearon
L. D. MacKay
OK E. Dodge
W. H. Woodruff

Carberry/gbm

OFFICE ▶	Feed Mat. Div.					
SURNAME ▶						
DATE ▶	7/8					

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[redacted]

J. P. Morgan, Area Manager, St. Louis July 19, 1954

S. R. Sapirie, Manager, Oak Ridge

SYLVANIA ELECTRIC PRODUCTS, INC., CONTRACT AT(30-1)-GEN-366, REDUCTION OF URANIUM AND THORIUM

SYMBOL: OF:TPC

During his Oak Ridge visit of July 13, 1954, Dr. Charles D. Harrington verbally agreed to a request that Mallinckrodt maintain liaison with Sylvania and have technical direction of uranium and thorium reduction work being performed by Sylvania under Appendix C to Contract AT(30-1)-GEN-366. By separate letter to Dr. Harrington, I am confirming our request.

In order that you and Dr. Harrington may have background information on this feed materials development work, I am forwarding herewith one copy each of Sylvania's Proposal DCF-4958 and two related Forms NYO-149 (DCF-4962 and DCF-4963).

Please transmit the enclosed material to Dr. Harrington as soon as possible. I am informed that he plans to visit the Sylvania - Bayside facility in the near future.

S. R. Sapirie

Enclosures:
1. NYO-149 (DCF-4962), Cy 3A
2. NYO-149 (DCF-4963), Cy 3A
3. Proposal DCF-4958, Cy 3A

CC: N. H. Woodruff
F. R. Dowling
J. R. Moore
W. H. Donnelly, New York

Carberry/gbm

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[redacted]

Feed Mat. Div.	Feed Mat. Div.	Ass't. Mgr. Operations	Manager		
Carberry	Dowling	Woodruff	Sapirie		
[signature]	Dowling	N.W.	[signature]	ORO 44458	

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In Reply
Refer to: OF:TPG

Oak Ridge, Tennessee
July 20, 1954

Dr. W. H. Kingston
Sylvania Electric Products, Inc.
P. O. Box 59
Bayside, New York

Dear Dr. Kingston:

As provided in "Appendix C" to Contract AT(30-1)-GEN-366, I have requested Mallinckrodt Chemical Works to maintain liaison with Sylvania and have technical direction of development work concerned with reduction of uranium and thorium. This work is detailed in your proposal DCF-4958 and Forms NYO-149 (DCF-4962 and DCF-4963).

My request that Mallinckrodt exercise such liaison and technical direction is contained in a letter being mailed today to Dr. Charles D. Harrington, a copy of which is enclosed.

I believe the New York Operations Office has asked that you accumulate and segregate costs for this feed materials work from other work under the contract and that you make monthly report of such costs to the Oak Ridge Operations Office. May I reaffirm this request, and in addition to sending copies of your cost and technical reports to the Oak Ridge Operations Office, please send copies of such reports to Mallinckrodt.

Dr. Harrington plans to visit Bayside early in August, the date to be confirmed later. Every courtesy extended to Dr. Harrington will be appreciated.

Very truly yours,

S. R. Sapirie
Manager
Oak Ridge Operations

Enclosure:
Ltr, Sapirie to Harrington, 7/20/54

CC: Dr. Charles D. Harrington, Mallinckrodt
N. H. Woodruff
John R. Moore
F. R. Dowling
A. J. Vander Weyden, Washington
W. H. Donnelly, New York
J. P. Morgan, St. Louis

Carberry/gbm

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J. P. Morgan, Area Manager, St. Louis — July 23, 1954

S. R. Sapirie, Manager, Oak Ridge

SYLVANIA ELECTRIC PRODUCTS, INC., CONTRACT AT(30-1)-OEM-366, REDUCTION OF URANIUM AND THORIUM

SYMBOL: OF:TPC

By memorandum of July 19, 1954, I indicated that by separate letter to Dr. Charles D. Harrington I would confirm a request made verbally that Mallinckrodt maintain liaison with Sylvania and technically direct uranium and thorium reduction work which Sylvania is performing under subject contract. Frank Dowling has indicated that he has discussed this assignment with you and that it has your concurrence.

Our request is made formally in the enclosed letter which is forwarded for your information and transmittal to Dr. Harrington. My writing directly to Dr. Harrington is necessary under the contractual arrangement outlined in the first paragraph of the enclosed letter.

for S. R. Sapirie

Enclosure:
Ltr, Sapirie to Harrington,
7/20/54 (50 & 2 cc's)

CC: H. H. Woodruff w/cc encl.

Carberry/gbm

OFFICE ▶	Feed Mat.Div.	Feed Mat.Div.	Ass't Mgr Opr	Ass't Mgr Admn	Manager
SURNAME ▶	Carberry	Dowling	Woodruff	Vanden Bulck	Sapirie
DATE ▶				7-26-54	

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NARA 000920

(1) Mr. Dowling
(2) Mr Dodge
Geneva - 1cc of this already filed in Sylvania - 366 file

CD:WHD

July 26, 1954

Mr. W. E. Kingston
Atomic Energy Division
Sylvania Electric Products Inc.
Bayside, New York

Subject: AT(30-1)-GEN-366

Dear Mr. Kingston:

Oak Ridge has informed us that Dr. C. D. Harrington of the Mallinckrodt Chemical Works has been designated to maintain liaison with Sylvania to have technical direction of uranium and thorium reduction work being done by you for Oak Ridge.

Very truly yours,

W. H. Donnelly
Contracts Division

CC: F. R. Dowling, ORCO

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DRAFT 1-6-55 (Carberry:pdp)

M. Goldberg, Director, Contracts Division, New York

F. R. Dowling, Director, Feed Materials Division, Oak Ridge

SYLVANIA ELECTRIC PRODUCTS, INC., AT(30-1)-GEN 366 - SPONSORED TASK 13

OF:TPC

We refer to memoranda on the subject to T. P. Carberry from V. J. Del Vecchia and W. H. Donnelly, dated December 22, 1954, and December 29, 1954, respectively, and a telephone conversation between Messrs. Donnelly and Carberry on January 6, 1955.

This will confirm Mr. Carberry's telephonic advice to Mr. Donnelly that we have approved in our mid-year review the monthly cost distribution ~~projected for the thorium and uranium projects for the period December 1954 through June 1955~~ shown in Mr. Del Vecchia's memorandum as projected for the period December 1954 - June 1955. We do not ~~intend~~ to sponsor a level of effort costing in excess of these amounts.

With reference to Mr. Donnelly's memorandum ~~of December 29, 1954~~, we still do not understand the reason for the high costs incurred in Sponsored Task C-13 (Thorium Project) in the period September - November 1954, since technical reports, received this far from Sylvania, have not included an account of ORO-sponsored thorium work which would justify or explain this high rate of cost. Further, with reference to information received by Mr. Donnelly from Mr. W. E. Kingston of Sylvania, we do not understand how the high costs for this period are attributable to "interest by Savannah River," and would appreciate your obtaining from Sylvania clarification on this point. We would specifically like to know background as to approval for du Pont participation in the ORO-sponsored work,

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if there was such participation, and whether Sylvania's "obtaining funds from du Pont" means that such funds will be credited to Sponsored Task C-13 to cover work performed because of "interest by Savannah River" or whether such funds will be used to effect a du Pont-sponsored task, presumably for work along lines we have sponsored. ~~Whatever information you may obtain to clarify matters will be appreciated.~~ Pending clarification of the above questions, ~~Until the above requested information is received~~ we will defer decision on future work under Sponsored Task C-13, except for approval of the cost distribution presented in Mr. Del Vecchia's memorandum and the level of effort this distribution provides.

We sincerely appreciate your cooperation in this matter.

F R Dowling

CC: N. H. Woodruff
V. J. Del Vecchia, NYO
E. Dodge

Carberry:pdp

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SYLVANIA ELECTRIC PRODUCTS INC.

Atomic Energy Division
BAYSIDE, NEW YORK

February 25, 1955

Sylvania /oRoo

Manager of Operations
U. S. Atomic Energy Commission
New York Operations Office
P. O. Box 30 Ansonia Station
New York 23, New York

Attention: Mr. W. H. Donnelly

Contract AT-30-1-GEN 366
C-13 With OHOO
Project 1837

Gentlemen:

Would you kindly arrange to have delivered to us the following:

Twelve hundred pounds (1200#) of uranium dioxide (UO_2)

We would want this material not later than April 15, 1955. If this date cannot be met please advise.

Very truly yours,

SYLVANIA ELECTRIC PRODUCTS INC.

William J. Donohue

William J. Donohue

WJD:pam

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Form No. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : S. R. Sapirie, Manager, Oak Ridge Operations DATE: MARCH 23 1956

FROM : M. Eisenbud, Manager, New York Operations Office CMS. for M.E.

SUBJECT: SYLVANIA ELECTRIC PRODUCTS, INC. - AT-30-1-GEN-366
OAK RIDGE SPONSORED WORK

SYMBOL: C:WHD

Attention: T. Carberry, Feed Materials Division

As you know, we first proposed that your work be handled via an "Appendix C" agreement. One was actually submitted to you by Sylvania, number C-13, and signed. Later it turned out our financial system could not accommodate itself to this arrangement. Oak Ridge thereupon transferred funds to NYOO which we have added to this contract. However, Sylvania still holds signed agreement C-13. Their accountant has questioned the existence of two documents (our contract and your Appendix C), both covering the same work. I suggest you withdraw the Appendix C agreement from Sylvania to clarify this situation.

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In Reply
Refer To: OF:RWL

Oak Ridge, Tennessee

20 APR 1956

Sylvania Electric Products, Inc.
P. O. Box 59
Bayside, L. I., New York

Subject: PROCESS DEVELOPMENT WORK FOR OAK RIDGE, PROJECT 1837-a, CONTRACT NO. AT-30-1-GEN-366

Gentlemen:

This is to advise you that we do not foresee an extension of subject project beyond June 30, 1956. We have reached this decision after a careful consideration of the impact of the Atomic Energy Commission's program for Industrial Participation in the fields of uranium feed materials processing and production upon the desirable directions of our process development efforts.

We continue to feel that the carbothermic reduction of uranium oxides to produce metal is a process of considerable technical promise and economic potential. Since, however, we do not foresee an immediate application of this work to our program needs and since the basic process parameters have been extensively investigated, we feel that a natural end-point for this process development effort has been reached.

So that your work under the contract may be brought to an orderly close, we request that you begin immediately the preparation of a topical summary report which will supplement and extend your previous report, SEP-178. This new report should, in conjunction with the older report, present a complete summary of all the technical data developed under this contract and reference all pertinent literature sources from which information of value to the program has been developed. We desire that all further laboratory investigations be terminated as rapidly as possible so that the preparation of this report may be accomplished, if possible, without extension of the term of the project. Costs of work under Project 1837-a which were transferred to Oak Ridge by the New York Operations Office through February 29, 1956, totalled $59,384, leaving unliquidated obligations as of that date of approximately $66,000. The latter amount appears more than adequate to cover project close-out and report work. Your estimate of cost of this work from date of receipt of this letter to completion of the work will be appreciated. If the work cannot be completed by June 30, 1956, kindly advise, giving your estimate of the most feasible date for completion.

CONTRACTS
Sylvania

NARA 000248

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Even though the time is short for the preparation of a close-out report, we would prefer that no attempt at conciseness be made at the expense of (a) detailed discussion, both qualitative and quantitative, of all fields of the work, (b) inclusion of negative investigations, (c) presentation of graphs and tabular data of clear significance and value for future investigations, (d) equipment construction details proven critical to good process operation and other matters of clear interest to technical groups who may desire to re-initiate work on this process under their own financing and for their own benefit. This desire is consistent with the Commission's effort to make known to industry all possible information developed at the Government's expense and therefore equally available for use by all properly qualified concerns.

We have noted your enthusiasm for this process and would be pleased to hear that you have decided to continue this work on your own. Under these conditions, the additional information developed through your own private investigations would be of a proprietary nature and would not be a matter of common knowledge or access. It may even be that the existing experimental equipment can be made available to you at your request through appropriate settlements or arrangements.

It is our desire to stimulate and encourage such private action and involvement in the atomic energy field, not only on the part of your company but of all technically qualified and interested parties.

Very truly yours,

F. R. Dowling
Director
Feed Materials Division

CC: W. N. Munster, Washington
N. F. Sievering, Washington
Merril Eisenbud, NYOO
F. H. Belcher, St. Louis (2)
N. H. Woodruff
N. A. Shearon

OFFICE ▶	Feed Materials Division			Contract Div.		Manag
SURNAME ▶	LeGassie:gbm	Corkery	NHW	Humphrey		[illegible]
DATE ▶	[illegible] 4/13/56	4/16/56	Concurrence	4-18-56		4-18-5

Form AEC-318 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—62761-3

NARA I
[illegible]
Accession 4NN 326-[illegible]
AEC [illegible] Div. [illegible]
Box 78 1964

12

SYLVANIA ELECTRIC PRODUCTS INC.

ATOMIC ENERGY DIVISION
P. O. BOX 59
BAYSIDE, NEW YORK

May 24, 1956

Mr. F. R. Dowling
Director, Feed Material Division
Oak Ridge Operations Office
Oak Ridge, Tennessee

Subject: CONTRACT AT-30-1-GEN-366

Dear Mr. Dowling:

We have held off our reply to your letter of April 20 pending Mr. R. LeGassie's visit here May 18.

All reduction work has been completed and only the leaching experiments remain. This work will be completed sometime in June. However, we are dependent on other laboratories for chemical analyses of the sponge metal and accordingly we suggest August 31 as an appropriate expiration date.

As of April 30, we had $25,390 of operating funds remaining of which $2,233 was an open commitment. This is slightly more than enough to finish the work. Your notation as to cumulative costs through February are not correct as we had only $47,881 unspent as of that date.

Your letter of April 20 has been given to our engineering personnel and we are confident that the final report will be a complete description of our progress. We have appreciated working with you on this project and trust we will have an opportunity to serve you further.

Very truly yours

SYLVANIA ELECTRIC PRODUCTS INC.

$25,390

E. S. Norris

E. S. Norris, Controller
Atomic Energy Division

ESN:ral

Sylvania

INCANDESCENT LAMPS . RADIO TUBES . FLUORESCENT LAMPS AND FIXTURES . SIGN TUBING . ELECTRONIC DEVICES
TELEVISION PICTURE TUBES . PHOTOFLASH LAMPS . RADIO AND TELEVISION SETS

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RG 326
Accession 4NN 326-87-00
AEC Feed Materials Div Corr. 194
Box 36

NARA 000239

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JUNE 6 1956

L. D. MacKay, Director of Finance, Oak Ridge

V. J. Del Vecchio, Director, Budget and Finance Division, New York

SYLVANIA ELECTRIC PRODUCTS, CONTRACT AT-(30-1)-366
[illegible]

SYMBOL: [illegible]

In the performance of our transaction audit for the calendar year 1955, under our prime contract with Sylvania, we test-checked the costs of Spenser Tasks performed under Appendix "C", Amendment [illegible] to subject contract.

Sylvania has billed $50,[illegible] for work under Spenser Task C-13 for the period from March 1, 1955 to June 30, 1955. This total includes costs of $[illegible], fee of $2,[illegible], and equipment of $[illegible]. These figures give effect to an adjustment of $1,854.23 covering Hicksville overhead adjustment through February 28, 1955, and a credit of $20,000.00 covering material and other charges together with applicable G & A at 6.1%.

A detailed listing of invoices included in the above totals is presented on Schedule #1 attached. Original copies of invoices have previously been forwarded to your office for payment.

Overhead rates shown on the attachments to the invoices represent provisional rates and will be adjusted to actual when the new rates are negotiated with this office. An adjustment in the billing of overhead will be made in subsequent billings.

No exceptions to the costs have been taken by the auditor.

Audit workpapers are retained in the files of the Audit Branch, New York Operations Office.

Enclosure:
Sched. #1, List of Invoices

BUDGET, ACCTG. & FINANCE

Sylvania

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RG 326
Accession 4NN 326-87-007
AEC Fond Materials Div Corr. 1947 1964
Box 38

NARA 001045

SCHEDULE #1

SILVANIA ELECTRIC PRODUCTS, INC. AT-(30-1)-366
SPONSOR TASK [illegible] (PROJECTS 1837, 1838, 1840)
MARCH 1, 1955 TO JUNE 30, 1955

Inv. No.	Period Covered From	To	Costs	Fee	Equipment	Total Billing
2A-388	3/1/55	3/31/55	14,958.45	897.31	688.44	16,544.40
438	4/1/55	4/30/55	9,887.87	593.27	726.63	11,207.77
438	5/1/55	5/31/55	[illegible]	[illegible]	[illegible]	21,758.01
	Sub-Totals		[illegible]	[illegible]	8,705.33	49,510.18
403	[illegible]	[illegible]	18,391.92	301.95	1,396.36	20,090.23
463	Overhead Adjustment (1)		1,254.23			1,254.23
438	April Cost Adjustment (2)		(20,000.00)			(20,000.00)
			$38,141.29	$2,611.66	$10,101.69	$50,854.64

(1) Hicksville overhead adjustment through Feb. 28, 1955.

(2) Material and other direct charges are credited with $18,501.39 and G & A credit of 8.1%, totals $1,498.61.

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JUN 8 - 1959
BUDGET, ACCTG. & FINANCE
Silvania

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EG 326
Accession 4NN 326-57-007
AEC Feed Materials Div Corr. 1947-1967
Box 38

NARA 001046

14

In Reply
Refer To: OF:RWL

Oak Ridge, Tennessee
June 19, 1956

Sylvania Electric Products, Inc.
P. O. Box 59
Raynide, New York

Subject: PROCESS DEVELOPMENT WORK FOR OAK RIDGE, PROJECT 1837-a, CONTRACT NO. AT-30-1-GEN-366

Gentlemen:

Please refer to our previous letter on this subject of April 20, 1956. We are in receipt of your reply from Mr. E. S. Harris, Controller, Atomic Energy Division of Sylvania, dated May 24, 1956. This letter is intended to confirm discussions between representatives of your organization and Mr. LeCassie on the occasion of his visit to Sylvania on May 18, 1956.

We are agreeable to the selection of August 31 as an appropriate expiration date for the subject project and will budget accordingly so that funds will be available to cover work necessary in FY 1957 to complete the termination report.

As stated by Mr. LeCassie in his discussions with you, we feel that the cost estimates prepared by Sylvania at our request and submitted to us as DCF-5738, "Project Proposal - Carbon Reduction of Uranium Oxide," are of sufficient interest and importance that they should be incorporated to the maximum extent possible into the present summary and termination report. It is not our intention here to request a new examination of the cost data but merely to have you present, in a form available for publication, the cost estimates made of the carbothermic process wherever this information still appears to be valid.

We would appreciate your planning for the return to our feed materials plants the uranium-bearing materials which have been held in inventory under this project. We understand that there are approximately 750 pounds of good "biscuit" material now available which is amenable to storage and appears to be the most satisfactory form in which to insure the availability of some sponge metal for future investigations. This material should be shipped for storage to the Mallinckrodt Chemical Works' Uranium Division. It should be so packaged that no further

PLANTS LAB BUILDINGS & LAND
CONTRACTS
G. Rennie

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RG 326
Accession 4NN 326-87-002
AEC Feed Materials Div. Corr. 1947-
78

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handling to prevent deterioration of the material or provision for safe storage will be required at Mallinckrodt. Arrangements for shipment should be made through M. Kuehn, Accountability Officer for Mallinckrodt.

All other material, such as "carbided biscuits," recycle UO_2, etc., should, we believe, be returned to our processing stream through the National Lead Scrap Plant. Shipping arrangements for this material should be made through Clyde Walden, Accountability Officer for National Lead.

If you have any questions in regard to the above instructions, please contact us.

Very truly yours,

F. R. Dowling
Director
Feed Materials Division

CC: C. L. Karl, Kernaid
F. H. Belcher, St. Louis
C. J. Rodden, New Brunswick
Merrill Eisenbud, New York
[illegible] Woodruff
V. V. Hendrix
G. Rennich

Feed Materials Division
LeGassie:gbm

NARA 000241

NARA II
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Accession 4NN 326-[illegible]
[illegible] 38

15

[redacted]

1895

SYLVANIA ELECTRIC PRODUCTS INC.

Atomic Energy Division
BAYSIDE, NEW YORK

August 10, 1956

Mr. F. R. Dowling
Director, Feed Material Division
Oak Ridge Operations Office
Oak Ridge, Tennessee

Subject: CONTRACT AT-30-1-366

Dear Mr. Dowling:

With regard to our Process Development work for Oak Ridge, and in particular to your letter of June 19, 1956, we request an extension of the time limit from August 31, 1956 to September 30, 1956. Our technical people now feel that this time will be necessary for the completion of our report. This delay is mainly due to the explosion which occurred here at the beginning of July.

Very truly yours

SYLVANIA ELECTRIC PRODUCTS INC.

A. M. Master, Jr.

A. M. Master, Jr.
Contract Administration

AMM:ral
cc: Mr. I. Zazik, AEC-NYOO

Sylvania

2/4

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RG 326
Accession 4NN 326-87-00
AEC Feed Materials Div Corr. 1944 1964
Box 38

NARA 000233

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124

[illegible] August 17, 1956

F. H. DOWLING, DIRECTOR
FEED MATERIALS DIVISION
OAK RIDGE OPERATIONS
OAK RIDGE, TENNESSEE

ORIGINAL SIGNED
BY J. W. RUCH

PRIORITY

SYLVANIA ELECTRIC PRODUCTS INC.
ATOMIC ENERGY DIVISION
BAYSIDE, NEW YORK

ATTENTION: A. M. MASTERS, JR.

August 10, 1956

THIS IS TO ADVISE THAT YOUR LETTER REQUEST OF AUGUST 10, 1956, FOR AN EXTENSION OF TIME TO [illegible] 10, 1956, FOR THE COMPLETION OF REPORT ON [illegible] IS APPROVED. END REF OF [illegible]

Subject: [illegible]

Dear Mr. Dowling:

[illegible] to our Process Development work for Oak Ridge, particularly to your letter of June 17, 1956, we [illegible] of the time limit from August [illegible], 1956 to September [illegible] technical people now feel that this time will be [illegible] completion of our report. This delay is mainly [illegible] which occurred here at the beginning of July.

Very truly yours,

SYLVANIA ELECTRIC

A. M. Masters, Jr.
Contract Administration

CC: H. H. Woodruff
cc L. Zasik, NYOO

Abbreval
cc: Mr. L. Zasik, AEC-NYOO

Moore:dh
4513
10:00 am
Room 652

	Feed Materials Division		Contract Div.			
SURNAME ▶	Moore	Ruch	[illegible]			
DATE ▶	8-17-56		8-20-56			

CONTRACTS
Sylvania

Form AEC-318 (Rev. 9-53)

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17

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SYLVANIA-CORNING NUCLEAR CORPORATION

Bayside, Long Island, New York

May 16, 1957

U.S. Atomic Energy Commission
Oak Ridge Operations Office
P.O. Box E
Oak Ridge, Tennessee

Attention: Mr. John W. Rush, Director
Feed Materials Division

Gentlemen:

This is in reply to your letter of May 7, 1957 regarding the completion of the final report on the Oak Ridge development work which we performed under Contract AT-30-1-GEN-366. The actual writing of the report has been completed and the report is now undergoing editing, editorial review, typing and printing. Since it is approximately a 300 page report, these processes, as well as the original writing, have taken considerably longer than we estimated.

Because the costs of editing, typing, etc. are applied to overhead rather than on a direct project basis, I believe there will be very little cost applied to the project in addition to the $12,007 incurred as of March 31, 1957. Our technical people now promise that the report will be finished by June 30 and I hope this will be satisfactory to you.

Very truly yours,

SYLVANIA-CORNING NUCLEAR CORPORATION

Arthur M. Master, Jr.

Arthur M. Master, Jr.
Contract Administration

GWE:ral

cc: Mr. I. Zazik-AEC-NYOO

CONTRACTS
Sylvania

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RG 326
Accession 4NN-326-87-007
AEC Feed Materials D.v. Corr. 1957-1964
Box 42

NARA 000302

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M. Goldberg, Director, Contract Division, WYOO July 25, 1957

R. G. Humphries, Acting Director, Contracts Division, OROO

SYLVANIA - CORNING NUCLEAR CORPORATION, AT-30-1-GEN-366

SYMBOL: CF:TPC

We wish to advise that we have received the final technical report pertinent to Oak Ridge sponsored carbothermic reduction work performed under an "Appendix C" arrangement to subject contract.

The Oak Ridge sponsored portion of the contract should therefore be considered as closed out.

Signed by R. G. Humphries

R. G. Humphries

cc: N. H. Woodruff
R. G. Humphries
N. A. Shearon
L. D. MacKay

CONTRACTS

OFFICE ▶	Feed Materials Division		Contract Div.			
SURNAME ▶	Carberry		Humphries			
DATE ▶	Carberry:jk 7-25-57		7-25-57			

Form AEC-318 (Rev. 9-53) U. S. GOVERNMENT PRINTING OFFICE 16—62761-3

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RG 326
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AEC Feed Materials Div Corr. 1947-1964
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152

M. Goldberg, Director, Contracts Division, August 13, 1957
New York Operations Office

John R. Moore, Director, Contract Division,
Oak Ridge Operations Office

SYLVANIA - CORNING NUCLEAR CORPORATION, AT-30-1-GEN-366

SYMBOL: OF:TPC

With reference to your memorandum of July 29, 1957, on the subject, it appears that ORO sponsored work was originally incorporated in an Appendix "C" agreement. However, records available locally indicate that the Appendix "C" agreement was superseded about April 1955, when ORO sponsored work was incorporated in Amendment No. 18 to subject contract and Amendment No. 3 to Appendix "D" of the contract.

Original signed by
R. G. Humphries, Actg
Original signed By
John R. Moore

CONTRACTS
Sylvania

Feed Materials
Carberry:arb
8-12-57

Contract Div.
RHumphries
8-12-57

[redacted]

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RG 326
Accession 4NN 326-87-007
AEC Feed Materials Div Corr. 1947-1964
Box 42

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L. D. Mealey, Director of Finance, Oak Ridge JAN 8 1958

W. J. Del Vecchio, Director, Budget and Finance Division, New York

CARBIDE AND CARBON NUCLEAR CORPORATION, AUDIT OF OAK RIDGE
SPONSORED PORTION OF WORK PERFORMED IN OVERHEAD AT-(30-1)-366
PERIOD JULY 1, 1955 to JUNE 30, 1957, PROJECTS 1837, 1838, 1840 & 1889.

Reference is made to your memorandum of November 7, 1957,
Metallurgy Laboratory

This office has negotiated the following fixed overhead rates for the calendar year 1956 with the above contractor:

Metallurgy Laboratory	133.9% of Direct Labor
Division General & Administrative	8.2% of Total Costs
Home Office General & Administrative	2% of Total Costs

The provisional rates paid to the contractor during the calendar year were:

Metallurgy Laboratory	120% of Direct Labor
Division General & Administrative	12% of Total Costs
Home Office General & Administrative	2.1% of Total Costs

The total adjustment of $1,038.84 to 1956 overhead costs applicable to your sponsored portion of the work under the contract is shown on the attached schedule.

Enclosure:
Schedule

NARA II
RG 326
Accession # NN 326-87-007
AEC Food Materials D.U. Corr. 1947-1964
Box 42

[illegible]

[illegible]

[illegible] Memorandum of March 21, 1957 [illegible]

[illegible] modified the subject contract to provide for [illegible] overhead rates:

<u>January 1, 1957 to March 31, 1957</u>

Metallurgy Laboratory	164.36% of Direct Labor Exclusive of O/T Premiums
Division General & Admin.	7.1% of Total Costs
Home Office Genl. & Admin.	3.03% of Total Costs

<u>April 1, 1957 to December 31, 1957</u>

Metallurgy Laboratory	190.2% of Direct Labor, Exclusive of O/T Premiums
Division Genl. & Admin.	16.6% of Total Costs

The contractor as a division of Sylvania Electric Products, Corp. to March 31, 1957 incurred a Home Office General & Administrative Expense. Effective as of April 1, 1957 the new corporation Sylvania-Corning Nuclear Corporation was formed, therefore, there is no Home Office General & Administrative Expense applicable for the period April 1, 1957 to December 31, 1957.

/s/ [illegible] Bryan

[illegible]

NARA II
RG 326
Accession 4NN-326-[illegible]
AEC Feed Mat[illegible]
Box 67

D

1

Accounting

Thompson - C
Wade

CONTRACT NO. AT-30-1-GEN-366.

Act. 2604 until actual [illegible] C-24

APPENDIX "C"

Responsive Doc 29

WORK UNDER PARAGRAPH 2 OF ARTICLE II

AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and the United States Atomic Energy Commission represented by the Manager, SROO (the 'Commission'), adds the following work under paragraph 2 of Article II of the above-identified contract:

DESCRIPTION OF WORK

Experimental development of a process suitable for production of target elements, and a small-quantity demonstration of the operability and practicality of such process, all in accordance with Sylvania's proposal of January 7, 1955, Document No. DCF No. 5515, which is expressly made a part hereof by reference.

2. Except as follows, all of the provisions of said Contract are applicable with respect to the work added hereby:

In Amendment 15, Article VI, paragraph 1, line 2, immediately following "course of", the words "any of the work under" are deleted, and in place thereof is inserted the terminology "in connection with, or under the terms of".

Amendment 15, Article VI, paragraph 1, line 15, the word "fissionable" is deleted, and in place thereof is inserted the term "special nuclear".

Amendment 15, Article VI, paragraph 2, line 2, the word "Act" is pluralized to read "Acts", and immediately following "1946" there is inserted the term "and 1954."

3. The fixed fee for the work added hereby is $1,560.00.

4. $29,150 has been obligated for the work added hereby. (See 4b and 4c of Article IV.)

USDOE 016648

5. This Agreement is effective as of January 14, 1955.

UNITED STATES ATOMIC ENERGY COMMISSION

By John V. Vinciguerra
Acting Director, Administrative Division
Savannah River Operations Office
Contracting Officer

SYLVANIA ELECTRIC PRODUCTS, INCORPORATED

By W E Knowlton

Title: General Manager, Atomic Energy Div.

USDOE 016649

2

SYLVANIA ELECTRIC PRODUCTS INC.

EXTRA COPY

ATOMIC ENERGY DIVISION, BAYSIDE, N. Y.

CUSTOMER'S ORDER NO. AT (30-1) GEN 366
APPENDIX C - SPONSOR TASK C-24

INVOICE NO. SA #710

DATE ENTERED

TERMS

INVOICE DATE 4/27/56

SOLD TO U. S. ATOMIC ENERGY COMMISSION
SAVANNAH RIVER OPERATIONS OFFICE
P.O. BOX "A"
AUGUSTA, GA.

TERRITORY

SHIPPING DATE

SHOP ORDER NO.

PRIORITY

SHIPPED FROM

SHIPPED TO

N. R.

CUSTOMER NO.

CODE

F. O. B.

VIA

Remit To: SYLVANIA ELECTRIC PRODUCTS Inc.
Cantiague Road, Hicksville, N. Y.

QUANTITY ORDERED	TYPE	UNIT PRICE	QUANTITY SHIPPED	EXTENSION
	CHARGE FOR FEE TO BRING UP TO CONTRACT AMOUNT.			4413.23
	"I Certify that the above bill is correct and just and that payment therefor has not been received"			
	SYLVANIA ELECTRIC PRODUCTS, INC.			
	B. CIOA SUPERVISOR OF ACCOUNTING			
	DR 650-05-90 CT 699-01-90 SA #710			

Title passes upon delivery by the Seller to the Carrier.

ff,

USDOE 016775

SYLVANIA ELECTRIC PRODUC INC.
ATOMIC ENERGY DIVISION
BAYSIDE, NEW YORK

CONTRACT AT(30-1) [illegible] 366
APPENDIX C
SPONSOR TASK C-24

U. S. ATOMIC ENERGY COMMISSION
SAVANNAH RIVER OPERATIONS OFFICE
P.O. BOX "A"
AUGUSTA, GA.

PROJECT 1866
SA #710
APRIL 27, 1956

CHARGE FOR FEE TO BRING UP TO CONTRACT AMOUNT.

		THIS BILLING	BILLING TO DATE
1)	DIRECT LABOR	$ -	$ 5,319.29
2)	OVERHEAD @ 120%	-	6,383.16
3)	MATERIAL & OTHER D/C	-	2,668.19
4)	RESEARCH LAB. T/C	-	905.52
5)	TOTAL - ITEMS 1,2,3, & 4	-	15,276.16
6)	O. & A. - 14.15% OF ITEM	-	1,238.59
7)	HICKSVILLE T/C	-	2,549.11
8)	O. & A.	-	48.34
9)	TOTAL - ITEMS 5, 6, 7, & 8	-	19,112.30
10)	FEE -6% OF ITEM 9	413.23	1,560.00
11)	EQUIPMENT	-	193.25
	TOTAL	$ 413.23	$ 20,866.05

USDOE 016776

3

Sponsored Task C-31

Responsive Doc 28

Accounting Signed cy

CONTRACT NO. AT-30-1-GEN-366

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE II

AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and the United States Atomic Energy Commission represented by the Manager, SROO (the 'Commission'), adds the following work under paragraph 2 of Article II of the above-identified contract:

	OBLIGATION RECORDS		GENERAL LEDGER	
	DATE	INITIAL	DATE	INITIAL
POSTED CONTROL	APR 21 1955			
POSTED SUBSIDIARY				

DESCRIPTION OF WORK

A. A program to determine the feasibility of canning the Mark IV slug with a minimum aluminum wall thickness;

B. A program for developing and evaluating the best method of canning "88" units using a double can;

all in accordance with Contractor's proposal of March 3, 1955, as outlined in letter from E. S. Norris to R. C. Blair, which is made a part hereof by reference.

2. Except as follows, all of the provisions of said Contract are applicable with respect to work added hereby:

In Amendment 15, Article VI, paragraph 1, line 2, immediately following "course of", the words "any of the work under" are deleted, and in place thereof is inserted the terminology "in connection with, or under the terms of".

Amendment 15, Article VI, paragraph 1, line 15, the word "fissionable" is deleted, and in place thereof is inserted the term "special nuclear".

Amendment 15, Article VI, paragraph 2, line 2, the word "Act" is pluralized to read "Acts", and immediately following "1946" there is inserted the term "and 1954".

3. The fixed fee for the work added by 1 A is $340 and the fixed fee for work added by 1 B is $140.

4. The amount of $8,380 has been obligated for the work added hereby. (See 4b and 4c of Article IV).

5. This Agreement is effective as of February 23, 1955.

UNITED STATES ATOMIC ENERGY COMMISSION

By _____
Acting Director, Administrative Division
Savannah River Operations Office
Contracting Officer

SYLVANIA ELECTRIC PRODUCTS, INCORPORATED

By _____
Walter E. Kingston
Title General Manager, Atomic Energy Divisio

USDOE 016647

4

Thompson - Oleg
Wade - File + payment

	OBLIGATION RECORDS		GENERAL LEDGER	
	DATE	INITIAL	DATE	INITIAL
FUNDS CONTROL	JUN 2 0 1955			
POSTED SUBSIDIARY				

Modification No. 1
Supplemental Agreement to
CONTRACT NO. AT-30-1-GEN-366
Sponsored Task C-31

Responsive Doc 27

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE II

AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and the United States Atomic Energy Commission represented by the Manager, SROO (the 'Commission'), adds the following work under paragraph 2 of Article II of the above-identified contract:

1. The following new subdivision "C" is added to paragraph 1 - DESCRIPTION OF WORK:

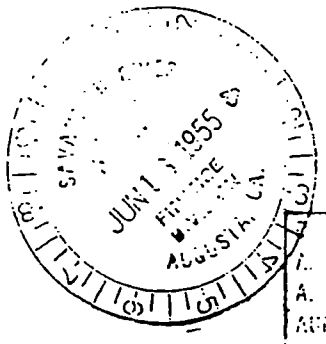
   "C. Can about 605 Tubby units in accordance with letter from E. S. Norris to R. C. Blair dated April 27, 1955, which is made a part hereof by reference."

2. Add the following sentence to paragraph 3:

   "The fixed fee for the work added by 1 C is $1,140."

3. In paragraph 4 substitute the amount of "$28,480" for "$8,380".

4. This supplemental agreement is effective as of March 21, 1955.



UNITED STATES ATOMIC ENERGY COMMISSION

By John V. Vinciguerra
Director, Administrative Division
Savannah River Operations Office
Contracting Officer

SYLVANIA ELECTRIC PRODUCTS, INCORPORATED

By W. E. Kingston
W. E. Kingston
Title General Manager, Atomic Energy Divisi

USDOE 016645

5

Modification No. 2
Supplemental Agreement to
CONTRACT NO. AT-30-1-GEN-366
Sponsored Task C-31

Responsive Doc 25

POSTED APR 12 1956
POSTED SUBSIDIARY

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE II

AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

This Supplemental Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and the United States Atomic Energy Commission represented by the Manager, SROO (the 'Commission'), modifies Sponsored Task C-31 under Contract AT-30-1-GEN-366, as heretofore modified, in the following particulars only:

1. The work provided for in paragraph 1 B of this Appendix "C" Agreement is deleted in its entirety.

2. The work provided for in paragraph 1 C in this Appendix "C" Agreement is changed to read as follows:

   "C. Can about 400 tubby units in accordance with letter from E. S. Norris to R. C. Blair dated April 27, 1955, which is made a part hereof by reference."

3. Paragraph 3 is amended to read as follows:

   "3. The fixed fee for work added by 1 A is $340 and the fixed fee for work added by 1 C is $700."

4. In paragraph 4 substitute the amount of "$19,000" for "$28,480".

5. This Supplemental Agreement is effective as of March 12, 1956.

DIR.
A. DIR.
A. O.
AUDIT
BUDGET
ACCTG.
APR 3 1956 BUDGET & FINANCE DIVISION AIKEN, S. C.

UNITED STATES ATOMIC ENERGY COMMISSION

By _____
Director, Administrative Division
Savannah River Operations Office

SYLVANIA ELECTRIC PRODUCTS, INCORPORATED

By _____

Title General Manager
Atomic Energy Division

6

Wade for Thompson has on

SPONSORED TASK C-33

CONTRACT NO. AT-30-1-GEN-366

Responsive Doc 26

A-F

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE II

Work under paragraph 2 of Article II shall be performed by the Contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and the United States Atomic Energy Commission represented by the Manager, SROO (the 'Commission'), adds the following work under paragraph 2 of Article II of the above-identified contract:

1. Description of Work

   A. Continuation of the Savannah River fuel and target element development in accordance with Sylvania's proposal DCF #5729, dated April 13, 1955, as modified by Sylvania's proposal DCF #5762, dated April 26, 1955, which are expressly made a part hereof by reference.

   B. Development of a process for reduction of "88" in accordance with Sylvania's proposal DCF #5727, dated April 12, 1955, which is expressly made a part hereof by reference.

2. Except as follows, all of the provisions of said Contract are applicable with respect to work added hereby: None

3. The fixed fee for the work added by 1 A is $15,060.

   The fixed fee for the work added by 1 B is $6,510.

4. The amount of $280,620* has been obligated for work added by 1 A.

   The amount of $127,430** has been obligated work work added by 1 B.

* Operations 266,120, PFE - $14,500
** Operations [illegible] PFE - 12,500
381,050 27,000

Per memo - McKinney to Morgan dated 6/17/55
Aym 6/20/55

USDOE 016643

5. This Agreement is effective for the period July 1, 1955, through June 30, 1956.

UNITED STATES ATOMIC ENERGY COMMISSION

By _____

R. C. Blair, Manager
Savannah River Operations Office

SYLVANIA ELECTRIC PRODUCTS, INCORPORATED

By _____

W. E. Kingston

Title General Manager, Atomic Energy Divisio

USDOE 016644

7

~~SECRET~~

SYLVANIA ELECTRIC PRODUCTS INC.

Atomic Energy Division
BAYSIDE, NEW YORK

"Document transmitted herewith contains [redacted]

March 16, 1956

DCF #6186 (Enclosed)

R. C. Blair, Manager
Savannah River Operations Office
U. S. Atomic Energy Commission
P. O. Box A
Aiken, South Carolina

Attention: Mr. J. Vinciguerra, Administrative Division

Subject: PARTIAL TERMINATION SPONSORED TASK C-33

Gentlemen:

We have terminated the work described in Paragraph 1A of this Sponsored Task in accordance with your instructions of February 6. The work actually accomplished is described in the enclosure. In our opinion, we have completed 50 percent of the work originally contracted for and accordingly propose that the fixed fee be reduced from $15,060 to $7,530. We estimate that the total funds required for this job, including close-out, will not exceed $150,000 and accordingly suggest that the amount obligated for Paragraph 1A work be reduced to this figure.

Very truly yours,

SYLVANIA ELECTRIC PRODUCTS INC.

E. S. Norris

E. S. Norris, Controller
Atomic Energy Division

ESN/gb
Encl. DCF #6186, Copy 1A

"When separated from enclosures, handle this document as UNCLASSIFIED".

~~SECRET~~

USDOE 017356

~~SECRET~~

This document consists of 4 pages,
No. 1 of 4 copies, Series A

DCF #6186
March 16, 1956

UNCLASSIFIED

Change in Scope of Program on
Savannah River Fuel and Target Element Development

As a result of a change in the requirements of the Savannah River Laboratory the development work on fuel and target materials was discontinued on January 1, 1956, except for clearing the area used for this work and writing a final report. It is necessary, therefore, to change the scope of the work described in the proposal submitted on April 13, 1955 (DCF #5729), and revised in a letter dated April 26, 1955 (DCF #5762). The scope of the work performed on this program during the period July 1, 1955 to January 1, 1956 was as follows:

1. Methods of improving the quality of the aluminum clad flat plates were investigated. Powder loading methods were investigated in order to increase the thickness of the rolled uranium preform in order to meet the thickness specifications set up by the Savannah River Laboratory. Improved uranium preform cleaning and nickel plating methods were investigated as a means towards improving the bond strength between core and cladding.

2. Plates were fabricated according to the improved conditions which were developed. Destructive and non-destructive tests were conducted on these plates as a means of evaluating quality. One of these plates which survived the autoclave test was selected as representative of material which can be produced at this time and will be submitted to Savannah River Laboratory for evaluation.

3. Development work was performed on fabrication of tubular elements by powder rolling techniques. Tubes approximately 30-inches long, $2\frac{1}{2}$-inches in diameter, with .25-inch wall were produced. An investigation was started towards increasing the density of these rolled tubes in order to eliminate the necessity for densification during the cladding operation.

A final report is being prepared which will describe the progress made on this program since its beginning in 1953. It is estimated that the revised cost for the development work performed and for the final report which is being prepared will be $150,000.

DEPARTMENT OF ENERGY SAVANNAH RIVER DECLASSIFICATION REVIEW
1st Review Date 4/1/03
Authority: ☐ ADC ☐ ADD
Name: J.B. Slack
2nd Review Date 4-1-03
Authority: ADD
Name: Norm N. Gordon
Determination (Circle Number)
1. Classification Unchanged
2. Classification changed to:
3. Classification Canceled.
4. Other: CG-NMP-2 9/00

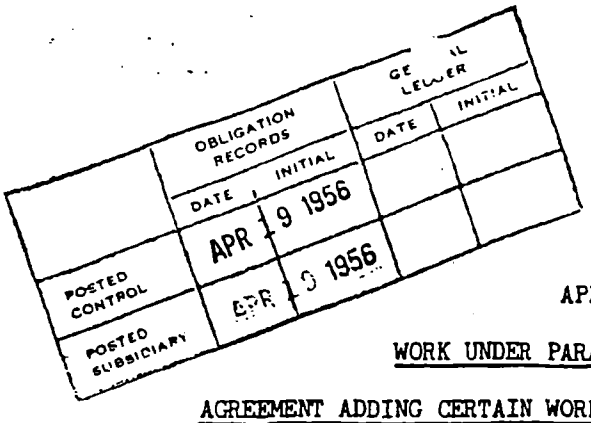
RESTRICTED DATA
THIS DOCUMENT CONTAINS RESTRICTED DATA AS DEFINED IN THE ATOMIC ENERGY ACT OF 1954. TRANSMITTAL OR THE DISCLOSURE OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED.

UNCLASSIFIED

~~SECRET~~

8

	OBLIGATION RECORDS		GENERAL LEDGER	
	DATE	INITIAL	DATE	INITIAL
POSTED CONTROL	APR 19 1956			
POSTED SUBSIDIARY	APR 19 1956			



Modification No. 1
Supplemental Agreement to
CONTRACT NO. AT(30-1)-GEN-366
Sponsored Task C-33

Responsive Doc 24

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE II

AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT(30-1)-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INCORPORATED

This Supplement Agreement between Sylvania Electric Products, Incorporated (the 'Contractor'), and the United States Atomic Energy Commission represented by the Manager, SROO (the 'Commission'), modifies Sponsored Task C-33 under Contract AT(30-1)-GEN-366 in the following particulars only:

1. The work provided for in paragraph 1 A in this Appendix "C" Agreement is changed to read as follows:

   "A. Continuation of the Savannah River fuel and target element development in accordance with Sylvania's proposal DCF #5729, dated April 13, 1955, as modified by Sylvania's proposal DCF #5762, dated April 26, 1955, and further modified by Sylvania's letter and enclosure DCF #6186, dated March 16, 1956, which are expressly made a part hereof by reference.

2. Paragraph 3 is amended to read as follows:

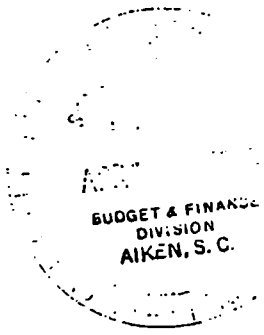
   "3. The fixed fee for work added by 1 A is $7,530.

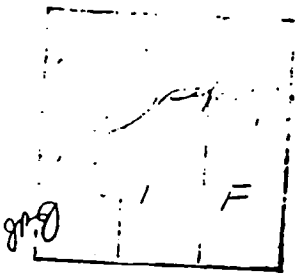
   The fixed fee for work added by 1 B is $6,510.

3. In paragraph 4 substitute the amount of "$150,000" for "$280,620".

Open $266,120.00
Expy 10,500.00
1879.04
Dec. PEE $13,620.96

BUDGET & FINANCE DIVISION
AIKEN, S. C.





130,620.00 Total
116,999.04 Op
13,620.96 PEE

USDOE 016640

4. This Supplement Agreement is effective as of March 16, 1956.

UNITED STATES ATOMIC ENERGY COMMISSION

BY _____
Director, Administrative Division
Savannah River Operations Office

SYLVANIA ELECTRIC PRODUCTS, INCORPORATED

By _____
W. E. Kingston
Title General Manager, Atomic Energy Divisio

USDOE 016641

9

Responsive Doc 19

MODIFICATION NO. 2
SPONSORED TASK C-33

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT No. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and the U.S. Atomic Energy Commission, represented by the Mgr., SROO (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

Continuation of work under Sponsored Task C-33 as amended by Modification No. 1 to that Sponsored Task.

2. Except as follows, all of the provisions of said Contract applicable with respect to the work added hereby:

None

(Note: Insert 'None' if applicable)

3. The fixed fee for the work added hereby is $ None .

4. Performance of the work shall end on approximately 11/30/56 .

5. $ No additional funds have been (insert 'obligated' if the Commission is the party, or 'allocated' if a Sponsor is involved) for the work hereby. (See 4b and 4c of Article IV.)

USDOE 016630

6. This Agreement will become effective upon its execution by both parties [redacted] as of July 1, 1956.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. K. Kingston

Title: General Manager

By: _____

Title: _____

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION

By: John V. Vinciguerra

Assistant to the Manager

USDOE 016631

Responsive Doc 18

Office Memorandum • UNITED STATES GOVERNMENT

TO : J. J. Wise, Director
Budget & Finance Division

DATE: February 6, 1957

FROM : T. L. Walker, Chief
Procurement & Contracts Branch

SUBJECT: MODIFICATION NO. 2 TO SPONSORED TASK C-33 - SYLVANIA ELECTRIC PRODUCTS, INC

SYMBOL: AC:ar

There is attached for your information and file a copy of Modification No. 2 to Sponsored Task C-33 under Contract No. AT(30-1)-366 with Sylvania Electric Products, Inc. This modification extends the period of performance under the agreement to November 30, 1956.

Attachment:
As stated above

DIR.	2	
A. DIR.	3	
A. O.	1	
AUDIT	6	
BUDGET	5	
ACCTG.	4	F

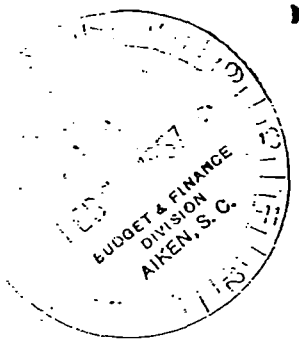
Executed cy

SAVANNAH OPNS. RECEIVED FEB 7 1957 BUDGET & FINANCE DIVISION AIKEN, S. C.

10

January 21, 1957

Responsive Doc 17



MODIFICATION NO. 3 TO SPONSORED TASK C-33

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE I

Work under paragraph 2 of Article I shall be performed by the contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT No. AT-30-1-GEN-366 BETWEEN THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA ELECTRIC PRODUCTS, INC.

1. This Agreement between Sylvania Electric Products, Inc. (the 'Contractor'), and the U.S. Atomic Energy Commission, represented by the Mgr., SAOO (Note: the 'Commission', or the 'Sponsor' if a firm), adds the following work under paragraph 2 of Article I of the above-identified contract:

DESCRIPTION OF WORK

Continuation of work under Sponsored Task C-33 as amended by Modification No. 2 to that Sponsored Task.

2. Except as follows, all of the provisions of said Contract applicable with respect to the work added hereby:

None

(Note: Insert 'None' if applicable)

3. The fixed fee for the work added hereby is $ None.

4. Performance of the work shall end on approximately June 30, 1957.

5. $ No additional funds/ have been (insert 'obligated' if the Commission is the party, or 'allocated' if a Sponsor is involved) for the work hereby. (See 4b and 4c of Article IV.)

USDOE 016627

6. This Agreement will become effective upon its execution by both parties and, in the event this Agreement is by a Sponsor, upon its written approval by the Commission.

SYLVANIA ELECTRIC PRODUCTS, INC.

By: W. E. Kingston

Title: General Manager
Atomic Energy Division

_____

By: _____

Title: _____

Approved:

UNITED STATES ATOMIC ENERGY COMMISSION

By: James T. Hopkins

Director, Administrative Division

USDOE 016628

11

See Mod. No. 3 attached stamped Feb 7, 1957 [illegible]

C
O
P
Y

	OBLIGATION RECORDS		GENERAL LEDGER	
			DATE	INITIAL
POSTED CONTROL	FEB 8 1957			
POSTED SUBSIDIARY				

Responsive Doc 16

Atomic Energy Division
Bayside, New York

January 9, 1957

Amount suggested to be obligated $9,800.0
Less: Amount previously obligated to cover B.V. 57-1405 573.7
Amount obligated 2-8-57 9,226.2

Mr. J. Donohue,
Savannah River Operations Office
U. S. Atomic Energy Commission
P. O. Box A
Aiken, S. C.

Subject: STATUS OF SPONSORED TASK C-33

Dear Jack:

Subsequent to our telephone conversation concerning our November billing on this sponsored task, I reviewed the contract carefully with our technical people. The November billing covered costs for the writing of the final report, which is now being edited and proof-read. There will be a small additional charge for this work.

I have also learned that there will be an additional charge for the disposal of the thorium powder remaining from this project. This powder consists of two types -- some very fine powder which we plan to pump as a slurry into a dry well, and some coarser powder which will probably have to be burned to render it non-pyrophoric prior to its return to the Commission. Our estimate for the additional work required in the preparation of the final report and the disposal of the thorium is $5,000.

I have prepared the attached schedule to show the difference between the billable costs and our realistic costs for this contract, as of November 30, 1956. Our invoices to you, as you know, are based on provisional overhead and G & A rates. The difference between these provisional rates and the rates which we are actually incurring will be billed to you after AEC audit. We estimate this adjustment to be approximately $4,800. We expect, therefore, because of the additional work mentioned above and the overhead and G & A adjustment, a total of approximately $9,800 additional will be billed to you. I have been unable to determine the basis for de-obligating funds for this contract, which you mentioned in our telephone conversation.

Our technical people inform me that it will take several months to conclude arrangements for suitable disposal of the thorium, primarily because of the indemnification problem and winter weather. I feel, therefore, that the contract should be amended to allow this additional time, and I am enclosing Modification #3 to extend the date to approximately June 30, 1957. If you concur, I would appreciate having this Modification executed and two copies returned to us.

Very truly yours,

SYLVANIA ELECTRIC PRODUCTS INC.

Garth W. Edwards, Controller
Atomic Energy Division

GWE:bek
enc.

12

STANDARD FORM NO. 64

Responsive Doc 13

Office Memorandum • UNITED STATES GOVERNMENT

TO : James Wise, Director, Finance Division
Savannah River Operations Office

DATE: OCT 12 1959

FROM : Lyman Bryan, Director, Finance Division
New York Operations Office

SUBJECT: SYLVANIA-CORNING NUCLEAR CORP. CONTRACT AT-(30-1)-366
AUDIT OF SPONSOR TASK C-33 SAVANNAH RIVER OPER. OFFICE
AUDIT PERIOD: JULY 1, 1958 to APRIL 30, 1959

SYMBOL: FA:FLP

In performing our audit of direct charges for the above period under the subject prime contract, we reviewed the billings under Sponsor Task C-33, pursuant to Appendix "C", Amendment #15.

Summary of Findings

During the period audited the contractor billed for an adjustment of the overhead and G & A expense applicable for the calendar year 1957, using the following rates negotiated by this office:

	Negotiated Fixed Rates			
Period	Metallurgy Laboratory	Division G & A	Corporate G & A	Home Office G & A
1/1/57 - 3/31/57	164.3%	7.4%	-	3.03%
4/1/57 - 6/30/57	190.2%	-	16.6%	-

The one invoice presented for reimbursement during this audit period represents the adjustment of overhead and G & A based on the above changes in rates:

Inv. No.	Period	Costs	Fee	Total
N 300	1/1/57 - 6/30/57	$150.39	-	$150.39

We reviewed the contractor's adjustments based on the fixed negotiated rates and found them to be correct.

L Bryan

Roland

SAVANNAH RIVER OPERS. RECEIVED OCT 15 1959 BUDGET & FINANCE DIVISION AIKEN, S. C.

DIR. 2
ASST. DIR. 3
1
ACCT. BUDGET ACCTG. 4 A F

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1

SYLCOR

SYLVANIA-CORNING NUCLEAR CORP.

Responsive Doc 12

BAYSIDE, NEW YORK

TELEPHONE FACULTY 1-1212

May 2, 1959

Mr. R. C. Blair, Manager
Savannah River Operations Office
U. S. Atomic Energy Commission
P. O. Box A
Aiken, South Caroline

Subj: Contract AT(30-1)GEN-366, Proposed Sponsored Task C-74

Dear Mr. Blair:

Under date of April 17, 1959, we submitted to du Pont an optional three-part proposal for a development and sample-making program to be conducted as a sponsored task under the subject research and development contract being performed at our Bayside engineering laboratory. It appears that du Pont has chosen the first alternative of our proposal which provides for the least number of samples. Among other things, this proposal was discussed during our May 22nd meeting at Savannah River and specifically with reference to our requested Certificate of Indemnity Assurance and the amount of fixed fee.

With respect to the first item, we were told that such a certificate will be issued. However with respect to the fixed fee, we were requested to submit a letter to your office in justification of the 8% that we had requested. This fee amounts to $2,740. based on an estimated cost to us of $34,205. Special uranium charges of $8,095. were deducted from the fee base. In compliance therewith, we are stating below certain factors to which your office should give consideration in determining the amount of fixed fee.

1. The comparative small value of the agreement which should merit a higher percentage of fee as compared to a large value contract.

2. The proposed work would involve the use of Sylcor owned high cost equipment which was recently acquired.

3. Although historically we have been receiving a 5% fee on all of our AEC work, it is our understanding that the Commission and the Department of Defense are now amenable to higher fees as an incentive to carry out research and development work more efficiently and economically.

4. The granting of a higher fee will set no precedent for the New York Operations Office or other sponsors in fee negotiation but that the fee for each program or task under the contract will be negotiated solely on its own merits.

USDOE 016620

5. In general, payment of higher fees will enable this company to invest in necessary research and development equipment rather than have the government furnish such.

We would appreciate your early consideration of this additional information, and trust that the fee to be paid may be fixed at an early date in order that we can start work on this project. At such time, we will prepare the necessary forms and forward them to your office.

Very truly yours,

SYLVANIA-CORNING NUCLEAR CORP.

Garth W. Edwards

Garth W. Edwards
Treasurer

GWE:MCC:HM

Fee will be paid at a 6% Rate per information received from R. P. McCully.

2

Form AEC-891
(9-56)

INSERT CLASSIFICATION (IF CLASSIFIED)

USE WHERE REQUIRED

THIS DOCUMENT CONSISTS OF _____ PAGES
NO. OF COPIES SERIES

U. S. ATOMIC ENERGY COMMISSION

OUTGOING TELECOMMUNICATION MESSAGE

Responsive Doc 11

(See reverse side for instructions)

FROM:

R. C. BLAIR, MANAGER, SAVANNAH RIVER

OFFICIAL BUSINESS

(Signature of certifying official)

PRECEDENCE DESIGNATION: ROUTINE

ENCIPHERED BY:

TO:

GARTH E. EDWARDS, TREASURER
SYLVANIA-CORNING NUCLEAR CORP
P. O. BOX 59
BAYSIDE, L. I., NEW YORK

DATE OF MESSAGE:

1959 JUN 17 AM 9 56

JUN 17 1959

IN ACCORDANCE WITH TELEPHONE CONVERSATION BETWEEN MR. M. C. CULLEN AND MR. R. A. MCFEELY JUNE 15, 1959, YOU ARE AUTHORIZED TO PROCEED WITH DEVELOPMENT OF URANIUM OXIDE FUEL ELEMENTS AND FURNISHING OF FOUR (4) SAMPLES IN ACCORDANCE WITH ITEM A OF SYLCOR'S PROPOSAL TO E. I. DU PONT DE NEMOURS AND COMPANY, PRIME CONTRACTOR OF THE COMMISSION AND MR. CULLEN'S LETTER OF JUNE 12, 1959. THE ESTIMATED COST OF THE WORK IS $42,360.00, EXCLUSIVE OF FIXED FEE. THE FIXED FEE FOR THE WORK IS $2,056.00. THE ABOVE WORK, TO BE PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF CONTRACT AT(30-1)GEN-366, PENDING PREPARATION OF AN APPROPRIATE APPENDIX C AGREEMENT BETWEEN SYLCOR AND SROO INCORPORATING THE ABOVE WORK INTO THE CONTRACT. AS REQUESTED IN YOUR PROPOSAL OF APRIL 17, YOU ARE AUTHORIZED TO PURCHASE THE FUSED UO_2 REQUIRED FOR THE WORK. ALSO, WE REPRESENT THAT THE MATERIAL IS FOR USE BY DU PONT UNDER CONTRACT AT(07-2)-1, WHICH INCLUDES A NUCLEAR HAZARD INDEMNITY CLAUSE AUTHORIZED PURSUANT TO SECTION 170 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED. END REF AC:RAMcF:EW

	OBLIGATION RECORDS		GENERAL LEDGER	
	DATE	INITIAL	DATE	INITIAL
POSTED CONTROL	6/30	wfm		
POSTED SUBSIDIARY				

THIS SPACE RESERVED FOR COMMUNICATION CENTER ACTION

MSG NO. | OR | DTG

TRANSMISSION MEANS

DIRECT TWX	TWX AND MILITARY	DIRECT MILITARY	W. U.

2691-91 Task C-74
$ 44,416 wfm
6272

ORIGINATOR:
4:07 P.M.
D-111
Ext. 2881

RESTRICTED DATA OR ESPIONAGE STAMP. IF REQUIRED

INSERT CLASSIFICATION (IF CLASSIFIED)

USDOE 016619

3

Responsive Doc 10

TASK NO. C-74

CONTRACT AT(30-1)-GEN-366

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE II

Work under paragraph 2 of Article II, Contract AT(30-1)-GEN-366, shall be performed by the Contractor if and to the extent that the document provided for below is fully completed and executed.

"AGREEMENT ADDING CERTAIN WORK TO CONTRACT NO. AT(30-1)-GEN-366 BETWEEN THE UNITED STATES OF AMERICA AS REPRESENTED BY THE UNITED STATES ATOMIC ENERGY COMMISSION, AND SYLVANIA-CORNING NUCLEAR CORPORATION"

This Agreement between Sylvania-Corning Nuclear Corporation (the "Contractor"), and the United States Atomic Energy Commission represented by the Manager, SROO (the "Commission"), adds the following work under paragraph 2 of Article II of the above-identified Contract:

1. Description of Work

Development of uranium oxide tubular fuel elements and furnishing of four (4) samples in accordance with Item a of the Contractor's proposal, dated April 17, 1959, signed by Mr. Garth W. Edwards and addressed to E. I. du Pont de Nemours and Company, Prime Contractor of the Commission's Savannah River Plant, and the Contractor's letter to the Commission, dated June 12, 1959, signed by Mr. M. C. Cullen and addressed to Mr. R. C. Blair

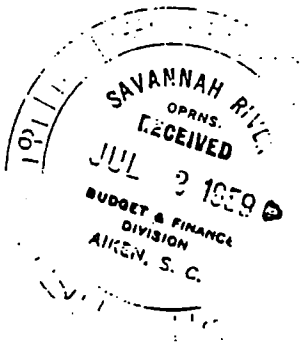
2. Performance of the work shall begin on or after June 17, 1959, and shall be completed on or before January 31, 1960.

3. The estimated cost of the work described in Item 1, above, is $42,360, exclusive of fixed fee.

4. The fixed fee for the work added hereby is $2,056.

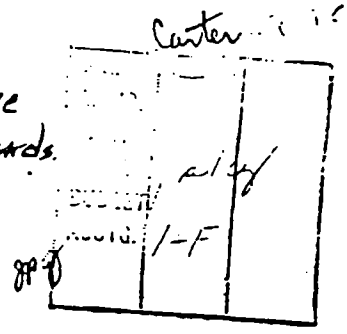
5. $44,416 has been obligated for work added hereby (see paragraphs 4b and 4c of Article IV, THE CONSIDERATION, of Prime Contract AT(30-1)-GEN-366.

SAVANNAH RIVER OPRNS. RECEIVED JUL 2 1959 BUDGET & FINANCE DIVISION AIKEN, S. C.



Obligated from teletype from Blair to Garth Edwards. dtd 6/17/59

Carter



1-F

USDOE 016617

6. Except as herein modified, all of the provisions of said Contract are applicable with respect to work added hereby.

UNITED STATES ATOMIC ENERGY COMMISSION
SAVANNAH RIVER OPERATIONS OFFICE

BY: John V. Vinciguerra for
R. C. Blair, Manager

SYLVANIA-CORNING NUCLEAR CORPORATION

BY: Garth W. Edwards
Garth W. Edwards
TITLE: Treasurer

USDOE 016618

4

Responsive Doc 8

Modification No. 1 to
TASK NO. C-74 under
Contract AT(30-1)-GEN-366

CONTRACT AT(30-1)-GEN-366

APPENDIX "C"

WORK UNDER PARAGRAPH 2 OF ARTICLE II

WHEREAS, Sylvania-Corning Nuclear Corporation (the "Contractor"), and the United States Atomic Energy Commission, represented by the Manager, SROO (the "Commission"), entered into TASK NO. C-74 for performance of work under Paragraph 2 of Article II of the above-identified Contract; and

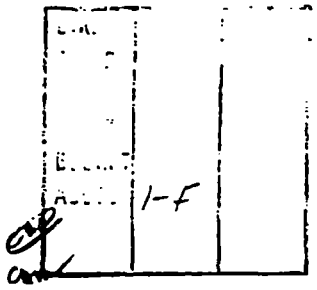
WHEREAS, the parties desire to amend said TASK NO. C-74 as hereinafter said further;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Item 2 of the TASK is changed to read as follows:

   "Performance of the work shall begin on or after June 17, 1959, and shall be completed on or before May 31, 1960."

2. Except as herein modified, all of the provisions of TASK C-74 remain unchanged.



UNITED STATES ATOMIC ENERGY COMMISSION
SAVANNAH RIVER OPERATIONS OFFICE

BY: _____
Manager 4-5-60

SYLVANIA-CORNING NUCLEAR CORPORATION

BY: Garth W. Edwards
Garth W. Edwards
TITLE: Treasurer

5

Responsive Doc 9

DEC 23 1959

Mr. H. C. Cullen
Contract Administrator
Sylvania-Corning Nuclear Corporation
Post Office Box 59
Bayside, Long Island, New York

Dear Mr. Cullen:

As requested by your letter of December 17, 1959, extension of SACO Sponsored Task C-74 under Contract AT(30-1)-[redacted]-366, from the period January 31, 1960, to March 31, 1960, is hereby approved.

Very truly yours,

R. C. Slair
Manager

CC; Manager's Office

USDOE 016616

Anchor Documents

1171

ANSON ENVIRONMENTAL LTD.

33 Gerard Street • Suite 100
Huntington, New York 11743
516•351•3555
Fax 516•351•3615

June 21, 1993

Thomas Taccone
United States Environmental Protection Agency
26 Federal Plaza
New York, NY 10278

Re: Direction of Groundwater Flow
Anchor Chemical Superfund Site
Administrative Order No. II CERCLA-90208

Dear Mr. Taccone:

In response to your recent inquiry, enclosed are the depth to water (DTW) measurements in all wells taken on November 9, 1992 at the above referenced site. The measurements are listed below along with the surface elevations of the wells.

Well #	DTW	Surface Elevation of Well
MW1S	not used in calculation	137.93 feet
MW2	59.05 feet	136.89 feet
MW3	59.55 feet	137.29 feet
MW4	60.90 feet	138.58 feet
MW5S	57.41 feet	135.19 feet
MW6S	60.42 feet	138.88 feet
MW7S	56.75 feet	134.62 feet
MW1D	60.43 feet	138.34 feet
MW5D	57.66 feet	135.42 feet
MW6D	60.61 feet	138.61 feet
MW7D	56.75 feet	134.20 feet

302710

The monitoring well location plan prepared by Albert W. Tay L.S. is included as Figure 3-2 in the remedial investigation report.

Figure 2-8 identifies the direction of groundwater flow in the vicinity of the Anchor Chemical Site to be south-southwest and was prepared by Dvirka and Bartilucci (Investigation of Contaminated Aquifer Segments Nassau County, NY, 1986).

If you have any questions, please call me.

Very truly yours,

Dean Anson II
Co-Facility Coordinator

cc: F. Werfel, Spiegel Associates
A. Sanders, Spiegel Associates
R. Leland, Esq., Rosenman & Colin
D. Sullivan, Alliance Technologies Corp.
J. Doyle, Esq., USEPA, Region II
S. Sucharski, BB & L

302711

ANSON ENVIRONMENTAL LTD.

33 Gerard Street • Suite 100
Huntington, New York 11743
516•351•3555
Fax 516•351•3615

July 13, 1993

Thomas Taccone
United States Environmental Protection Agency
26 Federal Plaza
New York, NY 10278

Re: Direction of Groundwater Flow
Anchor Chemical Superfund Site
Administrative Order No. II CERCLA-90208

Dear Mr. Taccone:

As a result of our meeting at the above referenced site on July 7th, we have prepared the following information to respond to the issues raised by yourself and Mr. Hauptmann.

The groundwater measurements and surface elevations are as follows:

Well #	Surface Elevation of Well	DTW (4/92)	(11/92)
MW1S	137.93 feet	not used	61.19 feet
MW2	136.89 feet	59.05 feet	60.25 feet
MW3	137.29 feet	59.55 feet	60.73 feet
MW4	138.58 feet	60.90 feet	62.25 feet
MW5S	135.19 feet	57.41 feet	58.60 feet
MW6S	138.88 feet	60.42 feet	61.61 feet
MW7S	134.62 feet	56.75 feet	
MW1D	138.34 feet	60.43 feet	
MW5D	135.42 feet	57.66 feet	58.88 feet
MW6D	138.61 feet	60.61 feet	61.79 feet
MW7D	134.20 feet	56.75 feet	57.61 feet

302712

In order to illustrate the implications of the depth to water measurements above, we have prepared a groundwater contour map for each measurement date-April and November, 1992. You will note from the maps that the groundwater flows generally southwest across the site.

This is confirmed by Figure 2-8 which identifies the direction of groundwater flow in the vicinity of the Anchor Chemical Site to be south -southwest and was prepared by Dvirka and Bartilucci (Investigation of Contaminated Aquifer Segments Nassau County, NY, 1986). The Phase II investigation of the MEK Spill at 530 West John Street which was conducted by Roy F. Weston Inc. for the USEPA indicates that the groundwater flows in a southerly direction (3.2 Site Geology section).

The depth to groundwater measurements were taken with an auditory water level indicator, Solinst Model No. 121. The measurements were taken to the rim of the protective manhole casing not the top of the well itself.

We have also enclosed, as you requested, the detail drawing of the drywell construction which was provided by Spiegel Associates, property manager for the site.

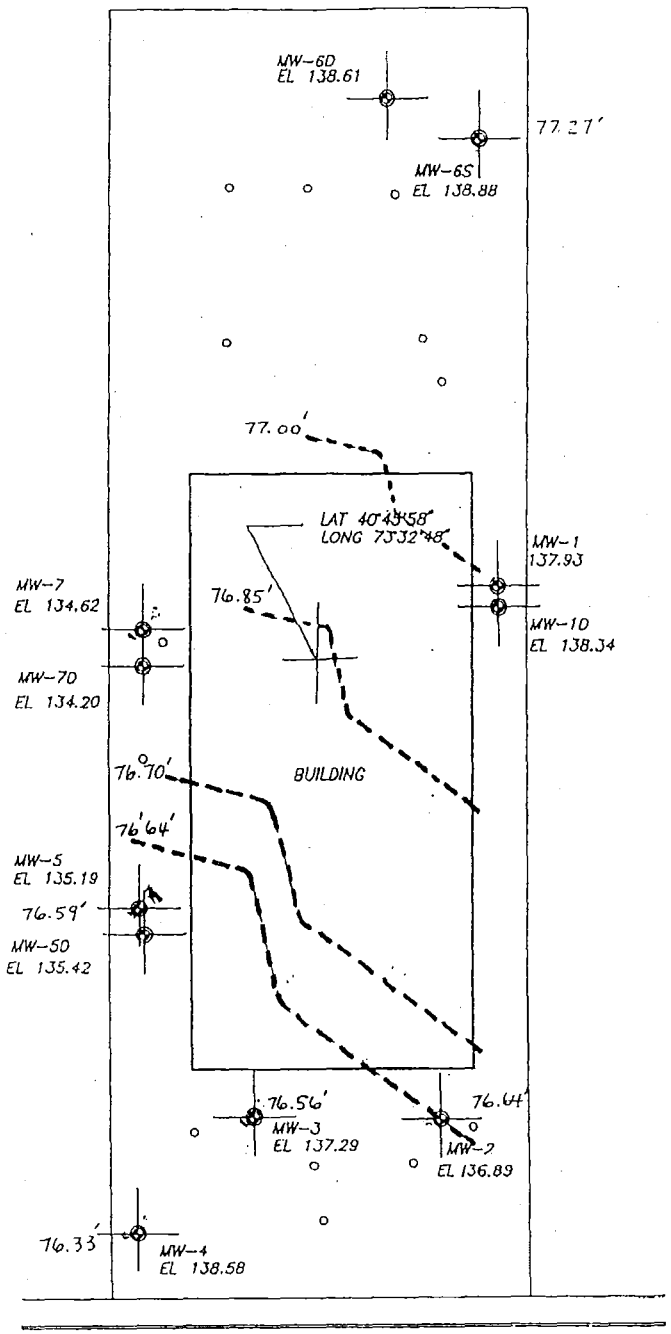
If you have any questions, please call me.

Very truly yours,

Dean Anson II
Co-Facility Coordinator

cc: J. Greco, NYSDEC, Albany
F. Werfel, Spiegel Associates
A. Sanders, Spiegel Associates
R. Leland, Esq., Rosenman & Colin
D. Sullivan, Alliance Technologies Corp.
J. Doyle, Esq., USEPA, Region II
S. Sucharski, BB & L

302713



WEST JOHN STREET

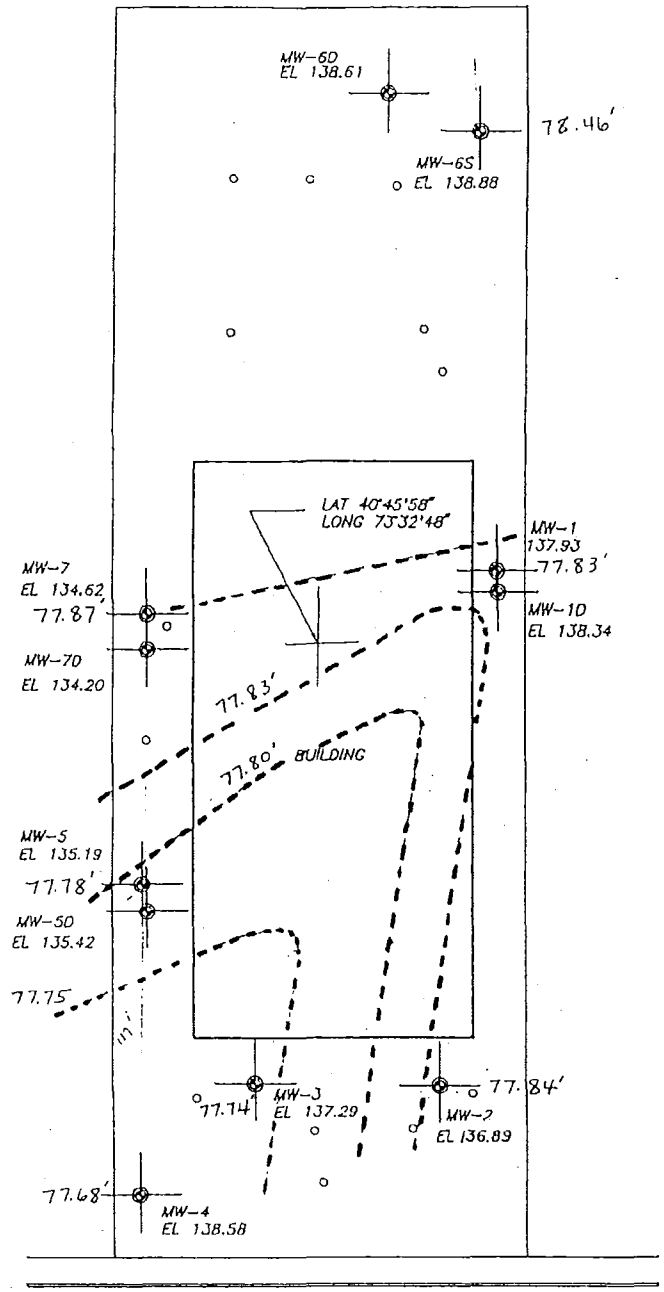
MONITORING WELL LOCATION PLAN
HICKSVILLE, NEW YORK
N.C.T.M. SECT II BLK 499 LOT 87
SURVEYED APRIL 21, 1992

SCALE 1" = 40'

ALBERT W. TAY
LICENSED LAND SURVEYOR
P.O. BOX 312, PLAINVIEW, NY 11803
TEL (516) 433-3725 FAX (516) 433-0409

302714
92233

4.1.1.2



WEST JOHN STREET

MONITORING WELL LOCATION PLAN
HICKSVILLE, NEW YORK
N.C.T.M. SECT II BLK 499 LOT 87
SURVEYED APRIL 21, 1992

40 20 0 40
SCALE 1" = 40'

ALBERT W. TAY
LICENSED LAND SURVEYOR
P.O. BOX 312, PLAINVIEW, NY 11803
TEL (516) 433-3725 FAX (516) 433-0409

302715

92233

Received 4/20/95 TF

ANSON
ENVIRONMENTAL LTD.

33 Gerard Street • Suite 100
Huntington, New York 11743
516•351•3555
Fax 516•351•3615

REMEDIAL INVESTIGATION REPORT

SUPPLEMENT

Anchor Chemical Site
Hicksville, New York

April 1995

Prepared for:
K.B. Co.
375 North Broadway
Jericho, New York 11753

Prepared by:
Anson Environmental Ltd.
33 Gerard Street
Suite 100
Huntington, New York 11743

USEPA 008097

ANSON
ENVIRONMENTAL LTD.

33 Gerard Street • Suite 100
Huntington, New York 11743
516•351•3555
Fax 516•351•3615

Supplementary Soil and Groundwater Sampling
Remedial Investigation Report
Anchor Chemical Site
500 West John Street
Hicksville, New York

April 10, 1995

Due to its concern over the presence of 2-butoxyethanol and 1,4-dioxane in earlier sampling events, EPA required additional soil and groundwater analysis. This report discusses the results of that additional sampling.

Soil Sampling

On February 7, 1995, two vertical soil borings were installed in the vicinity of tank 14 outside the building using hollow-stem augers. Soil samples were collected using a two-inch diameter split spoon samplers and were collected at five foot intervals from the ground surface to thirty five feet below grade.

The soil samples were collected at the following distances below grade in both vertical borings.

5 to 7 feet
10 to 12 feet
15 to 17 feet
20 to 22 feet
25 to 27 feet
30 to 32 feet
35 to 37 feet

As agreed upon with EPA, soil samples were selected for laboratory analysis based on head space readings, soil color and appearance. Head space readings did not exceed background levels and none of the soil samples appeared to be discolored. Therefore, the two deepest soil

• Groundwater Remediation • Hazardous Waste Investigation • Site Investigation and Remediation •
• Asbestos Management • Wetland Investigation •

samples, 30 to 32 feet and 35 to 37 feet, were selected from both borings for laboratory analysis.

Boring #1 was installed 5.8 feet to the east of the outside wall and 52.65 feet south from the northeastern corner of the building. Boring #2 was installed 5.8 feet from the eastern wall and 39.05 feet south of the northeastern corner of the building. The boring locations are marked on the site diagram.

On February 8th, an angle boring was installed such that a soil sample was collected from under tank 14 at a depth of approximately 17 feet, as prescribed by the USEPA. This boring was installed 24.4 feet east of the building, beginning on Nassau County Park property-the grass easement along the entrance road to Cantiague Park.

The boring logs for the two vertical borings are attached in the appendix.

Data Analysis and Results

The soil and groundwater samples were analyzed for Target Compound List volatile and semi-volatile organic compounds in accordance with CLP protocol. The analysis for 2-butoxyethanol was done as part of the analysis for semi-volatile compounds. The protocol for 1,4-dioxane was implemented as a supplement to the basic CLP analysis.

The data were submitted to Environmental Standards Inc. of Valley Forge, PA for validation. The validated data results are discussed in the following sections.

The validated data sheets and validator's commentary are attached in the appendix.

Soil Sample Analyses

There were no volatile or semi-volatile organic compounds detected in the soil samples. The phthlates were considered "non-detect" by the validator as the compounds were detected in the blanks.

The 1,4-dioxane was not detected by the laboratory utilizing the agreed upon protocol. The 2-butoxyethanol was not detected in any soil sample.

The former contents of Tank 14, butylcellusolve, was also not detected.

Groundwater Sample Analyses

Monitoring wells, MW 2 and MW 3, could not be sampled as planned as the water table had dropped at the time of sampling due to the lack of precipitation. Therefore, there was insufficient volume to conduct the sampling. With the concurrence of the USEPA, MW 4, a downgradient well on-site, was sampled as was MW 5S, as was prescribed in the original scope of work.

There were no volatile or semi-volatile organic compounds detected in the sample collected from MW 4. The compounds 1,4-dioxane and 2-butoxyethanol were not detected.

In MW 5S, 29 µg/L of 1,1,1-trichloroethane was detected and an estimated 3 µg/L of 1,1-dichloroethane. The ARAR for the each of the two compounds is 5 µg/L.

The compounds, 1,4-dioxane and 2-butoxyethanol, were not detected.

Conclusions

The soil samples did not reveal the presence of contamination near Tank 14. The downgradient well, MW 4, did not indicate the presence of contamination. Although 29 µg/L of 1,1,1-trichloroethane was detected in MW 5S, no additional sampling is recommended since there is no current source of 1,1,1-trichloroethane on site. The conditions of the Upper Glacial Aquifer in this region have been documented to include generalized contamination by chlorinated solvents, such as 1,1,1-trichloroethane and 1,1-dichloroethane.

In addition, no further action is warranted with respect to the 1,1-dichloroethane since the level present was below the ARAR of 5 µg/L.

APPENDIX

BORING LOGS

SUBSURFACE LOG

PROJECT: Anchor Chemical

DRILL TYPE: Hollow Stem Auger

DATE: 2 / 7 / 95

BOTTOM OF BORING (BOB): 37'

BORING NO.: B #2

SAMPLER TYPE: Split Spoon

RECORDED BY: F. Tooher

WEATHER: sunny, cool

DRILLER: S. Taylor

SAMPLE NO.	DEPTH FROM-TO FEET	RECOV. (ft)	OVM READING (s/s)	OVM READING (headspace)	SAMPLE DESCRIPTION
1	5 - 7		0 ppm	1-3 ppm	tan sand, gravel, pebbles
2	10 - 12		0 ppm	.8 ppm	tan sand, gravel, some pebbles
3	15 - 17		0 ppm	.5 ppm	tan-orange sand, gravel,some pebbles some cobbles
4	20 - 22		0 ppm	.5 ppm	tan - orange coarse sand, gravel, some pebbles and cobbles
5	25 -27		0 ppm	.8 ppm	tan- brown fine sand, some gravel, pebbles
6	30 - 32		0 ppm	.5 ppm	tan- brown fine sand, some gravel, pebbles
7	35 -37		0 ppm	1.0 ppm	tan- brown fine sand some gravel, pebbles

Complete boring at 35 - 37

SUBSURFACE LOG

PROJECT: Anchor Chemical

DRILL TYPE: Hollow Stem Auger

DATE: 2 / 7 / 95

BOTTOM OF BORING (BOB): 37'

BORING NO.: B #1

SAMPLER TYPE: Split Spoon

RECORDED BY: F. Tooher

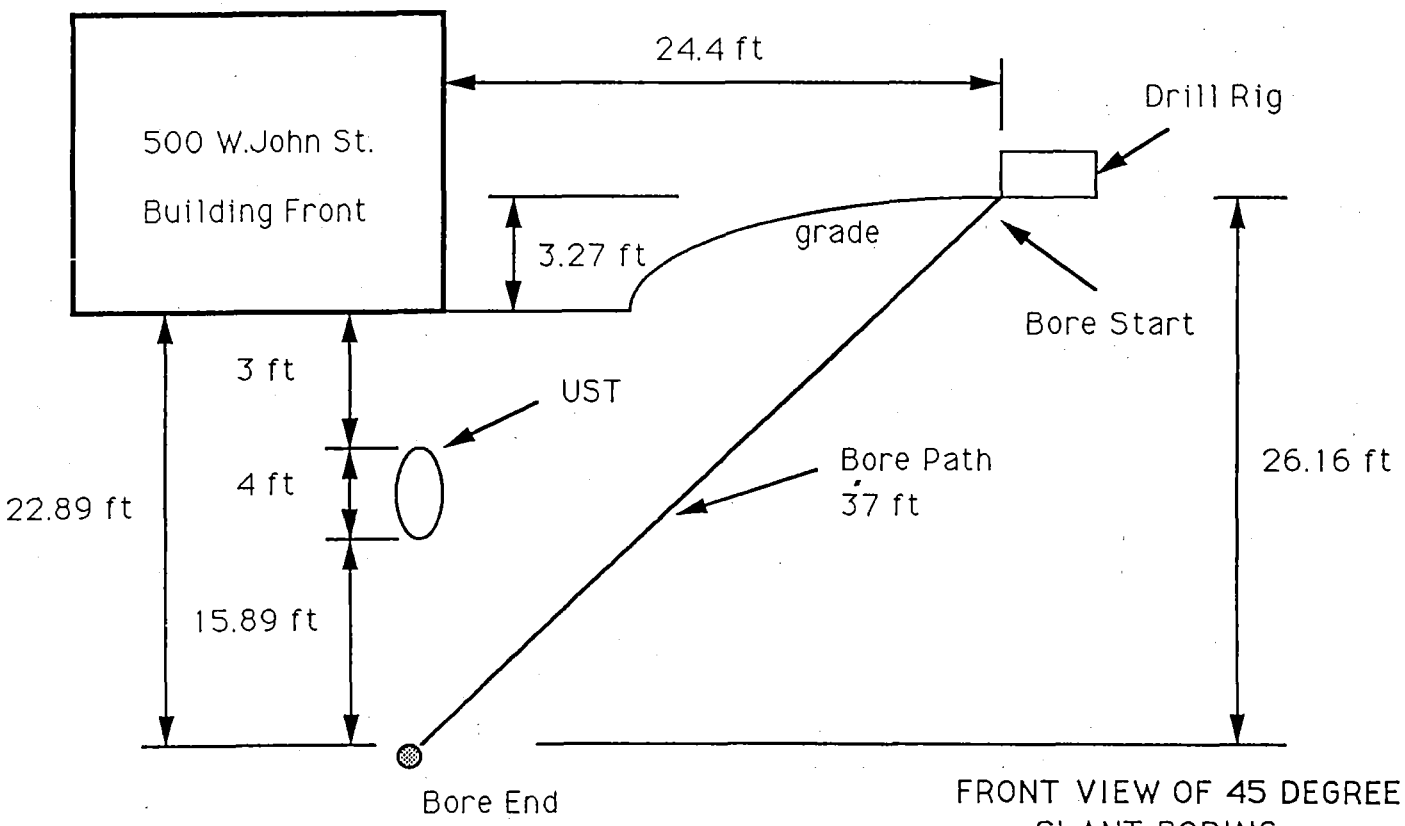
WEATHER: sunny, cool

DRILLER: S. Taylor

SAMPLE NO.	DEPTH FROM-TO FEET	RECOV. (ft)	OVM READING (s/s)	OVM READING (headspace)	SAMPLE DESCRIPTION
1	5 - 7		0 ppm	.8 ppm	tan sand, gravel, pebbles
2	10 - 12		0 ppm	.8 ppm	tan sand, gravel, some pebbles
3	15 - 17		0 ppm	.2 ppm	tan-orange sand, gravel and some pebbles
4	20 - 22		0 ppm	.5 ppm	tan - orange coarse sand, gravel, some pebbles and cobbles
5	25 -27		0 ppm	.8 ppm	tan- brown fine sand, some gravel, pebbles
6	30 - 32		0 ppm	.8 ppm	tan- brown fine sand some gravel, pebbles
7	35 -37		0 ppm	.8 ppm	tan- brown fine sand some gravel, pebbles

Complete boring at 35 - 37

SITE DIAGRAMS



FRONT VIEW OF 45 DEGREE
SLANT BORING

500 WEST JOHN STREET

ANSON ENVIRONMENTAL LTD.
ENGINEERING SKETCH

BORING DATE: 2/8/95 Scale: none

USEPA 008106

VALIDATED LABORATORY RESULTS

VOLATILE ORGANIC ANALYSIS						
Sample Number		Boring 1 (30-32)	Boring 1 (35-37)	Boring 2 (30-32)	Boring 2 (35-37)	Boring 3
Laboratory Sample Number	T502120-	01	02	03	04	05
Remarks						
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
VOLATILE COMPOUNDS	Quantitation Limit					
Chloromethane	10	UJ	UJ	UJ	UJ	UJ
Bromomethane	10	UJ	UJ	UJ	UJ	UJ
Vinyl Chloride	10	UJ	UJ	UJ	UJ	UJ
Chloroethane	10					
Methylene Chloride	10				10 U	
Acetone	10					
Carbon Disulfide	10					
1,1-Dichloroethene	10					
1,1-Dichloroethane	10					
Total 1,2-Dichloroethene	10					
Chloroform	10					
1,2-Dichloroethane	10					
2-Butanone	10					
1,1,1-Trichloroethane	10					
Carbon Tetrachloride	10					
Bromodichloromethane	10					
1,1,2,2-Tetrachloroethane	10					
1,2-Dichloropropane	10					
trans-1,3-Dichloropropene	10					
Trichloroethene	10					
Dibromochloromethane	10					
1,1,2-Trichloroethane	10					
Benzene	10					
cis-1,3-Dichloropropene	10					
Bromoform	10					
2-Hexanone	10	UJ	UJ	UJ	UJ	UJ
4-Methyl-2-Pentanone	10	UJ	UJ	UJ	UJ	UJ

USEPA 008108

VOLATILE ORGANIC ANALYSIS						
Sample Number		Boring 1 (30-32)	Boring 1 (35-37)	Boring 2 (30-32)	Boring 2 (35-37)	Boring 3
Laboratory Sample Number	T502120-	01	02	03	04	05
Remarks						
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
VOLATILE COMPOUNDS	Quantitation Limit					
Tetrachloroethene	10					
Toluene	10					
Chlorobenzene	10					
Ethylbenzene	10					
Styrene	10					
Total Xylenes	10					
1,4-Dioxane	1000	R	R	R	R	R
Quantitation Limit Multiplier		1.00	1.00	1.00	1.00	1.00
Date of Sample Collection		2/7/95	2/7/95	2/7/95	2/7/95	2/7/95
Date Sample Received by Laboratory		2/8/95	2/8/95	2/8/95	2/8/95	2/8/95
Date of Sample Analysis		2/16/95	2/16/95	2/16/95	2/16/95	2/16/95
Instrument Used for Analysis		MSD/B	MSD/B	MSD/B	MSD/B	MSD/B

VOLATILE ORGANIC ANALYSIS					
Sample Number		MW-5S	Trip Blank	Field Blank	MW-4
Laboratory Sample Number	T502120-	06	09	10	11
Remarks					
Units		µg/L	µg/L	µg/L	µg/L
VOLATILE COMPOUNDS	Quantitation Limit				
Chloromethane	10				
Bromomethane	10				
Vinyl Chloride	10				
Chloroethane	10				
Methylene Chloride	10				
Acetone	10				
Carbon Disulfide	10				
1,1-Dichloroethene	10				
1,1-Dichloroethane	10	3 J			
Total 1,2-Dichloroethene	10				
Chloroform	10	-			
1,2-Dichloroethane	10				
2-Butanone	10				
1,1,1-Trichloroethane	10	29			
Carbon Tetrachloride	10				
Bromodichloromethane	10				
1,1,2,2-Tetrachloroethane	10				
1,2-Dichloropropane	10				
trans-1,3-Dichloropropene	10				
Trichloroethene	10				
Dibromochloromethane	10				
1,1,2-Trichloroethane	10				
Benzene	10				
cis-1,3-Dichloropropene	10				
Bromoform	10				
2-Hexanone	10	UJ	UJ	UJ	UJ
4-Methyl-2-Pentanone	10				

USEPA 008110

VOLATILE ORGANIC ANALYSIS					
Sample Number		MW-5S	Trip Blank	Field Blank	MW-4
Laboratory Sample Number	T502120-	06	09	10	11
Remarks					
Units		µg/L	µg/L	µg/L	µg/L
VOLATILE COMPOUNDS	Quantitation Limit				
Tetrachloroethene	10				
Toluene	10				
Chlorobenzene	10				
Ethylbenzene	10				
Styrene	10				
Total Xylenes	10				
1,4-Dioxane	1000	R	R	R	R
Quantitation Limit Multiplier		1.00	1.00	1.00	1.00
Date of Sample Collection		2/8/95	2/8/95	2/8/95	2/8/95
Date Sample Received by Laboratory		2/8/95	2/8/95	2/8/95	2/8/95
Date of Sample Analysis		2/15/95	2/15/95	2/15/95	2/15/95
Instrument Used for Analysis		MSD/C	MSD/C	MSD/C	MSD/C

USEPA 008111

EXTRACTABLE ORGANIC ANALYSIS						
Sample Number			Boring 1 (30-32)	Boring 1 (35-37)	Boring 2 (30-32)	Boring 2 (35-37)
Laboratory Sample Number		T502120-	01	02	03	04
Remarks						
Units			µg/Kg	µg/Kg	µg/Kg	µg/Kg
SEMIVOLATILE COMPOUNDS	Quantitation Limit (Aq)	Quantitation Limit (Sol)				
Phenol	10	330				R
bis(2-Chloroethyl)ether	10	330				R
2-Chlorophenol	10	330				R
1,3-Dichlorobenzene	10	330				R
1,4-Dichlorobenzene	10	330				R
1,2-Dichlorobenzene	10	330				R
2-Methylphenol	10	330				R
2,2'-oxybis(1-Chloropropane)	10	330				R
4-Methylphenol	10	330				R
N-Nitroso-di-n-Propylamine	10	330				R
Hexachloroethane	10	330				R
Nitrobenzene	10	330				R
Isophorone	10	330				R
2-Nitrophenol	10	330				R
2,4-Dimethylphenol	10	330				R
bis(2-Chloroethoxy)methane	10	330				R
2,4-Dichlorophenol	10	330				R
1,2,4-Trichlorobenzene	10	330				R
Naphthalene	10	330				R
4-Chloroaniline	10	330				R
Hexachlorobutadiene	10	330				R
4-Chloro-3-Methylphenol	10	330				R
2-Methylnaphthalene	10	330				R
Hexachlorocyclopentadiene	10	330				R
2,4,6-Trichlorophenol	10	330				R
2,4,5-Trichlorophenol	25	800				R
2-Chloronaphthalene	10	330				R

USEPA 008112

EXTRACTABLE ORGANIC ANALYSIS						
Sample Number			Boring 1 (30-32)	Boring 1 (35-37)	Boring 2 (30-32)	Boring 2 (35-37)
Laboratory Sample Number		T502120-	01	02	03	04
Remarks						
Units			µg/Kg	µg/Kg	µg/Kg	µg/Kg
SEMIVOLATILE COMPOUNDS	Quantitation Limit (Aq)	Quantitation Limit (Sol)				
2-Nitroaniline	25	800				R
Dimethylphthalate	10	330				R
Acenaphthylene	10	330				R
2,6-Dinitrotoluene	10	330				R
3-Nitroaniline	25	800				R
Acenaphthene	10	330				R
2,4-Dinitrophenol	25	800				R
4-Nitrophenol	25	800				R
Dibenzofuran	10	330				R
2,4-Dinitrotoluene	10	330				R
Diethylphthalate	10	330				R
4-Chlorophenyl-phenylether	10	330				R
Fluorene	10	330				R
4-Nitroanaline	25	800				R
4,6-Dinitro-2-Methylphenol	25	800				R
N-Nitrosodiphenylamine	10	330				R
4-Bromophenyl-phenylether	10	330				R
Hexachlorobenzene	10	330				R
Pentachlorophenol	25	800				R
Phenanthrene	10	330				R
Anthracene	10	330				R
Carbazole	10	330				R
Di-n-Butylphthalate	10	330	340 U	340 U	340 U	R
Fluoranthene	10	330				R
Pyrene	10	330				R
Butylbenzylphthalate	10	330				R
3,3'-Dichlorobenzidine	10	330				R

USEPA 008113

EXTRACTABLE ORGANIC ANALYSIS						
Sample Number			Boring 1 (30-32)	Boring 1 (35-37)	Boring 2 (30-32)	Boring 2 (35-37)
Laboratory Sample Number		T502120-	01	02	03	04
Remarks						
Units			µg/Kg	µg/Kg	µg/Kg	µg/Kg
SEMIVOLATILE COMPOUNDS	Quantitation Limit (Aq)	Quantitation Limit (Sol)				
Benzo(a)anthracene	10	330				R
bis(2-Ethylhexyl)phthalate	10	330	340 U	340 U	340 U	340 U
Chrysene	10	330				R
Di-n-Octylphthalate	10	330				R
Benzo(b)fluoranthene	10	330				R
Benzo(k)fluoranthene	10	330				R
Benzo(a)pyrene	10	330				R
Indeno(1,2,3-cd)pyrene	10	330				R
Dibenz(a,h)anthracene	10	330				R
Benzo(g,h,i)perylene	10	330				R
Quantitation Limit Multiplier			1.02	1.03	1.03	1.03
Date of Sample Collection			2/7/95	2/7/95	2/7/95	2/7/95
Date Sample Received by Laboratory			2/8/95	2/8/95	2/8/95	2/8/95
Date of Sample Extraction			2/9/95	2/9/95	2/9/95	2/9/95
Date of Sample Analysis			3/6/95	3/6/95	3/6/95	3/6/95
Instrument Used for Analysis			MSD/J	MSD/J	MSD/J	MSD/J

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EXTRACTABLE ORGANIC ANALYSIS							
Sample Number			Boring 2 (35-37)	Boring 3	MW-5S	Field Blank	MW-4
Laboratory Sample Number		T502120-	04	05	06	10	11
Remarks			Rextraction/Reanalysis				
Units			µg/Kg	µg/Kg	µg/L	µg/L	µg/L
SEMIVOLATILE COMPOUNDS	Quantitation Limit (Aq)	Quantitation Limit (Sol)					
Phenol	10	330	R				
bis(2-Chloroethyl)ether	10	330	R				
2-Chlorophenol	10	330	R				
1,3-Dichlorobenzene	10	330	R				
1,4-Dichlorobenzene	10	330	R				
1,2-Dichlorobenzene	10	330	R				
2-Methylphenol	10	330	R				
2,2'-oxybis(1-Chloropropane)	10	330	R				
4-Methylphenol	10	330	R				
N-Nitroso-di-n-Propylamine	10	330	R				
Hexachloroethane	10	330	R				
Nitrobenzene	10	330	R		UJ	UJ	UJ
Isophorone	10	330	R				
2-Nitrophenol	10	330	R				
2,4-Dimethylphenol	10	330	R				
bis(2-Chloroethoxy)methane	10	330	R				
2,4-Dichlorophenol	10	330	R		UJ	UJ	UJ
1,2,4-Trichlorobenzene	10	330	R				
Naphthalene	10	330	R				
4-Chloroaniline	10	330	R				
Hexachlorobutadiene	10	330	R		UJ	UJ	UJ
4-Chloro-3-Methylphenol	10	330	R				
2-Methylnaphthalene	10	330	R				
Hexachlorocyclopentadiene	10	330	R				
2,4,6-Trichlorophenol	10	330	R				
2,4,5-Trichlorophenol	25	800	R				
2-Chloronaphthalene	10	330	R				

USEPA 008115

EXTRACTABLE ORGANIC ANALYSIS							
Sample Number			Boring 2 (35-37)	Boring 3	MW-5S	Field Blank	MW-4
Laboratory Sample Number		T502120-	04	05	06	10	11
Remarks			Rextraction/Reanalysis				
Units			µg/Kg	µg/Kg	µg/L	µg/L	µg/L
SEMIVOLATILE COMPOUNDS	Quantitation Limit (Aq)	Quantitation Limit (Sol)					
2-Nitroaniline	25	800	R				
Dimethylphthalate	10	330	R				
Acenaphthylene	10	330	R				
2,6-Dinitrotoluene	10	330	R				
3-Nitroaniline	25	800	R				
Acenaphthene	10	330	R				
2,4-Dinitrophenol	25	800	R				
4-Nitrophenol	25	800	R				
Dibenzofuran	10	330	R				
2,4-Dinitrotoluene	10	330	R				
Diethylphthalate	10	330	R		10 U	1 J	
4-Chlorophenyl-phenylether	10	330	R				
Fluorene	10	330	R				
4-Nitroanaline	25	800	R				
4,6-Dinitro-2-Methylphenol	25	800	R				
N-Nitrosodiphenylamine	10	330	R				
4-Bromophenyl-phenylether	10	330	R				
Hexachlorobenzene	10	330	R				
Pentachlorophenol	25	800	R		UJ	UJ	UJ
Phenanthrene	10	330	R				
Anthracene	10	330	R				
Carbazole	10	330	R				
Di-n-Butylphthalate	10	330	340 U	350 U	10 U		
Fluoranthene	10	330	R				
Pyrene	10	330	R				
Butylbenzylphthalate	10	330	R				
3,3'-Dichlorobenzidine	10	330	R				

USEPA 008116

EXTRACTABLE ORGANIC ANALYSIS							
Sample Number			Boring 2 (35-37)	Boring 3	MW-5S	Field Blank	MW-4
Laboratory Sample Number		T502120-	04	05	06	10	11
Remarks			Rextraction/Reanalysis				
Units			µg/Kg	µg/Kg	µg/L	µg/L	µg/L
SEMIVOLATILE COMPOUNDS	Quantitation Limit (Aq)	Quantitation Limit (Sol)					
Benzo(a)anthracene	10	330	R				
bis(2-Ethylhexyl)phthalate	10	330	R	350 U	13 U	1 J	10 U
Chrysene	10	330	R				
Di-n-Octylphthalate	10	330	R				
Benzo(b)fluoranthene	10	330	R				
Benzo(k)fluoranthene	10	330	R				
Benzo(a)pyrene	10	330	R				
Indeno(1,2,3-cd)pyrene	10	330	R				
Dibenz(a,h)anthracene	10	330	R				
Benzo(g,h,i)perylene	10	330	R				
Quantitation Limit Multiplier			1.03	1.04	1.00	1.00	1.00
Date of Sample Collection			2/7/95	2/7/95	2/8/95	2/8/95	2/8/95
Date Sample Received by Laboratory			2/8/95	2/8/95	2/8/95	2/8/95	2/8/95
Date of Sample Extraction			3/7/95	2/9/95	2/10/95	2/10/95	2/10/95
Date of Sample Analysis			3/7/95	3/6/95	3/7/95	3/7/95	3/7/95
Instrument Used for Analysis			MSD/J	MSD/J	MSD/J	MSD/J	MSD/J

TENTATIVELY IDENTIFIED COMPOUNDS						
Sample Number	Boring 1 (30-32)	Boring 1 (35-37)	Boring 2 (30-32)	Boring 2 (35-37)	Boring 3	MW-5S
Laboratory Sample Number T502120-	01	02	03	04	05	06
Remarks						
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/L
COMPOUNDS						
VOLATILE COMPONENTS						
Blank Contamination (Number of Peaks)	41(2) R	35(2) R	51(2) R	78(2) R	23(2) R	14(2) R
Laboratory Artifacts			6 R	5 R	5 R	
SEMIVOLATILE COMPONENTS						
Blank Contamination	1900 R	1500 R	1700 R	290 R	1700 R	
Unknowns (Number of Peaks)						270(17) J
Saturated Hydrocarbon and Phthalate					160 J	
Saturated Hydrocarbon						5 J
Unknown Phthalate						18(3) J

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TENTATIVELY IDENTIFIED COMPOUNDS				
Sample Number	Trip Blank	Field Blank	MW-4	Boring 2 (35-37)
Laboratory Sample Number T502120-	9	10	11	04
Remarks				Rextraction/Reanalysis
Units	µg/L	µg/L	µg/L	µg/Kg
COMPOUNDS				
VOLATILE COMPONENTS	-			NA
Blank Contamination (Number of Peaks)		16(2) R	10(2) R	
Laboratory Artifacts				
SEMIVOLATILE COMPONENTS				
Blank Contamination	NA	-	-	1600 R
Unknowns (Number of Peaks)				900(3) J
Saturated Hydrocarbon and Phthalate				
Saturated Hydrocarbon				
Unknown Phthalate				

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VOLATILE ORGANIC ANALYSIS						
Sample Number		Boring 1 (30-32)	Boring 1 (35-37)	Boring 2 (30-32)	Boring 2 (35-37)	Boring 3
Laboratory Sample Number	L5-02-044-	01	02	03	04	05
Remarks						
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
VOLATILE COMPOUNDS	Quantitation Limit					
2-Butoxyethanol	1000					
Quantitation Limit Multiplier		1.00	1.00	1.00	1.00	1.00
Date of Sample Collection		2/7/95	2/7/95	2/7/95	2/7/95	2/7/95
Date Sample Received by Laboratory		2/10/95	2/10/95	2/10/95	2/10/95	2/10/95
Date of Sample Analysis		2/15/95	2/15/95	2/15/95	2/15/95	2/15/95

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VOLATILE ORGANIC ANALYSIS				
Sample Number		MW-5S	Field Blank	MW-4
Laboratory Sample Number	L5-02-044-	06	09	10
Remarks				
Units		µg/L	µg/L	µg/L
VOLATILE COMPOUNDS	Quantitation Limit			
2-Butoxyethanol	1000			
Quantitation Limit Multiplier		1.00	1.00	1.00
Date of Sample Collection		2/8/95	2/8/95	2/8/95
Date Sample Received by Laboratory		2/10/95	2/10/95	2/10/95
Date of Sample Analysis		2/15/95	2/15/95	2/15/95

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Section 1 Quality Assurance Review

A. Organic Data

The organic analyses of seven soil samples (including the matrix spike and matrix spike duplicate samples) and six aqueous samples (including one trip blank and one field blank) were performed by Laboratory Resources, Inc., of Teterboro, New Jersey, and Bethlehem, Pennsylvania. These samples were collectively analyzed by CLP protocols for the Target Compound List (TCL) volatile organics and TCL semivolatile organics (at the Teterboro facility). In addition, library searches were performed for 30 extraneous chromatographic peaks for the volatile and semivolatile fractions combined. The samples were also analyzed for 1,4-dioxane using SW-846 Method 8240 (at the Teterboro facility) and for 2-butoxyethanol by SW-846 Method 8015 (at the Bethlehem facility). The analytical results are presented in Section 2.

The findings offered in this report are based upon a review of holding times, blank analysis results, matrix spike and surrogate recoveries, GC/MS tuning, internal standard areas, target compound matching quality, calibrations, analytical sequence, quantitation of positive results and overall system performance. Sample-specific quantitation limits can be obtained by multiplying the general quantitation limits by the quantitation limit multipliers presented on the data summary tables in Section 2. The sole purpose of the quantitation limit multipliers is to reproduce the laboratory-rounded, sample-specific quantitation limits.

The analytical data were examined to determine data usability in accordance with the U.S. EPA Region II validation checklist SOP No. HW-6 (Revision #9) "CLP Organics Data Review and Preliminary Review." The analytical requirements and required deliverables specified in the CLP Statement of Work were met for this data set with the following exceptions and comments. It should be noted that the following items are contractual in nature and do not necessarily affect data usability. Usability is addressed in a subsequent section.

Correctable Deficiencies

1. The laboratory did not label the surrogate compound recovery forms, method blank summary forms, or the internal standard summary forms with the Anson Environmental Ltd. sample numbers in the data package for the analysis of 1,4-dioxane. The data reviewer has entered these sample numbers on the quality control summary forms for the analysis.

2. The laboratory did not assign unique sample designations on all forms and raw data for two semivolatile method blanks (both SBLK01). All semivolatile method blanks should be designated using SBLK## (SOW, Document OLM01.8, B-28).

3. The laboratory did not supply any retention time information for the analysis of 2-butoxyethanol in the project samples. The data reviewer has examined the chromatograms for the initial calibration standards and matrix spike/matrix spike

duplicate analyses and has determined that the compound displayed a retention time of 17.9 minutes; this appeared to be very stable throughout the analytical sequence. The laboratory did not report any positive results for the compound in the samples, and no significant peaks were observed in the region around 17.9 minutes on the sample chromatograms.

4. The laboratory did not report what sample weights/volumes were used in the analysis of the samples for 2-butoxyethanol. The data reviewer has assumed that the laboratory consistently used a 5-gram aliquot of solid sample and a 5-mL volume for all aqueous samples and standards for the purge as suggested in the methods.

5. The GC column used for the GC/MS analysis of the project samples was able to separate the two isomers of 1,2-dichloroethene, and the laboratory used the later-eluting peak (eluting at 9.49 minutes on instrument MSD/C and at 8.07 minutes on instrument MSD/B) for the calculation of the relative response factors for total-1,2-dichloroethene in the initial and continuing calibrations performed for the volatile organics analysis. However, the laboratory should have summed the areas of the two peaks for the calculation of the relative response factors for total-1,2-dichloroethene in the initial and continuing calibrations (OLM01.8, D-28/VOA). This issue has no impact on data quality because no positive results were reported for total-1,2-dichloroethene in the samples.

6. The laboratory reported the absolute value of the percent differences on the continuing calibration summary forms for the volatile and semivolatile organics analyses. The laboratory should not be using the absolute value operator in the equation for the percent differences as the CLP protocol states that negative percent differences are possible (OLM01.8, D-30/VOA and D-48/SV).

7. The "B" qualifier flag (indicating the presence of the compound in a method blank) appears for methylene chloride on the Form I's for the matrix spike and matrix spike duplicate analyses of sample Boring 3. However, since methylene chloride was not detected in these analyses (as the quantitation limits were also flagged "U"), the "B" flag should not have been entered on the forms.

8. The laboratory often labelled the quality control summary forms and raw data for sample MW-5S in the semivolatile and volatile organics data packages with "MW-5S2." In many cases, the laboratory caught the error and corrected the mistakes. However, the correction was not made in all instances in which the error appeared.

9. Several inconsistencies were noted between the results reported on the matrix spike recovery summary forms (Form IIIs) and the associated Form I's for the matrix spike/matrix spike duplicate analyses performed in the volatile and semivolatile organics analyses. The table below summarizes these inconsistencies. It should be noted that in all cases, the Form IIIs reflect the results as calculated by the data reviewer from the raw data for the analyses. Data usability was not affected by this issue.

Sample	Fraction	Compound	Result From Form I	Result From Form III
Boring 3MS	volatile	toluene	57 μg/Kg	56 μg/Kg
MW-5SMSD	volatile	trichloroethene	43 μg/L	42 μg/L
MW-5SMS	semivolatile	pyrene	32 μg/L	31 μg/L
MW-5SMSD	semivolatile	4-nitrophenol	60 μg/L	59 μg/L

10. The laboratory reported a relative response factor of 1.5170 for total-1,2-dichloroethene on the continuing calibration check summary form (Form VII VOA) for the check performed on 2/15/95 at 11:17. The raw data indicates that the true relative response factor was 1.6238; in addition, the percent difference should have been reported as 5.02% instead of 1.88% as reported on the Form VII. (See Correctable Deficiency #5 above for the procedure used to calculate the relative response factors for the compound.)

11. The area counts reported for internal standard compound bromochloromethane on the internal standard area and retention time summary (Form VIII VOA) for the solid samples analysis do not match those observed in the raw data for the volatile organics analysis of the solid samples. The data reviewer has transcribed the area counts for the internal standard from the raw data to the summary form. This issue does not impact data usability because the correct internal standard areas are within the specified quality control limit.

12. A time of analysis of 12:02 was reported on the initial and continuing calibration summary forms for the time the first standard was analyzed for the initial calibration of instrument MSD/J for the semivolatile organics analysis. However, the raw data shows that the true time of analysis for the first standard of the initial instrument calibration was 12:17. The data reviewer has altered the associated quality control summary forms and has provided these in the Support Documentation section of this report.

13. The laboratory reported lab file IDs of >8083 for the 20 ppb standard and >8079 for the 10 ppb standard on the Form VI for the CLP volatile organics initial calibration performed on 2/13/95. The raw data shows that the laboratory should have reported the file IDs as >8083 for the 10 ppb standard and >8079 for the 20 ppb standard.

14. The laboratory reported that low recoveries were obtained for all surrogate compounds in the semivolatile organics analysis of sample Boring 2 (35-37). The laboratory reextracted and reanalyzed the sample and acceptable recoveries were obtained for the surrogate compounds. The laboratory provided raw data and results for both sets of analyses. However, per CPL protocol, the laboratory was required to submit only the raw data and summary forms for the analysis which displayed acceptable surrogate recoveries. It should be noted that the reextraction of the sample was performed outside holding time requirements. For completeness, both sets of analytical results for the sample appear on the data summary tables.

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15. The laboratory did not label the data package quality control summary forms with the sample identifications as they appear on the Chain-of-Custody Records. This may be due to the fact that the sample identifications were rather long and could not fit into the fields provided for the sample identification on the summary forms (which have a capacity of about ten characters). The data reviewer has referred to all samples by the identifications as they appear on the Chain-of-Custody Records.

16. The laboratory used a quantitation limit of 830 µg/Kg as the basis for the sample-specific quantitation limits for 2,4,5-trichlorophenol, 2-nitroaniline, 3-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, 4,6-dinitro-2-methylphenol and pentachlorophenol in the semivolatile organics analysis of the project samples. Per CLP protocol, the laboratory should have used 800 µg/Kg as the basis for the sample-specific quantitation limits for these compounds. The correct quantitation limits appear on the data summary tables in this report.

Noncorrectable Deficiencies

1. According to the raw data and quality control summary forms, instrument MSD/C (which was used for the aqueous samples) did not detect 1,4-dioxane in the low concentration initial calibration standard (0.50 mg/L). Therefore, the laboratory did not use the required five standards for the initial calibration of instrument MSD/C for the analysis of 1,4-dioxane in the aqueous samples (SW-846, 8015A-3). It should be noted that 1,4-dioxane was not detected in any aqueous sample, and it is the opinion of the data reviewer that the analysis was capable of determining the presence of the compound down to the reporting limit of 1.5 mg/L for the aqueous samples. (See Comment #2 below.)

2. The laboratory used initial and continuing calibration standards for the semivolatile organics analysis that contained the non-target compound 3-methylphenol as well as target compound 4-methylphenol, which coeluted on the instrument used for analysis (MSD/J). Therefore, the laboratory calculated the relative response factor for 4-methylphenol based on the concentration of both compounds combined. This deviation from the protocol was noted in the case narrative submitted with the data package. Because there were no positive results for 4-methylphenol in the project samples, data usability was not affected by this issue.

Comments

1. Based on the raw data provided, it appeared that the laboratory did not spike the aqueous matrix spike/matrix spike duplicate sample with 1,4-dioxane in the Method 8240 analysis. The laboratory confirmed that the CLP spiking solution was used for the Method 8240 analysis, and this solution does not contain 1,4-dioxane. In addition, the laboratory did

not spike a solid sample with the spiking solution. Therefore, it is the opinion of the data reviewer that the laboratory did not perform a matrix spike/matrix spike duplicate analysis for the analytical method used for the determination of 1,4-dioxane in the project samples.

2. The laboratory supplied the analytical results for the method detection limit (MDL) study for the analysis for 1,4-dioxane. However, it is the opinion of the data reviewer that the laboratory did not perform the MDL study according to good laboratory practice. The laboratory should have analyzed the low-spike samples seven times over three non-consecutive days. In addition, since the samples are analyzed over three nonconsecutive days, at least three different continuing calibrations should be used for quantitation of the analytical results. For instrument MSD/C, all seven analyses were performed within six hours of each other, and the quantitation was based on one continuing calibration. For instrument MSD/B, the laboratory performed the analysis of the seven low-spike samples on three consecutive days, and apparently the quantitation was based on one continuing calibration standard (despite the fact that the analysis covered three days). The data reviewer has examined the raw data from the initial calibration standards and has determined that the laboratory could detect 1,4-dioxane in the solid samples at the reported quantitation limit (1 mg/Kg). The instrument used for the aqueous samples did not detect 1,4-dioxane in the 0.5 mg/L initial calibration standard but did detect the compound in the 1.5 mg/L initial calibration standard. The ability to observe the compound in the 0.5 mg/L standard for the solid sample analysis but not the aqueous sample analysis may be due to the heated purge used in the volatile organics analysis of solid samples. Without other supporting raw data or quality control summaries, the quantitation limit for 1,4-dioxane in the aqueous samples should be considered to be 1.5 mg/L (the concentration of the compound in the lowest calibration standard in which the compound was detected).

3. It should be noted that the EPA Region II data validation checklist used for the review of the laboratory data was expressly developed for use with the CLP protocols and not for analyses performed using SW-846 methods. The data reviewer has used the checklist as guidance for the review of the data from the 1,4-dioxane and 2-butoxyethanol analyses; however, it should be remembered that some requirements stipulated in the checklist are not applicable to the SW-846 analyses and were not considered during the data validation. Notations in the checklist indicate which applications were considered inappropriate for the analyses.

4. SW-846 Method 8240 requires that the mass ion m/e=173 be less than or equal to 2.0% of the mass ion m/e=95 in the bromofluorobenzene mass tuning and calibration. The laboratory used a more restrictive 1.0% criterion. All mass tuning and calibration runs met the requirements of both the method and the laboratory.

5. The laboratory did not report the relative response factors or percent differences for the calibration check compounds (CCCs) or the system performance check compounds (SPCCs) on the initial and continuing calibration summary forms for the analysis of 1,4-dioxane in the project samples. However, the analysis for this compound was performed in conjunction with the volatile organics analysis of the samples by CLP protocols. The initial and continuing calibration summary forms in the volatile organics data package were used by the data reviewer to assess instrument stability and performance.

6. It should be noted that the concentration levels that are reported on the initial calibration summary forms for the 1,4-dioxane analysis (20 ppb, 50 ppb, 100 ppb, 150 ppb and 200 ppb) are for the surrogate compounds only. The laboratory used concentrations of 500 ppb, 1500 ppb, 2500 ppb, 4000 ppb and 5000 ppb for 1,4-dioxane in the initial calibration for the Method 8240 analysis.

7. The laboratory did not spike all samples and standards with a surrogate compound for the analysis of the project samples for 2-butoxyethanol as recommended in the method (SW-846, 8015A-4). Therefore, sample-specific purge efficiencies and matrix effects could not be assessed by the data reviewer.

8. The laboratory did not include the raw data and chromatogram for the analysis of the Procedure Blank and the chromatogram for sample Boring 2 (30-32) in the sample data package for 2-butoxyethanol submitted for validation. Upon notification, the laboratory provided the requested information.

9. The data reviewer noted that compounds benzo(b)fluoranthene and benzo(k)fluoranthene coeluted in the low-level initial calibration standard (and the laboratory reported the same relative response factors for the compounds on the initial calibration summary form) but the compounds were resolved in the higher concentration standards. Because no positive results were reported for the compounds in the semivolatile organics analysis of the project samples, this occurrence should have no effect on data quality.

With regard to data usability, the principal areas of concern are blank contamination, exceeded holding times, very low surrogate recoveries, very low relative response factors and high percent differences in the continuing calibrations. Based upon the data packages reviewed, the following organic data qualifiers are offered. It should be noted that the following organic data usability issues represent an interpretation of the quality control results obtained for the project samples. Quite often, data qualifications address issues relating to the sample matrix problems. Similarly, the validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the following data usability issues should <u>not</u> necessarily be construed as an indication of laboratory performance.

Organic Data Qualifiers

- Due to the presence of methylene chloride in the associated field blank and the presence of common phthalate esters in the method and field blanks, the positive results for methylene chloride in sample Boring 2 (35-37) and for di-*n*-butylphthalate, diethylphthalate, and *bis*(2-ethylhexyl)phthalate in all samples except the field blank should be considered "not-detected" and have been flagged "U" on the data table. In addition, all results reported at concentrations below the contract required quantitation limits (CRQLs) have been raised to the CRQL (corrected for percent solids for the soil samples) and assigned the appropriate "U" qualifier code.

- The analysis for 1,4-dioxane in all samples should be considered unreliable and the "not-detected" results for the compound in the project samples have been flagged "R" on the data summary tables. Very low relative response factors (<0.050) were reported for the compound in the initial and continuing calibrations performed for the volatile organics analysis. According to U.S. EPA Region II guidelines, the analysis is unreliable. However, it should be noted that the compound has historically displayed poor responses when analyzed by SW-846 Method 8240. The calibrations and method detection limit study performed for the analysis for the compound show that the analysis was capable of detecting the compound at the reported quantitation limits (1 mg/Kg) for solid samples. Therefore, although the validation guidelines require that the analysis for 1,4-dioxane in the project samples be considered unreliable, it is the opinion of the data reviewer that the analysis was capable of determining the presence or absence of the compound in the solid project samples at the reported quantitation limits and at a quantitation limit of 1.5 mg/L for the aqueous samples (See Noncorrectable Deficiency #1 and Comment #2).

- The analyses for all compounds in the semivolatile organics analysis of the initial and reextraction/reanalysis of sample Boring 2 (35-37) should be considered unreliable and the "not-detected" results for the semivolatile compounds in the sample have been flagged "R" on the data summary tables (unless previously flagged "U"). The initial semivolatile organics analysis of the sample displayed very low recoveries ($<10\%$) for all surrogate compounds. Per CLP protocol, the laboratory reextracted and reanalyzed the sample. Acceptable recoveries were obtained in the reanalysis of the sample; however, the sample was reextracted greater than 28 days from sample collection. According to Region II guidelines, both analyses of the sample should be considered unreliable.

- The actual detection limits for chloromethane, bromomethane, vinyl chloride, 2-hexanone and 4-methyl-2-pentanone in all solid samples may be higher than reported and have been flagged "UJ" on the data tables. High percent differences ($>25\%$) in the direction of a decrease in instrument sensitivity were observed between the response factors for these compounds in the associated continuing calibrations compared to the average response factors calculated from the associated initial multipoint calibration.

- The actual detection limits for 2-hexanone, nitrobenzene, 2,4-dichlorophenol, hexachlorobutadiene and pentachlorophenol in all aqueous samples should be considered estimated and have been flagged "UJ" on the data tables. High percent differences (>25%) in the direction of an increase in instrument sensitivity were observed between the response factors for these compounds in the associated continuing calibrations compared to the average response factors calculated from the associated initial multipoint calibrations. It should be noted that although qualification was stipulated by the Region II checklist, the percent differences were in the direction of an increase in instrument sensitivity; therefore, the actual detection limits may be acceptable as reported.

- Per CLP reporting conventions, all results below the quantitation limits should be considered estimated and have been flagged "J" on the data tables.

- Tentatively Identified Compounds (TICs) have been examined and the results appear on the data tables as part of Section 2. The majority of the TICs appear to be blank contamination and laboratory artifacts. Sample MW-5S displayed a significant number of TICs; the majority of these were classified as unknowns due to poor compound mass spectrum matches obtained in the library searches. All TICs identified as laboratory artifacts and blank contamination have been flagged "R" on the data summary tables and should be considered unreliable. All other TIC results have been flagged "J" on the data summary tables and should be considered estimated because the quantitation of the positive results for these compounds assume a relative response factors of 1.0 (per CLP methodology).

A complete support documentation of this organic quality assurance review is presented in Section 3 of this report. The Region II organics analysis data validation SOP checklist is presented in Section 4 of this report.

B. Conclusions

This quality assurance review has identified several aspects of the analytical data that have required qualification. Overall, the majority of the data appears to represent good qualitative and quantitative analyses, although some analyses were qualified due to blank contamination, exceeded holding times, surrogate compound recoveries and calibration issues. To confidently use any of the analytical results from the data sets examined, the data users should understand the qualifications and limitations stated in this report.

Reported prepared by:

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Date: 4/6/95

SECTION 2

ANALYTICAL RESULTS

Organic Qualifiers

- Compound was not detected.

U This compound should be considered "not-detected" since it was detected in a blank at a similar level.

J Quantitation is approximate due to limitations identified during the quality assurance review (data validation).

R Unreliable result - Compound may or may not be present in this sample.

UJ This compound was not detected, but the quantitation limit is probably higher due to a low bias identified during the quality assurance review.

It should be noted that the results for all solid samples are reported on a "dry-weight" basis.

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February 13, 2009

Brian Jankauskas
New York State Department of Environmental Conservation
Remedial Bureau A
Division of Environmental Remediation, 11th Floor
625 Broadway, Albany, NY 12233-7015

Re: Anchor Lith Kem Ko Site
November 2008 Groundwater Sampling Addendum

Dear Mr. Jankauskas:

Earth Tech Northeast completed the confirmation round of groundwater sampling at the Anchor Lith Kem Ko Site in Hicksville, NY in November 2008. A Site location map is presented in Figure 1. After the results of the Phase I samples were evaluated, the decision was made to resample several locations to address anomalies noted in the analytical data from the July 2008 sampling event. Seven Solinst continuous multi-channel tubing (CMT) wells, each with seven discrete screened intervals, were installed at the Site in April/May 2008. The 49 CMT channels and seven monitoring wells were sampled in July 2008. The results of the July sampling were presented in a letter report to the New York State Department of Environmental Conservation (NYSDEC) dated October 31, 2008. The report recommended that several CMT channels be resampled to evaluate the anomalous acetone concentrations and high metals concentrations in several CMT channels.

In consultation with NYSDEC, the decision was made to resample up to 12 CMT channels to verify the analytical results from the July sampling event. The targeted intervals included: PW02 channels 04 and 06; PW03 channels 04, 06 and 07; PW05 channels 05, 06 and 07; PW06 channels 04, 05 and 06; and PW07 channel 01.

Groundwater Sampling

The groundwater sampling activities were performed from November 18, 19 and 20, 2008. CMT sampling was conducted using a modified version of the EPA low-flow technique. Individual CMT channels are too narrow for both a pump and a water level meter. Consequently, the water level could not be monitored during sampling to verify that drawdown during purging was less than 0.3 ft. The Solinst 408M is a gas driven pump. An Earth Tech representative monitored purge rates and adjusted the pump rates accordingly to minimize any contact with the gas. The use of high purity nitrogen was a precautionary step to maintain the integrity of the samples. The maximum flow rate from a Solinst 408M pump is approximately 80 to 90 milliliters per minute (mL/min). Field parameters (turbidity, temperature, conductivity, dissolved oxygen, pH, and oxidation reduction potential) were measured during purging. Samples were collected after the measurements had stabilized over three consecutive readings. In cases where the stabilization parameters were not met, purging efforts were limited to one hour. Different lengths of Model 408M 3/8-inch diameter flexible micro double valve pumps constructed of stainless steel and LDPE were used to collect samples from each channel. During the July sampling

event, samples for metals analysis were not filtered in the field. During the November sampling event, both unfiltered and field filtered samples were collected at select locations. Samples were filtered in the field using dedicated, disposable 0.045 micron disposable filters. Due to problems with clogging in the field filters, the samples from PW05-07 and the field duplicate (PW65-07) were filtered at the laboratory within 24 hours of collection. For quality control purposes, one field blank was collected and trip blanks accompanied each shipment to the laboratory. Pumps were decontaminated after each application using Alconox solution and water. Groundwater samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260 and TAL Metals by EPA method 6010/7141. Groundwater sampling forms are included in Appendix A.

A sample was not collected from PW05-06. The field crew had difficulty with the pump. Water bubbled out of the channel each time the gas was turned on. After consulting Solinst on probable causes, it was determined that the most likely problem was that the water level was drawn down during purging. If the head is less than a few feet, the Solinst micro double value pumps will not operate correctly and gas will enter the CMT channel resulting in water being discharged to the surface. Because of the narrow channel width, it is not possible to monitor water levels during purging. In addition, because the pump displaces a significant amount of water in the channel during purging, it is not possible to accurately gauge water levels immediately after the pump is removed from the channel.

CMT channel PW05-06 is screened from 193.5 to 195.5 ft bgs. A review of the gamma log taken at PW05 indicated a high clay content between 182 to 216 ft bgs. A high clay content can result in a reduced flow into the screen. The clay content in the formation likely contributed to the problems encountered during the sampling effort.

Groundwater Analytical Results

Data validation was performed on all groundwater data by Analytical Assurance Associates. A Data Usability Summary Report (DUSR) was prepared and is included as Appendix B. Summary tables of the data are also included in Appendix B. As stated in the Work Assignment, contaminants of concern for the Site include 1,1,1-trichloroethane (1,1,1-TCA), methylene chloride, trichloroethene (TCE), tetrachloroethene (PCE), chromium and lead.

CMT Samples

A summary of compounds that exceeded their Class GA criterion in CMT points is shown on Table 1 which includes both the July and November 2008 sample results. The following discussion focuses on the November 2008 results and their comparison to the July 2008 results. Concentrations of 2-butanone, chloroform, methyl-tert-butyl ether (MTBE) and tert-butyl alcohol (TBA) were detected in a few samples at concentrations below their Class GA criterion and will not be discussed further in this report (these compounds are not included in Table 1 but are shown on Appendix Table E-1). 2-Hexanone and methylene chloride (both common laboratory contaminants) were detected in two samples from the November 2008 event at concentrations that slightly exceeded their Class GA criterion.

At PW02, two channels were resampled to verify the acetone exceedances noted during the July 2008 sampling event. CMT channels PW02-04 and PW02-06 had acetone concentrations of 230 µg/L and 720 µg/L during the July 2008 sampling event. During the November sampling event, both channels reported acetone as not detected (method detect limit of 5 µg/L). No VOCs were detected during either sampling event at PW02-04. At PW02-06, PCE was reported at concentrations of 3 µg/L and 2.5 µg/L.

At PW03, three channels were resampled to verify acetone concentrations. CMT channels PW03-04, PW03-06 and PW03-07 acetone concentrations of 130 µg/L, 200 µg/L and 560 µg/L were detected in July 2008, exceeding the Class GA criterion of 50 µg/L. During the November 2008 sampling round, acetone was not detected at PW03-04 and PW03-06, and detected at a concentration of 110 µg/L in PW03-07. During both the July and November 2008 events, no other VOCs were detected in either PW03-04 or PW03-06. Cis-1,2-dichloroethene was detected in channel PW03-07 at a concentration of 6.9 µg/L (Class GA criterion of 5 µg/L) during the November sampling event but was not detected during the July event. Channel PW03-07 had a PCE concentration of 7.8 µg/L during the July event and at 1.2 µg/L in November (Class GA criterion of 5 µg/L).

Two channels were resampled at PW05 in November 2008 to verify the VOCs and metals concentrations. PCE was the only VOC detected in either round at PW05-05 at concentrations of 1.2 µg/L and 1.3 µg/L. Arsenic had been detected during the July event at a concentration of 5.5 µg/L (Class GA criterion of 25 µg/L) but was not detected in either the unfiltered or filtered sample in November. In the July sampling event, nickel was detected in the (unfiltered) sample at a concentration of 120 µg/L (Class GA criterion of 100 µg/L). During the November sampling event, nickel was detected in the unfiltered sample at a concentration of 160 µg/L and at a concentration of 150 µg/L in the filtered sample.

Channel PW05-07 was resampled to verify VOCs and metals concentrations. Acetone had been detected during both rounds at concentrations of 94 µg/L in July and an estimated 18 µg/L in November (Class GA criterion of 50 µg/L). 2-Hexanone was detected in the November event at an estimated concentration of 52 µg/L (Class GA criterion of 50 µg/L) but was not detected in July. PCE had been detected during the July event at an estimated concentration of 1.4 µg/L (Class GA criterion of 5 µg/L) but was not detected in November (at a reporting limit of 1 µg/L).

During the July sampling event at PW05-07, five metals were detected at concentrations above their Class GA criterion including arsenic, chromium, copper, lead and nickel. These five metals were also detected in the unfiltered sample during the November event, but only chromium and lead were detected above their Class GA criterion. These five metals were not detected in the filtered sample.

Three channels were resampled at PW06. PW06-04 was resampled for VOCs and metals and PW06-05 and PW06-06 were resampled for VOCs. PW06-04 had an estimated acetone concentration of 300 µg/L during the July sampling event but acetone was not detected during the November sampling event. During the July event, chromium was detected at a concentration of 160 µg/L (Class GA criterion of 50 µg/L) while arsenic and nickel were detected below their criterion. Arsenic, chromium and lead were detected at concentrations exceeding the applicable GA criteria in unfiltered samples collected in November. However, none of these metals were detected in the corresponding filtered sample.

Channels PW06-05 and PW06-06 were resampled to verify the acetone exceedances (estimated concentrations of 320 µg/L and 360 µg/L, respectively) noted during the July sampling event. Acetone was detected at a concentration of 47 µg/L at PW06-05 (Class GA criterion of 50 µg/L) and was not detected in sample PW06-06 during the November event. Methylene chloride was detected in PW06-05 at a concentration of 6.2 µg/L (Class GA criterion of 5 µg/L) and in PW06-06 at a concentration of 2.1 µg/L during the November 2008 sampling event; methylene chloride was not detected in either CMT channel during the July 2008 sampling event. PCE was detected in CMT channel PW06-06 during both sampling events at concentrations of 1.1 µg/L and 1.9 µg/L, respectively (Class GA criterion of 5 µg/L).

Channel PW07-01 was resampled in November to verify the acetone exceedance (210 µg/L) reported during the July event. In November, the acetone concentration was 49 µg/L (Class GA criterion of 50 µg/L). Concentrations of 1,1-dichloroethane, 1,1-dichloroethene and TCE in PW07-01 were below the applicable Class GA criteria during the July sampling event. During the November sampling event, the concentration of 1,1-dichloroethane was also below the criterion and TCE was not detected. The concentration of 1,1-dichloroethene increased to 6.2 µg/L, which exceeds the criterion of 5 µg/L. Cis-1,2-dichloroethene was not detected during the July sampling event but was detected below the criterion (5 µg/L) during the November sampling event at a concentration of 3 µg/L.

Discussion of Results

High concentrations of acetone had been detected in numerous CMT channels during the July 2008 sampling event. However, a clear link between the Site and the presence of acetone in downgradient CMT locations was not established. Acetone appeared to increase in both concentration and the number of detections with distance from the Site. To address this anomaly, 11 CMT channels were resampled during the November 2008 event. In the July sampling event, 10 of these were channels where acetone concentrations exceeded the Class GA criterion (ranging from 94 µg/L to 720 µg/L). During the November 2008 sampling event, acetone exceeded the criterion at only one location, PW03-07, at a concentration of 110 µg/L; however, this is a five-fold decrease from the July 2008 concentration of 560 µg/L. Acetone was detected at concentrations below the criterion at an additional three locations and was not detected in the other seven samples.

During the July 2008 sampling event, high metals concentrations were noted in a few samples along the western perimeter of the study area in PW05 and PW06. These metals included arsenic, chromium, copper, lead and nickel. As these exceedances were not present in other samples, the concentrations appeared suspect. A review of the purge logs indicated that these samples had very high turbidity readings that greatly exceeded the purge criterion of 50 nephelometric units. During the November 2008 sampling event, two channels from PW05 and one from PW06 were resampled and both unfiltered and filtered metals samples were collected. The results of the unfiltered and filtered sample at PW05-05 indicate that nickel is present as the results from both the filtered and unfiltered samples are very similar and are consistent with the nickel concentration in the July event. The results from the deeper sample at PW05-07 indicate a significant decrease in concentration when comparing the July and November unfiltered results. None of these metals were detected in the filtered sample.

Should you have any questions or need additional information, please contact me.

Very truly yours,
Earth Tech | AECOM

Paul Kareth

Paul Kareth
Project Manager

Enclosures

TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-01	PW-01	PW-01	PW-01	PW-01	PW-01	PW-01
CMT Sample ID	NYSDEC	PW-01-01	PW-01-02	PW-01-03	PW-01-04	PW-01-05	PW-01-06	PW-01-07
CMT screen interval (ft bgs)	Class GA	70-72	80-82	90-92	100-102	110-112	120-122	130-132
Laboratory ID	Groundwater	AC38653-001	AC38653-003	AC38653-008	AC38653-002	AC38711-001	AC38653-004	AC38711-002
Sample Date	Criteria	7/11/08	7/11/08	7/11/08	7/11/08	7/14/08	7/11/08	7/14/08
Matrix	water	water	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds								
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND	ND	ND
Acetone	50	ND	ND	ND	23	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND
TAL Metals								
Filtered / Unfiltered		Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered
Arsenic	25	ND	ND	7.1	ND	ND	ND	4.2
Chromium	50	ND	ND	ND	ND	ND	ND	ND
Copper	200	ND	ND	ND	ND	ND	ND	ND
Lead	25	ND	ND	ND	ND	ND	ND	ND
Nickel	100	ND	ND	ND	ND	ND	ND	ND

ND - Not detected
NC - No criterion
NA - Not analyzed
J - Estimated value

TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-02	PW-02	PW-02	PW-02	PW-02	PW-02	PW-02	PW-02	PW-02
CMT Sample ID	NYSDEC	PW-02-01	PW-02-02	PW-02-03	PW-02-04	PW-02-04	PW-02-05	PW-02-06	PW-02-06	PW-02-07
CMT screen interval (ft bgs)	Class GA	71-73	86-88	101-103	116-118	116-118	131-133	146-148	146-148	160-162
Laboratory ID	Groundwater	AC38637-002	AC38601-008	AC38637-004	AC38637-003	AC41213-005	AC38601-009	AC38637-001	AC41213-004	AC38637-005
Sample Date	Criteria	7/9/08	7/9/08	7/10/08	7/10/08	11/19/08	7/9/08	7/9/08	11/19/08	7/10/08
Matrix	water	water	water	water	water	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds										
1,1,1-Trichloroethane	5	ND	ND	***13***	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	***9.5***	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	2	ND	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50	28	27	30	***230***	ND	ND	***720***	ND	***79***
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	1.3
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	2.1
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	3	2.5	***82***
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	2.4
TAL Metals										
Filtered / Unfiltered		Unfiltered	Unfiltered	Unfiltered	Unfiltered		Unfiltered	Unfiltered		Unfiltered
Arsenic	25	ND	7	ND	ND	NA	ND	4.4	NA	6.8
Chromium	50	ND	ND	ND	ND	NA	ND	ND	NA	ND
Copper	200	ND	ND	ND	ND	NA	ND	ND	NA	ND
Lead	25	ND	ND	ND	ND	NA	ND	ND	NA	ND
Nickel	100	ND	ND	ND	ND	NA	15	ND	NA	ND

ND - Not detected
NC - No criterion
NA - Not analyzed
J - Estimated value

TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-03		PW-03		PW-03		PW-03		PW-03		PW-03	
CMT Sample ID	NYSDEC	PW-03-01		PW-03-02		PW-03-03		PW-03-04		PW-03-04		PW-03-05	
CMT screen interval (ft bgs)	Class GA	70-72		85-87		100-102		115-117		115-117		130-132	
Laboratory ID	Groundwater	AC38601-003		AC38601-001		AC38601-005		AC38601-002		AC41213-002		AC38601-004	
Sample Date	Criteria	7/8/08		7/8/08		7/9/08		7/8/08		11/19/08		7/8/08	
Matrix	water	water		water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q		Q	conc	Q
Volatile Organic Compounds													
1,1,1-Trichloroethane	5	1.5		1.2		***9.7***		ND		ND		ND	
1,1-Dichloroethane	5	ND		2.3		4.6		ND		ND		ND	
1,1-Dichloroethene	5	ND		ND		1.1		ND		ND		ND	
2-Hexanone	50	ND		ND		ND		ND		ND		ND	
Acetone	50	38		37		ND		***130***		ND		***73***	
cis-1,2-Dichloroethene	5	ND		ND		ND		ND		ND		ND	
Methylene Chloride	5	ND		ND		ND		ND		ND		ND	
Tetrachloroethene	5	ND		ND		ND		ND		ND		ND	
Trichloroethene	5	ND		ND		ND		ND		ND		ND	
TAL Metals													
Filtered / Unfiltered		Unfiltered		Unfiltered		Unfiltered		Unfiltered				Unfiltered	
Arsenic	25	ND		7.9		ND		ND		NA		ND	
Chromium	50	ND		ND		ND		ND		NA		ND	
Copper	200	ND		ND		ND		ND		NA		ND	
Lead	25	ND		ND		ND		ND		NA		ND	
Nickel	100	13		ND		ND		ND		NA		12	

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TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-03		PW-03		PW-03		PW-03	
CMT Sample ID	NYSDEC	PW-03-06		PW-03-06		PW-03-07		PW-03-07	
CMT screen interval (ft bgs)	Class GA	145-147		145-147		160-162		160-162	
Laboratory ID	Groundwater	AC38601-006		AC41213-001		AC38601-007		AC41213-003	
Sample Date	Criteria	7/9/08		11/18/08		7/9/08		11/19/08	
Matrix	water	water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds									
1,1,1-Trichloroethane	5	ND		ND		ND		ND	
1,1-Dichloroethane	5	ND		ND		ND		ND	
1,1-Dichloroethene	5	ND		ND		ND		ND	
2-Hexanone	50	ND		ND		ND		ND	
Acetone	50	***200***		ND		***560***		***110***	
cis-1,2-Dichloroethene	5	ND		ND		ND		***6.9***	
Methylene Chloride	5	ND		ND		ND		ND	
Tetrachloroethene	5	ND		ND		***7.8***		1.2	
Trichloroethene	5	ND		ND		ND		ND	
TAL Metals									
Filtered / Unfiltered		Unfiltered		Unfiltered		Unfiltered			
Arsenic	25	ND		NA		5.9		NA	
Chromium	50	ND		NA		ND		NA	
Copper	200	ND		NA		ND		NA	
Lead	25	ND		NA		ND		NA	
Nickel	100	ND		NA		ND		NA	

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TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-04	PW-04	PW-04	PW-04	PW-04	PW-04	PW-04
CMT Sample ID	NYSDEC	PW-04-01	PW-04-02	PW-04-03	PW-04-04	PW-04-05	PW-04-06	PW-04-07
CMT screen interval (ft bgs)	Class GA	71-73	86-88	101-103	116-118	131-133	146-148	161-163
Laboratory ID	Groundwater	AC38739-001	AC38739-003	AC38739-002	AC38739-005	AC38739-009	AC38739-006	AC38739-008
Sample Date	Criteria	7/15/08	7/15/08	7/15/08	7/16/08	7/16/08	7/16/08	7/16/08
Matrix	water	water	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds								
1,1,1-Trichloroethane	5	2.5	ND	ND	ND	ND	ND	2.5
1,1-Dichloroethane	5	1.1	ND	ND	ND	ND	ND	1
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND	ND	ND
Acetone	50	ND	ND	ND	ND	***96*** J	17	ND
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND
TAL Metals								
Filtered / Unfiltered		Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered
Arsenic	25	5.1	ND	ND	ND	6.7	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND
Copper	200	ND	ND	ND	ND	ND	ND	ND
Lead	25	ND	ND	ND	ND	ND	ND	ND
Nickel	100	11	ND	ND	ND	ND	ND	13

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TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-05	PW-05	PW-05	PW-05	PW-05	PW-05	PW-05
CMT Sample ID	NYSDEC	PW-05-01	PW-05-02	PW-05-03	PW-05-04	PW-05-05	PW-05-05	PW-05-05
CMT screen interval (ft bgs)	Class GA	68.5-70.5	93.5-95.5	118.5-120.5	143.5-145.5	168.5-170.5	168.5-170.5	168.5-170.5
Laboratory ID	Groundwater	AC38771-006	AC38492-001	AC38771-007	AC38492-002	AC38492-007	AC41270-012	AC41270-013
Sample Date	Criteria	7/17/08	7/18/08	7/17/08	7/18/08	7/18/08	11/20/08	11/20/08
Matrix	water	water	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds								
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	NA
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	NA
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	NA
2-Hexanone	50	ND	ND	ND	ND	ND	ND	NA
Acetone	50	ND	ND	ND	ND	ND	ND	NA
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	NA
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	NA
Tetrachloroethene	5	ND	ND	ND	1.8	1.2	1.3	NA
Trichloroethene	5	ND	ND	ND	ND	ND	ND	NA
TAL Metals								
Filtered / Unfiltered		Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Filtered
Arsenic	25	ND	ND	5.4	6	5.5	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND
Copper	200	ND	ND	ND	ND	ND	ND	ND
Lead	25	ND	ND	ND	ND	ND	ND	ND
Nickel	100	15	ND	ND	ND	***120***	***160***	***150***

ND - Not detected
NC - No criterion
NA - Not analyzed
J - Estimated value

TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-05	PW-05	PW-05	PW-05
CMT Sample ID	NYSDEC	PW-05-06	PW-05-07	PW-05-07	PW-05-07
CMT screen interval (ft bgs)	Class GA	193.5-195.5	220.5-221.5	220.5-221.5	220.5-221.5
Laboratory ID	Groundwater	AC38492-008	AC38492-006	AC41270-005	AC41270-006
Sample Date	Criteria	7/18/08	7/18/08	11/20/08	11/20/08
Matrix	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds					
1,1,1-Trichloroethane	5	ND	ND	ND	NA
1,1-Dichloroethane	5	ND	ND	ND	NA
1,1-Dichloroethene	5	ND	ND	ND	NA
2-Hexanone	50	16 J	ND	***52*** J	NA
Acetone	50	***130***	***94*** J	18 J	NA
cis-1,2-Dichloroethene	5	ND	ND	ND	NA
Methylene Chloride	5	ND	ND	ND	NA
Tetrachloroethene	5	ND	1.4	ND	NA
Trichloroethene	5	ND	ND	ND	NA
TAL Metals					
Filtered / Unfiltered		Unfiltered	Unfiltered	Unfiltered	Filtered
Arsenic	25	***170***	***280***	21 J	ND
Chromium	50	***440***	***400***	***62*** J	ND
Copper	200	***810***	***660***	57 J	ND
Lead	25	***400***	***290***	***40*** J	ND
Nickel	100	***490***	***390***	27 J	ND

ND - Not detected
NC - No criterion
NA - Not analyzed
J - Estimated value

TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-06	PW-06	PW-06	PW-06	PW-06	PW-06
CMT Sample ID	NYSDEC	PW-06-01	PW-06-02	PW-06-03	PW-06-04	PW-06-04	PW-06-04
CMT screen interval (ft bgs)	Class GA	70-72	90-92	118-120	150-152	150-152	150-152
Laboratory ID	Groundwater	AC38739-010	AC38739-012	AC38739-011	AC38771-002	AC41270-001	AC41270-002
Sample Date	Criteria	7/16/08	7/16/08	7/16/08	7/17/08	11/20/08	11/20/08
Matrix	water	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds							
1,1,1-Trichloroethane	5	ND	4.2	3.5	ND	ND	NA
1,1-Dichloroethane	5	ND	***7.2***	1.7	ND	ND	NA
1,1-Dichloroethene	5	ND	2.3	1.8	ND	ND	NA
2-Hexanone	50	ND	ND	ND	ND	ND	NA
Acetone	50	ND	20	ND	***300*** J	ND	NA
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	NA
Methylene Chloride	5	ND	ND	ND	ND	ND	NA
Tetrachloroethene	5	ND	ND	ND	ND	2	NA
Trichloroethene	5	ND	ND	2.6	ND	ND	NA
TAL Metals							
Filtered / Unfiltered		Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Filtered
Arsenic	25	ND	5.9	ND	5.8	***31***	ND
Chromium	50	ND	42	ND	***160***	***64***	ND
Copper	200	ND	ND	ND	ND	95	ND
Lead	25	ND	ND	ND	ND	***26***	ND
Nickel	100	ND	ND	ND	91	53	ND

ND - Not detected
NC - No criterion
NA - Not analyzed
J - Estimated value

TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-06		PW-06		PW-06		PW-06		PW-06	
CMT Sample ID	NYSDEC	PW-06-05		PW-06-05		PW-06-06		PW-06-06		PW-06-07	
CMT screen interval (ft bgs)	Class GA	166-168		166-168		180-182		180-182		221-222	
Laboratory ID	Groundwater	AC38771-003		AC41270-003		AC38771-001		AC41270-004		AC38771-004	
Sample Date	Criteria	7/17/08		11/20/08		7/17/08		11/20/08		7/17/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	ND		ND		ND		ND		ND	
1,1-Dichloroethane	5	ND		ND		ND		ND		ND	
1,1-Dichloroethene	5	ND		ND		ND		ND		ND	
2-Hexanone	50	ND		ND		ND		ND		ND	
Acetone	50	***320***	J	47		***360***	J	ND		ND	
cis-1,2-Dichloroethene	5	ND		ND		ND		ND		ND	
Methylene Chloride	5	ND		***6.2***		ND		2.1		ND	
Tetrachloroethene	5	ND		ND		1.1		1.9		***130***	
Trichloroethene	5	ND		ND		ND		ND		ND	
TAL Metals											
Filtered / Unfiltered		Unfiltered				Unfiltered				Unfiltered	
Arsenic	25	5.6		NA		9.3		NA		ND	
Chromium	50	ND		NA		ND		NA		ND	
Copper	200	ND		NA		ND		NA		ND	
Lead	25	ND		NA		ND		NA		ND	
Nickel	100	49		NA		87		NA		12	

ND - Not detected
NC - No criterion
NA - Not analyzed
J - Estimated value

TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
SUMMARY OF VOLATILE ORGANIC COMPOUNDS AND TAL METALS, EXCEEDANCES ONLY

Sample Location		PW-07	PW-07	PW-07	PW-07	PW-07	PW-07	PW-07	PW-07
CMT Sample ID	NYSDEC	PW-07-01	PW-07-01	PW-07-02	PW-07-03	PW-07-04	PW-07-05	PW-07-06	PW-07-07
CMT screen interval (ft bgs)	Class GA	70-72	70-72	95-97	120-122	145-147	170-172	197-199	220-221
Laboratory ID	Groundwater	AC38711-003	AC41213-006	AC38711-005	AC38711-004	AC38711-006	AC38711-008	AC38711-007	AC38711-012
Sample Date	Criteria	7/14/08	11/19/08	7/15/08	7/14/08	7/15/08	7/15/08	7/15/08	7/15/08
Matrix	water	water	water	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds									
1,1,1-Trichloroethane	5	ND	ND	2	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	3.1	3.3	1.3	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	3.6	***6.2***	ND	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50	***210***	49	ND	***77***	20	ND	***78***	39
cis-1,2-Dichloroethene	5	ND	3	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	1.5	ND	ND
Trichloroethene	5	3.2	ND	ND	ND	ND	***11***	ND	1.6
TAL Metals									
Filtered / Unfiltered		Unfiltered		Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered	Unfiltered
Arsenic	25	9	NA	ND	ND	ND	ND	ND	4.5
Chromium	50	ND	NA	ND	ND	ND	ND	ND	ND
Copper	200	ND	NA	ND	ND	ND	ND	ND	ND
Lead	25	ND	NA	ND	ND	ND	ND	ND	ND
Nickel	100	ND	NA	ND	ND	ND	ND	ND	ND

ND - Not detected
NC - No criterion
NA - Not analyzed
J - Estimated value

0 400,000 800,000 1,600,000 Feet

N W E S

NYSDEC Site No. 1-30-021
Anchor Lith Kem Ko Site
Hicksville, Nassau County, NY

Figure 1
Site Location

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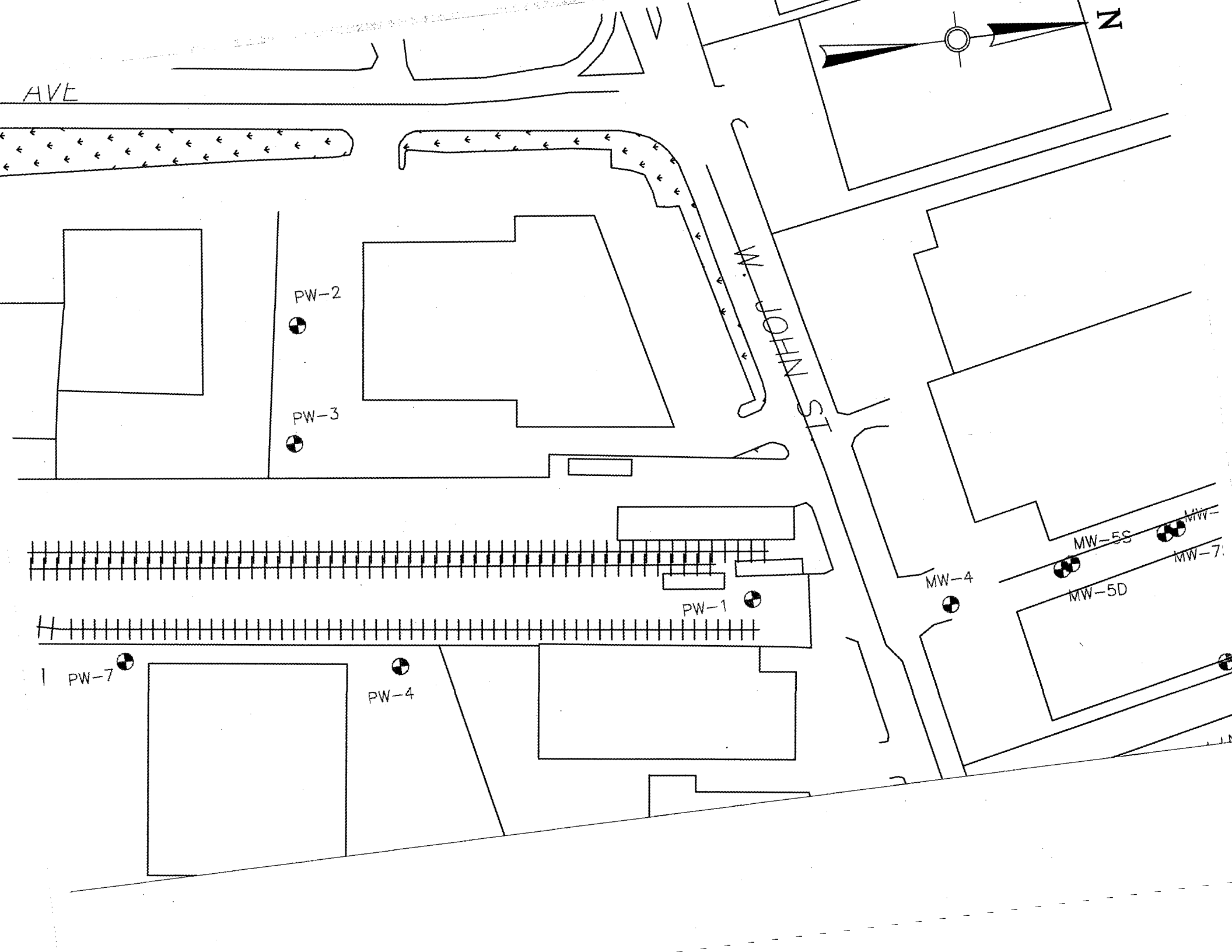
AVE
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PW-2
PW-3
PW-1
PW-7
PW-4
MW-4
MW-5S
MW-5D

APPENDIX A

FIELD SAMPLING FORMS
NOVEMBER 2008 SAMPLING EVENT

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WELL NO. PW02-04

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/19/08	DATE WELL COMPLETED: 11/19/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 115 ft PUMP INTAKE DEPTH: 113 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS: Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	REMARKS
	56.85								Static water level
13:15									Pump On
13:20		80	12.39	184	3.60	6.11	-247	40	
13:25		90	12.00	170	4.20	6.14	-230	27	
13:30		90	11.62	158	4.92	6.47	-218	21	
13:35		90	11.59	161	4.17	6.11	-225	22	
13:40		90	11.65	169	3.38	6.04	-235	21	
13:45		90	11.41	178	2.96	6.01	-242	28	
13:50		90	10.59	181	2.71	5.99	-234	27	
13:55		90	10.50	183	2.69	5.99	-231	22	
14:00		90	10.30	184	2.67	5.99	-227	22	
14:05									Collect sample PW02-04 (14:05)
									CPM 3, 12/8, 130 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

Earth Tech | AECOM

WELL NO. PW02-06

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/19/08	DATE WELL COMPLETED: 11/19/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 145 ft PUMP INTAKE DEPTH: 140 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	
	56.85								Static water level
12:20									Pump On
12:30		100	12.55	200	6.50	6.52	-230	13	
12:35		80	14.22	225	3.86	6.50	-222	9	
12:40		80	14.64	241	2.97	6.47	-219	9	
12:45		80	15.09	246	2.22	6.35	-242	14	
12:50		80	14.92	243	2.10	6.26	-257	15	
12:55		80	15.26	240	2.06	6.13	-265	10	
13:00		80	15.08	239	2.10	6.06	-267	14	
13:05		80	14.90	234	2.14	6.00	-262	12	
13:10		80	14.70	232	2.16	6.00	-258	11	
13:15									Collect sample PW02-06 (13:15)
									CPM 3, 12/8, 155 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

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WELL NO. PW03-04

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/19/08	DATE WELL COMPLETED: 11/19/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 115 ft PUMP INTAKE DEPTH: 113 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS: Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	REMARKS
	56.85								Static water level
9:15									Pump On
9:30		100	7.85	176	6.19	7.62	-185	270	
9:35		80	8.67	211	3.58	6.87	-201	60	
9:40		80	8.83	216	3.41	6.37	-196	70	
9:45		80	9.82	221	3.17	6.77	-209	45	
9:50		80	10.03	223	3.09	6.73	-217	38	
9:55		80	10.28	226	2.98	6.68	-227	32	
10:00		80	10.59	229	2.84	6.64	-234	40	
10:05		80	10.70	230	2.80	6.63	-239	43	
10:10									Collect sample PW03-04 (10:10)
									CPM 3, 10/10, 140 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

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WELL NO. PW03-06

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/18/08	DATE WELL COMPLETED: 11/18/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 145 ft PUMP INTAKE DEPTH: 142 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	
	56.89								Static water level
15:10									Pump On
15:15		150	13.01	179	9.76	6.84	-199	21.0	
15:20		80	13.60	202	6.84	6.69	-191	15.0	
15:25		80	13.40	210	6.34	6.56	-187	12.6	
15:30		80	13.02	213	5.87	6.48	-185	10.8	
15:35		80	13.20	213	4.75	6.32	-179	7.6	
15:40		80	13.36	213	4.70	6.26	-177	8.4	
15:45		80	13.63	214	4.36	6.21	-174	6.5	
15:50		80	13.31	212	4.41	6.16	-171	6.6	
15:55		80	13.18	210	4.34	6.13	-168	5.6	
16:00									Collect sample PW03-06 (16:00)
									CPM 3, 10/10, 155 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

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WELL NO. PW03-07

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/19/08	DATE WELL COMPLETED: 11/19/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 160 ft PUMP INTAKE DEPTH: 157 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	
	56.87								Static water level
10:15									Pump On
10:20		80	9.39	203	2.96	6.64	-225	109	
10:25		80	9.23	179	3.54	6.70	-197	90	
10:30		80	6.62	202	4.17	6.67	-175	66	
10:35		80	6.35	224	4.66	6.65	-176	48.4	
10:40		80	6.18	235	4.98	6.67	-176	36	
10:45		80	6.26	237	5.07	6.67	-179	32	
10:50		80	6.09	236	5.02	6.66	-182	28	
10:55		80	6.07	235	4.98	6.65	-182	25	
11:00		80	6.16	236	4.94	6.63	-183	23	
11:05									Collect sample PW03-07 (11:05)
									CPM 3, 11.5/8.5, 200 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

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WELL NO. PW05-05

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/20/08	DATE WELL COMPLETED: 11/20/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 170 ft PUMP INTAKE DEPTH: 168 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS: Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	REMARKS
	55.70								Static water level
18:45		90							Pump On
19:00		90	1.01	231	5.19	6.96	-160	1300	
19:05		90	1.83	285	1.90	6.71	-190	1350	
19:10		90	2.45	233	0.63	6.56	-235	1360	
19:15		90	3.40	197	0.46	6.47	-276	1360	
19:20		90	3.50	183	0.42	6.42	-288	1357	
19:25		90	3.55	180	0.42	6.38	-289	1330	
19:30		90	3.55	180	0.42	6.38	-289	1330	
19:35		90	3.55	180	0.42	6.38	-289	1340	
19:40		90	3.55	180	0.42	6.38	-290	1330	
19:45		90	3.55	180	0.42	6.38	-289	1332	
19:50									Collect sample PW05-05 (19:50)

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs, TAL metals (filtered and unfiltered)

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WELL NO. PW05-07

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/20/08	DATE WELL COMPLETED: 11/20/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 220 ft PUMP INTAKE DEPTH: 218 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS: Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	REMARKS
	58.80								Static water level
15:10									Pump On
15:20		90	6.18	453	2.80	6.59	-283	1000	
15:25		90	5.78	483	2.60	6.66	-283	975	
15:30		90	5.55	493	2.13	6.72	-275	900	
15:35		90	5.36	494	1.41	6.73	-271	870	
15:40		90	5.18	487	1.40	6.75	-261	900	
15:45		90	4.98	485	1.41	6.76	-268	860	
15:50		90	4.46	479	1.44	6.78	-254	897	
15:55		90	4.15	472	1.42	6.80	-254	950	
16:00		90	4.07	470	1.41	6.82	-251	938	
16:05		90	3.53	466	1.42	6.81	-247	950	
16:10		90	3.33	464	1.44	6.81	-245	970	
16:15									Collect sample PW05-07 (16:15)
									Duplicate PW65-07 (16:30)
									Samples to be filtered in the lab
									CPM 3, 11/9, 190 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs, TAL metals (filtered and unfiltered)

Earth Tech | AECOM

WELL NO. PW06-04

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/20/08	DATE WELL COMPLETED: 11/20/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 152 ft PUMP INTAKE DEPTH: 150 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	
	55.30								Static water level
8:55									Pump On
9:05		80	2.19	76	9.58	7.69	-128	950	
9:10		80	3.34	217	8.31	5.48	-113	930	
9:15		80	4.29	325	6.40	5.12	-137	500	
9:20		80	4.57	355	5.66	5.09	-144	390	
9:25		80	4.72	372	5.18	5.09	-149	316	
930		80	5.31	404	3.84	5.10	-160	114	
9:35		80	5.42	407	3.34	5.12	-165	73	
9:40		80	5.54	401	2.92	5.19	-177	60	
9:45		80	5.64	393	2.61	5.25	-187	62	
9:50		80	5.90	374	2.26	5.39	-199	37	
9:55		80	6.20	370	2.24	5.42	-197	42	
10:00		80	6.30	366	2.22	5.45	-201	47	
10:05									Collect sample PW06-04 (10:05)

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs, TAL metals (filtered and unfiltered)

Earth Tech | AECOM

WELL NO. PW06-05

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/20/08	DATE WELL COMPLETED: 11/20/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 168 ft PUMP INTAKE DEPTH: 166 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS: Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	REMARKS
	55.31								Static water level
10:15		80							Pump On
10:30		90	8.22	90	11.17	7.25	-167	570	
10:35		90	7.81	159	11.48	7.35	-188	700	
10:40		90	7.60	342	11.49	5.09	-145	900	
10:45		90	6.37	381	10.85	4.82	-143	800	
10:50		90	6.64	395	10.03	4.79	-151	118	
10:55		90	7.16	412	8.17	4.81	-170	44	
11:00		90	8.25	414	8.09	4.82	-175	42	
11:05		90	8.30	417	7.99	4.83	-180	43	
11:10									Collect sample PW06-05 (11:10)

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

Earth Tech | AECOM

WELL NO. PW06-06

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/20/08	DATE WELL COMPLETED: 11/20/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 182 ft PUMP INTAKE DEPTH: 180 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	
	55.32								Static water level
12:25		100							Pump On
12:35		90	8.86	370	5.83	5.19	-163	148	
12:40		90	8.18	295	5.98	5.13	-166	1200	
12:45		90	8.24	310	6.13	4.76	-162	1200	
12:50		90	8.03	324	5.65	4.70	-171	1350	
12:55		90	8.12	277	5.65	4.71	-174	1370	
13:00		90	7.45	319	5.64	4.70	-169	1380	
13:05		90	6.56	312	5.38	4.68	-175	1350	
13:10		90	6.38	306	5.05	4.68	-181	1355	
13:15		90	6.50	306	4.67	4.70	-179	1256	
13:20		90	7.32	308	4.30	4.73	-193	1290	
13:25		90	7.60	309	4.28	4.73	-196	1060	
13:30		90	7.58	308	4.25	4.73	-197	1030	
13:35									Collect sampe PW06-06 (13:35)
									CPM 3, 12/8, 200 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

Earth Tech | AECOM

WELL NO. PW07-01

WELL SAMPLING FORM	PROJECT: Anchor Lith Kem Ko	PROJECT No.: 101351	SHEET: 1 OF 1 SHEETS
LOCATION: Hicksville, NY		DATE WELL STARTED: 11/19/08	DATE WELL COMPLETED: 11/19/08
CLIENT: New York State Department of Environmental Conservation		NAME OF INSPECTOR: S. Chatterjee, M. Akbar	
DRILLING COMPANY:		SIGNATURE OF INSPECTOR:	

ONE WELL VOLUME : Gallons WELL TD: 70 ft PUMP INTAKE DEPTH: 68 ft

Time	Depth to Water (ft)	Purge Rate (mL/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (°C)	Conduct. (µs/cm)	DO (mg/L)	pH	ORP	Turbidity (ntu)	
	52.10								Static water level
15:35									Pump On
15:45		80	7.16	161	10.89	6.46	-149	180	
15:50		80	8.15	180	6.98	6.28	-151	170	
15:55		80	8.51	184	5.45	6.29	-156	109	
16:00		80	8.47	215	4.43	6.36	-162	63	
16:05		80	8.51	238	3.68	6.43	-166	41	
16:10		80	8.31	245	3.09	6.46	-160	22	
16:15		80	8.26	250	2.76	6.51	-162	21	
16:20		80	8.08	252	2.70	6.52	-161	16	
16:25		80	8.15	253	2.68	6.53	-158	13	
16:30									Collect sample PW07-01 (16:30)
									CPM 3, 11/9, 80 ft

Pump Type: CMT model 408 micro double value pump

Analytical Parameters: VOCs

APPENDIX B

DATA VALIDATION REPORTS

ANALYTICAL ASSURANCE ASSOCIATES

NOVEMBER 2008 SAMPLING EVENT

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-01		PW-01		PW-01		PW-01		PW-01	
CMT Sample ID	NYSDEC	PW-01-01		PW-01-02		PW-01-03		PW-01-04		PW-01-05	
CMT screen interval (ft bgs)	Class GA	70-72		80-82		90-92		100-102		110-112	
Laboratory ID	Groundwater	AC38653-001		AC38653-003		AC38653-008		AC38653-002		AC38711-001	
Sample Date	Criteria	7/11/08		7/11/08		7/11/08		7/11/08		7/14/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	50	R	50	R	50	R	50	R	50	R
2-Butanone	NC	1	U	1	U	1	U	1	U	1	U
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	1	U	1	U	1	U	1	U	1	U
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	1	U	1	U	1	U	1	U	1	U
Acetone	50	5	U	5	U	5	UJ	23		5	U
Acrolein	5	5	U	5	U	5	UJ	5	U	5	UJ
Acrylonitrile	5	1	U	1	U	1	UJ	1	U	1	U
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	50	1	U	1	U	1	U	1	U	1	U
Bromoform	50	1	U	1	U	1	U	1	U	1	U
Bromomethane	5	1	U	1	U	1	UJ	1	U	1	U
Carbon Disulfide	60	1	U	1	U	1	UJ	1	U	1	U
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	5	1	U	1	U	1	U	1	U	1	U
Chloroethane	5	1	U	1	U	1	U	1	U	1	U
Chloroform	7	1	U	1	U	1	U	1	U	1	U
Chloromethane	5	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-01		PW-01		PW-01		PW-01		PW-01	
CMT Sample ID	NYSDEC	PW-01-01		PW-01-02		PW-01-03		PW-01-04		PW-01-05	
CMT screen interval (ft bgs)	Class GA	70-72		80-82		90-92		100-102		110-112	
Laboratory ID	Groundwater	AC38653-001		AC38653-003		AC38653-008		AC38653-002		AC38711-001	
Sample Date	Criteria	7/11/08		7/11/08		7/11/08		7/11/08		7/14/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	1	U	1	U	1	UJ	1	U	1	U
Ethylbenzene	5	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	2	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	1	U	1	U	1	UJ	1	U	1	U
Methylcyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	1	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	1	U	1	U	1	U	1	U	1	U
n-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	1	U	1	U	1	U	1	U	1	U
o-Xylene	5	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Styrene	5	1	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
t-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	1	U	1	U	1	U	1	U	1	U
Toluene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	1	U	1	U	1	UJ	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-01		PW-01		PW-01		PW-01		PW-01	
CMT Sample ID	NYSDEC	PW-01-01		PW-01-02		PW-01-03		PW-01-04		PW-01-05	
CMT screen interval (ft bgs)	Class GA	70-72		80-82		90-92		100-102		110-112	
Laboratory ID	Groundwater	AC38653-001		AC38653-003		AC38653-008		AC38653-002		AC38711-001	
Sample Date	Criteria	7/11/08		7/11/08		7/11/08		7/11/08		7/14/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals											
Mercury	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Aluminum	NC	100	U	100	U	370		100	U	200	
Antimony	3	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
Arsenic	25	4	U	4	U	7.1		4	U	4	U
Barium	1,000	93		72		67		65		76	
Beryllium	3	4	U	4	U	4	U	4	U	4	U
Cadmium	5	2	U	2	U	2	U	2	U	2	U
Calcium	NC	9,600	J	14,000	J	10,000	J	10,000	J	9,800	J
Chromium	50	25	U	25	U	25	U	25	U	25	U
Cobalt	NC	18		10	U	10	U	10	U	10	U
Copper	200	25	U	25	U	25	U	25	U	25	U
Iron	300	7,900	J	1,200	J	6,000	J	7,000	J	2,600	
Lead	25	5	U	5	U	5	U	5	U	5	U
Magnesium	35,000	1,700		1,900		1,500		1,500		1,500	
Manganese	300	2000		150		880		1,100		340	
Nickel	100	10	U	10	U	10	U	10	U	10	U
Potassium	NC	2,500	U	2,900		2,800		2,800		2,700	
Selenium	10	25	U	25	U	25	U	25	U	25	U
Silver	50	10	U	10	U	10	U	10	U	10	U
Sodium	20,000	150,000		23,000		27,000		34,000		24,000	
Thallium	0.5	5	U	5	U	5	U	5	U	5	U
Vanadium	NC	25	U	25	U	25	U	25	U	25	U
Zinc	2000	25	U	25	U	25	U	25	U	130	

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-01		PW-01		PW-02		PW-02		PW-02	
CMT Sample ID	NYSDEC	PW-01-06		PW-01-07		PW-02-01		PW-02-02		PW-02-03	
CMT screen interval (ft bgs)	Class GA	120-122		130-132		71-73		86-88		101-103	
Laboratory ID	Groundwater	AC38653-004		AC38711-002		AC38637-002		AC38601-008		AC38637-004	
Sample Date	Criteria	7/11/08		7/14/08		7/9/08		7/9/08		7/10/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	1	U	1	U	1	U	1	U	13	
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	UJ	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	1	U	1	U	1	U	1	U	9.5	
1,1-Dichloroethene	5	1	U	1	U	1	U	1	U	2	
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	1	U	1	U	1	U	1	UJ	1	U
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	50	R	50	R	50	R	50	R	50	R
2-Butanone	NC	1	U	1	U	1	U	1	U	1	U
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	1	U	1	U	1	U	1	UJ	1	U
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	1	U	1	U	1	U	1	UJ	1	U
Acetone	50	5	U	5	U	28		27		30	
Acrolein	5	5	U	5	UJ	5	U	5	U	5	U
Acrylonitrile	5	1	U	1	U	1	U	1	U	1	U
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	50	1	U	1	U	1	U	1	U	1	U
Bromoform	50	1	U	1	U	1	U	1	U	1	U
Bromomethane	5	1	U	1	U	1	U	1	UJ	1	U
Carbon Disulfide	60	1	U	1	U	1	U	1	UJ	1	U
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	5	1	U	1	U	1	U	1	U	1	U
Chloroethane	5	1	U	1	U	1	U	1	UJ	1	U
Chloroform	7	1	U	1	U	1	U	1	U	1	U
Chloromethane	5	1	U	1	U	1	U	1	UJ	1	U
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-01		PW-01		PW-02		PW-02		PW-02	
CMT Sample ID	NYSDEC	PW-01-06		PW-01-07		PW-02-01		PW-02-02		PW-02-03	
CMT screen interval (ft bgs)	Class GA	120-122		130-132		71-73		86-88		101-103	
Laboratory ID	Groundwater	AC38653-004		AC38711-002		AC38637-002		AC38601-008		AC38637-004	
Sample Date	Criteria	7/11/08		7/14/08		7/9/08		7/9/08		7/10/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	5	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	2	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	1	U	1	U	1	U	1	UJ	1	U
Methylcyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	1	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	1	U	1	U	1	U	1	U	1	U
n-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	1	U	1	U	1	U	1	U	1	U
o-Xylene	5	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Styrene	5	1	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	5	UJ	5	UJ	5	UJ	5	U	5	UJ
t-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	1	U	1	U	1	U	1	U	1	U
Toluene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-01		PW-01		PW-02		PW-02		PW-02	
CMT Sample ID	NYSDEC	PW-01-06		PW-01-07		PW-02-01		PW-02-02		PW-02-03	
CMT screen interval (ft bgs)	Class GA	120-122		130-132		71-73		86-88		101-103	
Laboratory ID	Groundwater	AC38653-004		AC38711-002		AC38637-002		AC38601-008		AC38637-004	
Sample Date	Criteria	7/11/08		7/14/08		7/9/08		7/9/08		7/10/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals											
Mercury	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Aluminum	NC	100	U	100	U	410		150		100	U
Antimony	3	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
Arsenic	25	4	U	4.2		4	U	7		4	U
Barium	1,000	72		91		47		40		190	
Beryllium	3	4	U	4	U	4	U	4	U	4	U
Cadmium	5	2	U	2	U	2	U	2	U	2	U
Calcium	NC	12,000	J	13,000	J	19,000		13,000	J	14,000	
Chromium	50	25	U	25	U	25	U	25	U	25	U
Cobalt	NC	10	U	10	U	10	U	10	U	10	U
Copper	200	25	U	25	U	25	U	25	U	25	U
Iron	300	1,300	J	3,000		5,000		5,900	J	4,600	
Lead	25	5	U	5	U	5	U	5	U	5	U
Magnesium	35,000	1,600		1,700		3,500		2,600		2,900	
Manganese	300	130		71		140		150		1200	
Nickel	100	10	U	10	U	10	U	10	U	10	U
Potassium	NC	2,500	U	2,500	U	2,500	U	2,500	U	2,500	U
Selenium	10	25	U	25	U	25	U	25	U	25	U
Silver	50	10	U	10	U	10	U	10	U	10	U
Sodium	20,000	41,000		50,000		5,000		30,000		52,000	
Thallium	0.5	5	U	5	U	5	U	5	U	5	U
Vanadium	NC	25	U	25	U	25	U	25	U	25	U
Zinc	2000	25	U	49		25	U	25	U	25	U

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-02		PW-02		PW-02		PW-02		PW-02	
CMT Sample ID	NYSDEC	PW-02-04		PW-02-04		PW-02-05		PW-02-06		PW-02-06	
CMT screen interval (ft bgs)	Class GA	116-118		116-118		131-133		146-148		146-148	
Laboratory ID	Groundwater	AC38637-003		AC41213-005		AC38601-009		AC38637-001		AC41213-004	
Sample Date	Criteria	7/10/08		11/19/08		7/9/08		7/9/08		11/19/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	UJ	1	U	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	1	U	1	U	1	UJ	1	U	1	U
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	50	R	250	R	50	R	50	R	250	R
2-Butanone	NC	1	U	1	U	1	U	1	U	1	U
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	1	U	5	U	1	UJ	1	U	5	U
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	1	U	1	U	1	UJ	1	U	1	U
Acetone	50	230		5	U	5	U	720		5	U
Acrolein	5	5	U	5	UJ	5	U	5	U	5	UJ
Acrylonitrile	5	1	U	1	UJ	1	U	1	U	1	UJ
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	50	1	U	1	U	1	U	1	U	1	U
Bromoform	50	1	U	1	U	1	U	1	U	1	U
Bromomethane	5	1	U	1	U	1	UJ	1	U	1	U
Carbon Disulfide	60	1	U	1	U	1	UJ	1	U	1	U
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	5	1	U	1	U	1	U	1	U	1	U
Chloroethane	5	1	U	1	U	1	UJ	1	U	1	U
Chloroform	7	1	U	1	U	1	U	1	U	1	U
Chloromethane	5	1	U	1	U	1	UJ	1	U	1	U
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-02		PW-02		PW-02		PW-02		PW-02	
CMT Sample ID	NYSDEC	PW-02-04		PW-02-04		PW-02-05		PW-02-06		PW-02-06	
CMT screen interval (ft bgs)	Class GA	116-118		116-118		131-133		146-148		146-148	
Laboratory ID	Groundwater	AC38637-003		AC41213-005		AC38601-009		AC38637-001		AC41213-004	
Sample Date	Criteria	7/10/08		11/19/08		7/9/08		7/9/08		11/19/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	5	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	2	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	1	U	1	U	1	UJ	1	U	1	U
Methylcyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	1	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	1	U	0.5	U	1	U	1	U	0.5	U
n-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	1	U	1	U	1	U	1	U	1	U
o-Xylene	5	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Styrene	5	1	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	5	UJ	5	U	5	U	5	UJ	5	U
t-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	1	U	1	U	1	U	3		2.5	
Toluene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-02		PW-02		PW-02		PW-02		PW-02	
CMT Sample ID	NYSDEC	PW-02-04		PW-02-04		PW-02-05		PW-02-06		PW-02-06	
CMT screen interval (ft bgs)	Class GA	116-118		116-118		131-133		146-148		146-148	
Laboratory ID	Groundwater	AC38637-003		AC41213-005		AC38601-009		AC38637-001		AC41213-004	
Sample Date	Criteria	7/10/08		11/19/08		7/9/08		7/9/08		11/19/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals											
Mercury	0.7	0.2	U	NA		0.2	U	0.2	U	NA	
Aluminum	NC	360		NA		3,800		100	U	NA	
Antimony	3	7.5	U	NA		7.5	U	7.5	U	NA	
Arsenic	25	4	U	NA		4	U	4.4		NA	
Barium	1,000	58		NA		57		75		NA	
Beryllium	3	4	U	NA		4	U	4	U	NA	
Cadmium	5	2	U	NA		2	U	2	U	NA	
Calcium	NC	17,000		NA		18,000	J	19,000		NA	
Chromium	50	25	U	NA		25	U	25	U	NA	
Cobalt	NC	10	U	NA		10	U	10	U	NA	
Copper	200	25	U	NA		25	U	25	U	NA	
Iron	300	7,600		NA		6,400	J	10,000		NA	
Lead	25	5	U	NA		5	U	5	U	NA	
Magnesium	35,000	1,800		NA		2,700		5,300		NA	
Manganese	300	1300		NA		130		380		NA	
Nickel	100	10	U	NA		15		10	U	NA	
Potassium	NC	2,500	U	NA		2,500	U	2,800		NA	
Selenium	10	25	U	NA		25	U	25	U	NA	
Silver	50	10	U	NA		10	U	10	U	NA	
Sodium	20,000	14,000		NA		29,000		38,000		NA	
Thallium	0.5	5	U	NA		5	U	5	U	NA	
Vanadium	NC	25	U	NA		25	U	25	U	NA	
Zinc	2000	25	U	NA		25	U	25	U	NA	

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-02		PW-03		PW-03		PW-03		PW-03	
CMT Sample ID	NYSDEC	PW-02-07		PW-03-01		PW-03-02		PW-03-03		PW-03-04	
CMT screen interval (ft bgs)	Class GA	160-162		70-72		85-87		100-102		115-117	
Laboratory ID	Groundwater	AC38637-005		AC38601-003		AC38601-001		AC38601-005		AC38601-002	
Sample Date	Criteria	7/10/08		7/8/08		7/8/08		7/9/08		7/8/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	1	U	1.5		1.2		9.7		1	U
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	UJ	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	1	U	1	U	2.3		4.6		1	U
1,1-Dichloroethene	5	1	U	1	U	1	U	1.1		1	U
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	1	U	1	U	1	U	1	UJ	1	U
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	50	R	50	R	50	R	50	R	50	R
2-Butanone	NC	1	U	5	U	5	U	1	U	5	U
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	1	U	5	U	5	U	1	UJ	5	U
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	1	U	1	U	1	U	1	UJ	1	U
Acetone	50	79		38		37		5	U	130	
Acrolein	5	5	U	5	U	5	U	5	U	5	U
Acrylonitrile	5	1	U	1	U	1	U	1	U	1	U
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	50	1	U	1	U	1	U	1	U	1	U
Bromoform	50	1	U	1	U	1	U	1	U	1	U
Bromomethane	5	1	U	1	U	1	U	1	UJ	1	U
Carbon Disulfide	60	1	U	1	U	1	U	1	UJ	1	U
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	5	1	U	1	U	1	U	1	U	1	U
Chloroethane	5	1	U	1	U	1	U	1	UJ	1	U
Chloroform	7	1.8		1	U	1	U	1	U	1	U
Chloromethane	5	1	U	1	U	1	U	1	UJ	1	U
cis-1,2-Dichloroethene	5	1.3		1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-02		PW-03		PW-03		PW-03		PW-03	
CMT Sample ID	NYSDEC	PW-02-07		PW-03-01		PW-03-02		PW-03-03		PW-03-04	
CMT screen interval (ft bgs)	Class GA	160-162		70-72		85-87		100-102		115-117	
Laboratory ID	Groundwater	AC38637-005		AC38601-003		AC38601-001		AC38601-005		AC38601-002	
Sample Date	Criteria	7/10/08		7/8/08		7/8/08		7/9/08		7/8/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	5	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	2	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	1	U	1	U	1	U	1	UJ	1	U
Methylcyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	2.1		1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	1	U	1	U	1	U	1	U	1	U
n-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	1	U	1	U	1	U	1	U	1	U
o-Xylene	5	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Styrene	5	1	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	5	UJ	5	U	5	U	5	U	5	U
t-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	82		1	U	1	U	1	U	1	U
Toluene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	2.4		1	U	1	U	1	U	1	U
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-02		PW-03		PW-03		PW-03		PW-03	
CMT Sample ID	NYSDEC	PW-02-07		PW-03-01		PW-03-02		PW-03-03		PW-03-04	
CMT screen interval (ft bgs)	Class GA	160-162		70-72		85-87		100-102		115-117	
Laboratory ID	Groundwater	AC38637-005		AC38601-003		AC38601-001		AC38601-005		AC38601-002	
Sample Date	Criteria	7/10/08		7/8/08		7/8/08		7/9/08		7/8/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals											
Mercury	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Aluminum	NC	400		100	U	100	U	100	U	210	
Antimony	3	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
Arsenic	25	6.8		4	U	7.9		4	U	4	U
Barium	1,000	35		120		290		25	U	25	U
Beryllium	3	4	U	4	U	4	U	4	U	4	U
Cadmium	5	2	U	2	U	2	U	2	U	2	U
Calcium	NC	17,000		23,000	J	24,000	J	8,800	J	13,000	J
Chromium	50	25	U	25	U	25	U	25	U	25	U
Cobalt	NC	10	U	12		10	U	10	U	10	U
Copper	200	25	U	25	U	25	U	25	U	25	U
Iron	300	18,000		14,000	J	18,000	J	450	J	6,500	J
Lead	25	5	U	5	U	5	U	5	U	5	U
Magnesium	35,000	5,100		2,900		3,000		1,300		2,500	
Manganese	300	53		440		2,700		370		800	
Nickel	100	10	U	13		10	U	10	U	10	U
Potassium	NC	2,500	U	24,000		25,000		2,500	U	2,500	U
Selenium	10	25	U	25	U	25	U	25	U	25	U
Silver	50	10	U	10	U	10	U	10	U	10	U
Sodium	20,000	58,000		39,000		54,000		29,000		57,000	
Thallium	0.5	5	U	5	U	5	U	5	U	5	U
Vanadium	NC	25	U	25	U	25	U	25	U	25	U
Zinc	2000	25	U	130		25	U	52		25	U

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-03	PW-03	PW-03	PW-03	PW-03
CMT Sample ID	NYSDEC	PW-03-04	PW-03-05	PW-03-06	PW-03-06	PW-03-07
CMT screen interval (ft bgs)	Class GA	115-117	130-132	145-147	145-147	160-162
Laboratory ID	Groundwater	AC41213-002	AC38601-004	AC38601-006	AC41213-001	AC38601-007
Sample Date	Criteria	11/19/08	7/8/08	7/9/08	11/18/08	7/9/08
Matrix	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds						
1,1,1-Trichloroethane	5	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	5	1 U	1 UJ	1 UJ	1 U	1 UJ
1,1,2-trichloro-1,2,2-trifluoroethane	5	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	5	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	5	1 U	1 UJ	1 UJ	1 U	1 UJ
1,2,4-Trichlorobenzene	5	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	5	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	0.04	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	5	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	3	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	5	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	3	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	5	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	3	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	NC	250 R	50 R	50 R	250 R	50 R
2-Butanone	NC	1 U	1 U	1 U	1 U	1 U
2-Chloroethylvinylether	NC	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
2-Hexanone	50	5 U	1 UJ	1 UJ	5 U	1 UJ
4-Isopropyltoluene	5	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	NC	1 U	1 UJ	1 UJ	1 U	1 UJ
Acetone	50	5 U	73	200	5 U	560
Acrolein	5	5 UJ	5 U	5 U	5 UJ	5 U
Acrylonitrile	5	1 UJ	1 U	1 U	1 UJ	1 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	5	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	50	1 U	1 U	1 U	1 U	1 U
Bromoform	50	1 U	1 U	1 U	1 U	1 U
Bromomethane	5	1 U	1 UJ	1 UJ	1 U	1 UJ
Carbon Disulfide	60	1 U	1 UJ	1 UJ	1 U	1 UJ
Carbon Tetrachloride	5	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	1 U	1 U	1 U	1 U	1 U
Chloroethane	5	1 U	1 UJ	1 UJ	1 U	1 UJ
Chloroform	7	1 U	1 U	1 U	1 U	1 U
Chloromethane	5	1 U	1 UJ	1 UJ	1 U	1 UJ
cis-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-03	PW-03	PW-03	PW-03	PW-03
CMT Sample ID	NYSDEC	PW-03-04	PW-03-05	PW-03-06	PW-03-06	PW-03-07
CMT screen interval (ft bgs)	Class GA	115-117	130-132	145-147	145-147	160-162
Laboratory ID	Groundwater	AC41213-002	AC38601-004	AC38601-006	AC41213-001	AC38601-007
Sample Date	Criteria	11/19/08	7/8/08	7/9/08	11/18/08	7/9/08
Matrix	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		Q	conc Q	conc Q	conc Q	conc Q
cis-1,3-Dichloropropene	0.4	1 U	1 U	1 U	1 U	1 U
Cyclohexane	NC	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	5	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	5	1 U	1 U	1 U	1 U	1 U
m&p-Xylenes	5	2 U	2 U	2 U	2 U	2 U
Methyl Acetate	NC	1 U	1 UJ	1 UJ	1 U	1 UJ
Methylcyclohexane	NC	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	5	1 U	1 U	1 U	1 U	1 U
Methyl-t-butyl ether	10	0.8	1 U	1 U	0.5 U	1 U
n-Butylbenzene	5	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	5	1 U	1 U	1 U	1 U	1 U
o-Xylene	5	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	5	1 U	1 U	1 U	1 U	1 U
Styrene	5	1 U	1 U	1 U	1 U	1 U
t-Butyl Alcohol	NC	5 U	5 U	5 U	5 U	5 U
t-Butylbenzene	5	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	5	1 U	1 U	1 U	1 U	7.8
Toluene	5	1 U	1 U	1 U	1 U	1 U
Trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	0.4	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	5	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	2	1 U	1 U	1 U	1 U	1 U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-03	PW-03	PW-03	PW-03	PW-03
CMT Sample ID	NYSDEC	PW-03-04	PW-03-05	PW-03-06	PW-03-06	PW-03-07
CMT screen interval (ft bgs)	Class GA	115-117	130-132	145-147	145-147	160-162
Laboratory ID	Groundwater	AC41213-002	AC38601-004	AC38601-006	AC41213-001	AC38601-007
Sample Date	Criteria	11/19/08	7/8/08	7/9/08	11/18/08	7/9/08
Matrix	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		Q	conc Q	conc Q	conc Q	conc Q
TAL Metals						
Mercury	0.7	NA	0.2 U	0.2 U	NA	0.2 U
Aluminum	NC	NA	100 U	120	NA	320
Antimony	3	NA	7.5 U	7.5 U	NA	7.5 U
Arsenic	25	NA	4 U	4 U	NA	5.9
Barium	1,000	NA	46	44	NA	48
Beryllium	3	NA	4 U	4 U	NA	4 U
Cadmium	5	NA	2 U	2 U	NA	2 U
Calcium	NC	NA	12,000 J	12,000 J	NA	19,000 J
Chromium	50	NA	25 U	25 U	NA	25 U
Cobalt	NC	NA	10 U	10 U	NA	10 U
Copper	200	NA	25 U	25 U	NA	25 U
Iron	300	NA	3,200 J	4,600 J	NA	35,000 J
Lead	25	NA	5 U	5 U	NA	5 U
Magnesium	35,000	NA	2,000	3,000	NA	5,400
Manganese	300	NA	130	510	NA	370
Nickel	100	NA	12	10 U	NA	10 U
Potassium	NC	NA	2,500 U	2,500 U	NA	2,500 U
Selenium	10	NA	25 U	25 U	NA	25 U
Silver	50	NA	10 U	10 U	NA	10 U
Sodium	20,000	NA	34,000	44,000	NA	32,000
Thallium	0.5	NA	5 U	5 U	NA	5 U
Vanadium	NC	NA	25 U	25 U	NA	25 U
Zinc	2000	NA	29	25 U	NA	25 U

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-03		PW-04		PW-04		PW-04		PW-04	
CMT Sample ID	NYSDEC	PW-03-07		PW-04-01		PW-04-02		PW-04-03		PW-04-04	
CMT screen interval (ft bgs)	Class GA	160-162		71-73		86-88		101-103		116-118	
Laboratory ID	Groundwater	AC41213-003		AC38739-001		AC38739-003		AC38739-002		AC38739-005	
Sample Date	Criteria	11/19/08		7/15/08		7/15/08		7/15/08		7/16/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	1	U	2.5		1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	1	U	1.1		1	U	1	U	1	U
1,1-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	250	R	50	R	50	R	50	R	50	R
2-Butanone	NC	1	U	1	U	1	U	1	U	1	U
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	5	U	1	U	1	U	1	U	1	U
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	1	U	1	U	1	U	1	U	1	U
Acetone	50	110		5	U	5	U	5	U	5	U
Acrolein	5	5	UJ	5	U	5	U	5	U	5	U
Acrylonitrile	5	1	UJ	1	U	1	U	1	U	1	U
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	50	1	U	1	U	1	U	1	U	1	U
Bromoform	50	1	U	1	U	1	U	1	U	1	U
Bromomethane	5	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	60	1	U	1	UJ	1	UJ	1	UJ	1	U
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	5	1	U	1	U	1	U	1	U	1	U
Chloroethane	5	1	U	1	U	1	U	1	U	1	U
Chloroform	7	1	U	1	U	1	U	1	U	1	U
Chloromethane	5	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	6.9		1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-03		PW-04		PW-04		PW-04		PW-04	
CMT Sample ID	NYSDEC	PW-03-07		PW-04-01		PW-04-02		PW-04-03		PW-04-04	
CMT screen interval (ft bgs)	Class GA	160-162		71-73		86-88		101-103		116-118	
Laboratory ID	Groundwater	AC41213-003		AC38739-001		AC38739-003		AC38739-002		AC38739-005	
Sample Date	Criteria	11/19/08		7/15/08		7/15/08		7/15/08		7/16/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	5	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	2	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	1	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	0.5	U	1	U	1	U	1	U	1	U
n-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	1	U	1	U	1	U	1	U	1	U
o-Xylene	5	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Styrene	5	1	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	5	U	5	UJ	5	UJ	5	UJ	5	UJ
t-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	1.2		1	U	1	U	1	U	1	U
Toluene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-03	PW-04	PW-04	PW-04	PW-04
CMT Sample ID	NYSDEC	PW-03-07	PW-04-01	PW-04-02	PW-04-03	PW-04-04
CMT screen interval (ft bgs)	Class GA	160-162	71-73	86-88	101-103	116-118
Laboratory ID	Groundwater	AC41213-003	AC38739-001	AC38739-003	AC38739-002	AC38739-005
Sample Date	Criteria	11/19/08	7/15/08	7/15/08	7/15/08	7/16/08
Matrix	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q
TAL Metals						
Mercury	0.7	NA	0.2 U	0.2 U	0.2 U	0.2 U
Aluminum	NC	NA	100 U	100 U	100 U	230
Antimony	3	NA	7.5 U	7.5 U	7.5 U	7.5 U
Arsenic	25	NA	5.1	4 U	4 U	4 U
Barium	1,000	NA	120	85	75	25 U
Beryllium	3	NA	4 U	4 U	4 U	4 U
Cadmium	5	NA	2 U	2 U	2 U	2 U
Calcium	NC	NA	12,000	13,000	9,600	7,100
Chromium	50	NA	25 U	25 U	25 U	25 U
Cobalt	NC	NA	10 U	10 U	10 U	10 U
Copper	200	NA	25 U	25 U	25 U	25 U
Iron	300	NA	3,300	7,100	220	650
Lead	25	NA	5 U	5 U	5 U	5 U
Magnesium	35,000	NA	2,300	2,800	1,500	1,200
Manganese	300	NA	550	310	65	26
Nickel	100	NA	11	10 U	10 U	10 U
Potassium	NC	NA	7,500	2,500 U	2,500 U	2,500 U
Selenium	10	NA	25 U	25 U	25 U	25 U
Silver	50	NA	10 U	10 U	10 U	10 U
Sodium	20,000	NA	42,000	38,000	25,000	39,000
Thallium	0.5	NA	5 U	5 U	5 U	5 U
Vanadium	NC	NA	25 U	25 U	25 U	25 U
Zinc	2000	NA	25 U	25 U	25 U	25 U

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-04		PW-04		PW-04		PW-05		PW-05	
CMT Sample ID	NYSDEC	PW-04-05		PW-04-06		PW-04-07		PW-05-01		PW-05-02	
CMT screen interval (ft bgs)	Class GA	131-133		146-148		161-163		68.5-70.5		93.5-95.5	
Laboratory ID	Groundwater	AC38739-009		AC38739-006		AC38739-008		AC38771-006		AC38492-001	
Sample Date	Criteria	7/16/08		7/16/08		7/16/08		7/17/08		7/18/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	1	U	1	U	2.5		1	U	1	U
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	1	U	1	U	1		1	U	1	U
1,1-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	50	R	50	R	50	R	50	R	50	R
2-Butanone	NC	1	U	1	U	1	U	1	U	1	U
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	1	U	1	U	1	U	1	U	1	UJ
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	1	U	1	U	1	U	1	U	1	UJ
Acetone	50	96	J	17		5	U	5	UJ	5	UJ
Acrolein	5	5	UJ	5	U	5	U	5	UJ	5	UJ
Acrylonitrile	5	1	UJ	1	U	1	U	1	UJ	1	UJ
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	50	1	U	1	U	1	U	1	U	1	U
Bromoform	50	1	U	1	U	1	U	1	U	1	U
Bromomethane	5	1	UJ	1	U	1	U	1	UJ	1	U
Carbon Disulfide	60	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	5	1	U	1	U	1	U	1	U	1	U
Chloroethane	5	1	U	1	U	1	U	1	U	1	U
Chloroform	7	1	U	1	U	1	U	1	U	1	U
Chloromethane	5	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-04		PW-04		PW-04		PW-05		PW-05	
CMT Sample ID	NYSDEC	PW-04-05		PW-04-06		PW-04-07		PW-05-01		PW-05-02	
CMT screen interval (ft bgs)	Class GA	131-133		146-148		161-163		68.5-70.5		93.5-95.5	
Laboratory ID	Groundwater	AC38739-009		AC38739-006		AC38739-008		AC38771-006		AC38492-001	
Sample Date	Criteria	7/16/08		7/16/08		7/16/08		7/17/08		7/18/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	1	UJ	1	U	1	U	1	UJ	1	U
Ethylbenzene	5	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	2	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	1	UJ	1	U	1	U	1	UJ	1	UJ
Methylcyclohexane	NC	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	1	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	1	U	1	U	1	U	1	U	1	U
n-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	1	U	1	U	1	U	1	U	1	U
o-Xylene	5	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Styrene	5	1	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
t-Butylbenzene	5	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	1	U	1	U	1	U	1	U	1	U
Toluene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	1	UJ	1	U	1	U	1	UJ	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-04		PW-04		PW-04		PW-05		PW-05	
CMT Sample ID	NYSDEC	PW-04-05		PW-04-06		PW-04-07		PW-05-01		PW-05-02	
CMT screen interval (ft bgs)	Class GA	131-133		146-148		161-163		68.5-70.5		93.5-95.5	
Laboratory ID	Groundwater	AC38739-009		AC38739-006		AC38739-008		AC38771-006		AC38492-001	
Sample Date	Criteria	7/16/08		7/16/08		7/16/08		7/17/08		7/18/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals											
Mercury	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Aluminum	NC	100	U	1,200		100	U	140		100	U
Antimony	3	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
Arsenic	25	6.7		4	U	4	U	4	U	4	U
Barium	1,000	35		25	U	120		36		77	
Beryllium	3	4	U	4	U	4	U	4	U	4	U
Cadmium	5	2	U	2	U	2	U	2	U	2	U
Calcium	NC	12,000		5,200		12,000		17,000		18,000	
Chromium	50	25	U	25	U	25	U	25	U	25	U
Cobalt	NC	10	U	10	U	15		22		10	U
Copper	200	25	U	25	U	25	U	25	U	25	U
Iron	300	12,000		4,400		4,600		6,400		8,500	
Lead	25	5	U	5	U	5	U	5	U	5	U
Magnesium	35,000	2,000		1,000	U	2,100		4,300		3,500	
Manganese	300	320		62		490		790		460	
Nickel	100	10	U	10	U	13		15		10	U
Potassium	NC	2,500	U	2,500	U	8,200		2,500	U	2,500	U
Selenium	10	25	U	25	U	25	U	25	U	25	U
Silver	50	10	U	10	U	10	U	10	U	10	U
Sodium	20,000	35,000		36,000		44,000		16,000		57,000	
Thallium	0.5	5	U	5	U	5	U	5	U	5	U
Vanadium	NC	25	U	25	U	25	U	25	U	25	U
Zinc	2000	25	U	25	U	25	U	25	U	26	

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-05		PW-05		PW-05		PW-05		PW-05	
CMT Sample ID	NYSDEC	PW-05-03		PW-05-04		PW-05-05		PW-05-05		PW-05-05	
CMT screen interval (ft bgs)	Class GA	118.5-120.5		143.5-145.5		168.5-170.5		168.5-170.5		168.5-170.5	
Laboratory ID	Groundwater	AC38771-007		AC38492-002		AC38492-007		AC41270-012		AC41270-013	
Sample Date	Criteria	7/17/08		7/18/08		7/18/08		11/20/08		11/20/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	1	U	1	U	1	U	1	U	NA	
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	U	NA	
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U	NA	
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	NA	
1,1-Dichloroethane	5	1	U	1	U	1	U	1	U	NA	
1,1-Dichloroethene	5	1	U	1	U	1	U	1	U	NA	
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U	NA	
1,2,3-Trichloropropane	5	1	U	1	U	1	U	1	U	NA	
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	NA	
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U	NA	
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U	NA	
1,2-Dibromoethane	5	1	U	1	U	1	U	1	UJ	NA	
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	NA	
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	NA	
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	NA	
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U	NA	
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	NA	
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U	NA	
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	NA	
1,4-Dioxane	NC	50	R	50	R	50	R	50	R	NA	
2-Butanone	NC	1	U	1	U	1	U	1	U	NA	
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ	NA	
2-Hexanone	50	1	U	1	UJ	1	UJ	1	U	NA	
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U	NA	
4-Methyl-2-Pentanone	NC	1	U	1	UJ	1	UJ	1	U	NA	
Acetone	50	5	UJ	5	UJ	5	UJ	5	UJ	NA	
Acrolein	5	5	UJ	5	UJ	5	UJ	5	U	NA	
Acrylonitrile	5	1	UJ	1	UJ	1	UJ	1	U	NA	
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	NA	
Bromochloromethane	5	1	U	1	U	1	U	1	U	NA	
Bromodichloromethane	50	1	U	1	U	1	U	1	U	NA	
Bromoform	50	1	U	1	U	1	U	1	U	NA	
Bromomethane	5	1	UJ	1	U	1	U	1	U	NA	
Carbon Disulfide	60	1	UJ	1	UJ	1	UJ	1	U	NA	
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	NA	
Chlorobenzene	5	1	U	1	U	1	U	1	U	NA	
Chloroethane	5	1	U	1	U	1	U	1	U	NA	
Chloroform	7	1	U	1	U	1	U	1	U	NA	
Chloromethane	5	1	U	1	U	1	U	1	U	NA	
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	NA	

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-05		PW-05		PW-05		PW-05		PW-05	
CMT Sample ID	NYSDEC	PW-05-03		PW-05-04		PW-05-05		PW-05-05		PW-05-05	
CMT screen interval (ft bgs)	Class GA	118.5-120.5		143.5-145.5		168.5-170.5		168.5-170.5		168.5-170.5	
Laboratory ID	Groundwater	AC38771-007		AC38492-002		AC38492-007		AC41270-012		AC41270-013	
Sample Date	Criteria	7/17/08		7/18/08		7/18/08		11/20/08		11/20/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	UJ	NA	
Cyclohexane	NC	1	U	1	U	1	U	1	U	NA	
Dibromochloromethane	5	1	U	1	U	1	U	1	U	NA	
Dichlorodifluoromethane	5	1	UJ	1	U	1	U	1	U	NA	
Ethylbenzene	5	1	U	1	U	1	U	1	U	NA	
Isopropylbenzene	5	1	U	1	U	1	U	1	U	NA	
m&p-Xylenes	5	2	U	2	U	2	U	2	U	NA	
Methyl Acetate	NC	1	UJ	1	UJ	1	U	1	U	NA	
Methylcyclohexane	NC	1	U	1	U	1	U	1	U	NA	
Methylene Chloride	5	1	U	1	U	1	U	1	U	NA	
Methyl-t-butyl ether	10	1	U	1	U	1	U	0.5	U	NA	
n-Butylbenzene	5	1	U	1	U	1	U	1	U	NA	
n-Propylbenzene	5	1	U	1	U	1	U	1	U	NA	
o-Xylene	5	1	U	1	U	1	U	1	U	NA	
sec-Butylbenzene	5	1	U	1	U	1	U	1	U	NA	
Styrene	5	1	U	1	U	1	U	1	U	NA	
t-Butyl Alcohol	NC	5	UJ	5	UJ	5	UJ	33		NA	
t-Butylbenzene	5	1	U	1	U	1	U	1	U	NA	
Tetrachloroethene	5	1	U	1.8		1.2		1.3		NA	
Toluene	5	1	U	1	U	1	U	1	U	NA	
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	NA	
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	NA	
Trichloroethene	5	1	U	1	U	1	U	1	U	NA	
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	NA	
Vinyl Chloride	2	1	UJ	1	U	1	U	1	U	NA	

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-05		PW-05		PW-05		PW-05		PW-05	
CMT Sample ID	NYSDEC	PW-05-03		PW-05-04		PW-05-05		PW-05-05		PW-05-05	
CMT screen interval (ft bgs)	Class GA	118.5-120.5		143.5-145.5		168.5-170.5		168.5-170.5		168.5-170.5	
Laboratory ID	Groundwater	AC38771-007		AC38492-002		AC38492-007		AC41270-012		AC41270-013	
Sample Date	Criteria	7/17/08		7/18/08		7/18/08		11/20/08		11/20/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals											
Mercury	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Aluminum	NC	260		350		1,900		1,100	J	100	U
Antimony	3	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
Arsenic	25	5.4		6		5.5		20	U	20	U
Barium	1,000	43		32		63		93		120	
Beryllium	3	4	U	4	U	4	U	4	U	4	U
Cadmium	5	2	U	2	U	2	U	2	U	2	U
Calcium	NC	11,000		15,000		8,700		11,000		11,000	
Chromium	50	25	U	25	U	25	U	25	U	25	U
Cobalt	NC	10	U	10	U	18		10	U	10	U
Copper	200	25	U	25	U	25	U	25	U	25	U
Iron	300	29,000		22,000		4,800		1,600		590	
Lead	25	5	U	5	U	5	U	5	U	5	U
Magnesium	35,000	2,000		1,800		1,300		1,600		1,400	
Manganese	300	1800		3,600		4,800		5,400		5,300	
Nickel	100	10	U	10	U	120		160		150	
Potassium	NC	2,500	U	2,500	U	2,500	U	2,500	U	2,500	U
Selenium	10	25	U	25	U	25	U	25	U	25	U
Silver	50	10	U	10	U	10	U	10	U	10	U
Sodium	20,000	38,000		36,000		29,000		21,000		21,000	
Thallium	0.5	5	U	5	U	5	U	5	U	5	U
Vanadium	NC	25	U	25	U	25	U	25	U	25	U
Zinc	2000	25	U	25	U	27		34	J	110	J

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-05		PW-05		PW-05		PW-05		PW-06
CMT Sample ID	NYSDEC	PW-05-06		PW-05-07		PW-05-07		PW-05-07		PW-06-(
CMT screen interval (ft bgs)	Class GA	193.5-195.5		220.5-221.5		220.5-221.5		220.5-221.		70-72
Laboratory ID	Groundwater	AC38492-008		AC38492-006		AC41270-005		AC41270-006		AC38739-
Sample Date	Criteria	7/18/08		7/18/08		11/20/08		11/20/08		7/16/08
Matrix	water	water		water		water		water		water
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L
		conc	Q	conc	Q	conc	Q	conc	Q	conc
Volatile Organic Compounds										
1,1,1-Trichloroethane	5	1	U	1	U	1	U	NA		1
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	NA		1
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	NA		1
1,1,2-Trichloroethane	1	1	U	1	U	1	U	NA		1
1,1-Dichloroethane	5	1	U	1	U	1	U	NA		1
1,1-Dichloroethene	5	1	U	1	U	1	U	NA		1
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	NA		1
1,2,3-Trichloropropane	5	1	U	1	U	1	U	NA		1
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	NA		1
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	NA		1
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	NA		1
1,2-Dibromoethane	5	1	U	1	U	1	U	NA		1
1,2-Dichlorobenzene	3	1	U	1	U	1	U	NA		1
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	NA		0.5
1,2-Dichloropropane	1	1	U	1	U	1	U	NA		1
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	NA		1
1,3-Dichlorobenzene	3	1	U	1	U	1	U	NA		1
1,3-Dichloropropane	5	1	U	1	U	1	U	NA		1
1,4-Dichlorobenzene	3	1	U	1	U	1	U	NA		1
1,4-Dioxane	NC	50	R	50	R	250	R	NA		50
2-Butanone	NC	1	U	1	U	20	J	NA		1
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	NA		1
2-Hexanone	50	16	J	1	UJ	52	J	NA		1
4-Isopropyltoluene	5	1	U	1	U	1	U	NA		1
4-Methyl-2-Pentanone	NC	1	U	1	UJ	1	U	NA		1
Acetone	50	130		94	J	18	J	NA		5
Acrolein	5	5	U	5	UJ	5	UJ	NA		5
Acrylonitrile	5	1	U	1	UJ	1	UJ	NA		1
Benzene	1	0.5	U	0.5	U	0.5	U	NA		0.5
Bromochloromethane	5	1	U	1	U	1	U	NA		1
Bromodichloromethane	50	1	U	1	U	1	U	NA		1
Bromoform	50	1	U	1	U	1	U	NA		1
Bromomethane	5	1	U	1	U	1	U	NA		1
Carbon Disulfide	60	1	U	1	U	1	U	NA		1
Carbon Tetrachloride	5	1	U	1	U	1	U	NA		1
Chlorobenzene	5	1	U	1	U	1	U	NA		1
Chloroethane	5	1	U	1	U	1	U	NA		1
Chloroform	7	1	U	1	U	1	U	NA		1
Chloromethane	5	1	U	1	U	1	U	NA		1
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	NA		1

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-05		PW-05		PW-05		PW-05		PW-06
CMT Sample ID	NYSDEC	PW-05-06		PW-05-07		PW-05-07		PW-05-07		PW-06-(
CMT screen interval (ft bgs)	Class GA	193.5-195.5		220.5-221.5		220.5-221.5		220.5-221.		70-72
Laboratory ID	Groundwater	AC38492-008		AC38492-006		AC41270-005		AC41270-006		AC38739-
Sample Date	Criteria	7/18/08		7/18/08		11/20/08		11/20/08		7/16/08
Matrix	water	water		water		water		water		water
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L
		conc	Q	conc	Q	conc	Q	conc	Q	conc
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	NA		1
Cyclohexane	NC	1	U	1	U	1	U	NA		1
Dibromochloromethane	5	1	U	1	U	1	U	NA		1
Dichlorodifluoromethane	5	1	U	1	U	1	U	NA		1
Ethylbenzene	5	1	U	1	U	1	U	NA		1
Isopropylbenzene	5	1	U	1	U	1	U	NA		1
m&p-Xylenes	5	2	U	2	U	2	U	NA		2
Methyl Acetate	NC	1	U	1	UJ	1	U	NA		1
Methylcyclohexane	NC	1	U	1	U	1	U	NA		1
Methylene Chloride	5	1	U	1	U	1	U	NA		1
Methyl-t-butyl ether	10	1	U	1	U	0.5	U	NA		1
n-Butylbenzene	5	1	U	1	U	1	U	NA		1
n-Propylbenzene	5	1	U	1	U	1	U	NA		1
o-Xylene	5	1	U	1	U	1	U	NA		1
sec-Butylbenzene	5	1	U	1	U	1	U	NA		1
Styrene	5	1	U	1	U	1	U	NA		1
t-Butyl Alcohol	NC	16		14	J	100	J	NA		5
t-Butylbenzene	5	1	U	1	U	1	U	NA		1
Tetrachloroethene	5	1	U	1.4		1	UJ	NA		1
Toluene	5	1	U	1	U	1	U	NA		1
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	NA		1
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	NA		1
Trichloroethene	5	1	U	1	U	1	U	NA		1
Trichlorofluoromethane	5	1	U	1	U	1	U	NA		1
Vinyl Chloride	2	1	U	1	U	1	U	NA		1

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-05		PW-05		PW-05		PW-05		PW-06
CMT Sample ID	NYSDEC	PW-05-06		PW-05-07		PW-05-07		PW-05-07		PW-06-(
CMT screen interval (ft bgs)	Class GA	193.5-195.5		220.5-221.5		220.5-221.5		220.5-221.		70-72
Laboratory ID	Groundwater	AC38492-008		AC38492-006		AC41270-005		AC41270-006		AC38739-
Sample Date	Criteria	7/18/08		7/18/08		11/20/08		11/20/08		7/16/08
Matrix	water	water		water		water		water		water
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L
		conc	Q	conc	Q	conc	Q	conc	Q	conc
TAL Metals										
Mercury	0.7	0.58		0.66		0.2	UJ	0.2	U	0.2
Aluminum	NC	150,000		78,000		30,000	J	1,200	J	740
Antimony	3	38	U	38	U	7.5	U	7.5	U	7.5
Arsenic	25	170		280		21	J	20	U	4
Barium	1,000	1600		720		200	J	25	U	35
Beryllium	3	20	U	20	U	4	UJ	4	U	4
Cadmium	5	10	U	10	U	2	U	2	U	2
Calcium	NC	35,000		34,000		15,000	J	6,700		9,500
Chromium	50	440		400		62	J	25	U	25
Cobalt	NC	430		300		23	J	10	U	10
Copper	200	810		660		57	J	25	U	25
Iron	300	99,000		230,000		31,000	J	13,000	J	420
Lead	25	400		290		40	J	5	U	5
Magnesium	35,000	13,000		9,400		3,700	J	1,800		1,200
Manganese	300	350		470		210	J	67		310
Nickel	100	490		390		27	J	10	U	10
Potassium	NC	17,000		14,000		3,400	J	2,500	U	6,000
Selenium	10	120	U	120	U	25	U	25	U	25
Silver	50	50	U	50	U	10	U	10	U	10
Sodium	20,000	160,000		190,000		140,000	J	85,000		23,000
Thallium	0.5	25	U	25	U	5	U	5	U	5
Vanadium	NC	640		540		56	J	25	U	25
Zinc	2000	620		1,100		120	J	25	U	25

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location			PW-06		PW-06		PW-06		PW-06	
CMT Sample ID	NYSDEC	01	PW-06-02		PW-06-03		PW-06-04		PW-06-04	
CMT screen interval (ft bgs)	Class GA		90-92		118-120		150-152		150-152	
Laboratory ID	Groundwater	010	AC38739-012		AC38739-011		AC38771-002		AC41270-001	
Sample Date	Criteria		7/16/08		7/16/08		7/17/08		11/20/08	
Matrix	water		water		water		water		water	
Units	µg/L		µg/L		µg/L		µg/L		µg/L	
		Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds										
1,1,1-Trichloroethane	5	U	4.2		3.5		1	U	1	U
1,1,2,2-Tetrachloroethane	5	U	1	U	1	U	1	U	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	U	7.2		1.7		1	U	1	U
1,1-Dichloroethene	5	U	2.3		1.8		1	U	1	U
1,2,3-Trichlorobenzene	5	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	5	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	U	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	R	50	R	50	R	50	R	250	R
2-Butanone	NC	U	1	U	1	U	64		16	
2-Chloroethylvinylether	NC	UJ	1	U	1	UJ	1	UJ	1	UJ
2-Hexanone	50	U	1	UJ	1	U	1	UJ	5	U
4-Isopropyltoluene	5	U	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	U	1	U	1	U	1	U	1	U
Acetone	50	U	20		5	U	300	J	5	U
Acrolein	5	U	5	U	5	U	5	UJ	5	UJ
Acrylonitrile	5	U	1	U	1	U	1	UJ	1	UJ
Benzene	1	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	U	1	U	1	U	1	U	1	U
Bromodichloromethane	50	U	1	U	1	U	1	U	1	U
Bromoform	50	U	1	U	1	U	1	U	1	U
Bromomethane	5	U	1	U	1	U	1	U	1	U
Carbon Disulfide	60	UJ	1	UJ	1	UJ	1	UJ	1	U
Carbon Tetrachloride	5	U	1	U	1	U	1	U	1	U
Chlorobenzene	5	U	1	U	1	U	1	U	1	U
Chloroethane	5	U	1	U	1	U	1	U	1	U
Chloroform	7	U	1	U	1	U	2.3		1	U
Chloromethane	5	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location			PW-06		PW-06		PW-06		PW-06	
CMT Sample ID	NYSDEC	01	PW-06-02		PW-06-03		PW-06-04		PW-06-04	
CMT screen interval (ft bgs)	Class GA		90-92		118-120		150-152		150-152	
Laboratory ID	Groundwater	010	AC38739-012		AC38739-011		AC38771-002		AC41270-001	
Sample Date	Criteria		7/16/08		7/16/08		7/17/08		11/20/08	
Matrix	water		water		water		water		water	
Units	µg/L		µg/L		µg/L		µg/L		µg/L	
		Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	U	1	U	1	U	1	U	1	U
Ethylbenzene	5	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	U	1	U	1	U	1	UJ	1	U
Methylcyclohexane	NC	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	U	1	U	1	U	1	U	0.5	U
n-Butylbenzene	5	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	U	1	U	1	U	1	U	1	U
o-Xylene	5	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	U	1	U	1	U	1	U	1	U
Styrene	5	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	UJ	5	UJ	5	UJ	5	UJ	5	UJ
t-Butylbenzene	5	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	U	1	U	1	U	1	U	2	
Toluene	5	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	U	1	U	1	U	1	U	1	U
Trichloroethene	5	U	1	U	2.6		1	U	1	U
Trichlorofluoromethane	5	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location			PW-06		PW-06		PW-06		PW-06	
CMT Sample ID	NYSDEC	01	PW-06-02		PW-06-03		PW-06-04		PW-06-04	
CMT screen interval (ft bgs)	Class GA		90-92		118-120		150-152		150-152	
Laboratory ID	Groundwater	010	AC38739-012		AC38739-011		AC38771-002		AC41270-001	
Sample Date	Criteria		7/16/08		7/16/08		7/17/08		11/20/08	
Matrix	water		water		water		water		water	
Units	µg/L		µg/L		µg/L		µg/L		µg/L	
		Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals										
Mercury	0.7	U	0.2	U	0.2	U	0.2	U	0.2	U
Aluminum	NC		320		220		2,500		8,700	J
Antimony	3	U	7.5	U	7.5	U	7.5	U	7.5	U
Arsenic	25	U	5.9		4	U	5.8		31	
Barium	1,000		36		83		160		170	
Beryllium	3	U	4	U	4	U	4	U	4	U
Cadmium	5	U	2	U	2	U	2	U	2	U
Calcium	NC		20,000		15,000		33,000		17,000	
Chromium	50	U	42		25	U	160		64	
Cobalt	NC	U	11		10	U	71		42	
Copper	200	U	25	U	25	U	25	U	95	
Iron	300		29,000		1,200		110,000		50,000	
Lead	25	U	5	U	5	U	5	U	26	
Magnesium	35,000		2,700		6,200		8,600		5,700	
Manganese	300		1,800		51		1,500		480	
Nickel	100	U	10	U	10	U	91		53	
Potassium	NC		4,500		2,500	U	10,000		3,200	
Selenium	10	U	25	U	25	U	25	U	25	U
Silver	50	U	10	U	10	U	10	U	10	U
Sodium	20,000		86,000		19,000		150,000		33,000	
Thallium	0.5	U	5	U	5	U	5	U	5	U
Vanadium	NC	U	25	U	25	U	25	U	46	
Zinc	2000	U	25	U	25	U	330		130	J

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-06		PW-06		PW-06		PW-06		PW-06	
CMT Sample ID	NYSDEC	PW-06-04		PW-06-05		PW-06-05		PW-06-06		PW-06-06	
CMT screen interval (ft bgs)	Class GA	150-152		166-168		166-168		180-182		180-182	
Laboratory ID	Groundwater	AC41270-002		AC38771-003		AC41270-003		AC38771-001		AC41270-004	
Sample Date	Criteria	11/20/08		7/17/08		11/20/08		7/17/08		11/20/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds											
1,1,1-Trichloroethane	5	NA		1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	5	NA		1	U	1	U	1	U	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	NA		1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	NA		1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	NA		1	U	1	U	1	U	1	U
1,1-Dichloroethene	5	NA		1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	5	NA		1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	NA		1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	5	NA		1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	NA		1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	NA		1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	NA		1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	NA		1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	NA		0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	NA		1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	NA		1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	NA		1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	NA		1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	NA		1	U	1	U	1	U	1	U
1,4-Dioxane	NC	NA		50	R	250	R	50	R	250	R
2-Butanone	NC	NA		31		43		42		44	
2-Chloroethylvinylether	NC	NA		1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	NA		1	UJ	5	U	1	UJ	5	U
4-Isopropyltoluene	5	NA		1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	NA		1	U	1	U	1	U	1	U
Acetone	50	NA		320	J	47		360	J	5	U
Acrolein	5	NA		5	UJ	5	UJ	5	UJ	5	UJ
Acrylonitrile	5	NA		1	UJ	1	UJ	1	UJ	1	UJ
Benzene	1	NA		0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	NA		1	U	1	U	1	U	1	U
Bromodichloromethane	50	NA		1	U	1	U	1	U	1	U
Bromoform	50	NA		1	U	1	U	1	U	1	U
Bromomethane	5	NA		1	U	1	U	1	U	1	U
Carbon Disulfide	60	NA		1	UJ	1	U	1	UJ	1	U
Carbon Tetrachloride	5	NA		1	U	1	U	1	U	1	U
Chlorobenzene	5	NA		1	U	1	U	1	U	1	U
Chloroethane	5	NA		1	U	1	U	1	U	1	U
Chloroform	7	NA		1	U	5.5		1	U	4	
Chloromethane	5	NA		1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	NA		1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-06		PW-06		PW-06		PW-06		PW-06	
CMT Sample ID	NYSDEC	PW-06-04		PW-06-05		PW-06-05		PW-06-06		PW-06-06	
CMT screen interval (ft bgs)	Class GA	150-152		166-168		166-168		180-182		180-182	
Laboratory ID	Groundwater	AC41270-002		AC38771-003		AC41270-003		AC38771-001		AC41270-004	
Sample Date	Criteria	11/20/08		7/17/08		11/20/08		7/17/08		11/20/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	NA		1	U	1	U	1	U	1	U
Cyclohexane	NC	NA		1	U	1	U	1	U	1	U
Dibromochloromethane	5	NA		1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	NA		1	U	1	U	1	U	1	U
Ethylbenzene	5	NA		1	U	1	U	1	U	1	U
Isopropylbenzene	5	NA		1	U	1	U	1	U	1	U
m&p-Xylenes	5	NA		2	U	2	U	2	U	2	U
Methyl Acetate	NC	NA		1	UJ	1	U	1	UJ	1	U
Methylcyclohexane	NC	NA		1	U	1	U	1	U	1	U
Methylene Chloride	5	NA		1	U	6.2		1	U	2.1	
Methyl-t-butyl ether	10	NA		1	U	0.5	U	1	U	0.5	U
n-Butylbenzene	5	NA		1	U	1	U	1	U	1	U
n-Propylbenzene	5	NA		1	U	1	U	1	U	1	U
o-Xylene	5	NA		1	U	1	U	1	U	1	U
sec-Butylbenzene	5	NA		1	U	1	U	1	U	1	U
Styrene	5	NA		1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	NA		5	UJ	25	J	5	UJ	16	
t-Butylbenzene	5	NA		1	U	1	U	1	U	1	U
Tetrachloroethene	5	NA		1	U	1	U	1.1		1.9	
Toluene	5	NA		1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	NA		1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	NA		1	U	1	U	1	U	1	U
Trichloroethene	5	NA		1	U	1	U	1	U	1	U
Trichlorofluoromethane	5	NA		1	U	1	U	1	U	1	U
Vinyl Chloride	2	NA		1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-06		PW-06		PW-06		PW-06		PW-06	
CMT Sample ID	NYSDEC	PW-06-04		PW-06-05		PW-06-05		PW-06-06		PW-06-06	
CMT screen interval (ft bgs)	Class GA	150-152		166-168		166-168		180-182		180-182	
Laboratory ID	Groundwater	AC41270-002		AC38771-003		AC41270-003		AC38771-001		AC41270-004	
Sample Date	Criteria	11/20/08		7/17/08		11/20/08		7/17/08		11/20/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals											
Mercury	0.7	0.2	U	0.2	U	NA		0.2	U	NA	
Aluminum	NC	230	J	1,000		NA		1,300		NA	
Antimony	3	7.5	U	7.5	U	NA		7.5	U	NA	
Arsenic	25	20	U	5.6		NA		9.3		NA	
Barium	1,000	94		150		NA		120		NA	
Beryllium	3	4	U	4	U	NA		4	U	NA	
Cadmium	5	2	U	2	U	NA		2	U	NA	
Calcium	NC	16,000		24,000		NA		23,000		NA	
Chromium	50	25	U	25	U	NA		25	U	NA	
Cobalt	NC	10	U	49		NA		160		NA	
Copper	200	25	U	25	U	NA		25	U	NA	
Iron	300	44,000		34,000		NA		51,000		NA	
Lead	25	5	U	5	U	NA		5	U	NA	
Magnesium	35,000	5,000		6,900		NA		7,400		NA	
Manganese	300	380		590		NA		710		NA	
Nickel	100	10	U	49		NA		87		NA	
Potassium	NC	2,500	U	10,000		NA		12,000		NA	
Selenium	10	25	U	25	U	NA		25	U	NA	
Silver	50	10	U	10	U	NA		10	U	NA	
Sodium	20,000	29,000		91,000		NA		65,000		NA	
Thallium	0.5	5	U	5	U	NA		5	U	NA	
Vanadium	NC	25	U	25	U	NA		25	U	NA	
Zinc	2000	25	U	200		NA		470		NA	

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-06	PW-07	PW-07	PW-07	PW-07
CMT Sample ID	NYSDEC	PW-06-07	PW-07-01	PW-07-01	PW-07-02	PW-07-03
CMT screen interval (ft bgs)	Class GA	221-222	70-72	70-72	95-97	120-122
Laboratory ID	Groundwater	AC38771-004	AC38711-003	AC41213-006	AC38711-005	AC38711-004
Sample Date	Criteria	7/17/08	7/14/08	11/19/08	7/15/08	7/14/08
Matrix	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q
Volatile Organic Compounds						
1,1,1-Trichloroethane	5	5 U	1 U	1 U	2	1 U
1,1,2,2-Tetrachloroethane	5	5 U	1 U	1 U	1 U	1 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	5 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	5 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	5	5 U	3.1	3.3	1.3	1 U
1,1-Dichloroethene	5	5 U	3.6	6.2	1 U	1 U
1,2,3-Trichlorobenzene	5	5 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	5	5 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	5	5 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	5	5 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	0.04	5 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	5	5 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	3	5 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	1	5 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	5	5 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	3	5 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	5	5 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	3	5 U	1 U	1 U	1 U	1 U
1,4-Dioxane	NC	250 R	50 R	250 R	50 R	50 R
2-Butanone	NC	5 U	1 U	1 U	1 U	1 U
2-Chloroethylvinylether	NC	5 UJ	1 UJ	1 UJ	1 UJ	1 UJ
2-Hexanone	50	5 UJ	1 U	5 U	1 U	1 U
4-Isopropyltoluene	5	5 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	NC	5 U	1 U	1 U	1 U	1 U
Acetone	50	25 UJ	210	49	5 U	77
Acrolein	5	25 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Acrylonitrile	5	5 UJ	1 U	1 UJ	1 U	1 U
Benzene	1	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	5	5 U	1 U	1 U	1 U	1 U
Bromodichloromethane	50	5 U	1 U	1 U	1 U	1 U
Bromoform	50	5 U	1 U	1 U	1 U	1 U
Bromomethane	5	5 U	1 U	1 U	1 U	1 U
Carbon Disulfide	60	5 UJ	1 U	1 U	1 U	1 U
Carbon Tetrachloride	5	5 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	5 U	1 U	1 U	1 U	1 U
Chloroethane	5	5 U	1 U	1.9	1 U	1 U
Chloroform	7	5 U	1 U	1 U	1 U	1 U
Chloromethane	5	5 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	5	5 U	1 U	3	1 U	1 U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-06		PW-07		PW-07		PW-07		PW-07	
CMT Sample ID	NYSDEC	PW-06-07		PW-07-01		PW-07-01		PW-07-02		PW-07-03	
CMT screen interval (ft bgs)	Class GA	221-222		70-72		70-72		95-97		120-122	
Laboratory ID	Groundwater	AC38771-004		AC38711-003		AC41213-006		AC38711-005		AC38711-004	
Sample Date	Criteria	7/17/08		7/14/08		11/19/08		7/15/08		7/14/08	
Matrix	water	water		water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	5	U	1	U	1	U	1	U	1	U
Cyclohexane	NC	5	U	1	U	1	U	1	U	1	U
Dibromochloromethane	5	5	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	5	U	1	U	1	U	1	U	1	U
Ethylbenzene	5	5	U	1	U	1	U	1	U	1	U
Isopropylbenzene	5	5	U	1	U	1	U	1	U	1	U
m&p-Xylenes	5	10	U	2	U	2	U	2	U	2	U
Methyl Acetate	NC	5	UJ	1	U	1	U	1	U	1	U
Methylcyclohexane	NC	5	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	5	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	5	U	1	U	1.4		1	U	1	U
n-Butylbenzene	5	5	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	5	U	1	U	1	U	1	U	1	U
o-Xylene	5	5	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	5	U	1	U	1	U	1	U	1	U
Styrene	5	5	U	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	25	UJ	5	UJ	5	U	5	UJ	5	UJ
t-Butylbenzene	5	5	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	130		1	U	1	U	1	U	1	U
Toluene	5	5	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	5	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	5	U	1	U	1	U	1	U	1	U
Trichloroethene	5	5	U	3.2		1	U	1	U	1	U
Trichlorofluoromethane	5	5	U	1	U	1	U	1	U	1	U
Vinyl Chloride	2	5	U	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-06	PW-07	PW-07	PW-07	PW-07
CMT Sample ID	NYSDEC	PW-06-07	PW-07-01	PW-07-01	PW-07-02	PW-07-03
CMT screen interval (ft bgs)	Class GA	221-222	70-72	70-72	95-97	120-122
Laboratory ID	Groundwater	AC38771-004	AC38711-003	AC41213-006	AC38711-005	AC38711-004
Sample Date	Criteria	7/17/08	7/14/08	11/19/08	7/15/08	7/14/08
Matrix	water	water	water	water	water	water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		conc Q	conc Q	conc Q	conc Q	conc Q
TAL Metals						
Mercury	0.7	0.2 U	0.2 U	NA	0.2 U	0.2 U
Aluminum	NC	1,400	100 U	NA	100 U	100 U
Antimony	3	7.5 U	7.5 U	NA	7.5 U	7.5 U
Arsenic	25	4 U	9	NA	4 U	4 U
Barium	1,000	44	86	NA	57	73
Beryllium	3	4 U	4 U	NA	4 U	4 U
Cadmium	5	2 U	2 U	NA	2 U	2 U
Calcium	NC	12,000	34,000 J	NA	11,000 J	13,000 J
Chromium	50	25 U	25 U	NA	25 U	25 U
Cobalt	NC	15	52	NA	10 U	10 U
Copper	200	25 U	25 U	NA	25 U	25 U
Iron	300	6,100	74,000	NA	1,300	1,900
Lead	25	5 U	5 U	NA	5 U	5 U
Magnesium	35,000	3,900	11,000	NA	1,400	3,300
Manganese	300	120	6,600	NA	100	110
Nickel	100	12	10 U	NA	10 U	10 U
Potassium	NC	2,900	5,900	NA	2,600	2,500 U
Selenium	10	25 U	25 U	NA	25 U	25 U
Silver	50	10 U	10 U	NA	10 U	10 U
Sodium	20,000	38,000	13,000	NA	25,000	31,000
Thallium	0.5	5 U	5 U	NA	5 U	5 U
Vanadium	NC	25 U	25 U	NA	25 U	25 U
Zinc	2000	42	25 U	NA	31	36

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-07		PW-07		PW-07		PW-07	
CMT Sample ID	NYSDEC	PW-07-04		PW-07-05		PW-07-06		PW-07-07	
CMT screen interval (ft bgs)	Class GA	145-147		170-172		197-199		220-221	
Laboratory ID	Groundwater	AC38711-006		AC38711-008		AC38711-007		AC38711-012	
Sample Date	Criteria	7/15/08		7/15/08		7/15/08		7/15/08	
Matrix	water	water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q
Volatile Organic Compounds									
1,1,1-Trichloroethane	5	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	U
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U
1,1-Dichloroethane	5	1	U	1	U	1	U	1	U
1,1-Dichloroethene	5	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	5	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	5	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	U	1	U	1	U
1,2-Dibromoethane	5	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U
1,3-Dichloropropane	5	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U
1,4-Dioxane	NC	50	R	50	R	50	R	50	R
2-Butanone	NC	1	U	1	U	1	U	1	U
2-Chloroethylvinylether	NC	1	UJ	1	UJ	1	UJ	1	UJ
2-Hexanone	50	1	U	1	U	1	U	1	U
4-Isopropyltoluene	5	1	U	1	U	1	U	1	U
4-Methyl-2-Pentanone	NC	1	U	1	U	1	U	1	U
Acetone	50	20		5	U	78		39	
Acrolein	5	5	U	5	UJ	5	UJ	5	UJ
Acrylonitrile	5	1	U	1	U	1	U	1	U
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	1	U	1	U	1	U	1	U
Bromodichloromethane	50	1	U	1	U	1	U	1	U
Bromoform	50	1	U	1	U	1	U	1	U
Bromomethane	5	1	U	1	U	1	U	1	U
Carbon Disulfide	60	1	U	1	U	1	U	1	U
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U
Chlorobenzene	5	1	U	1	U	1	U	1	U
Chloroethane	5	1	U	1	U	1	U	1	U
Chloroform	7	1	U	1	U	1	U	1	U
Chloromethane	5	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-07		PW-07		PW-07		PW-07	
CMT Sample ID	NYSDEC	PW-07-04		PW-07-05		PW-07-06		PW-07-07	
CMT screen interval (ft bgs)	Class GA	145-147		170-172		197-199		220-221	
Laboratory ID	Groundwater	AC38711-006		AC38711-008		AC38711-007		AC38711-012	
Sample Date	Criteria	7/15/08		7/15/08		7/15/08		7/15/08	
Matrix	water	water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U
Cyclohexane	NC	1	U	1	U	1	U	1	U
Dibromochloromethane	5	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	5	1	U	1	U	1	U	1	U
Ethylbenzene	5	1	U	1	U	1	U	1	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U
m&p-Xylenes	5	2	U	2	U	2	U	2	U
Methyl Acetate	NC	1	U	1	U	1	U	1	U
Methylcyclohexane	NC	1	U	1	U	1	U	1	U
Methylene Chloride	5	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	10	3.7		1	U	1	U	1	U
n-Butylbenzene	5	1	U	1	U	1	U	1	U
n-Propylbenzene	5	1	U	1	U	1	U	1	U
o-Xylene	5	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	1	U	1	U	1	U	1	U
Styrene	5	1	U	1	U	1	U	1	U
t-Butyl Alcohol	NC	5	UJ	5	UJ	5	UJ	5	UJ
t-Butylbenzene	5	1	U	1	U	1	U	1	U
Tetrachloroethene	5	1	U	1.5		1	U	1	U
Toluene	5	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	11		1	U	1.6	
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U
Vinyl Chloride	2	1	U	1	U	1	U	1	U

APPENDIX B, TABLE 1
ANCHOR LITH KEM KO SITE (#1-30-021)
JULY AND NOVEMBER 2008 GROUNDWATER SAMPLING EVENTS
VOLATILE ORGANIC COMPOUNDS AND TAL METALS

Sample Location		PW-07		PW-07		PW-07		PW-07	
CMT Sample ID	NYSDEC	PW-07-04		PW-07-05		PW-07-06		PW-07-07	
CMT screen interval (ft bgs)	Class GA	145-147		170-172		197-199		220-221	
Laboratory ID	Groundwater	AC38711-006		AC38711-008		AC38711-007		AC38711-012	
Sample Date	Criteria	7/15/08		7/15/08		7/15/08		7/15/08	
Matrix	water	water		water		water		water	
Units	µg/L	µg/L		µg/L		µg/L		µg/L	
		conc	Q	conc	Q	conc	Q	conc	Q
TAL Metals									
Mercury	0.7	0.2	U	0.2	U	0.2	U	0.2	U
Aluminum	NC	100	U	100	U	100	U	100	U
Antimony	3	7.5	U	7.5	U	7.5	U	7.5	U
Arsenic	25	4	U	4	U	4	U	4.5	
Barium	1,000	29		30		25	U	25	U
Beryllium	3	4	U	4	U	4	U	4	U
Cadmium	5	2	U	2	U	2	U	2	U
Calcium	NC	6,100	J	11,000	J	4,200	J	5,600	J
Chromium	50	25	U	25	U	25	U	25	U
Cobalt	NC	10	U	10	U	10	U	10	U
Copper	200	25	U	25	U	25	U	25	U
Iron	300	3,300		1,800		3,600		6,100	
Lead	25	5	U	5	U	5	U	5	U
Magnesium	35,000	1,300		3,300		1,200		1,600	
Manganese	300	48		25	U	38		34	
Nickel	100	10	U	10	U	10	U	10	U
Potassium	NC	2,500	U	2,500	U	2,500	U	2,500	U
Selenium	10	25	U	25	U	25	U	25	U
Silver	50	10	U	10	U	10	U	10	U
Sodium	20,000	29,000		23,000		50,000		54,000	
Thallium	0.5	5	U	5	U	5	U	5	U
Vanadium	NC	25	U	25	U	25	U	25	U
Zinc	2000	34		25	U	49		180	

Notes:
NC - No criterion
U - Not detected
J - Estimated value
R - Data rejected during validation
NA - Not analyzed

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ORGANIC
DATA VALIDATION REPORT

EARTH TECH
ANCHOR LITH KEM KO PROJECT

ANALYZED BY
HAMPTON-CLARKE VERITECH LABORATORY
LABORATORY CASE No.: 8112001

REVIEWED BY:
Analytical Assurance Associates (A^3)
600 Rock Raymond Road
Downingtown, PA 19335

RECEIVED
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EARTH TECH
BLOOMFIELD, NJ

EARTH TECH
ANCHOR LITH KEM KO PROJECT
LABORATORY ID: AC41213
CASE NO.: 8112001

INTRODUCTION

This quality assurance review is based upon a review of all data generated from seven (7) aqueous samples including one trip blank, collected on November 18 and 19, 2008. Samples were received by Hampton-Clarke/Veritech laboratory on November 20, 2008 and analyzed for specific volatile organic compounds (VOCs) using EPA Method 624 following the criteria set forth in NYSDEC Category B.

The following samples are evaluated and included in this package review.

PW03-06	**PW02-04**
PW03-04	**PW07-01**
PW03-07	**TB**
PW02-06	

MS/MSD analysis was not performed on the above samples.

The analysis data were reviewed in accordance with the following parameters and all problems encountered during the analysis were summarized in this report.

QUALITY ASSURANCE REVIEW

The findings offered in this report are based upon a review of the following criteria:

- Data Completeness
- Holding Times
- Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards Recovery
- Matrix Spike/Spike Duplicate/Blank Spike Analyses
- Instrument Performance
- Field Duplicate Results
- Sample Results

DATA COMPLETENESS

The CLP data package was not provided. However, the reported data was summarized on the similar CLP forms and considered acceptable.

The narrower ranges for percent abundance ratios in tune analysis were reported by laboratory for ions 50, 174 and 175. The data was not impacted since the reported abundance ratios were within the method recommended limits.

%Ds in continuing calibrations reported by the laboratory was not calculated based on the calculations recommended by the method. Consequently some %Ds were above 25%. The %Ds were recalculated by the data reviewer and reported accordingly.

The reported limit for dioxane in trip blank (50 ug/L) was not the same as the reported values (250 ug/L) for other aqueous samples since trip blank was analyzed on GCMS#3.

HOLDING TIME

Samples were analyzed within 10-day from the VTSR. All samples were preserved at pH less than 2 pH unit.

A daily tune analysis was performed by the laboratory. Consequently the 12-hour tune analysis was exceeded for all samples. Samples were analyzed 1:44 to 6:02 hours beyond the 12-hour tune analysis, the frequency required by the CLP VOC SOW and also by SW-846 Method 8260B. However, these samples were analyzed using EPA Method 624, which only requires a tune "at the beginning of each day that analyses are to be performed." As the tune frequency was consistent with the requirements of the method, sample data were accepted, since all other criteria met the requirements for the tune analysis.

CALIBRATION

The response factors for acrolein (0.014, 0.027, 0.017& 0.024), t-butyl alcohol (0.027, 0.018, 0.029 & 0.015), and 1,4-dioxane (0.004, 0.004, 0.004 & 0.004) were below data validation requirement of 0.05 in initial and continuing calibrations. These compounds are not considered as TCL compounds and they are known as low response factor compounds. Sample data was not qualified for acrolein and t-butyl alcohol since their Rfs were above "0.01" control limits recommended by the method. However, the reported results and non-detected values for 1,4-dioxane were qualified in accordance with the Region II guidelines.

1,4-Dioxane was not detected in the samples. The reported non-detected values were contractually rejected "R".

All %RSDs were within the control limits with the exception of %RSD for acrolein (31%), Acrylonitrile (33%) and 2-chloroethylvinylether (32%) in initial calibration analyzed on 11-18-08 (GCMS#6). The non-detected values in the corresponding samples (all sample except trip blank) were qualified estimated. .

Several %Ds were above 25% in the corresponding continuing calibrations. The laboratory reported the percent difference between the concentrations and the expected true values instead of %Ds between response factors. The reported %Ds were recalculated. All recalculated %Ds were within the control limit of 25.

BLANKS

The laboratory method blanks were free of target compound. Toluene was detected in Trip blank at a level (1.2 ug/L) above the reporting limits. This compound was not detected in the samples. Therefore, sample data was not impacted. Storage blank was not analyzed with this batch.

SURROGATE RECOVERIES

Samples were spiked with four surrogate compounds prior to analysis. The recoveries were within the control limits.

MATRIX SPIKE/SPIKE DUPLICATE ANALYSIS

Matrix spike/spike duplicate analysis was performed on samples AC4129-005 from an alternate batch for thirty-one (31) specific volatile compounds. The percent recoveries and RPDs were with in the control limits with the exception of recoveries for 2-chloroethylvinylether (0.0%) in both MS and MSD samples. The laboratory case narrative indicated that this compound readily decomposes under acidic condition. It is the data reviewer's opinion that 2-chloroethylvinylether could not be recovered under these specific sampling/analysis procedures and the non-detected values should be accepted with the qualifier code "UJ", since the recoveries were within the control limits in all blank spike samples.

INTERNAL STANDARD

The recoveries and retention times were within the control limits.

FIELD DUPLICATE

Field duplicate analysis was not performed with this batch of samples. Duplicate samples were collected from this site. The analysis results were reported under separate cover page.

SAMPLE RESULTS

All samples were analyzed at one-fold dilutions. Acetone was detected in samples PW03-07 and PW07-01 at relatively high concentrations. Other chlorinated target compounds were detected at levels less than ten times the reporting limits. Non-target compounds were not detected in these samples.

SUMMARY

The cooler temperature (3.5°C) was considered acceptable.

All data have been validated in accordance with the data quality assurance set forth in NYSDEC ASP for Evaluating Organic analyses. The USEPA Region II Data Validation SOP # HW-6 Revision 14, (September 2006), modified as needed for the specific requirements the analytical used by the laboratory (EPA Method 624), was utilized to review the data completeness and data quality. The analysis problems were discussed in the above sections. Major problems were not encountered during the sample analysis. The reported sample data were accepted with the applied qualifier codes. If you have any questions or comments on this data review, please contact Zohreh Hamid at (610) 269-9989.

Sincerely,

Zohreh Hamid, Ph.D
Analytical Assurance Associates

1. **Appendix A- Glossary of Data Qualifier**
2. **Appendix B- Laboratory Form I, & Applied Qualifier Codes**
3. **Appendix D- Resubmission (If applicable)**

Appendix A
Glossary of Data Qualifiers

GLOSSARY OF DATA QUALIFIERS

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

U = NOT DETECTED SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS. [Substantially is equivalent to a result less than 10 times the blank level for common contaminants (methylene chloride, acetone and 2- butanone in the VOA analyses, and common phthalates in the BNA analyses, along with tentatively identified compounds) or less than 5 times the blank level for other target compounds.]

R = UNUSABLE RESULT. THE PRESENCE OR ABSENCE OF THIS ANALYTE CANNOT BE VERIFIED. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.

N = NEGATED COMPOUND. THERE IS PRESUMPTIVE EVIDENCE TO MAKE A TENTATIVE IDENTIFICCATION.

CODES RELATING TO QUATITATION

(can be used for both positive results and sample quantitation limits):

J = ANALYTE WAS POSITIVELY IDENTIFIED. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.

UJ = ANALYTE WAS NOT DETECTED. THE REPORTED QUATITATION LIMIT IS QUALIFIED ESTIMATED.

OTHER CODES

Q = NO ANALYTICAL RESULT.

Appendix B
Laboratory Form I and Applied Qualifier Codes

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41213-001
Client Id: PW03-06
Data File: 6M34926.D
Analysis Date: 11/24/08 22:02
Date Rec/Extracted: 11/20/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	U R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	U UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104544

Total Target Concentration 0

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC41213-001
Client Id: PW03-06
Data File: 6M34926.D
Analysis Date: 11/24/08 22:02
Date Rec/Extracted: 11/20/08-NA

Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids:
Method: EPA 624

Units: ug/L

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 104544

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41213-002
Client Id: PW03-04
Data File: 6M34927.D
Analysis Date: 11/24/08 22:18
Date Rec/Extracted: 11/20/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	**1634-04-4**	**Methyl-t-butyl ether**	**0.50**	**0.80**
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	U R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	U UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104544

Total Target Concentration 0.80 nd 11/10/09

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC41213-002
Client Id: PW03-04
Data File: 6M34927.D
Analysis Date: 11/24/08 22:18
Date Rec/Extracted: 11/20/08-NA

Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids:
Method: EPA 624

Units: ug/L

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 104544

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC41213-003
Client Id: PW03-07
Data File: 6M34928.D
Analysis Date: 11/24/08 22:34
Date Rec/Extracted: 11/20/08-NA

Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids:
Method: EPA 624

Units: ug/L

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 104544

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41213-004
Client Id: PW02-06
Data File: 6M34929.D
Analysis Date: 11/24/08 22:50
Date Rec/Extracted: 11/20/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	**127-18-4**	**Tetrachloroethene**	**1.0**	**2.5**
107-02-8	Acrolein	5.0	~~U~~ UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	~~U~~ UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104544

Total Target Concentration 2.5

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC41213-004
Client Id: PW02-06
Data File: 6M34929.D
Analysis Date: 11/24/08 22:50
Date Rec/Extracted: 11/20/08-NA

Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids:
Method: EPA 624

Units: ug/L

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 104544

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41213-005
Client Id: PW02-04
Data File: 6M34930.D
Analysis Date: 11/24/08 23:06
Date Rec/Extracted: 11/20/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	U R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	U UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104544

Total Target Concentration 0

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC41213-005
Client Id: PW02-04
Data File: 6M34930.D
Analysis Date: 11/24/08 23:06
Date Rec/Extracted: 11/20/08-NA

Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids:
Method: EPA 624

Units: ug/L

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 104544

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41213-006
Client Id: PW07-01
Data File: 6M34931.D
Analysis Date: 11/24/08 23:22
Date Rec/Extracted: 11/20/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	**75-00-3**	**Chloroethane**	**1.0**	**1.9**
75-34-3	**1,1-Dichloroethane**	**1.0**	**3.3**	67-66-3	Chloroform	1.0	U
75-35-4	**1,1-Dichloroethene**	**1.0**	**6.2**	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	**156-59-2**	**cis-1,2-Dichloroethene**	**1.0**	**3.0**
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	**1634-04-4**	**Methyl-t-butyl ether**	**0.50**	**1.4**
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	U R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	U UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	**Acetone**	**5.0**	**49**	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104544

Total Target Concentration 8.65 nd 11/19

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC41213-006
Client Id: PW07-01
Data File: 6M34931.D
Analysis Date: 11/24/08 23:22
Date Rec/Extracted: 11/20/08-NA

Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids:
Method: EPA 624

Units: ug/L

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 104544

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41213-007
Client Id: TB
Data File: 3M56408.D
Analysis Date: 11/21/08 23:19
Date Rec/Extracted: 11/20/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	50	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	1.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U	**108-88-3**	**Toluene**	**1.0**	**1.2**
107-13-1	Acrylonitrile	1.0	U	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104544

Total Target Concentration 1.2

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out wd 11/10/09
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC41213-007
Client Id: TB
Data File: 3M56408.D
Analysis Date: 11/21/08 23:19
Date Rec/Extracted: 11/20/08-NA

Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids:
Method: EPA 624

Units: ug/L

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 104544

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.

Analytical Assurance Associates, Inc.
600 Rock Raymond Road
Downingtown, PA 19335
Phone: 610 - 269 - 9989
Fax: 610 - 269 - 9989

ORGANIC & INORGANIC DATA VALIDATION REPORT

EARTH TECH
ANCHOR LITH KEM KO PROJECT

ANALYZED BY
HAMPTON-CLARKE VERITECH LABORATORY
LABORATORY CASE No.: 8112106

REVIEWED BY:
Analytical Assurance Associates (A^3)
600 Rock Raymond Road
Downingtown, PA 19335

RECEIVED
JAN 19 2009
EARTH TECH
BLOOMFIELD, NJ

EARTH TECH
ANCHOR LITH KEM KO PROJECT
LABORATORY ID: AC41270
CASE NO.: 8112106

INTRODUCTION

This quality assurance review is based upon a review of all data generated from eight (8) aqueous samples including one set of field duplicate, one field blank and one trip blank, collected on 11-20-2008. Samples were received by Hampton-Clarke/Veritech laboratory on 11-21-2008 and analyzed for specific volatile organic compounds (VOCs) using EPA Method 624 following the criteria set forth in NYSDEC Category B.

The following samples are evaluated and included in this package review.

PW06-04U	**PW65-07U**
PW06-05	**FB112008**
PW06-06	**TB**
PW05-07U	**PW05-05U**

MS/MSD analysis was not performed on samples from this batch.

The reported analytical data for the above samples were evaluated in accordance with the following parameters and summarized in this report.

QUALITY ASSURANCE REVIEW

The findings offered in this report are based upon a review of the following criteria:

- Data Completeness
- Holding Times
- Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards Recovery
- Matrix Spike/Spike Duplicate/Blank Spike Analyses
- Instrument Performance
- Field Duplicate Results
- Sample Results

DATA COMPLETENESS

The incorrect samples preservation was inadvertently reported on page 0037. The laboratory was contacted. The sample preservation was corrected and resubmitted.

The CLP data package was not provided. However, the reported data was summarized on the similar CLP forms and considered acceptable.

%Ds in continuing calibrations reported by the laboratory was not calculated based on the calculations recommended by the method. Consequently some %Ds were above 25%. The %Ds were recalculated by the data reviewer and reported accordingly.

The reporting limit for dioxane on GCMS#6 (250 ppb) was different than GCMS#3 (50 ppb)

HOLDING TIME

Samples were analyzed within 10-day from the VTSR. Samples were preserved at pH less than 2 pH unit.

A daily tune analysis was performed by the laboratory. Consequently the 12-hour tune analysis was exceeded for samples FB 112008 and TB. These samples were analyzed 3:43 to 4:01 hours beyond the 12-hour tune analysis, the frequency required by the CLP VOC SOW and also by SW-846 Method 8260B. However, these samples were analyzed using EPA Method 624, which only requires a tune "at the beginning of each day that analyses are to be performed." As the tune frequency was consistent with the requirements of the method, sample data were accepted, since all other criteria met the requirements for the tune analysis.

CALIBRATION

The response factors for acrolein (0.014, 0.027, 0.027, 0.019, 0.0200 & 0.028), t-butyl alcohol (0.027, 0.018, 0.017, 0.031, 0.036 & 0.031), and 1,4-dioxane (0.004, 0.004, 0.004, 0.004, 0.005 & 0.005) were below data validation requirement of 0.05 in all initial and continuing calibrations. These compounds are not considered as TCL compounds and they are known as low response factor compounds. Sample data was not qualified for acrolein and t-butyl alcohol since their Rfs were above "0.01" control limits recommended by the method. However, the reported results and non-detected values for 1,4-dioxane were qualified in accordance with the Region II guidelines.

1,4-Dioxane was not detected in the samples. The reported non-detected values were contractually rejected "R".

All %RSDs were within the control limits with the exception of %RSD for acrolein (31%), Acrylonitrile (33%) and 2-chloroethylvinylether (32%) in initial calibration analyzed on 11-18-08 (GCMS#6). These compounds were not detected in the samples. The non-detected values were qualified estimated "UJ" in the corresponding samples: AC41270- (001, 003, 004 & 005).

Several %Ds were above 25% in the continuing calibrations. The laboratory reported the percent difference between the concentrations and expected true values instead of %Ds between response factors. The %Ds were recalculated and the following "recalculated" %Ds were above 25% control limit:

Compound	CC 11-24-08 @ 7:06	CC 11-26-08@ 7:26	CC 11-26-08 @ 7:27
Chloromethane	27		
Acetone		27	
cis-1,2-Dichloropropene		31	
1,2-Dibromoethane		30	
Acrolein			42
Acrylonitrile			28
t-Butyl Alcohol			33
Sample: AC41270-	009 011	007 012	001 003 005

The reported sample results and non-detected values were qualified estimated (J & UJ).

BLANKS

The laboratory method blanks, field blank and trip blank were free of target compound. Storage blank was not analyzed with this batch.

SURROGATE RECOVERIES

Samples were spiked with four surrogate compounds prior to analysis. The recoveries were within the control limits.

MATRIX SPIKE/SPIKE DUPLICATE ANALYSIS

Matrix spike/spike duplicate analysis was not performed on samples from this batch. Two sets of matrix spike/spike duplicate samples were analyzed from alternate batches. The recoveries and RPDs were with in the control limits with the exception of 2-chloroethylvinylether (0.0%) recovery in AC41290-005 MS/MSD samples. The laboratory case narrative indicated that this compound readily decomposes under acidic condition. This compound was not detected in the

samples. Therefore, the non-detected values were accepted with the qualifier code "UJ" since the recoveries were within the control limits in all blank spike samples.

INTERNAL STANDARD

The recoveries and retention times were within the control limits.

FIELD DUPLICATE

Field duplicate analysis was performed on samples PW-05-07U/PW-65-07U. RPDs for the detected compounds were 200% with the exception of t-butyl alcohol (74%).

Acetone, 2-butanone and 2-hexanone were reported in the field sample (PW-05-07U), and tetrachloroethene was solely reported in the field duplicate sample. Consequently the RPDs for these compounds exceeded 100%. The reported sample results were qualified estimated for all target compounds detected in these two samples.

SAMPLE RESULTS

All samples were analyzed at one-fold dilutions.

An intensive peak was detected at about RT = 4.5 minute in samples PW-06-05 and PW-06-06. This peak was not identified since the TICs were not searched for these samples.

SUMMARY

The cooler temperature (3.7°C) was considered acceptable.

All data have been validated in accordance with the data quality assurance set forth in NYSDEC ASP for Evaluating Organic analyses. The USEPA Region II Data Validation SOP # HW-6 Revision 14, (September 2006), modified as needed for the specific requirements the analytical used by the laboratory (EPA Method 624), was utilized to review the data completeness and data quality. The analysis problems were discussed in the above sections. Sample data was accepted with the applied qualifier codes. If you have any questions or comments on this data review, please contact Zohreh Hamid at (610) 269-9989.

Sincerely,

Zohreh Hamid, Ph.D
Analytical Assurance Associates

TOTAL & DISSOLVED METAL ANALYSES

EARTH TECH
ANCHOR LITH KEM KO PROJECT
LABORATORY ID: AC41270
CASE NO.: 8112106

INTRODUCTION

This quality assurance review is based upon a review of all data generated from 10 (ten) aqueous (five total and five dissolved) samples including one set of field duplicate samples and one field blank, collected on 11-20-2008. Samples were received by Hampton-Clarke/Veritech laboratory on 11-21-2008 and analyzed for Total and dissolved metals according to the EPA Methods 200.7 and 245.1 for ICP metals and mercury respectively.

The following samples are evaluated and included in this package review.

PW06-04U	**PW65-07F**
PW06-04F	**FB112008U**
PW05-07U	**FB112008F**
PW05-07F	**PW05-05U**
PW65-07U	**PW05-05F**

MS and MD analyses were performed on sample PW05-05U for total metal analysis.

The analysis data were reviewed in accordance with the following parameters and all problems encountered during the analysis were summarized in this report.

QUALITY ASSURANCE REVIEW

The findings offered in this report are based upon a review of the following criteria:

- Data Completeness
- Holding Times
- Calibrations & CRDL Analyses
- Blanks
- ICP Interference Check Sample
- Matrix Spike Analysis
- Matrix Duplicate Analysis
- Laboratory Control Sample Analysis
- ICP Serial Dilution Analysis
- Instrument Detection Limits
- Field Duplicate Results
- Sample Results

DATA COMPLETENESS

Data completeness was satisfactory.

HOLDING TIME

Samples were digested and analyzed within the holding time requirements established in the corresponding methods.

CALIBRATIONS & CRDL ANALYSES

The recoveries were within the control limits in initial and continuing calibrations analyzed prior and after sample analysis for all metals. The CRDL sample analysis was not performed for ICP metals since this quality sample analysis is optional.

BLANKS

The preparation blanks, ICBs and CCBs were free of target analyte at levels above the CRDLs. Field blank was free of target analytes for both total and dissolved samples

ICP INTERFERENCE CHECK SAMPLE

The recoveries for ICSA and ICSB were within the control limit of 80-120% for ICP metals.

MATRIX SPIKE ANALYSIS

Matrix spike and spike duplicate analysis was performed on sample PW05-05 for total metals. The recoveries were within 75-125% control limits with the exception of Al (209/226%) in MS/MSD. The positive sample results were considered biased high and qualified estimated (J & UJ". Also, the recoveries for Mn (49/62%) were below the control limits. Sample data was not impacted since the field sample result was above four times (4x) the amount of spike added to these QC samples.

MATRIX DUPLICATE ANALYSIS

Matrix duplicate analysis was performed on sample PW05-05 for total analysis. The RPDs were within the control limits.

SERIAL DILUTION

This quality control sample was analyzed on sample PW05-05 for ICP metals. The %Differences for Zn (11%) was above 10%. The positive sample results were qualified estimated "J".

LABORATORY CONTROL SAMPLE

The recoveries were within the control limits in this analysis.

FIELD DUPLICATE ANALYSIS

Field duplicate was analyzed on sample PW05-07U/PW65-07U and PW05-07F/PW65-07F for total and dissolved analyses. The results and RPDs were listed on table I. & II for total and dissolved metals respectively.

Sample PW65-07U was reanalyzed at a 2-fold dilution under separate calibration analysis. Please note that the RPDs exceeded 50% control limits for almost all detected metals in total analysis. This discrepancy should be investigated by the sampling and/or laboratory procedures.

SAMPLE RESULTS

ICP metals were analyzed at 0.5-fold dilutions with the exception of ICP metals in sample PW65-07U. This sample was reanalyzed at a 2-fold dilution due to the high concentration of the analytes.

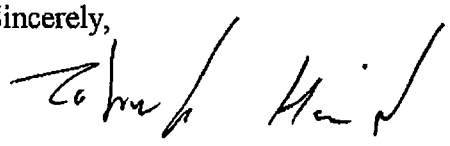
The comparisons of total and dissolved analyses were satisfactory with the exception of the results for zinc in samples PW05-05U/PW05-05F. The concentration for zinc in dissolved sample was almost 3 times the concentration in the corresponding total sample. This analyte was qualified due to the serial dilution outlier. Additional qualifier code was not applied.

SUMMARY

The cooler temperature (3.7 °C) was within the acceptable limits. The reported sample data was considered acceptable.

All data have been validated in accordance with the data quality assurance set forth in NYSDEC ASP for Evaluating TAL metals. The USEPA Region II Data Validation SOP # HW-2, Revision 13, (September 2006) was utilized to review the data completeness and data quality. The analysis problems were discussed in the above section. If you have any questions or comments on this data review, please contact Zohreh Hamid at (610) 269-9989.

Sincerely,



Zohreh Hamid, Ph.D
Analytical Assurance Associates

Table I
Field Duplicate Precision
Laboratory Project No.: 8112106
Total Analysis

Analyte	Field Sample PW05-07U	Field Dup PW65-07U	RPD
Aluminum	30000	260000	157
Antimony			
Arsenic	21	460	183
Barium	200	1900	162
Beryllium		18	200
Cadmium			
Calcium	15000	55000	114
Chromium	62	700	167
Cobalt	23	500	182
Copper	57	1200	182
Iron	31000	390000	171
Lead	40	590	175
Magnesium	3700	21000	140
Manganese	210	600	96
Mercury		2.3	200
Nickel	27	690	185
Potassium	3400	21000	144
Selenium			
Silver			
Sodium	140000	71000	65
Thallium			
Vanadium	56	1000	179
Zinc	120	2500	180

The reported results and non-detected values for the RPDs above 50% were qualified estimated.

Table II
Field Duplicate Precision
Laboratory Project No.: 8112106
Dissolved Analysis

Analyte	Field Sample PW05-07F	Field Dup PW65-07F	RPD
Aluminum	1200	740	47
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium	6700	6600	1.5
Chromium			
Cobalt			
Copper			
Iron	13000	710	180
Lead			
Magnesium	1800	2000	11
Manganese	67	56	18
Mercury			
Nickel			
Potassium			
Selenium			
Silver			
Sodium	85000	52000	48
Thallium			
Vanadium			
Zinc			

The reported results for iron were qualified estimated in these two samples

1. **Appendix A- Glossary of Data Qualifier**
2. **Appendix B- Laboratory Form I, & Applied Qualifier Codes**
3. **Appendix D- Resubmission (If applicable)**

Appendix A
Glossary of Data Qualifiers

GLOSSARY OF DATA QUALIFIERS

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

U = NOT DETECTED SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS. [Substantially is equivalent to a result less than 10 times the blank level for common contaminants (methylene chloride, acetone and 2- butanone in the VOA analyses, and common phthalates in the BNA analyses, along with tentatively identified compounds) or less than 5 times the blank level for other target compounds.]

R = UNUSABLE RESULT. THE PRESENCE OR ABSENCE OF THIS ANALYTE CANNOT BE VERIFIED. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.

N = NEGATED COMPOUND. THERE IS PRESUMPTIVE EVIDENCE TO MAKE A TENTATIVE IDENTIFICCATION.

CODES RELATING TO QUATITATION

(can be used for both positive results and sample quantitation limits):

J = ANALYTE WAS POSITIVELY IDENTIFIED. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.

UJ = ANALYTE WAS NOT DETECTED. THE REPORTED QUATITATION LIMIT IS QUALIFIED ESTIMATED.

OTHER CODES

Q = NO ANALYTICAL RESULT.

Appendix B
Laboratory Form I and Applied Qualifier Codes

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-001
Client Id: PW-06-04 U
Data File: 6M35040.D
Analysis Date: 11/26/08 11:35
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	**2-Butanone**	**1.0**	**16**	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U UJ
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	~~U~~ UJ
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	**127-18-4**	**Tetrachloroethene**	**1.0**	**2.0**
107-02-8	Acrolein	5.0	U UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	~~U~~ UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104242

Total Target Concentration ~~8~~ 18

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out nd 11-7-09
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-003
Client Id: PW-06-05
Data File: 6M35041.D
Analysis Date: 11/26/08 11:51
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	**67-66-3**	**Chloroform**	**1.0**	**5.5**
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	**75-09-2**	**Methylene Chloride**	**1.0**	**6.2**
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	U R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	**2-Butanone**	**1.0**	**43**	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	U UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	**75-65-0**	**t-Butyl Alcohol**	**5.0**	**25** J
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	**Acetone**	**5.0**	**47**	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104242

Total Target Concentration 8.130

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.

R - Retention Time Out 11/26/08
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-004
Client Id: PW-06-06
Data File: 6M34986.D
Analysis Date: 11/25/08 14:51
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	**67-66-3**	**Chloroform**	**1.0**	**4.0**
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	**75-09-2**	**Methylene Chloride**	**1.0**	**2.1**
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	**2-Butanone**	**1.0**	**44**	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	5.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	**75-65-0**	**t-Butyl Alcohol**	**5.0**	**16**
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	**127-18-4**	**Tetrachloroethene**	**1.0**	**1.9**
107-02-8	Acrolein	5.0	~~U~~ UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	~~U~~ UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104243

Total Target Concentration Q 68 nd 1/7/09

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-005
Client Id: PW-05-07 U
Data File: 6M35042.D
Analysis Date: 11/26/08 12:08
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	250	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	**2-Butanone**	**1.0**	20 J	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	**2-Hexanone**	**5.0**	52 J	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	**75-65-0**	**t-Butyl Alcohol**	**5.0**	**100** J
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	**Acetone**	**5.0**	18 J	127-18-4	Tetrachloroethene	1.0	~~U~~ UJ
107-02-8	Acrolein	5.0	~~U~~ UJ	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	~~U~~ UJ	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104242

Total Target Concentration 0.190 ~~0.190~~ ~~0.190~~ 11/10/09

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-007
Client Id: PW-65-07 U
Data File: 3M56545.D
Analysis Date: 11/26/08 11:54
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	**67-66-3**	**Chloroform**	**1.0**	**1.1**
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	~~U~~ UJ
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	~~U~~ UJ	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	50	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	~~U~~ UJ	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	1.0	~~U~~ UJ	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	**75-65-0**	**t-Butyl Alcohol**	**5.0**	**15** J
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	~~U~~ UJ	**127-18-4**	**Tetrachloroethene**	**1.0**	**4.0** J
107-02-8	Acrolein	5.0	U	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104242

Total Target Concentration 8.20

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-009
Client Id: FB 112008 U
Data File: 3M56468.D
Analysis Date: 11/24/08 22:37
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	~~U~~ UJ
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	50	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	1.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	U	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104242

Total Target Concentration 0

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-011
Client Id: TB
Data File: 3M56469.D
Analysis Date: 11/24/08 22:55
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	~~U~~ UJ
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	50	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	1.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	75-65-0	t-Butyl Alcohol	5.0	U
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	~~U~~	127-18-4	Tetrachloroethene	1.0	U
107-02-8	Acrolein	5.0	U	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104242

Total Target Concentration 0

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.

R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC41270-012
Client Id: PW05-05 U
Data File: 3M56546.D
Analysis Date: 11/26/08 12:11
Date Rec/Extracted: 11/21/08-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 624
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: ug/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	1.0	U	75-15-0	Carbon Disulfide	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	56-23-5	Carbon Tetrachloride	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	1.0	U	108-90-7	Chlorobenzene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U	75-00-3	Chloroethane	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U	67-66-3	Chloroform	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U	74-87-3	Chloromethane	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U	156-59-2	cis-1,2-Dichloroethene	1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	U	10061-01-5	cis-1,3-Dichloropropene	1.0	~~U~~ UJ
120-82-1	1,2,4-Trichlorobenzene	1.0	U	110-82-7	Cyclohexane	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	U	124-48-1	Dibromochloromethane	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropa	1.0	U	75-71-8	Dichlorodifluoromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	~~U~~ UJ	100-41-4	Ethylbenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U	98-82-8	Isopropylbenzene	1.0	U
107-06-2	1,2-Dichloroethane	0.50	U	136777612	m&p-Xylenes	2.0	U
78-87-5	1,2-Dichloropropane	1.0	U	79-20-9	Methyl Acetate	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	U	108-87-2	Methylcyclohexane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U	75-09-2	Methylene Chloride	1.0	U
142-28-9	1,3-Dichloropropane	1.0	U	1634-04-4	Methyl-t-butyl ether	0.50	U
106-46-7	1,4-Dichlorobenzene	1.0	U	104-51-8	n-Butylbenzene	1.0	U
123-91-1	1,4-Dioxane	50	~~U~~ R	103-65-1	n-Propylbenzene	1.0	U
78-93-3	2-Butanone	1.0	U	95-47-6	o-Xylene	1.0	U
110-75-8	2-Chloroethylvinylether	1.0	~~U~~ UJ	135-98-8	sec-Butylbenzene	1.0	U
591-78-6	2-Hexanone	1.0	U	100-42-5	Styrene	1.0	U
99-87-6	4-Isopropyltoluene	1.0	U	**75-65-0**	**t-Butyl Alcohol**	**5.0**	**33**
108-10-1	4-Methyl-2-Pentanone	1.0	U	98-06-6	t-Butylbenzene	1.0	U
67-64-1	Acetone	5.0	~~U~~ UJ	**127-18-4**	**Tetrachloroethene**	**1.0**	**1.3**
107-02-8	Acrolein	5.0	U	108-88-3	Toluene	1.0	U
107-13-1	Acrylonitrile	1.0	U	156-60-5	trans-1,2-Dichloroethene	1.0	U
71-43-2	Benzene	0.50	U	10061-02-6	trans-1,3-Dichloropropene	1.0	U
74-97-5	Bromochloromethane	1.0	U	79-01-6	Trichloroethene	1.0	U
75-27-4	Bromodichloromethane	1.0	U	75-69-4	Trichlorofluoromethane	1.0	U
75-25-2	Bromoform	1.0	U	75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U	1330-20-7	Xylenes (Total)	1.0	U

Worksheet #: 104242

Total Target Concentration 34 ug/L

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used.

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-001	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW-06-04 U	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	8700 J	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-36-0	Antimony	7.5	ND	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-38-2	Arsenic	20	31	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-39-3	Barium	25	170	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-41-7	Beryllium	4.0	ND	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-43-9	Cadmium	2.0	ND	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-70-2	Calcium	1000	17000	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-47-3	Chromium	25	64	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-48-4	Cobalt	10	42	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-50-8	Copper	25	95	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7439-89-6	Iron	150	50000	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7439-92-1	Lead	5.0	26	0.5	11/30/08	9738	A9738C2	22	P	PEICP2
7439-95-4	Magnesium	1000	5700	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7439-96-5	Manganese	25	480	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7439-97-6	Mercury	0.20	ND	1	12/03/08	9738	H9738A	18	CV	HGCV1
7440-02-0	Nickel	10	53	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-09-7	Potassium	2500	3200	0.5	11/27/08	9738	A9738B2	21	P	PEICPRAD2
7782-49-2	Selenium	25	ND	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-22-4	Silver	10	ND	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-23-5	Sodium	2500	33000	0.5	11/27/08	9738	A9738B2	21	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-62-2	Vanadium	25	46	0.5	11/26/08	9738	A9738A2	22	P	PEICP2
7440-66-6	Zinc	25	130 J	0.5	11/26/08	9738	A9738A2	22	P	PEICP2

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-002	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW-06-04 F	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	230 J	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-36-0	Antimony	7.5	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-38-2	Arsenic	20	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-39-3	Barium	25	94	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-41-7	Beryllium	4.0	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-43-9	Cadmium	2.0	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-70-2	Calcium	1000	16000	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-47-3	Chromium	25	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-48-4	Cobalt	10	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-50-8	Copper	25	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7439-89-6	Iron	150	44000	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7439-92-1	Lead	5.0	ND	0.5	11/30/08	9738	A9738C2	23	P	PEICP2
7439-95-4	Magnesium	1000	5000	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7439-96-5	Manganese	25	380	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7439-97-6	Mercury	0.20	ND	1	12/03/08	9738	H9738A	19	CV	HGCV1
7440-02-0	Nickel	10	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-09-7	Potassium	2500	ND	0.5	11/27/08	9738	A9738B2	22	P	PEICPRAD2
7782-49-2	Selenium	25	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-22-4	Silver	10	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-23-5	Sodium	2500	29000	0.5	11/27/08	9738	A9738B2	22	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-62-2	Vanadium	25	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2
7440-66-6	Zinc	25	ND	0.5	11/26/08	9738	A9738A2	23	P	PEICP2

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-005	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW-05-07 U	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	30000 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-36-0	Antimony	7.5	ND	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-38-2	Arsenic	20	21 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-39-3	Barium	25	200 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-41-7	Beryllium	4.0	ND UJ	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-43-9	Cadmium	2.0	ND	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-70-2	Calcium	1000	15000 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-47-3	Chromium	25	62 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-48-4	Cobalt	10	23 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-50-8	Copper	25	57 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7439-89-6	Iron	150	31000 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7439-92-1	Lead	5.0	40 J	0.5	11/30/08	9738	A9738C2	24	P	PEICP2
7439-95-4	Magnesium	1000	3700 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7439-96-5	Manganese	25	210 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7439-97-6	Mercury	0.20	ND UJ	1	12/03/08	9738	H9738A	20	CV	HGCV1
7440-02-0	Nickel	10	27 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-09-7	Potassium	2500	3400 J	0.5	11/27/08	9738	A9738B2	23	P	PEICPRAD2
7782-49-2	Selenium	25	ND	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-22-4	Silver	10	ND	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-23-5	Sodium	2500	140000 J	0.5	11/27/08	9738	A9738B2	23	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-62-2	Vanadium	25	56 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2
7440-66-6	Zinc	25	120 J	0.5	11/26/08	9738	A9738A2	24	P	PEICP2

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV - ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-006	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW-05-07 F	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	1200]	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-36-0	Antimony	7.5	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-38-2	Arsenic	20	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-39-3	Barium	25	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-41-7	Beryllium	4.0	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-43-9	Cadmium	2.0	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-70-2	Calcium	1000	6700	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-47-3	Chromium	25	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-48-4	Cobalt	10	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-50-8	Copper	25	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7439-89-6	Iron	150	13000]	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7439-92-1	Lead	5.0	ND	0.5	11/30/08	9738	A9738C2	25	P	PEICP2
7439-95-4	Magnesium	1000	1800	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7439-96-5	Manganese	25	67	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7439-97-6	Mercury	0.20	ND	1	12/03/08	9738	H9738A	23	CV	HGCV1
7440-02-0	Nickel	10	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-09-7	Potassium	2500	ND	0.5	11/27/08	9738	A9738B2	24	P	PEICPRAD2
7782-49-2	Selenium	25	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-22-4	Silver	10	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-23-5	Sodium	2500	85000	0.5	11/27/08	9738	A9738B2	24	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-62-2	Vanadium	25	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2
7440-66-6	Zinc	25	ND	0.5	11/26/08	9738	A9738A2	25	P	PEICP2

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-007	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW-65-07 U	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	400	260000 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-36-0	Antimony	30	ND	2	12/01/08	0738	A9738F2	11	P	PEICP2
7440-38-2	Arsenic	80	460 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-39-3	Barium	100	1900 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-41-7	Beryllium	16	18 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-43-9	Cadmium	8.0	ND	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-70-2	Calcium	4000	55000 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-47-3	Chromium	100	700 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-48-4	Cobalt	40	500 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-50-8	Copper	100	1200 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7439-89-6	Iron	600	390000 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7439-92-1	Lead	20	590 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7439-95-4	Magnesium	4000	21000 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7439-96-5	Manganese	100	600 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7439-97-6	Mercury	0.20	2.3 J	1	12/03/08	9738	H9738A	24	CV	HGCV1
7440-02-0	Nickel	40	690 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-09-7	Potassium	10000	21000 J	2	12/01/08	9738	A9738G2	10	P	PEICPRAD2
7782-49-2	Selenium	100	ND	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-22-4	Silver	40	ND	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-23-5	Sodium	10000	71000 J	2	12/01/08	9738	A9738G2	10	P	PEICPRAD2
7440-28-0	Thallium	20	ND	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-62-2	Vanadium	100	1000 J	2	12/01/08	9738	A9738F2	11	P	PEICP2
7440-66-6	Zinc	100	2500 J	2	12/01/08	9738	A9738F2	11	P	PEICP2

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-008	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW-65-07 F	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc		Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	740	J	0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-36-0	Antimony	7.5	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-38-2	Arsenic	20	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-39-3	Barium	25	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-41-7	Beryllium	4.0	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-43-9	Cadmium	2.0	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-70-2	Calcium	1000	6600		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-47-3	Chromium	25	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-48-4	Cobalt	10	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-50-8	Copper	25	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7439-89-6	Iron	150	710	J	0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7439-92-1	Lead	5.0	ND		0.5	11/30/08	9738	A9738C2	31	P	PEICP2
7439-95-4	Magnesium	1000	2000		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7439-96-5	Manganese	25	56		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7439-97-6	Mercury	0.20	ND		1	12/03/08	9738	H9738A	25	CV	HGCV1
7440-02-0	Nickel	10	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-09-7	Potassium	2500	ND		0.5	11/27/08	9738	A9738B2	30	P	PEICPRAD2
7782-49-2	Selenium	25	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-22-4	Silver	10	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-23-5	Sodium	2500	52000		0.5	11/27/08	9738	A9738B2	30	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-62-2	Vanadium	25	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2
7440-66-6	Zinc	25	ND		0.5	11/26/08	9738	A9738A2	31	P	PEICP2

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-009	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	FB 112008 U	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-36-0	Antimony	7.5	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-38-2	Arsenic	20	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-39-3	Barium	25	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-41-7	Beryllium	4.0	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-43-9	Cadmium	2.0	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-70-2	Calcium	1000	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-47-3	Chromium	25	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-48-4	Cobalt	10	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-50-8	Copper	25	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7439-89-6	Iron	150	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7439-92-1	Lead	5.0	ND	0.5	11/30/08	9738	A9738C2	32	P	PEICP2
7439-95-4	Magnesium	1000	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7439-96-5	Manganese	25	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7439-97-6	Mercury	0.20	ND	1	12/03/08	9738	H9738A	26	CV	HGCV1
7440-02-0	Nickel	10	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-09-7	Potassium	2500	ND	0.5	11/27/08	9738	A9738B2	31	P	PEICPRAD2
7782-49-2	Selenium	25	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-22-4	Silver	10	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-23-5	Sodium	2500	ND	0.5	11/27/08	9738	A9738B2	31	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-62-2	Vanadium	25	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2
7440-66-6	Zinc	25	ND	0.5	11/26/08	9738	A9738A2	32	P	PEICP2

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-010	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	FB 112008 F	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-36-0	Antimony	7.5	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-38-2	Arsenic	20	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-39-3	Barium	25	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-41-7	Beryllium	4.0	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-43-9	Cadmium	2.0	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-70-2	Calcium	1000	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-47-3	Chromium	25	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-48-4	Cobalt	10	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-50-8	Copper	25	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7439-89-6	Iron	150	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7439-92-1	Lead	5.0	ND	0.5	11/30/08	9738	A9738C2	33	P	PEICP2
7439-95-4	Magnesium	1000	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7439-96-5	Manganese	25	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7439-97-6	Mercury	0.20	ND	1	12/03/08	9738	H9738A	27	CV	HGCV1
7440-02-0	Nickel	10	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-09-7	Potassium	2500	ND	0.5	11/27/08	9738	A9738B2	32	P	PEICPRAD2
7782-49-2	Selenium	25	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-22-4	Silver	10	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-23-5	Sodium	2500	ND	0.5	11/27/08	9738	A9738B2	32	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-62-2	Vanadium	25	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2
7440-66-6	Zinc	25	ND	0.5	11/26/08	9738	A9738A2	33	P	PEICP2

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-012	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW05-05 U	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc		Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	1100	J	0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-36-0	Antimony	7.5	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-38-2	Arsenic	20	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-39-3	Barium	25	93		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-41-7	Beryllium	4.0	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-43-9	Cadmium	2.0	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-70-2	Calcium	1000	11000		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-47-3	Chromium	25	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-48-4	Cobalt	10	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-50-8	Copper	25	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7439-89-6	Iron	150	1600		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7439-92-1	Lead	5.0	ND		0.5	11/30/08	9738	A9738C2	14	P	PEICP2
7439-95-4	Magnesium	1000	1600		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7439-96-5	Manganese	25	5400		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7439-97-6	Mercury	0.20	ND		1	12/03/08	9738	H9738A	14	CV	HGCV1
7440-02-0	Nickel	10	160		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-09-7	Potassium	2500	ND		0.5	11/27/08	9738	A9738B2	13	P	PEICPRAD2
7782-49-2	Selenium	25	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-22-4	Silver	10	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-23-5	Sodium	2500	21000		0.5	11/27/08	9738	A9738B2	13	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-62-2	Vanadium	25	ND		0.5	11/26/08	9738	A9738A2	14	P	PEICP2
7440-66-6	Zinc	25	34	J	0.5	11/26/08	9738	A9738A2	14	P	PEICP2

Comments: _____

_____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC41270-013	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	PW05-05 F	Units:	UG/L	Lab Code:		Sdg No:	
Matrix:	AQUEOUS	Date Rec:	11/21/2008	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Analysis Date:	Prep Batch	File:	Seq Num:	M	Instr
7429-90-5	Aluminum	100	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-36-0	Antimony	7.5	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-38-2	Arsenic	20	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-39-3	Barium	25	120	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-41-7	Beryllium	4.0	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-43-9	Cadmium	2.0	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-70-2	Calcium	1000	11000	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-47-3	Chromium	25	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-48-4	Cobalt	10	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-50-8	Copper	25	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7439-89-6	Iron	150	590	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7439-92-1	Lead	5.0	ND	0.5	11/30/08	9738	A9738C2	34	P	PEICP2
7439-95-4	Magnesium	1000	1400	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7439-96-5	Manganese	25	5300	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7439-97-6	Mercury	0.20	ND	1	12/03/08	9738	H9738A	28	CV	HGCV1
7440-02-0	Nickel	10	150	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-09-7	Potassium	2500	ND	0.5	11/27/08	9738	A9738B2	33	P	PEICPRAD2
7782-49-2	Selenium	25	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-22-4	Silver	10	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-23-5	Sodium	2500	21000	0.5	11/27/08	9738	A9738B2	33	P	PEICPRAD2
7440-28-0	Thallium	5.0	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-62-2	Vanadium	25	ND	0.5	11/26/08	9738	A9738A2	34	P	PEICP2
7440-66-6	Zinc	25	110 J	0.5	11/26/08	9738	A9738A2	34	P	PEICP2

Comments: _____

_____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Appendix C
Support Documentation/Resubmission
If Applicable

PRESERVATION DOCUMENT

Batch Number AC41270

Entered By: children

Date Entered 11/21/2008 11:58:00 AM

Lab#:	Container Siz	Container Typ	Paramete	Preservative	PH
AC41270-001	1L	P	METALS	HNO3	1
AC41270-001	40ML	G	VO+10	HCL	1
AC41270-002	NA	NA	NA	NA	NA
AC41270-003	40ml	G	VO+10	HCL	1
AC41270-004	40ml	G	VO+10	HCL	1
AC41270-005	40ml	G	VO+10	HCL	1
AC41270-005	1L	P	METALS	HNO3	1
AC41270-006	NA	NA	NA	NA	NA
~~AC41270-006~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~
AC41270-007	40ml	G	VO+10	HCL	1
AC41270-007	1L	P	METALS	HNO3	1
~~AC41270-008~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~
~~AC41270-008~~	~~40ML~~	~~G~~	~~VO+10~~	~~HCL~~	~~1~~
AC41270-009	40ml	G	VO+10	HCL	1
AC41270-009	1L	P	METALS	HNO3	1
AC41270-010	NA	NA	NA	NA	NA
AC41270-011	40ml	G	VO+10	HCL	1
AC41270-012	40ml	G	VO+10	HCL	1
AC41270-012	1L	P	METALS	HNO3	1
AC41270-013	NA	NA	NA	NA	NA

JK 11/24/08

FINAL WORK PLAN

GROUNDWATER EVALUATION
ANCHOR LITH KEM LO SITE
Site Number: 1-30-021

Work Assignment No.
D004436-08

Prepared for:

SUPERFUND STANDBY PROGRAM
New York State
Department of Environmental Conservation
625 Broadway
Albany, New York 12233

November 2007

Prepared by:

Earth Tech Northeast, Inc.
300 Broadacres Drive
Bloomfield, NJ 07003-3153

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C Health and Safety Plan

1.0 INTRODUCTION

Earth Tech Northeast, Inc. (Earth Tech) has been issued Work Assignment # D004436-08 under the New York State Department of Environmental Conservation (NYSDEC) State Superfund Standby Program. The Site under this work assignment is Anchor Lith Kem Ko (Site # 1-30-021). The location of the Site is shown on Figure 1.

The specific objective of this work assignment, as defined by the NYSDEC, is to conduct a groundwater evaluation in order to determine if contamination is emanating from the site. The work will be performed in accordance with NYSDEC Division of Environmental Remediation Draft DER-10 Technical Guidance for Site Investigation and Remediation, dated December 2002.

Earth Tech has developed and submitted this management plan for NYSDEC's review and approval. It includes a detailed budget based upon the scope of work outlined in the work assignment (WA) letter issued by the Department on June 28, 2007. In addition, this submittal includes a staffing plan and proposed schedule and a subcontractor utilization plan including a Minority/Women Business Enterprise (M/WBE) utilization plan.

1.1 Site Description

Information on the location, history, previous investigations, and site geology are provided in the subsections below.

1.1.1 General/Location

The Anchor Lith Kem Ko (Anchor Chemical) site (herein identified as the site) is located at 500 West John Street in the Village of Hicksville, Town of Oyster Bay, Nassau County, New York (Section 11: Block 499, Lot 87). The site covers approximately 1.5 acres (100 feet by 400 feet) and includes a 28,850 square foot, two-story masonry structure. The remainder of the site is covered by pavement except for a small grassy area adjacent to West John Street. The site is currently occupied by the Cookie Factory Outlet.

The surrounding area is predominantly industrial with a recreational area to the northeast. The site is bordered to the west and east by commercial property, to the south by West John Street and to the north by Cantiague Park, a 125 acre recreational facility which includes a golf course. The aerial photograph provided on Figure 1 depicts the general conditions of the site and the adjacent properties.

A groundwater recharge basin lies to the east of the Site. Public water is available to everyone in the area, but the contaminated groundwater is a potential threat to the water supply wells. These water districts are located less than 6,500 feet south of the site.

1.1.2 Operational/Disposal History

Anchor Chemicals operated at the John Street location from 1964 to 1986. In 1978, Anchor Chemical was purchased by Chessco Industries and the facility name was changed to Anchor Lith Kem Ko. This facility blended and packed chemicals for the graphic art industries. The property has continued to change hands and has been utilized for various purposes. The last known use of the building was as a cookie factory.

Contamination at the site is generally attributed to the building's past use as a chemical blending and packaging operation. The chemicals utilized at the site were stored in seven above ground storage tanks

(ASTs) and seventeen underground storage tanks (USTs). The ASTs ranged from 550 to 1,500 gallons. The USTs were located beneath the concrete floor of the building with capacities ranging from 500 to 4,000 gallons. In the 1980s, six USTs were removed and determined to have been compromised. Investigations indicated that several on-site dry wells were contaminated due to site operations. From 1981 to 1991, all the known USTs were emptied and abandoned in place, and the ASTs were removed.

1.1.3 Remedial History

In 1977, the Nassau County Department of Health (NCDOH) discovered 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE), and tetrachloroethene (PCE) in samples from a drywell located north of the building in the parking lot. The facility utilized nine dry wells and one drain, which are located within the paved areas, to handle the stormwater.

In August 1981, the Nassau County Fire Marshal's (NCFM) office pressure-tested 14 USTs that contained flammable materials. Based on the pressure test results, five USTs were determined to be compromised. The contents of the five compromised USTs were emptied and the USTs were taken out of service. The contents of the compromised USTs consisted of naphthol spirits, acetone, mineral spirits, isopropyl alcohol, and textile spirits. Three other USTs containing methylene chloride, diethylene glycol, and 1,1,1-TCA were not tested because they did not contain flammable material and thus did not fall under the jurisdiction of the NCFM.

In July 1982, a meeting was organized and the facility schematics from 1965 to 1975 indicated that 1,1,1-TCA was stored in Tank #8, which contained mineral spirits at the time of the pressure test conducted by NCFM in August 1981. The pressure test results indicated that the UST was compromised.

In September 1982, soil and groundwater samples were collected. Based on the laboratory data, the primary contaminants were 1,1,1-TCA, methylene chloride, and PCE.

In December 1982, three monitoring wells, identified as MW-1, MW-2, and MW-3, were sampled to confirm the initial results and the three USTs that were not tested by NCFM were pressure tested. Analytical data indicate that 1,1,1-TCA was detected at 800 µg/L, 6 µg/L, and 24,000 µg/L in groundwater samples from MW-1, MW-2, and MW-3, respectively. The pressure tests indicated that one UST containing methylene chloride was compromised. The contents of the compromised UST were emptied and the UST was taken out of service.

In 1983, the six compromised USTs were filled with concrete and abandoned in place.

In January 1983, the site was included in on the New York State Department of Environmental Conservation (NYSDEC) list of hazardous waste sites. The site was included in the registry as a Class 2 site due to a consequential amount of hazardous waste that was released to the environment and constitutes a significant threat to the public health and environment.

In June 1983, monitoring wells MW-1, MW-2, and MW-3 were re-sampled. Based on the laboratory results, 1,1,1-TCA was detected at 180 µg/L, less than 1 µg/L and 7,000 µg/L at MW-1 through MW-3, respectively. When these wells were sampled again in January 1984 the laboratory results were 80 µg/L, 3 µg/L and 1,000 µg/L.

In 1985, the seven ASTs were removed.

In June 1986, the United States Environmental Protection Agency (USEPA) listed the site on the National Priorities List (NPL). Following the listing of the site on the NPL, USEPA issued administrative orders

on consent to the potential responsible parties to undertake a remedial investigation/feasibility study (RI/FS). The investigation activities included the items listed below.

- Inspection and closure of 11 USTs;
- Installation of four shallow and four deep groundwater monitoring wells;
- Three rounds of groundwater samples;
- Two rounds of soil samples from under the USTs; and
- One round of sediment samples from nine dry wells, on drain, and two cesspools.

In June 1991, the remaining 11 USTs were filled with concrete and abandoned in place.

In September 1995, NCDOH requested the EPA conduct an off-site groundwater monitoring program due to the significant levels of VOCs and metals in the groundwater at the site and the close proximity of the public supply wells.

A summary of the elevated concentrations of 1,1,1-TCA, chromium, and lead in groundwater and soil samples is presented below.

Groundwater Contaminants of Concern:

• 1,1,1-TCA	April 1992	MW-3 (8 µg/L);
	Nov. 1992	MW-4 (2 µg/L); and
	Feb. 1995	MW-5S (29 µg/L);
• Chromium	April 1992	MW-2 (317 µg/L), MW-3 (227 µg/L), and MW-1D (132 µg/L);
	Nov. 1992	MW-2 (1,440 µg/L), and MW-3 (1,150 ppb);
• Lead	April 1992	MW-2 (74.7 µg/L), and MW-3 (30.2 µg/L);
	Nov. 1992	MW-2 (240 µg/L), and MW-3 (71.5 µg/L).

Soil Contaminants of Concern:

- 1,1,1-TCA DW-2 (3,300 µg/kg)
- Chromium DW-2 (463 mg/kg), DW-3 (101 mg/kg), DW-6 (240 mg/kg), and DW-8 (198 mg/kg); and
- Lead DW-2 (1,210 mg/kg), DW-3 (607 mg/kg), DW-6 (1,120 mg/kg), and DW-8 (1,620 mg/kg).

After the excavation of soils contaminated with 1,1,1-TCA, chromium, and lead from four dry wells to prevent further groundwater contamination, a Record of Decision (ROD) was issued for this site on September 29, 1995, calling for no further action. In April 1996 and July 1997, EPA collected confirmatory groundwater samples from MW-4, MW-5S, MW-5D, MW-6S, and MW-6D to evaluate the groundwater quality on-site. Based on the sample results, EPA removed the site from the NPL in September 1999.

In September 2003, groundwater investigations were conducted to evaluate groundwater quality downgradient of the nearby Sylvania site, located to the west of Anchor Lith Kem Ko. 1,1,1,-TCA was detected at a concentration of 57 ppb at one location, identified as P30, at a depth of 100 feet below ground surface (ft bgs).

In October 2005 NYSDEC inspected the condition of nine of the eleven monitoring wells located at the site. Based on the site inspection, five of the monitoring wells, identified as MW-4, MW-5S, MW-5D, MW-6S, and MW-6D, were determined to be in "good" condition and were included in sampling program conducted in December, 2005. The other four monitoring wells inspected, identified as MW-2, MW-3, MW-7S, and MW-7D, were determined to be compromised due to either their location within a

low lying area of collection of debris within the monitoring well housing; therefore, they were not included in the proposed sampling program because of the potential from surface contaminants to impact the monitoring wells. The locations of the monitoring wells are shown on Site Plan (Figure 2).

In December 2005, NYSDEC sampled the five existing groundwater monitoring wells determined to be in "good" condition, identified as MW-4, MW-5S, MW-5D, MW-6S, and MW-6D; the results of this sampling event suggests that the on-site groundwater underlying the site is no longer contaminated. However, low concentrations of 1,1,1-TCA were detected in public wells located in the region from 1977 to 2005. Due to the lack of an off-site groundwater evaluation performed during the remedial investigation, a preliminary investigation of the aquifer downgradient of the site is necessary to determine if contaminated groundwater has migrated off-site.

On February 4, 2005 the site was included on the List of Inactive Hazardous Waste Sites with Pre-2003 Remedial Decisions where Disposal of Chlorinated Hydrocarbons Occurred (vapor intrusion legacy site list). The site owner has agreed to evaluate the vapor intrusion concerns. This work plan addresses the state-funded groundwater investigation.

1.1.4 Site Geology and Hydrogeology

Previous reports indicate that subsurface materials at the site consist of fine sandy granular soils.

Based on documented groundwater measurements, the depth to groundwater was approximately 60 ft bgs and the groundwater flow direction is towards the south-southwest.

1.2 Work Plan Organization

This volume, the Work Plan proper, provides the background information, administrative information including subcontracting, schedule, and budget (provided as Appendix 1 to this volume). Additional project plans which are an integral component of the project documents are provided as attachments to this Work Plan and include:

Field Activities Plan – Attachment A

Quality Assurance Project Plan – Attachment B

Health and Safety Plan – Attachment C

The scope and content of each of these plans is summarized in Section 2 of this Work Plan.

2.0 SCOPE OF WORK

The following scope of work has been developed in accordance with the Work Assignment narrative provided by NYSDEC. The scope is divided into five tasks:

- Task 1 – Work Plan Development;
- Task 2 – Off-Site Groundwater Evaluation – Phase I,
- Task 3 – Off-Site Groundwater Evaluation – Phase II,
- Task 4 – Surveying & Investigative Derived Waste Disposal, and
- Task 5 – Field Documentation and Reporting.

2.1 Task 1 - Work Plan Development

A meeting will be held at the site to discuss this work assignment and the requirements of the work plan. During the on-site meeting Earth Tech will attempt to locate and verify the condition of the on-site monitoring wells. Based on the meeting, Earth Tech will prepare a dynamic work plan to evaluate groundwater conditions.

The Work Plan document consists of the following components:

- Site Specific Field Activities Plan;
- Site-Specific Quality Assurance Project;
- Site-Specific Health and Safety Plan;
- Detailed Work Assignment Budget
- Final Progress Schedule

These items are discussed below.

2.1.1 Field Activities Plan

The Draft Field Activities Plan (FAP) provided as Attachment A, describes the planned field activities. The major field activities include locating and accessing 11 existing wells, the installation and development of 7 permanent Solinst CMT multilevel systems (seven channel systems) and sampling the existing and new wells. The objective of these field activities is to evaluate groundwater at the site to determine if contamination is emanating from the site. The FAP provides sufficient detail for field personnel to complete the tasks. The FAP will include a discussion of each of the activities to be completed including rationale, methodology, numbers of samples to be collected, disposal of IDW, etc. This information will also be summarized on tables and figures (type and number of samples, analyses, etc.).

To minimize redundancy, required items which are described in detail elsewhere will not be repeated in the FAP, but the relevant plan (and section) where the information is located will be cited.

2.1.2 Quality Assurance Project Plan

A site-specific Quality Assurance Project Plan (QAPP), provided as Attachment B, has been developed to address QA/QC requirements for this Work Assignment. The QAPP will include descriptions of the following:

- Project Management and Organization - This will include project personnel and responsibilities, identification of subcontractors, and schedule;
- Sample handling, including sample identification, bottles and custody;
- Data Quality Requirements - This will include definition of the data quality objectives, type and frequency of field QA/QC samples and field and laboratory QA/QC;
- Custody Documentation Requirements;
- Laboratory Equipment Maintenance Requirements;
- Data Reduction, Validation and Reporting; and
- Audits and quality assurance reporting requirements.

To minimize redundancy, required items which are described in detail elsewhere will not be repeated in the QAPP, but the relevant plan (and section) where the information is located will be cited.

The estimated number of samples to be collected, including QA/QC samples, is shown on QAPP Table 2.

All samples collected will be analyzed by Hampton-Clarke Laboratory of Fairfield, New Jersey, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. Hampton-Clarke will provide analytical data in a NYSDEC Analytical Services Protocol Category B data deliverable format. Preliminary sample results will be provided in two weeks and final sample results will be provided within standard turnaround time (30 days). Laboratory data will be validated by a third party independent of the analytical laboratory and Earth Tech. The resume of the data validator will be provided for approval prior to initiating sampling activities. A data usability summary report (DUSR) will be submitted to the NYSDEC.

2.1.3 Health and Safety Plan

The site-specific worker health and safety requirements will be evaluated. A site-specific draft Health and Safety Plan (HASP) has been developed and is provided in Attachment C.

The HASP will include descriptions of the following:

- Project Management - This will include project personnel and responsibilities, and identification of subcontractors;
- An evaluation of the work to be performed including an assessment of risks and protective measures;
- Definition of Monitoring Requirements and Action Levels;
- Site control, Decontamination and Disposal Procedures;
- Emergency Contingency Plan; and,
- Administrative and reporting requirements.

To minimize redundancy, required items which are described in detail elsewhere will not be repeated in the HASP, but the relevant plan (and section) where the information is located will be cited.

Unless otherwise noted, it is assumed that all field work will be completed at USEPA level D personal protection in accordance with the Health and Safety Plan. Field activities will be monitored by an Earth Tech representative.

2.1.4 Detailed Budget

A detailed budget estimate for completing Task 1 through Task 5 has been developed in the required 2.11 series cost schedules and are presented in Appendix 1 of this Plan.

2.1.5 Final Progress Schedule

A progress schedule for completing the required tasks is presented in Section 3 of this Plan. The schedule identifies milestones and deliverables. The progress schedule is relative to the date of the Notice to Proceed. For purposes of developing the schedule, this date has been assumed to be November 16, 2007 per the Schedule in Figure 5. In addition, the schedule includes estimated time periods for NYSDEC review of submittals. The actual progress schedule may vary depending on the actual date of the Notice to Proceed and NYSDEC review of submittals within estimated time periods.

2.2 Task 2 – Phase I Evaluation of Off-Site Groundwater

The activities that will be performed under this task involve the assessment of groundwater quality within the anticipated off-site plume. Due to the potential for contamination to have migrated off-site via groundwater, the assessment will be performed in a manner capable of profiling the migration pathway to link the off-site contamination to the site. The approximate locations of the proposed groundwater sampling points are shown on Figure 2 (on-site monitoring well locations) and Figure 3 (off-site CMT locations).

This task will include:

- Installation of 7 Solinst CMT Multilevel Sampling Systems (seven channels per location) located downgradient of the site to a depth ranging from 130 to 220 feet below ground surface (bgs);
- Each of the Solinst CMTs will have seven discrete sampling ports in order to accurately profile the groundwater column. Sample ports will be spaced approximately 10 to 25 feet apart depending on the location. The first screen interval will be located approximately five ft below the groundwater interface: PW-01 will extend to approximately 130 ft bgs with screens spaced 10 ft apart; PW-02 through PW-04 will extend to approximately 160 ft bgs with screens spaced 15 ft apart; and PW-05 through PW-07 will extend to approximately 220 ft bgs with screens spaced 25 ft apart.
- Collection and analysis of 60 groundwater samples for volatile organic compounds (VOCs) and metals from the seven new Solinst CMTs (seven channels each for a total of 49 samples) and the 11 existing monitoring wells (MW-1S, MW-1D, MW-2, MW-3, MW-4, MW-5S, MW-5D, MW-6S, MW-6D, MW-7S and MW-7D).

Detailed information on the execution of this Task is provided in the FAP and QAPP.

2.2.1 Groundwater Profiling

Earth Tech will assess the groundwater quality vertically at the identified groundwater profile points shown of Figure 3. Solinst CMTs will be installed to obtain 7 discrete samples in order to profile the groundwater column. The clusters will be located within the anticipated limits of the groundwater contamination to properly evaluate the groundwater quality. Groundwater sampling ports associated with PW01 will be spaced approximately 10 ft apart vertically, beginning five ft below groundwater interface (approximately 60 ft bgs) and extending to an approximate depth of 130 ft bgs. Groundwater sampling ports associated with PW02 through PW04 will be spaced approximately 15 ft apart vertically, beginning at groundwater interface and extending to an approximate depth of 160 ft bgs. Groundwater sampling ports associated with PW05 through PW07 will be spaced approximately 25 feet apart vertically, beginning at groundwater interface and extending to an approximate depth of 220 ft bgs. The screened interval will span approximately two feet at each sampling port. Well construction will be performed in a manner that limits vertical migration of contaminants between the sample ports. Each monitoring well will be developed after installation.

2.2.2 Groundwater Monitoring Well Sampling

Fourteen days after installation and development of the proposed monitoring wells, Earth Tech will gauge the depth to water in the proposed off-site monitoring wells and from the existing on-site monitoring wells to provide information on groundwater flow in the vicinity of the site. Based on field measurements and established survey datum, a groundwater flow contour will be provided by Earth Tech. Low flow sampling techniques in accordance with EPA Region II sampling protocols will be collected from the 11 existing on-site shallow and deep monitoring wells, identified as MW-1 through MW-7. Solinst CMTs will be sampled in accordance with Solinst CMT protocols described in the FAP. A total of 60 groundwater sample locations will be collected during Phase I. Samples will be analyzed for VOCs and metals. In low yield wells, the samples may be collected after well recharge if purged dry.

2.3 Task 3 – Phase II Define Off-Site Groundwater Contamination

Pending findings from Task 2, the installation of supplemental monitoring well clusters will be evaluated and if necessary performed to define the horizontal and vertical extents of the off-site groundwater contamination. Potential locations of supplemental monitoring well clusters are shown of Figure 3, but actual locations will be determined, if necessary, after Task 2 is completed. Installation of monitoring wells adjacent to Phase I locations may be necessary to refine the limits of the contamination detected as part of Phase I.

Anticipated tasks include:

- Refine the horizontal and vertical extents of contamination by installing up to 11 monitoring well clusters;
- Each monitoring well cluster will be capable of providing 7 discrete sample points in order to accurately profile the groundwater column; and
- Collect and analyze approximately 87 groundwater samples for VOCs and metals from approximately 11 new monitoring well clusters and approximately 10 confirmatory samples from monitoring well locations previously sampled under Task 3.

Detailed information on the execution of this Task is provided in the FAP and QAPP.

2.3.1 Groundwater Profiling

Supplemental monitoring well clusters, tentatively identified in Figure 3 as PW08 through PW18, will be installed, if necessary, based on the results from Task 2 to further investigate potential concerns and/or to delineate the extents of the contamination. Based on the analytical results and spacing of the Phase I samples, one of the proposed eleven supplemental monitoring well clusters may be located adjacent to a Phase I monitoring well cluster to refine the vertical extent of contamination. Each groundwater profile point is anticipated to obtain approximately seven discrete samples in order to profile the groundwater column, but actual monitoring well construction will be determined based on the results of Task 2.

2.3.2 Groundwater Monitoring Well Sampling

Fourteen days after installation and development of the proposed monitoring wells, Earth Tech will gauge the depth to water in the proposed off-site monitoring wells and from the existing on-site monitoring wells to provide information on groundwater flow in the vicinity of the site. Based on field measurements and established survey datum, a groundwater flow contour will be provided by Earth Tech. Low flow sampling techniques in accordance with EPA Region II sampling protocols will be collected from 11 monitoring well clusters (77 off-site monitoring wells) and approximately 10 confirmatory samples from previously-sampled monitoring wells, for a total of 87 groundwater samples. In low yield wells, the samples may be collected after well recharge if purged dry.

2.4 Task 4 – Surveying & Investigative Derived Waste Disposal

Pending findings from Tasks 2 and 3, the monitoring wells installed will be surveyed and investigative derived waste (IDW) will be processed and disposed accordingly.

Anticipated tasks include:

- Survey existing and new monitoring well locations; and
- Coordinate the transportation and disposal of IDW.

2.4.1 Survey Sampling Locations

The locations of all sample points and newly installed monitoring wells will be surveyed. The horizontal positions will be tied into the North American Datum of 1983 and UTM Zone 18 N coordinate system. The vertical position will be tied to the North American Vertical Datum of 1988. The measuring point associated with the existing monitoring wells will be recorded to a vertical accuracy of ±0.01 ft. Three benchmarks will be established on existing site features. The site survey information will be provided on the aerial photograph that indicates current site features (i.e., roads, buildings, etc.) and can be utilized as a base map to illustrate site conditions.

2.4.2 Investigative Derived Wastes

IDW consisting of soil cuttings and purge water will be staged in appropriate containers and analyzed to determine the waste classification and appropriate disposal methods. Based on the analytical results, Earth Tech will dispose of the IDW at a NYSDEC-approved disposal facility.

2.5 Task 5 - Field Documentation and Reporting

2.5.1 Field Documentation Procedures

Field notebooks will be used during all on-site work. A dedicated field notebook will be maintained by the Earth Tech representative overseeing the site activities. In addition to the notebook, any and all sampling forms and purge forms used during the field activities will be submitted to the NYSDEC as part of the final letter report. Field and sampling procedures, including installation of the monitoring wells, groundwater sampling, etc. will be photo-documented.

2.5.2 Reporting

A total of four copies of a draft letter report will be submitted that documents the work conducted and presents the results of the sample analysis for review and comment by NYSDEC and NYSDOH. Upon receipt of the comments, Earth Tech will revise the draft letter report and print the requested number of final copies indicated in the comment letter. One copy of the final letter report; text, tables, maps, photos, etc., will be submitted as a single bookmarked pdf file. The electronic files will be submitted to NYSDEC on a compact disc. The laboratory analytical data will be submitted in NYSDEC EZ-EDD format, as specified in Section 2.0 of Exhibit H of the July 2005 Analytical Services Protocol.

3.0 STAFFING PLAN AND SCHEDULE

An organizational chart is presented on Figure 4.

A tentative schedule for this assignment is presented on Figure 5.

4.0 SUBCONTRACTING AND M/WBE PLAN

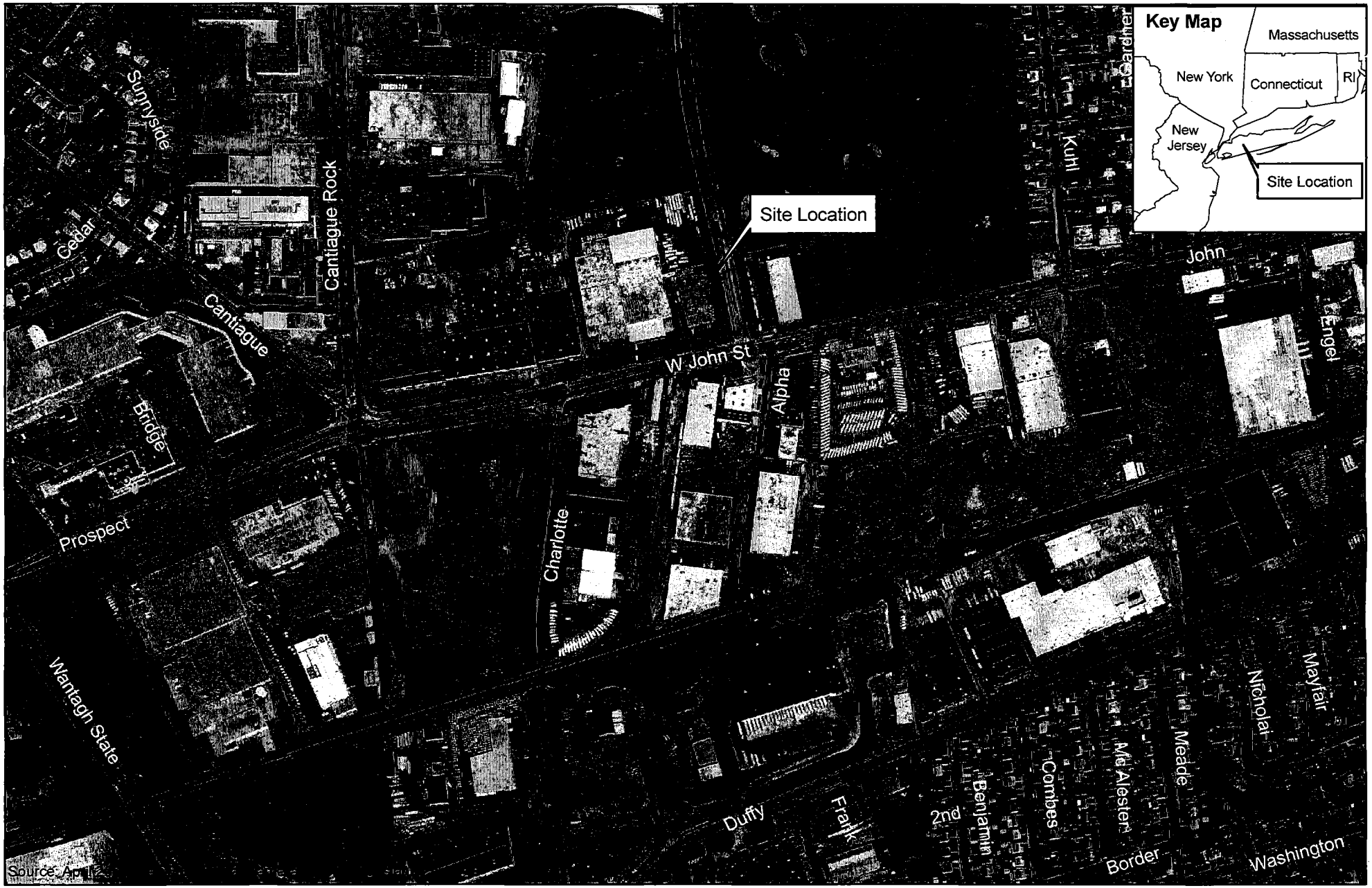
It is likely that the services of subcontractors will be required in the following areas:

- Land Surveying by YEC, Inc. (MBE)
- Drilling services for the installation of monitoring wells
- Installation and development services for multi-port wells
- Laboratory analyses
- Data validation

Earth Tech will make a good faith effort to use Minority Business Enterprises (MBE) and Women Business Enterprises (WBE) for at least 15 percent and 5 percent of the dollar value of the work, respectively.

5.0 PROJECT BUDGET

A summary of the proposed project level of effort and budget is presented in the attached 2.11 schedules for this assignment.



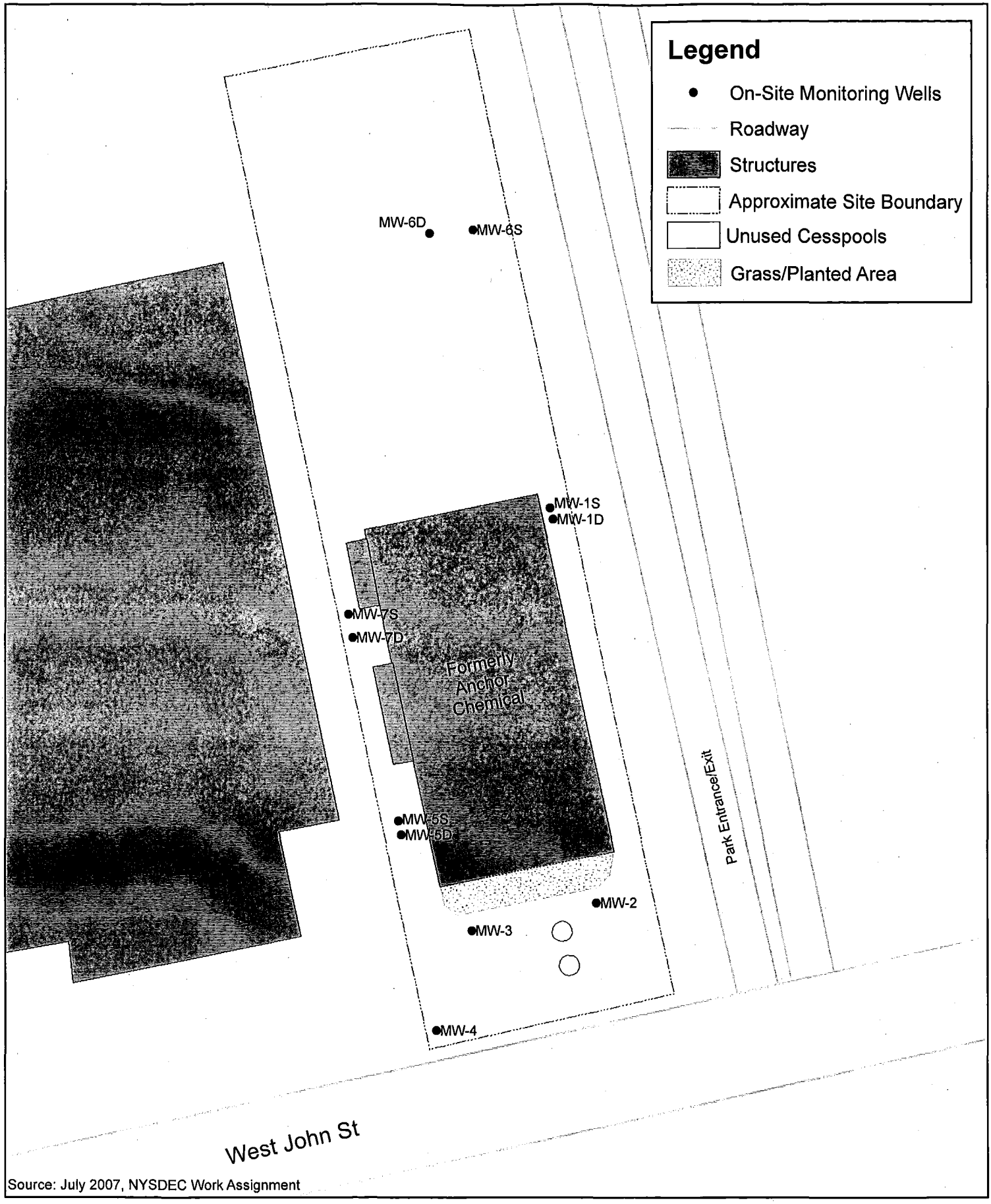
0 400,000 800,000 1,600,000 Feet

N W E S

NYSDEC Site No. 1-30-021
Anchor Lith Kem Ko Site
Hicksville, Nassau County, NY

Figure 1
Site Location

EarthTech
A tyco International Ltd. Company



Source: July 2007, NYSDEC Work Assignment

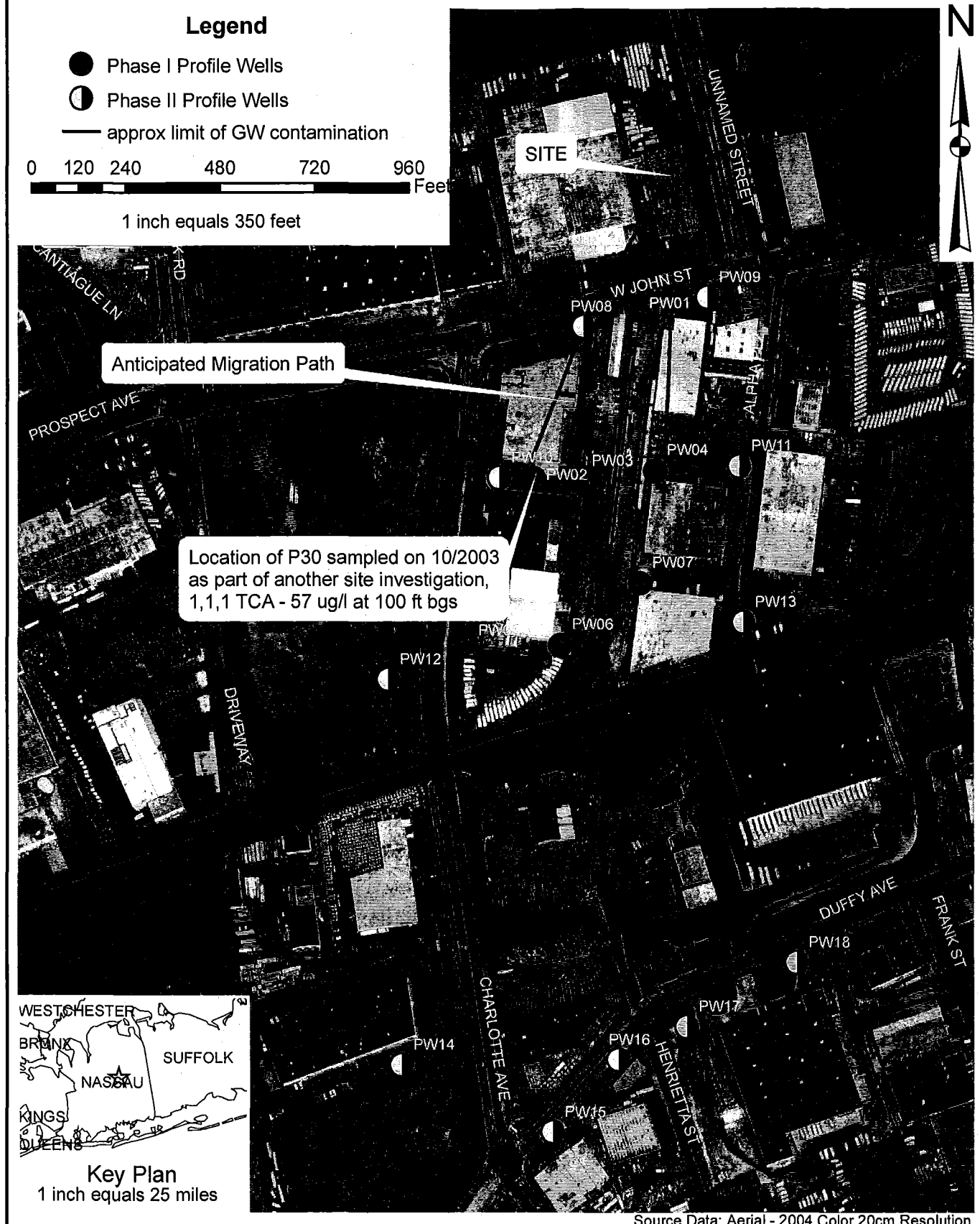
0 20 40 80 120 160 Feet

N W E S

NYSDEC
Anchor Lith Kem Ko
Site No. 1-30-021
Nassau County, NY

Figure 2
Site Plan

EarthTech
A tyco International Ltd. Company



Source Data: Aerial - 2004 Color 20cm Resolution

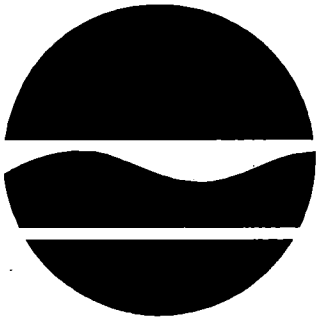
New York State Department of Environmental Conservation
Proposed Sample Locations
Anchor Lith Kem Ko, Site No. 1-30-021
Hicksville, Nassau County, New York

Created by: BFJ
Date: 6/26/06
Figure 3

Division of Environmental Remediation

VOLUNTARY CLEANUP PROGRAM GUIDE

DRAFT



May 2002

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* ERIN M. CROTTY, *Commissioner*

PROPOSED VOLUNTARY CLEANUP PROGRAM GUIDE
SUBMITTING COMMENTS

The New York State Department of Environmental Conservation is accepting comments on this draft guidance document from all interested parties until June 28, 2002. Written comments may be submitted to the Department at the following address:

NYS Department of Environmental Conservation
Attn. Andrew English
625 Broadway
Albany, New York 12233-7017

Phone: 518-402-9671
Fax: 518-402-9679

Written comments may also be sent via email to ajenglis@gw.dec.state.ny.us

VOLUNTARY CLEANUP PROGRAM GUIDE
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NOTICE

This reference document is not a statute or regulation, and it does not create legally binding obligations on any person, including employees of New York State, nor does it create a waiver for any person from any obligations created by applicable state and/or federal law. This guidance may be subject to change at the discretion of the Department.

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SECTION 1 PURPOSE AND GOALS OF PROGRAM

New York established its Voluntary Cleanup Program (VCP) to address the environmental, legal, and financial barriers that often hinder the redevelopment and reuse of contaminated properties. The VCP was developed to enhance private sector cleanups and to reduce the development pressures on "Greenfield" sites. This Program Guide has been prepared to help prospective Volunteers and other interested parties understand the goals and requirements of New York's VCP and to have a reference document that explains the process for completing a voluntary cleanup project.

New York's VCP is a cooperative approach among the New York State Department of Environmental Conservation (the Department), the New York State Department of Health (NYSDOH), and Volunteers to investigate and/or remediate contaminated sites and return these sites to productive use. Under the VCP, a Volunteer enters into a Voluntary Cleanup Agreement (VCA) with the Department and thereafter submits one or more work plans to investigate and/or remediate a site.

The goal under the VCP is to remediate the site to a level that is protective of public health and the environment for the Contemplated Use of the property (see §3.4). When the Volunteer completes remediation, the Department provides a release from the Department for remedial liability for the work done and the contaminants addressed, with standard reservations (see §4.4). If the investigation completed under Department oversight and pursuant to a VCA indicates that no remediation is needed to meet the remedial goal of the VCP, a release will also be issued. All activities performed under the VCA are carried out under the oversight of the Department. The Volunteer pays the State's oversight costs.

Currently, the Department's ability to administer the VCP is based on the authority found in several parts of New York's Environmental Conservation Law (the "ECL") and Navigation Law ("NL"). These laws differ regarding the treatment of petroleum and hazardous wastes/substances. In particular, hazardous wastes and hazardous substances are managed somewhat differently under the ECL when contrasted with petroleum issues under the NL. These distinctions are described below and are analyzed by the Department's staff during the application process.

The Department has delegated responsibility for managing the VCP to staff in the Divisions of Environmental Remediation (DER) and Environmental Enforcement (DEE). Other program divisions may manage voluntary cleanup projects consistent with these procedures. The NYSDOH is responsible for determining that work completed under VCAs at voluntary cleanup sites is protective of public health and appropriate for the Contemplated Use of the property. Regional staff are typically assigned as Project Managers for the sites and serve as the main contacts for Volunteers and the public. Central Office staff are responsible for providing guidance and oversight to promote statewide consistency in the program. In some cases, staff from Central Office will be assigned to manage a specific voluntary cleanup project.

Information regarding various aspects of the program can be obtained from the Department contacts listed in Appendix A. A list of abbreviations used in this document is given in Appendix F. In this document, the term "VCA" is intended to refer to both agreements and orders.

SECTION 2 GENERAL

2.1 Definitions

The following definitions are program-specific and apply only to the VCP as described in this guidance. The decision about whether a Volunteer is a PRP, innocent owner, or innocent non-owner is made by the Department's Project Attorney.

2.1.1 "**Hazardous Substance Site**" - one that contains any kind of hazardous waste, hazardous substance (including manufactured gas plant constituents), solid waste, or a mixture of petroleum with either hazardous waste, hazardous substances, or solid waste.

2.1.2 "**Petroleum Site**" - one that contains only petroleum contamination.

2.1.3 "**PRP**" - Potentially Responsible Party - a party, other than an "innocent owner" or "innocent non-owner" as defined below, responsible under law to remediate contamination disposed on, or released from, a property, including a discharger of petroleum.

2.1.4 "**Innocent Owner**" - An owner who meets all of the following criteria:

a. Acquired title to the property in an already contaminated condition after the cessation of the disposal or discharge of the contamination;
b. Did not participate in the operation of the facility from which contamination was released;
c. Has not by its own actions caused a release of contaminants into the environment at the site;
d. Is not responsible under law to remediate contamination disposed on or released from a property other than as a result of ownership subsequent to the cessation of the disposal or discharge of the contamination.

2.1.5 "**Innocent non-Owner**" - someone who is not a PRP under the law and has not acquired title to the property prior to entering into the VCP.

2.2 Eligibility

2.2.1 "**Eligible Sites**" - All sites are eligible for the VCP except the following:

a. Sites listed as Class 1 in the New York State Registry of Inactive Hazardous Waste Disposal Sites as referenced in 6 NYCRR Part 375-1.8;
b. Sites on the United States Environmental Protection Agency's (USEPA) National Priorities List (NPL), other than Onondaga Lake NPL Subsites, as noted on the USEPA's website at http://www.epa.gov/superfund/sites;
c. Hazardous waste management sites regulated pursuant to ECL Article 27, Title 9 and the 6 NYCRR Part 370 regulations promulgated pursuant thereto;
d. Sites that are currently subject to a Department or USEPA enforcement action may be deemed ineligible by the NYSDEC Project Attorney.

2.2.2 **"Eligible Parties"** - Any party is eligible to become a Volunteer **except** those listed below:

a. A discharger, as defined by law, at a petroleum site other than one who has purchased the site after the cessation of petroleum discharge;
b. A PRP, other than an "innocent owner" as defined herein, at a Class 2 site listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites;
c. A PRP subject to any "enforcement action" requiring the PRP to remove or remediate at the site a hazardous substance. For this purpose, an "enforcement action" commences against a PRP:
    (i) Under State law: upon issuance of a notification of violation or upon commencement of enforcement under ECL, Article 71 or upon issuance of an accusatory instrument under the Criminal Procedure law;
    (ii) Under federal law: upon issuance of any notification pursuant to federal law that commences an administrative or judicial proceeding seeking to require the removal or remediation of hazardous substances.

Questions regarding eligibility should be directed to the Department's Project Attorney.

2.3 Permits

At its discretion, the Department may exempt Volunteers from having to obtain permits issued by the New York State Department of Environmental Conservation. **All** Volunteers must comply with the substantive requirements of the Department's permit programs, but they may not be subject to the procedural requirements of those permit programs. This requires the Volunteer to follow the application process, but no formal permit is issued. The Volunteer must obtain all permits not issued by this Department including federal permits and permits issued by other New York State agencies and local authorities (e.g., the United States Army Corps of Engineers, the New York Department of State, etc.).

2.4 State Environmental Quality Review Act

The following paragraph describes when a voluntary cleanup project is subject to the requirements of the State Environmental Quality Review Act (SEQRA). Regulations on the State Environmental Quality Review (SEQRA) process can be found in 6 NYCRR Part 617.

All **investigation activities** under the VCP, regardless of the contaminants involved, are exempt from a SEQRA analysis. **Remedial activities** are subject to SEQRA. Agreements and orders with PRPs and innocent owners under the VCP are considered to fall within the SEQRA exemptions for civil or criminal enforcement proceedings from review. Therefore, only innocent non-owners must complete SEQRA reviews unless the cleanup is part of a project (e.g., a shopping center) that requires State or local review under the SEQRA independent of the VCP. If the issuance of a Negative Declaration is appropriate, it will be issued before the approval of a Remedial Action Work Plan. Fulfilling the SEQRA requirements for a Positive Declaration or Type I project is handled on a case-by-case basis.

2.5 Cost Recovery

Department oversight of VCP projects is required and the Volunteer is responsible for payment of these costs. This also includes any oversight performed by the NYSDOH. The Department, along with the NYSDOH, will review the investigation and remediation reports and determine if the project has been completed satisfactorily. Billing of oversight costs will occur after the work for each phase has been approved. Invoices will be sent to the Volunteer according to the terms specified in the Voluntary Cleanup Agreement (VCA). If past costs are included in the VCA, a bill for these services may be prepared before issuance of the completion letter. The amount of past costs and the duration of the scope of work in the VCA will determine if a separate bill for past costs will be sent to the Volunteer as opposed to sending one invoice which combines both past and oversight costs.

2.6 Operation, Monitoring and Maintenance

2.6.1 The need for operation, monitoring, and maintenance (OM&M) at a VCP site is dependent upon site-specific issues. Often, remediation consists solely of a removal action that does not require OM&M beyond the completion of the field work. For projects where the protectiveness of the remedy is dependent on continued OM&M, there must be a formal OM&M Plan with specific requirements including reporting. This includes cases where the effectiveness of the remedy depends upon the use of engineering or institutional controls. The Assignable Release, described in §4.4, is issued contingent upon satisfactory completion of the OM&M Plan. OM&M Plans are approved using the same procedure as an investigation work plan (see §6.7). A draft of the OM&M Plan (or an outline for large projects) should be submitted/included at the time of the draft Remedial Action Work Plan and is typically finalized subsequent to the construction of the remedy.

2.6.2 VCAs require that when applicable, Volunteers must submit to the Department an annual certification that institutional or engineering controls required for the remedy are still in place, have not been altered, and are still effective.

SECTION 3 APPLICATION PROCESS

3.1 Submission of Applications

Applicants must submit site-specific applications. VCAs will not be executed by the Department without complete applications. See Appendix A for the VCP Application Form, instructions, and contact persons.

3.1.1 Two copies of the application with all of the accompanying attachments, including one with original signatures, should be submitted to the Brownfields/Voluntary Cleanup Section (B/VCS), New York State Department of Environmental Conservation, Division of Environmental Remediation, 625 Broadway, Albany, New York 12233-7012.

3.1.2 Two copies of the application with all of the accompanying attachments, including one with original signatures, should be submitted to the appropriate Department Regional VCP Coordinator (see Appendix A). If the application will be submitted with large attachments,

additional copies of the attachments may be needed (confirm with Regional VCP Coordinator).

3.2 Site Identification Numbers

3.2.1 The Department will assign an official site name and site identification number upon receipt of the application. The official site name and number should be used on all site correspondence and reports. The site number consists of the alpha "V," a five-digit numeric, and a one-digit region number (e.g., V00123-8).

3.3 Sites with Multiple Contaminants

As indicated by the definitions given in §2.1, projects that are managed as hazardous substance sites include a wide range of contaminant types including hazardous wastes, hazardous substances, solid wastes, and various mixtures. For hazardous substance sites that also have petroleum contamination, they are to be managed as follows:

3.3.1 If the petroleum and hazardous substance contamination is distinct (i.e., can be investigated/remediated separately) and the Volunteer is the discharger, the "site" should be defined as the non-petroleum portion of the property only. The petroleum contamination is then managed as a separate project under a stipulation with the Department.

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3.3.2 If the contamination is distinct but the Volunteer is not the discharger, the petroleum and hazardous substances should be addressed as one hazardous substance project.

3.3.3 If the contaminants are not distinct, the site should be managed as a hazardous substance project.

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3.4 Contemplated Use

Under the VCP, cleanups must be protective of public health and the environment under the conditions of the Contemplated Use of the site. In the VCP application, the Volunteer is required to specify the Contemplated Use of the site. The VCA or Order shall specify one of four different site use categories, as follows:

3.4.1 **Unrestricted** - To qualify for the unrestricted use category, site conditions after remediation must be such that no engineering controls, use restrictions, or any other institutional controls are needed to make the site protective of public health and the environment under any use. This also applies to sites where a no further action decision has been made after the site investigation.

3.4.2 **Restricted Residential** - Residential uses such as homes, apartments, mobile home parks, dormitories, schools, and day-care facilities are allowed but require engineering and/or institutional controls for the use to be protective.

3.4.3 **Restricted Commercial** - Residential uses are not allowed in this category. Commercial uses are allowed but require engineering controls and/or institutional controls. Some types

of "commercial" uses that could create "residential" types of exposures are excluded such as day-care and health care facilities.

3.4.4 **Restricted Industrial** - Residential and commercial uses are not allowed. Industrial uses are allowed but they require the use of engineering controls and/or institutional controls.

3.5 Application Response Letter

The Department's Project Attorney will determine if the site and the Volunteer are eligible for the program. The Department uses best efforts to send an application response letter within 45 days of receipt of a complete application stating if the applicant is eligible to participate in the program. If eligible, the application response letter will include three (3) copies of a VCA for signature by the Volunteer with a request to return the signed agreements within 15 days. If an application is deemed incomplete, the Project Attorney will notify the applicant of the deficiency and request a resubmittal within 15 days.

SECTION 4 AGREEMENTS AND CONSENT ORDERS

4.1 General

The Department's Project Attorney provides the Volunteer with a legally enforceable document which in most cases will be a VCA. Occasionally, the Volunteer or the Volunteer's attorney may request that the document be described and written as an "Order," due to various legal, cost recovery, and tax ramifications.

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Each VCA generally contains the following paragraphs:

4.1.1 Definitions: All VCAs include definitions of the following **site-specific** terms: Contemplated Use of the site (see §3.4), existing contamination (see §4.3), site description, and Volunteer.

4.1.2 Development, Performance and Reporting of Work Plans: This paragraph details the process of submitting and approving work plans, annual reports, and final reports. The process for issuing an assignable release is also described.

4.1.3 Progress Reports: This paragraph requires that status reports be submitted (usually on a monthly basis) during the implementation of the work plans and specifies the information that should be contained in the reports.

4.1.4 Enforcement: This paragraph states that the VCA is enforceable as a contract and provides a force majeure defense under limited circumstances. The exception to this would be if the instrument is an Order and if so, it would be enforceable like any other Commissioner's Order.

4.1.5 Entry upon Site: This paragraph provides the Department with access to the site and site records given reasonable notice. It also gives the Department the right to take samples and make measurements.

4.1.6 Payment of State Costs: The Volunteer commits to reimburse the State as follows:

Volunteer	Reimbursement
PRP (as defined herein)	Past costs and all costs associated with negotiating and implementing the VCA including future oversight costs
Other	All costs associated with negotiating and implementing the VCA including future oversight costs

4.1.7 Reservation of Rights: This paragraph reserves rights for the Department with respect to investigation and remediation, summary abatement, and noncompliance. The Volunteer also reserves rights with respect to assertions of remedial liability, due process, and contribution protection under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

4.1.8 Indemnification: This paragraph requires the Volunteer to indemnify the State and the Department for all claims except those caused by the State's gross negligence or willful and wanton reckless acts or omissions.

4.1.9 Public Notice: This paragraph requires the Volunteer to file a notice with the County Clerk regarding the Volunteer's participation in the VCP. A form notice is attached to the VCA. The Volunteer must also notify the Department if ownership of the site is to be conveyed to a different party.

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4.1.10 Declaration of Covenants and Restrictions: Within 30 Days after the Department's approval of a Remedial Action Work Plan which relies upon one or more institutional controls, or within 30 Days of the Department's determination that additional remediation is not needed based upon use restrictions, the Volunteer must submit for Department approval a Declaration of Covenants and Restrictions to run with the land which provides for covenants and restrictions consistent with the Work Plan. The Volunteer must file the instrument within 30 Days of the Department's approval of such instrument. The Volunteer must provide the Department with a copy of the instrument certified by the County Clerk (or the City Register) within 30 Days of recording. Restrictions are not required in every case. A form declaration is attached to the VCA. Assignable Releases (see §4.4) are not issued by the Department until it has received proof that an acceptable restriction has been put into place.

4.1.11 Communications: This paragraph sets forth the parties who are to receive notices, correspondence, and copies of work plans under the terms of the VCA.

4.1.12 Termination of Agreement: The process for terminating a VCA by either the Volunteer (for any reason or no reason) or the Department (only for cause) is explained in this section.

4.1.13 Dispute Resolution: A process is established for resolving disputes.

4.1.14 Miscellaneous: This paragraph sets out various terms which are not detailed in the previous paragraphs.

4.2 Preparation of Agreements

The VCA is drafted by the Project Attorney and executed first by the Volunteer and then the Department at the start of the project. Work plans are developed after the Department executes the VCA.

4.3 Existing Contamination

One of the steps involved in creating a site-specific VCA is to develop a definition of "existing contamination." Existing contamination includes contamination known to exist at the site as of the effective date of the VCA and contamination found, or more sufficiently characterized, during implementation of the VCA. The distinction between existing contamination and "covered contamination" is that covered contamination is that which remains on the site as of the date the Department's liability release is issued.

The amount of information available about the nature and extent of existing contamination varies significantly from project to project. To the extent that information is available, the definition of existing contamination should include the following:

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4.3.1 A list of the class/classes of contaminants such as volatile organic compounds (VOCs); semi-volatile organic compounds (SVOCs); metals; PCBs; polycyclic aromatic hydrocarbons (PAHs); pesticides; herbicides; petroleum compounds; cyanides; which are present at the site when the VCA is drafted;

4.3.2 If the list is limited or there are predominant contaminants, specific contaminants can be listed after the corresponding contaminant class (e.g., "volatile organic compounds (VOCs) including but not limited to trichloroethene (TCE) and vinyl chloride and metals including lead and chromium");

4.3.3 A list of the titles, dates, and authors of relevant investigation reports that provide specific information regarding the contaminants listed;

4.3.4 In some cases, it is appropriate to include what is known regarding the location of the contamination. This may be needed to clarify and limit the scope of the investigation, remediation, and the area of "covered contamination."

4.4 Assignable Releases

As discussed below, to qualify for an Assignable Release (the Release) under the VCP, the Volunteer must perform substantive work to make the site protective of public health and the environment for the Contemplated Use.

The Department will issue a Release once the Department agrees that the Volunteer has successfully carried out the Remedial Action Work Plan or that no remediation is necessary following an

investigation under the VCP. The Release declares that the Department releases, covenants not to sue, and forebears from bringing any action, proceeding, or suit against the Volunteer, including further investigation or remediation, subject to the reservations set forth below. A Natural Resources Damage (NRD) release will be provided to all Volunteers except PRPs.

A Volunteer must perform substantive work under a VCA to receive a Release from the Department. Work done without Department oversight and approval may not be usable under this program (see §6.3.1) and may not be sufficient to warrant a release from the Department. This includes data from previous investigations, the submission of confirmatory sampling and analytical data after remediation has been performed, as well as the imposition of use restrictions in lieu of investigation and remediation.

The Release is subject to the following reservations for further investigation or remediation the Department deems necessary due to:

4.4.1 off-site migration of petroleum (and, if the Volunteer is a PRP, migration off-Site of contaminants resulting in impacts that are not inconsequential to environmental resources, to human health, or to other biota);

4.4.2 environmental conditions or information related to the Site which were unknown at the time the Release and Covenant not to Sue is issued and which indicate that the Contemplated Use cannot be implemented with sufficient protection of human health and the environment;

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4.4.3 Volunteer's failure to implement the VCA to the Department's satisfaction (e.g., not completing OM&M, not paying State costs, not maintaining use restrictions, etc.);

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4.4.4 fraud committed by the Volunteer in entering into or implementing the VCA;

4.4.5 a release or threat of release at the Site of any hazardous substance (as that term is defined at 42 USC 9601[14]) or petroleum (as that term is defined in Navigation Law § 172[15]), other than Covered Contamination; or

4.4.6 causing or allowing the use of the Site to change from the Contemplated Use to one requiring a lower level of residual contamination before that use can be implemented with sufficient protection of human health and the environment.

The Release does not affect the Commissioner's summary abatement powers. The Release does not apply to the New York State Department of Law (the Office of the Attorney General), the Spill Fund, or any other State agency. Note that the Attorney General has independent legal enforcement authorities regarding contaminated sites that are separate and distinct from the Department's. If applicable, the topic of obtaining liability releases from the other State agencies should be raised with the Department's Project Attorney or the respective State Agency.

4.5 Signature of Agreement

Once the VCA is in final form, it is executed as follows:

4.5.1 The Volunteer signs a minimum of three original copies of the final VCA and submits them to the Department's Project Attorney.

4.5.2 The Project Attorney will mail one original copy of the VCA to the Volunteer once it is executed by the Commissioner.

SECTION 5 CITIZEN PARTICIPATION

The general requirements for public notice and comment are listed below. However, more extensive citizen participation activities may be undertaken by the Department for sites which have significant public interest. All citizen participation activities are conducted by the Department in cooperation with the NYSDOH. Input is accepted from the Volunteer, when appropriate.

5.1 Investigations

5.1.1 A fact sheet will be sent to persons on a mailing list before the start of field work except as set forth in §5.1.2. The fact sheet will be sent to adjacent property owners, elected officials, any relevant community groups, and local media. The Department's Project Manager is responsible for developing the mailing list. The fact sheet will describe the site, provide a summary of the purpose and goals of the investigation, include the project schedule and milestones, and list sources of additional information.

5.1.2 For Class 2 sites on the Registry of Inactive Hazardous Waste Disposal Sites, the Citizen Participation provisions required in 6 NYCRR Part 375 must be followed. For more information, please consult Part 375 and DER's citizen participation guidance document entitled, *Citizen Participation in New York's Hazardous Waste Site Remediation Program: A Guidebook*, dated June 1998 or the most recent version.

5.2 Remediation

5.2.1 Once a Remedial Action Work Plan is approvable, the Project Manager will issue a notice of the availability of the work plan for review and comment in the Environmental Notice Bulletin (ENB). The notice will provide for a 30-day comment period during which written comments may be submitted to the Department. The Project Manager will be listed as the contact person in the notice.

5.2.2 Notice that the Remedial Action Work Plan is available for review will be provided by the Project Manager to each municipality within which the site is located, as appropriate:

County..... County Executive
Town.....Supervisor
City (if applicable).....Mayor

Village (if applicable).....Mayor

5.2.3 A fact sheet, similar to that described in §5.1.1, will be developed which specifies the start and end dates of the public comment period, where to find and review the project documents, and how to submit comments. A document repository will be established where interested citizens can conveniently review the project work plans.

5.2.4 For non-Registry sites, no formal response from the Department is required for comments received. The Project Manager will send an acknowledgment for any written comments received. However, the Department may make revisions to the work plans if appropriate.

5.2.5 For sites listed on the Registry of Inactive Hazardous Waste Disposal Sites as Class 2, the Citizen Participation requirements in 6 NYCRR Part 375 will be followed. In addition to the ENB Notice and fact sheet described above, a Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD) must be issued before remediation begins. The start of the public comment period for the PRAP should coincide with the start of the 30-day comment period noticed in the ENB. A public meeting must be held, typically in the middle of the public comment period. After the close of the comment period, a responsiveness summary is prepared and attached to the ROD. The ROD is completed and issued by the Department following established procedures.

5.3 Interim Remedial Measures

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5.3.1 If a decision is made to implement an Interim Remedial Measure (IRM, see also §7.7), the extent of citizen participation activities to be completed depends upon the scope of the IRM as follows:

a. If the scope of the IRM could be all or most of the final remedy for the site, the citizen participation activities should be the same as for a Remedial Action Work Plan (see §5.2).
b. If the scope of the IRM will not cover all or most of the final remedy, the fact sheet for the investigation should also describe the IRM activities. If a decision is made to complete an IRM after the investigation fact sheet has been issued, another fact sheet should be issued using the same procedures as for an investigation work plan (see §5.1).

5.4 Waivers

5.4.1 The public participation provisions may be waived in instances where the Department has approved the Volunteer's request to take the necessary actions to mitigate a release or a threat of release of contaminants which may be an immediate threat to life, health, property or natural resources.

5.4.2 The citizen participation activities outlined above do not preclude the Department from conducting more public outreach that is appropriate for the circumstances. For example, the Department may decide to hold informational sessions with the public to discuss issues regarding a particular site.

SECTION 6 INVESTIGATION WORK PLANS

6.1 Goals and Requirements

Volunteers commit to completing the specific activities set forth in the Investigation Work Plan. All Volunteers must complete on-site investigations to define the nature and extent of contamination at the site. In some cases, off-site investigation is needed to provide information needed for the qualitative exposure assessment (see §6.6). PRP Volunteers and Volunteers at petroleum sites are required to complete both on-site and off-site investigations (see also Chart 4).

If hazardous waste has been disposed at the site and the site presents a significant threat (§375-1.4), the Department would normally list the site on the Registry of Inactive Hazardous Waste Disposal Sites (the "Registry"). If a site is being investigated and remediated satisfactorily under the VCP, this listing process is deferred. The deferral is lifted and the site listed on the Registry if the Volunteer elects to terminate the VCA or if the project is not adequately addressing the significant threats in a timely manner. Projects completed satisfactorily will eliminate or mitigate all significant threats removing the need to list the site on the Registry.

Innocent parties are not required to investigate or remediate off-site contamination. If there is a significant threat and off-site investigation and remediation is needed to address the threat, the site will be listed on the Registry. In this case the Department proceeds with the off-site work either with a responsible party or under the State Superfund. Innocent parties may, however, elect to complete an off-site investigation and the remediation of all significant threats associated with the site contamination themselves. In this case, the listing of the site would be deferred as described above.

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The main goals of voluntary cleanup investigations include but are not limited to the following:

6.1.1 Defining the nature and extent of contamination, both areally and vertically, both on site and, as appropriate (i.e., for PRPs), off site;

6.1.2 Identifying contaminant source areas;

6.1.3 Producing data of sufficient quantity and quality to support the development of an acceptable Remedial Action Work Plan.

The Volunteer must develop an Investigation Work Plan that directs a systematic investigation of the site including all appropriate media at and around the site as well as any existing structures. The data requirements are site-specific and will be dependent upon many factors including site history, geology, hydrogeology, topography, existence of structures, contaminant type and volume, methods of waste disposal, and past remedial actions. At some sites, existing contamination presents actual or potential threats to fish and wildlife resources. In these cases, the Investigation Work Plan, or subsequent work, must include an evaluation of these impacts or the potential impacts after completion of the remedy.

Work plans must be submitted for review by the Department and the NYSDOH. Once an application to enter the VCP is signed, no investigative work should commence until the Department approvals are obtained.

6.2 Investigation Work Plan Contents

In general, the Investigation Work Plan should include:

1. Introduction and Purpose
2. Site History and Description
3. Objectives, Scope, and Rationale
4. Field Activities Plan
5. QA/QC Plan
6. Health and Safety Plans
7. Reporting and Schedule

Appendix E provides additional guidance regarding the contents of the Investigation Work Plan.

6.3 Previous Investigations and Evaluations

6.3.1 As noted in §4.4, the Volunteer may have performed site investigations at the site before participating in the VCP. For the Department to accept analytical data generated without Department oversight, the Volunteer must show that the results are valid and useable. This is best shown through the submittal of validation reports or Data Usability Summary Reports (DUSRs). The amount of documentation needed to show that the data is usable under the VCP is dependent upon many site-related factors and is determined by the Department's Project Manager.

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6.3.2 Survey data used to define site boundaries and features or to provide data used for interpreting groundwater conditions must also be shown to be reliable. This may come through the submittal of a certification by a New York State licensed and registered land surveyor, through an agreement to confirm the data under the VCA, or by other methods approved by the Department.

6.3.3 The Project Manager may require that any interpretive reports that are submitted in support of the project and were prepared before the drafting of the VCA be supplied with appropriate certifications. The need for and type of certifications is also case-specific.

6.4 Source Areas

Source areas are portions of a site, typically soil or groundwater, that have the potential to release significant amounts of contaminants to the environment. In most cases under the VCP, source areas are treated or removed. In certain instances, source areas are contained rather than removed or treated due to technical or economic factors. Source removal prevents continuing releases of contaminants and reduces the long-term potential for significant exposures to the public and the environment. To identify source areas, the investigation should focus on both a careful review of the site history including any chemical or industrial processes performed, waste disposal practices, drainage structures, chemical storage units, and on-site investigations. The nature and extent of each source area should be carefully defined so that appropriate remedial technologies can be evaluated.

6.5 Quality Assurance/Quality Control (QA/QC)

Analytical data submitted for VCP projects must be shown to be of adequate quality and useable for characterizing the site and selecting a remedy. Minimum requirements for the development of QA/QC plans and for preparing Data Usability Summary Reports (DUSRs) are summarized in Appendix B.

6.6 Qualitative Exposure Assessments

All Volunteers are required to complete qualitative on-site and off-site public health exposure assessments. The purpose of the human health exposure assessments is to qualitatively determine the route, intensity, frequency, and duration of actual or potential exposures of humans to chemicals. It also describes the nature and size of the population exposed to the contaminants that are present at or migrating from a site. A qualitative exposure assessment consists of characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. Some off-site investigation may be required to support the exposure assessment. Guidance on how to complete qualitative public health exposure assessments is provided in Appendix C.

6.7 Approval of Investigation Work Plans

The Regional VCP Coordinator or designee is responsible for the approval of Investigation Work Plans. The approval sequence is as follows:

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6.7.1 Work plan development between the Department and the Volunteer;

6.7.2 Department and NYSDOH review and approve work plan;

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6.7.3 Regional VCP Coordinator (or designee) sends work plan approval letter to Volunteer.

6.8 Field Oversight

Department Project Managers are responsible for the oversight of field investigations to ensure that investigations are completed according to the Investigation Work Plan. The Project Manager must provide sufficient oversight in order to conclude that the requirements of the VCA and associated work plan(s) have been met. The Project Manager is also responsible for maintaining adequate records to document that the oversight has occurred. This includes ensuring that any data collected during the work is acceptable to form the basis for developing a remedy for the site, if needed.

SECTION 7 REMEDY SELECTION

7.1 Goals

7.1.1 The goal of the remedy selection process in the VCP is to remediate the site to a level that is protective of public health and the environment under the conditions of the site's Contemplated Use. As described in §3.4, there are four categories of Contemplated Use; unrestricted, and restricted forms of residential, commercial, and industrial uses. Since the potential for exposure to contaminated media varies under the different site use scenarios,

the levels and location of contamination that can remain at a site depends upon several factors. Examples include potential exposure pathways, potential contaminant release mechanisms, the types and reliability of institutional or engineering controls to be used, and other site-specific factors. As described in §6.4, source areas should generally be removed or treated rather than contained.

7.1.2 Once the investigation is complete and if a determination is made by the Department that remediation is necessary, the Volunteer elects to either terminate the VCA or works with the Department's Project Manager to develop an acceptable Remedial Action Work Plan.

7.1.3 Decisions regarding the investigation and remediation of the site and off-site areas have implications regarding the site's status on the Registry. These implications are described in § 6.1.

7.1.4 The process for selecting and documenting a remedy at a Voluntary Cleanup site is generally described below. See Chart 5 for a discussion of the differing requirements for PRP and non-PRP Volunteers. The remediation of Class 2 sites on the Registry of Inactive Hazardous Waste Disposal sites must meet all of the administrative and regulatory requirements for these sites. In most cases, Remedial Action Work Plans will identify cleanup levels to be attained or the process to be used to determine the cleanup levels. The Remedial Action Work Plan will describe the basis for concluding that the results of the remediation will be protective of public health and the environment.

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7.1.5 All Remedial Design and Remedial Action Work Plan documents must be signed and sealed by a licensed professional engineer registered in New York State except for certain petroleum tank removals closed in accordance with Department requirements. Section 7.4 describes the engineering evaluation that must be completed.

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7.2 Remedial Design vs. Remedial Action Work Plans

As discussed in §7.4, except for Class 2 sites, it is not necessary to submit a feasibility study for a project in the VCP. Also, remedies completed under the VCP do not generally require the preparation of biddable-quality plans and specifications. For simple remedial actions, an approved Remedial Action Work Plan will provide sufficient documentation and control for the project. On a case-by-case basis, the Project Manager may determine that the complexity or sensitivity of the project requires the submittal of a full Remedial Design. Full-scale Remedial Designs may be appropriate when, for example, one or more of the following factors apply:

7.2.1 The proposed remedy includes treatment systems where the performance of the remedy is dependent upon the careful specification of sizes, capacities, process control, etc.

7.2.2 Implementing the remedy requires specialized engineering or specialized construction (e.g., a barrier wall).

7.2.3 Excavations will occur near sensitive environmental receptors (e.g., wetlands) making it necessary to have plan sheets that provide careful vertical and horizontal control; or

7.2.4 Specialized materials of construction need to be used (e.g., seamed geomembrane).

If a full-scale remedial design is needed, it is recommended that a concept-level document be prepared that summarizes the proposed remedy and provides an engineering evaluation of the remedy as described in §7.4 below. The contents of this summary document should be the same as for a Remedial Action Work Plan (see §7.3 below) except that the sections describing the field work, health and safety plans, and QA/QC plans will provide a scope of work rather than a complete description of the activities and requirements. This process allows the Volunteer to obtain Department approval of the approach before investing the resources needed to prepare a full-scale Remedial Design.

7.3 Remedial Action Work Plan Contents

In general, the contents of a Remedial Action Work Plan should include:

1. Introduction and Purpose
   a. Site Description
   b. Site History
   c. Previous Investigations
   d. Summary of Environmental Conditions
   e. Summary of Remedy
   f. Contemplated Use
2. Engineering Evaluation of the Remedy
3. Project Plans and Specifications
4. Institutional Controls
5. Health and Safety Plans
6. QA/QC Plan
7. Schedule
8. Reporting
9. Project Organization

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Health and Safety Plans for site remediation must also address community health and safety issues associated with completing the remedy. One aspect of community health and safety is air monitoring. Appendix D provides guidance on preparing Community Air Monitoring Plans.

Appendix E provides a checklist that provides additional guidance regarding the elements of the Remedial Action Work Plan.

7.4 Remedial Action Selection (RAS) Report

Except for Class 2 sites, it is not necessary to submit a feasibility study to support a proposed remedy in the VCP. In the VCP, the Volunteer must submit a report that demonstrates through an engineering analysis that the remedy can achieve the cleanup goals for the site. This demonstration also includes an evaluation of the remedy against the factors given in 6 NYCRR 375-1.10(c) (see §7.4.1and following). It is not necessary to evaluate cost effectiveness or community acceptance in this evaluation. Community acceptance is evaluated by the Department. If the Volunteer has information regarding community acceptance for the project, it should be provided in this report.

The results of the engineering analysis is documented in a "Remedial Action Selection" (RAS) Report. The report must be certified by a professional engineer registered in New York State. It can be incorporated into the Remedial Action Work Plan or it may be submitted separately. It is not necessary to submit an RAS for the closure of certain underground storage tanks closed in accordance with approved Department procedures.

For some complex sites (e.g., manufactured gas plants) where the strengths and weaknesses of several alternatives need to be evaluated before selecting a remedy, a "Remedial Alternatives Report" (RAR) should be prepared and submitted in support of a proposed remedy. An RAR is similar to a focused feasibility study and helps both the Volunteer and the Department to identify the best cleanup plan for more complicated sites. The need to complete an RAR is determined on a case-by-case basis by the Department's Project Manager.

The RAS (or RAR when appropriate) must explain **how** the remedy would be protective of public health and the environment. The following sections identify the minimum issues that these engineering evaluations must address.

7.4.1 Protection of Human Health and the Environment

a. Does the proposed remedy achieve each of the remedial action objectives (RAOs)? Describe.
b. Identify any special issues regarding protection of human health and the environment not addressed in §7.4.1.a.

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7.4.2 Standards, Criteria, & Guidance (SCG)

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a. List all of the major SCGs for the site;
b. Does the proposed remedy comply with all of the SCGs? If not, identify, describe, and discuss.

7.4.3 Short-term Effectiveness & Impacts

a. Identify the risks to the community, workers, and environment that would result from implementing the proposed remedy.
b. How will these risks be controlled?
c. How effective/reliable are the controls?
d. Will the proposed remedy achieve the RAOs in less than two years? If not, how long will it take?

7.4.4 Long-term Effectiveness & Permanence

a. Is the proposed remedy permanent or does it rely upon containment?
b. Will the ability of the remedy to achieve RAOs lessen over time? If there is uncertainty, describe the factors involved.
c. After completion, will there be any significant threats, exposure pathways, or risks to the public or environment from remaining wastes or treated residuals?

7.4.5 Reduction of Toxicity, Mobility, or Volume

a. How much of the contamination will be treated for each media (e.g. soil, groundwater, sediment, etc.);
b. Will the process be complete or partial (quantify)? Is the treatment process reversible?
c. Will the mobility of contaminants be reduced? Describe any uncertainties.

7.4.6 Implementability

a. Are there any potential construction and O&M difficulties?
b. How would these difficulties be overcome?
c. Are services and materials readily available (consider long-term OM&M also)?
d. Any there any problems coordinating with other agencies such as obtaining approvals or permits?

7.5 Approval of Remedial Action Work Plans

The approval sequence for Remedial Action Work Plans is as follows:

7.5.1 Work plan is developed between the Department and the Volunteer;

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7.5.2 Department and NYSDOH review and approve work plan;

7.5.3 Regional VCP Coordinator (or designee) issues work plan approval letter to Volunteer.

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7.6 Construction Oversight

The Department observes construction to ensure that remedies are built and operated according to the Remedial Action Work Plan or remedial design. Although full-time oversight is not required, the Department's Project Manager must provide sufficient oversight to document that the requirements of the VCA and associated work plan(s) have been met. The Project Manager provides a recommendation regarding the issuance of the Release to the Volunteer and is also responsible for maintaining records that serve as the basis for a recommendation regarding the issuance of a Release.

7.7 Interim Remedial Measures (IRMs)

In some cases, site conditions make it appropriate to complete Interim Remedial Measures (IRMs). An IRM is a discrete set of activities which can be undertaken without extensive investigation and evaluation, to prevent, mitigate, or remedy site contamination. Its purpose is to address obvious issues quickly, often in conjunction with site investigation. The process for reviewing, approving, and implementing VCP IRMs is as follows:

7.7.1 IRM work plans are to be developed and submitted to the Department's Project Manager in accordance with the procedures and requirements given in the VCA.

7.7.2 If the Project Manager determines that the proposed IRM may constitute all or a significant portion of the final remedy for the site, the review and approval of the IRM work plan will be completed using the same procedures as for a Remedial Action Work Plan, including citizen participation (see §5.2) and having the work plan certified by a professional engineer registered in New York State (see §7.4).

7.7.3 If the scope of the IRM is not significant in comparison to the likely remedy for the site, the process for approving, implementing, and documenting an IRM will be the same as for an Investigation Work Plan, including citizen participation (see §5.1).

SECTION 8 PROJECT COMPLETIONS, APPROVALS, AND RELEASE LETTERS

8.1 Investigation Reports

A final report must be submitted at the conclusion of the investigation phase of a VCP project. The final report should provide a summary of the work done, the resulting analytical data, engineering and geological interpretations of the data, and the overall conclusions regarding the nature and extent of contamination at the site. Site data should be compared with the Standards, Criteria and Guidelines (SCGs) and/or action levels selected specifically for the site during the work plan development process.

8.1.1 The Department's Project Manager determines if the technical requirements of the Investigation Work Plan have been satisfied after reviewing the final investigation report.

8.1.2 Based upon information generated during the completion of the investigation, issues regarding the site's status in the Registry of Inactive Hazardous Waste Sites must be reconsidered by the Department, when applicable.

8.1.3 If an off-site exposure assessment indicates that there may be exposures of concern, the Department will determine a course of action after evaluating the specific circumstances involved.

8.2 Investigation Approvals

Depending upon the need for remediation, two types of approvals can occur after the completion of investigation.

8.2.1 For projects where the Department has determined that remediation is necessary, the Regional VCP Coordinator or designee will issue an investigation approval letter to the Volunteer and request the submittal of a Remedial Action Work Plan. If remediation is required and the Volunteer declines to proceed with the cleanup, the investigation report may be approved but the Release will not be issued.

8.2.2 If an investigation is completed satisfactorily and the Department concludes that no remediation is needed, the Volunteer will be eligible to receive the Release issued by Department legal staff.

8.3 Remediation Reports

8.3.1 Within 90 days after completion of remediation, the Volunteer should submit a final engineering report and "as-built" drawings that include all changes made to the final design during construction and an OM&M Plan, if appropriate. Except for certain petroleum tank removals, the report, drawings, and certification must be prepared, signed, and sealed by a professional engineer. The certification should include the following language: "I certify that the Remedial Action Work Plan (or Remedial Design) was implemented and that all construction activities were completed substantially in accordance with the Department-approved Remedial Action Work Plan (or Remedial Design) and were personally witnessed by me (or "by a person under my direct supervision")."

8.4 Remediation Approvals

8.4.1 The Project Manager will verify that the technical requirements of the VCA and work plan(s) have been satisfied. The issuance of a Release by the Department's legal staff occurs after the final reports are approved.

8.4.2 If operation, maintenance, and monitoring (OM&M) of the remedy is needed, a Release will be issued after construction is completed even though the remedial goals have not been fully achieved. If needed, OM&M Plans are approved before the Department issues a Release. As stated in the VCA, the release is issued contingent upon satisfactory completion of any needed OM&M.

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8.4.3 As required by the VCA, the Volunteer must file an appropriate use restriction (if needed) after the Department's approval of a Remedial Action Work Plan or a determination that no remediation is needed beyond the imposition of site use restrictions. Final remediation reports cannot be approved without evidence that the use restriction has been filed. Failure to maintain the use restriction will void the Release.

Appendix A: VCP Application Form

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

VOLUNTARY CLEANUP PROGRAM APPLICATION (rev. 3/02)

Application Instructions

The New York State Department of Environmental Conservation's Voluntary Cleanup Program (VCP) application has five sections. Section I asks for information about the site's location; Section II asks for information about the site's current owner and operator; Section III asks for information about the Volunteer; Section IV asks for information about the site's environmental history over the past 50 years; and Section V asks for information on the Contemplated Use of the cleaned-up site.

The application form is designed to be self explanatory, with the following exceptions:

- Leave the "NYSDEC Site No." space blank. This is for Department use only.
- The Certification must be signed by the Volunteer rather than a representative (e.g., consultant, attorney).
- TYPE OF CONTAMINANTS: Indicate by checking-off the appropriate box(es) whether the known or suspected site contaminants are associated with petroleum only, hazardous substances (including hazardous wastes), manufactured gas plant (MGP) waste, or "other" (e.g., construction and demolition debris). If more than one type is present, check as many boxes as necessary to indicate the contaminant types involved. Clarifications about what is known regarding contaminant types can be provided in Section IV.
- Section I. Site Location. The Voluntary Cleanup Agreement between the Volunteer and the Department needs to contain a clear and legally defensible definition of the "Site." Please provide as much information as needed (e.g., tax map identifiers, area map, site plan, survey drawings, metes and bounds, etc.) to create an unambiguous description of the site boundaries. Regarding the "Street or Route No.", if a precise street address is unavailable, enter a brief direction narrative (e.g., ½ mi. North of US Rte. 5 & Wolf Road).

Action on the Application

The Department will use the information provided on the VCP application form and from the Department's files to determine an applicant's eligibility for participation in the Program. It also serves as an initial summary of site conditions.

Applicants should prepare four copies of the application with all attachments, two with original signatures. Two sets, one with original signatures should be sent to Chief, Brownfields/Voluntary Cleanup Section, New York State Department of Environmental Conservation, Division of Environmental Remediation, 625 Broadway, Albany, NY 12233-7012. The other two sets (one with original signatures) should be sent to the appropriate DEC Regional VCP Coordinator (see the Regional Office Map included with these instructions).

The Department will attempt to notify applicants whether or not they are eligible to participate in the program within 45 days of receipt of a complete application. If an application is deemed incomplete, the applicant will be notified of the deficiency and may submit the additional information.

Please note that under certain circumstances, a proposal to remediate a site may require an environmental review under the State Environmental Quality Review Act (SEQRA).

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VOLUNTARY CLEANUP PROGRAM
DIRECTORY OF REGIONAL AND CENTRAL OFFICES

March 2002

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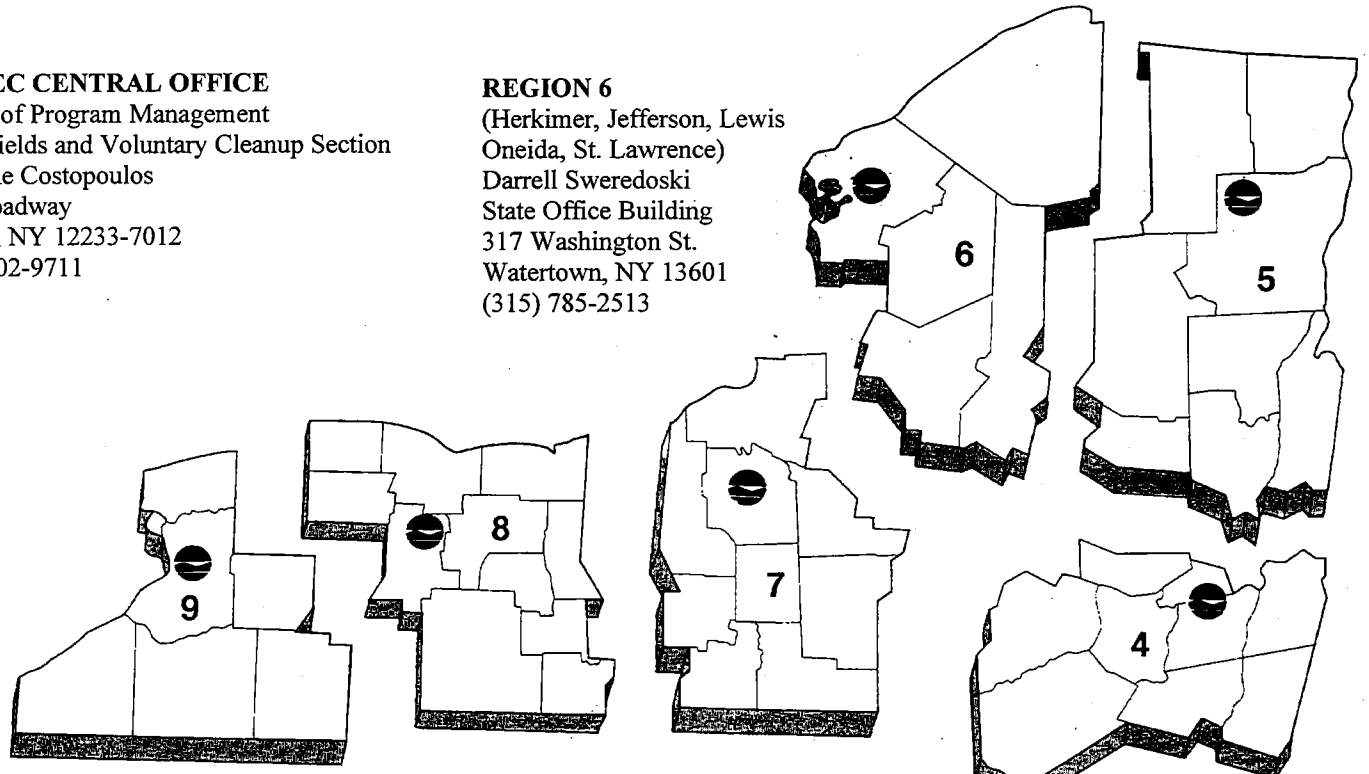

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

VOLUNTARY CLEANUP PROGRAM APPLICATION

NYSDEC Site No.:_____ (rev. 5/02)

STATEMENT OF CERTIFICATION

I,_____, do hereby certify and attest that the information included in this Voluntary Cleanup Program application, including any attachments, is, to the best of my knowledge and belief, accurate and complete; and that the applicant has the necessary funds to undertake the activities proposed to be implemented under this application, if approved.

_____ _____

Date Volunteer's Signature

TYPE OF CONTAMINANTS: ☐ Petroleum ☐ Hazardous Substances ☐ MGP ☐ Other

I. SITE NAME AND LOCATION

SITE NAME (legal, common, or descriptive): _____
SITE LOCATION: Street or Route No.:_____
CITY/TOWN: _____ COUNTY: _____ ZIP: _____
LATITUDE: _____ LONGITUDE: _____
COUNTY TAX MAP IDENTIFIER NO(S). _____
SITE SIZE: (ACRES)_____
SITE BOUNDARIES: Please attach maps and figures (and survey data if needed) to show the location and boundaries of the site.
Do the site boundaries correspond to Tax Map metes and bounds? Yes ____ No ____

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II. CURRENT OWNER/OPERATOR INFORMATION

Current owner's name, address, and phone and fax nos.:

_____
_____
_____
_____

Current operator's name, address, and phone and fax nos.:

_____
_____
_____
_____

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III. VOLUNTEER IDENTIFICATION

Volunteer's name, address, and phone and fax nos.:

_____
_____
_____
_____

Volunteer's contact's name, address, and phone and fax nos.:

_____
_____
_____
_____

Describe Volunteer's relationship, if any, to current owner and current operator (subsidiary, shareholder, partner, etc.). If no relationship, put "none":

_____
_____

IV. PROPERTY'S ENVIRONMENTAL HISTORY OVER PAST 50 YEARS

A. To the extent that existing information/studies/reports are readily available to the applicant, attach:
   - a description of the environmental history of the site that includes previous uses of the property, types of operation, chemicals used on the property, by-products or wastes produced by previous activities on-site, and a list of any orders, decrees, or other legal documents regarding violations of the Environmental Conservation Law or equivalent federal environmental statutes;

- a list of previous owners with names, last known addresses and telephone numbers (describe Volunteer's relationship, if any, to each previous owner listed. If no relationship, put "none"); and
- a list of previous operators with names, last known addresses and telephone numbers (describe Volunteer's relationship, if any, to each previous operator listed. If no relationship, put "none").

B. Is/was the site listed in New York State's Registry of Inactive Hazardous Waste Sites? YES ____ NO ____

If yes, the Registry Site Code is/was __ - ____ - _____.

C. Is the site listed as Class 1 or 2 in New York State's Registry of Inactive Hazardous Waste Sites? YES ____ NO ____

D. Did the Volunteer generate, transport or dispose of, arrange for or cause the generation, transportation or disposal of hazardous substance on the property? YES ____ NO ____

E. Is the site a treatment, storage, or disposal facility (TSDF) subject to corrective action or closure under permit or order issued under the Department's hazardous waste management regulatory ("RCRA") program? YES ____ NO ____

F. Is the site a TSDF operating under interim status under the RCRA program that is subject to enforcement action leading to the issuance of an order containing a corrective action schedule? YES ____ NO ____

G. Have there been any spills or other releases of petroleum at the site that have been reported to the Department? YES ____ NO ____

H. Are any enforcement actions pending against the Volunteer or against the site? YES ____ NO ____

I. Is the Volunteer or the site the subject of any active consent orders with the Department or the United States Environmental Protection Agency? YES ____ NO ____

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V. INTENDED SITE USE

Briefly describe below the Contemplated Use of the site following cleanup.

_____

_____

_____

_____

Appendix B: Minimum Requirements for QA/QC

Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)

I. General Discussion

A. Data Quality Assurance/Quality Control: A separate Quality Assurance Project Plan (QAPjP) is not required when the following quality assurance points are included in the Work Plan:

1. Project description and project goals - Include the site environmental history and project goals.

2. Project organization - Include designation of the Project Manager, Quality Assurance Officer and Field Analyst, if field analysis is planned. These resumes must be included as a Work Plan Appendix.

3. Sampling procedure and equipment decontamination procedures - Include a sampling chart that specifies the sample matrix, number of samples, analysis methods and data reporting level. EPA or Department Analytical Services Protocol (ASP) methods are acceptable. Also include a site map that shows proposed sampling sites and previous sampling locations and results.

4. Proposed laboratory - The proposed laboratory must be identified in the Work Plan and it must be NYSDOH ELAP-certified for the planned laboratory analyses. Ten (10) percent of field screening analyses are to be confirmed by an ELAP certified laboratory. In most cases, the investigation and cleanup confirmation sample analysis reporting level will be DEC ASP Category B deliverables in order to fully evaluate and document the project. This reporting level gives the necessary documentation that will be reviewed to evaluate the usability of the data. It also gives calibration data needed to verify "not-detected" analytes that are possible compounds of concern, as indicated by site history or previous screening level data. Detection limits must be low enough to be compared to applicable standards.

   When Category B deliverables are required, the laboratory must be NYSDOH ELAP CLP-certified, since the CLP certification program evaluates the proficiency of the laboratory in the quality control parameters required by the analytical methods and the reporting format for the Category B deliverables package. For sites where the Department already has valid and usable investigative data verified by Category B deliverables, intermediate samples (SPDES, interim remedial measures, construction, and operation and maintenance samples) usually only require a standard, one page analysis report done by an ELAP- certified laboratory.

5. Standard Operating Procedures (SOPs) - Include SOPs for well construction, sample collection, decontamination procedures, field instruments and field screening methods.

6. Data validation - While not required, the data should be evaluated according to the Division of Environmental Remediation (DER) Data Usability Summary Report (DUSR) guidelines.

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II. Data Usability Summary Reports

A. Background: The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data without the costly and time consuming process of third party data validation. The primary objective of a DUSR is to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.
The development of the DUSR must be carried out by an experienced environmental scientist, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. Furthermore, the DUSR is developed from a full New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B or a United States Environmental Protection Agency Contract Laboratory Protocol (USEPA CLP) deliverables package.

B. Review: If the DUSR and the data deliverables package indicates significant problems with some or all of the data in the package, the data should be either rejected or validated to determine if it can be used. This decision will be based upon several factors and should be made with advice from a qualified person in the Department's Quality Assurance Unit. In some cases, the data may be usable for screening purposes only.

C. Personnel Requirements: The Environmental Scientist preparing the DUSR must hold a Bachelors Degree in a relevant natural or physical science or field of engineering and must submit a resume to the Division's Quality Assurance Unit documenting experience in environmental sampling, analysis and data review.

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D. Preparation of a DUSR: The DUSR is developed by reviewing and evaluating the analytical data package. During the course of this review the following questions must be asked and answered:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data (i.e., blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data) fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

Once the data package has been reviewed and the questions given above have been answered, the DUSR proceeds to describe the samples and the analytical parameters. Data deficiencies, analytical protocol deviations, and quality control problems are identified and their effect on the data is discussed. The DUSR shall also include recommendations on resampling and/or reanalysis. All data qualifications must be documented following the latest NYSDEC ASP guidelines.

E. **Questions:** Contact the Department's Division of Environmental Remediation Quality Assurance Group with any questions on the preparation of a DUSR.

III. Quality Assurance Officer Guidelines

A. QAO Description and Requirements

1. The Quality Assurance Officer (QAO) is an employee of the same consulting firm generating the work plan and acts in conjunction with the project manager to develop a site-specific quality assurance plan. The QAO must not have another position on the project, such as a project or task manager, that involves project productivity or profitability as a job performance criteria.

2. The project QAO must have a minimum of a bachelors degree in chemistry or natural science with a minimum of 20 hours in chemistry.

3. The QAO must be proficient in analytical methodology, data interpretation and validation, the development of sampling plans, quality control procedures, and auditing techniques.

4. The QAO will assist the project manager in the development of the sampling and analytical portion of the Quality Assurance Project Plan. The QAO or his/her designee shall conduct periodic field and sampling audits, interface with the analytical laboratory to make requests and resolve problems, interface with the data validator, and develop a project specific data usability report. Because on-site work may be necessary, verification of completion of the 40-hour OSHA safety training course and 8-hour refresher is required.

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Appendix C: Qualitative Human Health Exposure Assessments

A qualitative exposure assessment consists of characterizing the exposure setting (including the physical environment and potentially exposed human populations), identifying exposure pathways, evaluating contaminant fate and transport.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: (1) a contaminant source; (2) contaminant release and transport mechanisms; (3) a point of exposure; (4) a route of exposure; and (5) a receptor population. The source of contamination is the source of contaminant release to the environment (any waste disposal area or point of discharge). If the original source is unknown, it is the environmental medium (soil, air, biota, water) at the point of exposure. Contaminant release and transport mechanisms carry contaminants from the source to points where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (i.e., ingestion, inhalation, dermal absorption). The receptor population is the people who are or may be exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway are documented. A potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway is not documented. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future.

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To perform a qualitative exposure assessment, site conditions are characterized to evaluate whether a site poses an existing or potential hazard to the exposed or potentially exposed population. Site characterization involves a review of sampling data for environmental media (e.g., soil, surface water, groundwater, air), both on-site and off-site, and an evaluation of the physical conditions of the contaminant sources or physical hazards near the site which may pose an additional health risk to the community. Site contaminants are reviewed, and those selected for further evaluation are identified based upon consideration of the following factors:

- Concentrations of contaminants in environmental media both on-site and off-site;
- Field data quality, laboratory data quality and sampling design; and,
- Comparison of on-site and off-site contaminant concentrations in environmental media with typical background levels.

Appendix D: Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

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Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

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Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

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- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

- All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

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Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

- All readings must be recorded and be available for State (DEC and DOH) personnel to review.

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Appendix E: VCP Work Plan and Report Checklist

This checklist provides additional guidance regarding the general contents of investigation and remediation work plans for typical VCP sites. This list is not intended to address each issue that may be relevant at specific sites. The Department reserves its right to request additional information in accordance with the Voluntary Agreement.

ok?	*Item*	*Notes*
	Investigation Work Plans	
☐	• Have the prior uses/contamination been described?	The Volunteer should identify the prior uses of the site and any specific processes or chemicals that were used. This greatly assists in developing and confirming the scope of work.
☐	• Have the surrounding land uses been described?	This information is needed to support the exposure assessments and the site investigation. It can also influence the types of site use restrictions or controls that may be needed.
☐	• Is the scope adequate to define the nature and extent of contamination?	All investigations must contain reliable information that adequately defines the nature and extent of site contamination and, if applicable, threats to fish and wildlife resources.
☐	• Are adequate methods of investigation proposed?	The methods used to acquire and handle environmental samples and data must be specified (in Standard Operating Procedures, (SOPs)).
☐	• Is there adequate QA/QC?	At a minimum, each work plan must provide sufficient QA/QC procedures (see Appendix B) so that the environmental data acquired during the project will be reproducible, accurate, representative, comparable, and complete.
☐	• Have the source areas been defined?	The scope of the investigation must be sufficient to determine if the site contains "source areas" (see §6.4), and if so, to define their extent.
☐	• Have on & off-site exposure assessments been performed?	All Volunteers must complete on-site and off-site exposure assessments. The work plan should give enough detail to document that the assessment will adequately characterize all actual/potential public health and environmental exposures due to site contamination.
☐	• Have off-site issues been adequately addressed? If not, provide explanation.	Depending upon the Volunteer's status, off-site issues range from completing qualitative exposure assessments to full investigation and remediation. The off-site scope of work must be appropriate for the type of Volunteer and site conditions.

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ok?	*Item*	*Notes*
☐	• Is a risk assessment needed?	If the results of the exposure assessments will not be sufficient to define site-specific remedial goals, a quantitative risk assessment may be needed.
☐	• Does the work plan provide for adequate documentation and reporting?	The work plan should specify the information that will be included in the final report to ensure that the information supplied will be sufficient for making remedial decisions.
☐	• Is a fish & wildlife impact analysis needed?	A decision must be made by the Department if a site-specific fish and wildlife impact analysis is needed and if so, if the scope given in the work plan is adequate.
☐	• Is there an adequate worker Health and Safety Plan (HASP)?	The Volunteer's consultant is responsible for preparing a worker HASP that meets all regulatory requirements (e.g., OSHA).
	Investigation Final Report	
☐	• Did the investigation substantially comply with the work plan?	This is an overall evaluation of the adequacy of the investigation. If unexpected conditions makes it necessary to do additional work, another work plan should be developed to characterize the new conditions.
☐	• Are any deviations from the work plan sufficiently described?	The significance of any omissions or problems should be evaluated to determine if more work is needed.
☐	• Did the investigation adequately define the nature and extent of the contamination and identify source areas?	The final report should clearly define the contaminants of concern, impacted media, volumes and limits of contamination, concentration ranges, and additional information as needed to define the nature and extent of contamination.
☐	• Does the report include an on-and off-site exposure assessment?	The results of the exposure assessments should be presented with clear conclusions about actual or potentially complete exposure pathways.
☐	• Was a DUSR included with the report?	The DUSR must be complete and indicate if the data is useable. Problems with the data must be identified and resolved.
	Remedial Action Work Plan	
☐	• Are there adequate remedial goals?	Unambiguous remedial goals for each media must be specified in the work plan which clearly indicate the cleanup standard to be achieved before a final release could be issued to the Volunteer. The basis and/or source of the cleanup standards must be specified.

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ok?	*Item*	*Notes*
☐	• Has the remedy been assessed by a PE against the factors listed in §375-1.10(c)(1-6)?	Although a feasibility study is not required for most VCP sites, the Volunteer must support the proposed remedy by showing how the remedy would achieve the objectives as compared against the evaluation factors in 6 NYCRR Part 375 (except cost effectiveness and community acceptance). This should be documented in a report that is prepared and sealed by a professional engineer. Class 2 sites must go through the typical PRAP/ROD process.
☐	• Will the remedy mitigate threats on site and off site?	The Remedial Action Work Plan should identify the threats posed to public health and the environment and explain how the remedy would mitigate those threats.
☐	• Has the obvious contamination been addressed?	Every remedy should halt or prevent significant health and environmental exposures resulting from the release of contaminants.
☐	• Is source control necessary?	If source areas exist at the site, in most cases they should be removed or treated rather than contained.
☐	• Is there adequate OM&M?	If the protectiveness of the remedy relies upon continuing OM&M, there must be a plan that specifies the actions, inspections, and reporting that will occur to ensure that the remedy continues to remain protective.
☐	• Are there adequate site use restrictions?	If the protectiveness of the remedy depends upon site use restrictions such as groundwater or property use restrictions, they must be clearly identified and placed in an enforceable instrument.
☐	• Has adequate post-remediation verification sampling been performed with the appropriate QA/QC?	With some exceptions, post-remediation verification samples are required to demonstrate that the remedial action objectives have been met. Data used to show compliance with the RAOs must be part of a DUSR.
☐	• Adequate worker and community HASPs?	If the remedy could create exposures to the community, a CHASP must be in place. Documentation air monitoring may be necessary. HASPs must be prepared by a competent person.
Remedial Action Final Report		
☐	• Did the remediation substantially comply with the work plan?	This is an overall evaluation of the completeness of the remedy in comparison to the requirements of the RAWP.

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ok?	*Item*	*Notes*
☐	• Are any deviations from the work plan sufficiently described?	Any changes from the RAWP must be documented.
☐	• Were the remedial goals clearly met?	The Report must provide enough information for the Department to determine if the goals have been obtained.
☐	• Was a DUSR included with the report?	The DUSR must be complete and indicate if the data is useable. Problems with the data must be identified and resolved.
☐	• Was the report certified by a NYS P.E.? Correct language?	The report must be certified by an individual/firm (in compliance with the State Education Law). The certification should include the exact language from §7.3.
☐	• Has the Department received proof of institutional controls?	Evidence that institutional controls are in place must be submitted within 30 days of the Department's approval of the instrument.
☐	• Does the report contain adequate as-builts?	The Report should contain as-builts as necessary to document the extent and location of the remedial activities.
☐	• Does the report contain an adequate OM&M Plan (if applicable)?	For remedies that include ongoing OM&M, the report should contain a complete and approvable OM&M Plan.

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Appendix F: List of Abbreviations and Acronyms

B/VCS	Brownfields/Voluntary Cleanup Section
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHASP	Community Health and Safety Plan
The Department	New York State Department of Environmental Conservation
DEE	Division of Environmental Enforcement
DER	Division of Environmental Remediation
DUSR	Data Usability and Summary Report
ECL	Environmental Conservation Law
EIS	Environmental Impact Statement
ENB	Environmental Notice Bulletin
FS	Feasibility Study
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
MGP	Manufactured Gas Plant
NL	Navigation Law
NPL	National Priorities List
NRD	Natural Resources Damage
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OM&M	Operation, Monitoring, and Maintenance
P	Potential
PAHs	Polycyclic aromatic hydrocarbons
PRAP	Proposed Remedial Action Plan
PRP	Potentially Responsible Party
QAO	Quality Assurance Officer
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
RAO	Remedial Action Objectives
RAR	Remedial Alternatives Report
RAS	Remedial Action Selection
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
The Release	Assignable Release
ROD	Record of Decision
SCGs	Standards, Criteria, & Guidance
SEQR	State Environmental Quality Review
SEQRA	State Environmental Quality Review Act
SPDES	State Pollution Discharge Elimination System
SOP	Standard Operating Procedure
SVOCs	Semi-volatile Organic Compounds
TCE	Trichloroethene
TSDF	Treatment, storage, and disposal facility
USEPA	United States Environmental Protection Agency
VCA	Voluntary Cleanup Agreement/Order
VCP	Voluntary Cleanup Program
VOCs	Volatile Organic Compounds

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Chart No. 1: Definitions

Voluntary Cleanup Program -- Definitions	
HAZARDOUS SUBSTANCE SITE	A site that contains any kind of hazardous waste, hazardous substance (including manufactured gas plant constituents), solid waste, **or a <u>mixture</u>** of petroleum with either hazardous waste, hazardous substances, or solid waste.
PETROLEUM SITE	A site that contains **<u>only</u>** petroleum contamination.
PRP	Potentially Responsible Party - a party, other than an innocent owner or innocent non-owner as defined below, responsible under law to remediate contamination disposed on, or released from, a property, including a discharger of petroleum
INNOCENT OWNER	An owner who meets <u>all</u> of the following criteria: 1. Acquired title to the property in an already contaminated condition after the cessation of the disposal or discharge of the contamination. 2. Did not participate in the operation of the facility from which contamination was released. 3. Has not by its own actions caused a release of contaminants into the environment at the site. 4. Is not responsible under law to remediate contamination disposed on or released from a property other than as a result of ownership subsequent to the cessation of the disposal or discharge of the contamination.
INNOCENT NON-OWNER	Someone who is not a PRP under the law and has not acquired title to the property prior to entering into the VCP.

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Chart No. 2: Eligibility

Voluntary Cleanup Program-Eligibility Requirements	
ELIGIBLE SITES	All sites except: 1. Sites listed on the Registry as Class 1 2. Sites on the USEPA's NPL, other than Onondaga Lake NPL Subsites 3. Sites regulated pursuant to ECL Article 27, Title 9 and 6 NYCRR Part 370. 4. Sites subject to Department or USEPA enforcement action may not be eligible.
ELIGIBLE VOLUNTEER	Any party is eligible to become a Volunteer **except**: 1. A discharger, as defined by law, at a petroleum site other than one who has purchased the site after the cessation of petroleum discharge. 2. A PRP, other than an "innocent owner" or "innocent non-owner" as defined below, at a Class 2 site listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites. 3. A PRP subject to any "enforcement action" requiring the PRP to remove or remediate at the site a hazardous substance. For this purpose, an "enforcement action" commences against a PRP. a. Under State law: upon issuance of a notification of violation or upon commencement of enforcement under ECL, Article 71 or upon issuance of an accusatory instrument under the Criminal Procedure Law. b. Under federal law: upon issuance of any notification pursuant to federal law that commences an administrative or judicial proceeding seeking to require the removal or remediation of hazardous substances.

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Chart No. 3: Permit Requirements

Voluntary Cleanup Program *Permit Requirements — All Sites*	
All Volunteers	1. At its discretion, the Department may exempt Volunteers from having to obtain permits issued by the Department. 2. All Volunteers must comply with all substantive requirements of the Department's permit programs even though they need not comply with the procedural requirements. 3. The Volunteer must obtain all permits not issued by this Department, e.g., federal permits and permits issued by other NYS Agencies.

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Chart No. 4: Investigation Requirements

Voluntary Cleanup Program--Investigation Requirements*		
	Hazardous Substances	***Petroleum***
PRP	On-site & Off-site Investigation	Not eligible to participate in the program.
INNOCENT-OWNER	On-site Investigation	On-site & Off-site Investigation
INNOCENT NON-OWNER		

Note: See §6.1 for a discussion of how the extent of the investigation and remediation of the site impacts the site's status regarding the Registry of Inactive Hazardous Disposal Sites.

* All investigations include on-site and off-site exposure assessments (see §5.5). Some off-site investigation may be needed to support the exposure assessment.

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Chart No. 5: Remediation Requirements

Voluntary Cleanup Program–Remediation Requirements		
	Hazardous Substances	***Petroleum***
PRP (except for a Class 2 site)	1. Clean up the site to a level considered protective based on the Contemplated Use 2. Eliminate off-site impacts from on-site sources 3. Remediate all significant off-site threats to human health and the environment attributable to site contamination.	Not eligible to participate in the program.
INNOCENT-OWNER	1. Clean up the site to a level considered protective based on the Contemplated Use 2. Eliminate off-site impacts from on-site sources	1. Clean up the site to a level considered protective based on the Contemplated Use 2. Eliminate off-site impacts from on-site sources 3. Remediate all significant off-site threats to human health and the environment attributable to site contamination.
INNOCENT NON-OWNER		Same as **Petroleum Innocent-Owner** above, unless benefit to Oil Spill Fund is demonstrated*.

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Note: All obvious contamination should be removed and all source areas should be remediated.

* Consult with the Project Attorney to determine how a benefit to the Oil Spill Fund is demonstrated.

Chart No. 6: Release and Covenant not to Sue

Voluntary Cleanup Program -- Release and Covenant not to Sue	
Hazardous Substances	
Non-PRP (Innocent Owner and Innocent Non-Owner)	The Volunteer and its non-PRP successors and assigns (including in title) receive a DEC release from: 1. Liability to further investigate or remediate "covered contamination" subject to the following reservations: A. off-site migration of petroleum (and, if the Volunteer is a PRP, migration off-Site of contaminants resulting in impacts that are not inconsequential to environmental resources, to human health, or to other biota); B. environmental conditions or information related to the Site which were unknown at the time the Release and Covenant not to Sue is issued and which indicate that the Contemplated Use cannot be implemented with sufficient protection of human health and the environment; C. Volunteer's failure to implement the VCA to the Department's satisfaction (e.g., not completing OM&M, not paying State costs, not maintaining use restrictions, etc.); D. fraud committed by Volunteer in entering into or implementing the VCA; E. a release or threat of release at the Site of any hazardous substance (as that term is defined at 42 USC 9601[14]) or petroleum (as that term is defined in Navigation Law § 172[15]), other than Covered Contamination; or F. causing or allowing the use of the Site to change from the Contemplated Use to one requiring a lower level of residual contamination before that use can be implemented with sufficient protection of human health and the environment. 2. Natural Resource damages **Note:** revoking the release under 1.E affects the Volunteer, successor or assign who owns the site and those following in the chain of title.
PRP	Same as above except the reservation under 1.A above is for any contamination migrating off-site whereby the PRP would not receive the Natural Resource Damages Release.
Petroleum	
Non-PRP (Innocent Owner and Innocent Non-Owner)	Same as Hazardous Substances Non-PRP.
PRP	Not Eligible to Participate in Program

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Chart No. 7: SEQR

Does SEQR Apply to the Remedial Action?[1]		
	PROJECT WHICH IS OTHERWISE SUBJECT TO SEQR	PROJECT WHICH IS **NOT** OTHERWISE SUBJECT TO SEQR
PRP[2]	YES[3]	NO
INNOCENT OWNER	YES[3]	NO
INNOCENT NON-OWNER	YES[3]	YES

Note (1): VCP Investigations are exempt from SEQR.

Note (2): Dischargers at sites contaminated with petroleum are not eligible for the VCP.

Note (3): SEQR compliance is required as part of the overall project analysis.

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Chart No. 8: Citizen Participation

Voluntary Cleanup Program-Citizen Participation All Contaminants	
Investigation	1. Preparation and mailing of a fact sheet to adjacent property owners, elected officials, community groups and local media
Remediation Non-Class 2 site	1. Preparation and mailing of a fact sheet to adjacent property owners, elected officials, community groups and local media 2. ENB notice and 30 day comment period 3. Significant comments may result in a revision to the Work Plan 4. An ENB Notice is required for an IRM Work Plan if the IRM could become the final remedy.
Remediation Class 2 site	In addition to the same activities as Remediation at a Non-Class 2 site: 1. A PRAP must be prepared and released for public comment. 2. A 30 day public comment period on the PRAP during which a public meeting is held. 3. A summary of all comments received and their responses provided to interested parties and included in ROD.

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All citizen participation activities are to be carried out by Department staff, not the Volunteer. However, the Volunteer can assist, as appropriate.

Chart No. 9: Cost Recovery

Voluntary Cleanup Program-Recovery of State Costs	
	Hazardous Substances or Petroleum
INNOCENT OWNER and INNOCENT NON-OWNER	1. Reimburse the State for all costs in negotiating the VCA; and 2. Reimburse the State for all oversight costs
PRP	1. Same as above; and 2. All costs associated with the site prior to VCA

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CHAPTER 5.1

HAZARDOUS WASTE and CONTAMINATED MATERIALS

PROJECT ENVIRONMENTAL GUIDELINES

June 1999

New York State Department of Transportation
Environmental Analysis Bureau

5.1 HAZARDOUS WASTE and CONTAMINATED MATERIALS

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I. SUMMARY

The New York State Department of Transportation should avoid compromising public or worker health and safety, or incurring significant financial liability, or violating State or federal laws and regulations through the inadvertent release of hazardous wastes or unknowing purchase of contaminated property. When contamination is discovered early in project development, many options are available and problems can be avoided or cleanup solutions incorporated as an integral

part of the project in an efficient, cost-effective way. Understanding the type and extent of contamination is especially important for projects in former industrialized or urban corridors, or brownfields areas. In addition, CERCLA (the Comprehensive Environmental Response, Compensation, and Liability Act of 1980) has changed the way that properties are assessed prior to transfer because of the need to meet environmental "due diligence" standards that require those who purchase or acquire properties to assess them for environmental contamination beforehand. CERCLA imposes such enormous liabilities on those who acquire contaminated properties that it has changed the procedures used to sell, buy or transfer property.

If contamination is discovered after the property is purchased or construction is underway, federal and State regulations hold the property owner responsible for the investigation and clean-up, regardless of who originally released the contaminants. Major transportation projects in New York State have been seriously delayed and even stopped while costly and complex investigations of contamination were conducted, and treatment, disposal or remediation measures negotiated.

This guidance is intended to help Department staff and consultants identify hazardous wastes and contaminated materials, assess the nature and extent of contamination, and understand how to properly manage or cleanup various kinds of contaminants to comply with federal and State requirements. Chapter 5.1 does not, however, include specific guidance on identifying and handling petroleum-contaminated soil and water, which is the subject of Chapter 5.B.

This guidance supersedes Project Environmental Guideline (PEG) #43, issued March 18, 1988, and Supplement # 1 dated April 14, 1989, as well as previous editions of this chapter. This guidance does not address the transportation or accidental spills of hazardous substances, Departmental maintenance activities, or hazardous materials in the workplace. Similarly, problems related to asbestos, spent abrasives from sandblasting lead-painted bridges, and containment methods for sandblasting are not discussed in this document.

II. APPLICABILITY

Project managers, designers and Regional Environmental Units should screen all projects for hazardous wastes and contaminated materials if they involve:

- acquiring new right-of-way or permanent easement;
- excavation or other disturbance of the soil;
- relocating utilities; or
- demolishing or substantially modifying buildings or structures.

Even projects that do not involve these activities are typically screened for contamination to ensure that potential problems are identified as early as possible (see Flow Chart 1). Many contaminants, such as petroleum products or solvents in the subsurface or groundwater, can migrate onto State right-of-way from adjacent locations. The Project Manager, Designer or Regional Environmental Unit must always consider surrounding land use when screening for contaminated materials.

Federal and State regulations strictly define "hazardous wastes" and "hazardous substances," and subject them to different and sometimes confusing requirements. Soils containing very high levels of lead -- if excavated and disposed -- may be classified as hazardous wastes, for example, but soils with lower lead levels may be considered nonhazardous, industrial solid wastes. Soil, ground- and surface water contaminated with petroleum and fuel products are generally not hazardous wastes or hazardous substances, but are regulated under different federal and State statutes. This guidance document uses "contaminated materials" to describe all these regulated materials that pose health and environmental concerns. Section VIII, "Citations and Definitions," gives detailed definitions of specific terms, and Attachment 5.1.A illustrates the major steps in determining when a material must be managed as a hazardous waste.

This chapter is intended to supplement and explain the steps described in the NYSDOT's Base Scope of Services, and in CAPER, NYSDOT's Computer Assisted Protocols for Environmental Reporting. CAPER was designed to help regional staff and project managers prepare complete, consistent and accurate environmental reports through development of the Expanded Project Proposal (Phase I) for large projects, or until Design Approval is received (through Phase IV) for smaller projects.

III. PROCEDURES

This guidance document describes the steps to follow when screening for hazardous wastes and contaminated materials, and performing more detailed assessments. All reference materials and sources of data discussed here are listed in Attachment 5.1.B. Contaminated materials' screenings are sometimes called "Phase I assessments" in the lending and real estate industries, and are typically performed by Department staff to determine whether additional study or testing is necessary. Screenings generally do not involve collecting or analyzing samples of soil or water, and are adequate for minor projects, and projects in rural or undeveloped areas where the possibility of encountering contamination is low. The Regional Environmental Unit can help identify projects where a waste screening is sufficient, and when the results of the screening indicate that additional work in the form of an assessment -- sometimes called a "Phase II assessment" -- is warranted.

Assessments are usually conducted when a project's location indicates a likelihood that contaminated materials will be encountered, and typically requires the help of consultants. Staff in the Consultant Management and Environmental Analysis Bureaus are available to assist the Regional Environmental Units, Project Managers or Designers in preparing a workscope for consultant services, identifying which elements in the base scope of services should be used, and estimating the appropriate level of required effort. The Regional Environmental Unit, Project Manager or Designer must still review the consultant's plans and proposals for a detailed investigation that could include geophysical and soil gas surveys, sample collection and analysis. A contaminated materials assessment also evaluates potential exposure for worker health and safety, disposal options for contaminated materials or remedial measures if necessary.

IV. PLANNING STAGE - SCREENING

The early planning stages provide the best opportunities to deal effectively with potential contamination problems on any project. Problems can be avoided, eliminated by changing the project's design, or scheduled for remediation as part of the construction project if they are identified early. The following sections describe the steps shown in Flow Chart 2 that should be completed as early as possible, and preferably before Design Approval is received. The Regional Environmental Unit can help identify those projects in rural areas where the likelihood of encountering contaminated materials is low, and some of the steps in Flow Chart 2 can be eliminated.

The elements described in NYSDOT's hazardous waste screening process are included in ASTM's Standard E1527-97, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." Following the steps in the ASTM standard will satisfy NYSDOT's requirements for hazardous waste screening. NYSDOT currently has a contract with a firm that provides database searches and assessment reports for NYSDOT projects and corridor studies, and can also provide custom search distances and Sanborn maps upon request.

A. Investigate Previous Activities and Current Site Uses

The best way to predict whether hazardous wastes or contaminated materials will be encountered on a project is to identify the previous activities within or near the project area. Research into the histories of the adjacent and underlying properties can help identify both the likelihood and the kinds of contaminants that may be encountered. A partial list of some activities that generate or are associated with wastes and contaminated materials is shown in Table 1.

TABLE 1
ACTIVITIES ASSOCIATED WITH CONTAMINATED MATERIALS AND WASTES

ACTIVITIES:	CONTAMINANTS:
Auto body or repair shops	Solvents, petroleum products, degreasers, antifreeze, lead-acid batteries
Coal storage yards and coal gasification plants	Polynuclear aromatic hydrocarbons (PAHs), metals, petroleum products
Chemical spill areas (if known)	Spilled material
Dry cleaners	Dry cleaning fluids, solvents & volatiles
Electroplating factories	Solvents and metals
Foundries	Phenols and metals
Furniture refinishers	Solvents and thinners
Gasoline service stations	Petroleum products, solvents, degreasers, antifreeze, batteries
Incinerators (municipal, spent product, other)	Various contaminants
Landfills (municipal, spent product, other)	Various contaminants; may require removal of disposed material or capping of fill
Manufacturers: electronics, paint, shoes, etc.	Various contaminants
Metal shop or metal finishing/ fabricating plant	Solvents, cyanide, metals, acids, & cutting oils
Print shop, photographic processors	Solvents, some metals
Railyards and tracks	PAHs, some metals, petroleum products, herbicides
Reconditioners of drums, barrels, tanks, etc.	Various contaminants
Recyclers (batteries, solvents)	Various contaminants
Sludge Management area	Metals & other contaminants
Scrap yard/salvage yard	Metals, petroleum products, PCBs, solvents
Transformer yards/electrical substations	PCBs

1. Examine Aerial Photography

A property's present appearance may not indicate previous structures or activities, especially in urban or industrial locations. Reviewing aerial photography can help identify previous land uses, filled areas, and structures that no longer exist. Generally if features on the air photos are too small, they are not very useful because a viewer cannot identify small features like impoundments or sheds. The scale of black and white photos should be at least 1:40,000, where one centimeter on the photo equals 40,000 centimeters on the ground, but other scales may be useful for infrared photography. NYSDOT's Map Information unit can provide information about general purpose base maps and aerial photography, and can be contacted at (518) 457-3555 or at MAGIS, Building 4 - Room 105, 1220 Washington Ave., Albany, NY 12232-0432. NYSDOT maintains an extensive inventory of aerial photography and the "Inventory of Aerial Photography and Other Remotely Sensed Imagery of New York State," 1968-1983, (October, 1995), describes the aerial photography of New York State and tells where air photos may be viewed or purchased. In addition, Cornell University's Laboratory for Environmental Applications of Remote Sensing (CLEARS) Airphoto Directory, June, 1990, lists older photographs dating back to 1926 in New York State. Aerial photographs can also be viewed at county Soil Conservation Service offices, and many town clerk or town engineer's offices.

NYSDOT's Photolog Unit also makes permanent photographic records of more than 16,000 miles of State highways, including the Thruway. Photologs are a series of sequential photographs taken at the rate of one hundred frames per mile from the driver's eye level of a moving vehicle. The camera is aimed slightly down and to the right to show the condition of the highway and adjacent roadside development. Photolog films dating back to 1984 are available for public inspection, and reproductions can also be obtained. The Photolog Unit can be contacted at (518) 457-1777 or Building 4 - Room 102, 1220 Washington Ave., Albany, NY 12232-0417.

2. Determine if Sanborn Maps are Available

Another source of information about a site's history is the Sanborn Map Company of Pelham, New York, which began in 1867 to produce large-scale maps of the commercial, industrial and residential sections of thousands of U.S. towns. These maps generally do not provide much useful information in areas that were rural or developed only recently, but are helpful in identifying former industrial activities such as manufactured coal gas plants (MGPs) that now lie in metropolitan settings. The Regional Environmental Unit has photocopied sets of the index of Sanborn Fire Insurance Maps for New York State, and can help determine if maps exist for a specific project area. Some Regional Environmental Units also have Sanborn maps for their regions.

A complete set of Sanborn maps can be viewed at the Library of the State University of New York - Binghamton, and the Archives of the New York State Museum has a nearly complete set for the

State. Individual maps may be obtained by using the database search firm under contract to NYSDOT or contacting EDR Sanborn, Inc. at (800) 352-0050.

B. Review Published Databases and Government Records

Several federal, State and local agencies maintain databases and records of known contaminated locations. New York was authorized in 1985 to administer and enforce its own federally-funded hazardous waste management regulatory program, and maintains extensive records of contaminated areas, sites being cleaned up, and those that have been remediated.

In recent years database search firms have been formed to serve the needs of the real estate and financial industries for information about whether properties are known or suspected to be contaminated. One of these firms is currently under contract to NYSDOT and maintains current files of both federal and State information that are examined during a hazardous waste screening. This service can provide rapid, useful and inexpensive data for a specific project or corridor.

A hazardous waste screening should include a review of the following sources:

1. Inactive Hazardous Waste Site Registry

The New York State Department of Environmental Conservation (NYSDEC) is responsible for investigating and overseeing the cleanup of hazardous waste sites. The records for each site comprise the Registry, and are grouped by location within the NYSDEC's nine regions. (Their web page, www.dec.state.ny.us, describes the regulatory programs and regional offices with addresses and telephone numbers.) The Registry classifies each site based on the disposal of hazardous waste and its threat to public health or the environment. The Registry also reports the status of any investigation, design or construction work, and lists any federal or State legal action. Copies of the Registry, quarterly status reports, or information about recent changes can be obtained from the NYSDEC's Division of Environmental Remediation at (518) 457-5861. NYSDOT also has obtained the NYSDEC Registry in ARCVIEW or ARCINFO, two GIS (Geographic Information Systems) software systems. The GIS datasets show the Registry sites as address points, and do not represent actual areas of contamination. Contact the NYSDOT regional GIS coordinator or Environmental Analysis Bureau for additional information about information available on GIS.

Some properties are removed or "delisted" from the Registry if the NYSDEC's investigation finds no evidence that the contamination resulted from the disposal of hazardous wastes, or the risks to public health and the environment were adequately reduced. However, residual contamination may pose a problem if pavement is removed to expose contaminated soil, for example, or excavation occurs. (The GIS datasets do not include delisted sites.) The project designer should contact the NYSDEC's Regional Remediation Engineer to determine whether any of these kinds of delisted sites lie within the project corridor.

2. Records of Registered Chemical or Petroleum Storage Tanks

NYSDEC maintains records for all underground storage tanks (USTs) and aboveground storage tanks (ASTs) registered after 1987. Regional NYSDEC offices have records of registered tanks in most areas of the State. In Cortland, Rockland, Nassau, Suffolk, and Westchester Counties the County Health Department maintains these records. (In addition, many large cities and local fire departments maintain records of tank locations and contents.) Active, registered USTs and ASTs must be tested periodically for leaks, and any spills must be reported to the NYSDEC within two hours of discovery.

If right-of-way or a permanent easement will be taken less than one quarter mile from an existing UST, the location, age, and date of the last inspection or pressure test should be examined to determine whether subsurface releases or contaminated soil are likely to be present. If the project involves excavation below the zone of saturation (water table), the property should also be considered for a contaminated materials assessment to determine if petroleum products have migrated onto the right-of-way.

NYSDEC has information on spills and storage facilities available as a series of databases on CD.-ROM. That CD is available at a cost of $5.00 and contains current information about: the Chemical Bulk Storage (CBS) system of facilities which store hazardous substances in USTs or in ASTs with a capacity of 185 gallons or more; the Petroleum Bulk Storage System (PBS) database of facilities that can store more than 1,100 gallons but less than 400,000 gallons; the Oil and Chemical Spills System (Spills) database; the Major Oil Storage Facilities (MOSF) database of onshore vessels and facilities that store 400,000 gallons or more; the Project Identification Number (PIN) system; and a Freedom of Information Law (FOIL) Database Search Engine. NYSDOT also has the CBS, MOSF, and the PBS databases available on ARCVIEW or ARCINFO GIS files.

3. Oil Spills, Waste Incident Reports and Chemical Release Reports

The NYSDEC's Division of Environmental Remediation maintains the Spills database with information about more than 10,000 spills and releases of petroleum products within New York State. If a spill or release of a petroleum product is known or reported, the NYSDEC assigns a spill number and maintains an open-spill file until the contamination is satisfactorily addressed. A typical spill report is shown in Attachment 5.1.C. **Any NYSDOT project that involves excavation adjacent to an existing open spill must be assessed for petroleum contamination in the right-of-way.**

Information about open and closed spills can be obtained through the database search firm, from the NYSDEC databases, or from NYSDOT's GIS datasets. Additional information or questions can be obtained from the NYSDEC Regional Remediation Engineer and spills program staff.

4. Other State Sources of Information

Certain contaminated areas are specifically exempted by federal laws and State regulations from classification as inactive hazardous waste sites. Transformer yards contaminated with PCBs or former manufactured coal gas plants cannot be classified as hazardous waste sites under RCRA, for example, but can represent areas of significant contamination. Typically the NYSDEC has information about these sites on file in their regional office, even if no extensive assessment has been conducted. NYSDEC, working with the State Health Department, issued a summary of 296 sites in December 1998 as the Hazardous Substance Waste Disposal Site Study. The Environmental Analysis Bureau has most of these sites with GIS coordinates for use in NYSDOT projects. The Regional Environmental Unit meets regularly with NYSDEC staff to review proposed and current Department projects, and can assist you in learning whether and what kind of additional information exists.

5. Federal Sources of Information

Although a number of federal databases contain information about contaminated materials, their information is generally obtained from the states and is largely duplicative of information available through the NYSDEC and State Health Department. For example, CERCLIS, the Comprehensive Environmental Response, Compensation, and Liability System, is a computer database of more than 26,000 potential hazardous waste sites in the nation. CERCLIS contains information about sites that have been reported by states, municipalities and private parties and includes sites on the National Priorities List (NPL) that are ranked according to a hazardous ranking system. In New York State, the Environmental Conservation Law (ECL) requires that all sites listed on the NPL must also be listed in the State Registry. CERCLIS information can be obtained through the database search firm under contract to NYSDOT or from the U.S. EPA/National Technical Information Service at (703) 603-8904. CERCLIS information is also available through online information at the U.S. EPA website, www.epa.gov/superfund/sites/index.htm.

On very large projects other federal databases may also be consulted. Some of the most useful databases that have been used in the past are: (1) RCRIS, the Resource Conservation and Recovery Information System that includes some information about sites that generate, transport, store, treat and/or dispose of hazardous waste under RCRA, (703) 308-7907; (2) HMIR, the Hazardous Materials Information Reporting System, that contains hazardous material spills incidents reported to the U.S. DOT, (202) 366-4555; (3) PADS, the PCB Activity Database System, that identifies generators, transporters, commercial stores and/or brokers and disposers of PCBs, (202) 260-3992; and (4) TRIS, the Toxic Release Inventory System that identifies facilities that release toxic chemicals to the air, water and land in quantities that must be reported under SARA Title III Section 313, (202) 260-2320.

6. County and Local Sources of Information

For projects in urban or former industrial areas, the Regional Environmental Unit, Project Manager or Designer may need additional information about previous activities and the contaminants associated with them. Many local sources of information exist and can help to identify both locations and contaminants of concern. Municipal and county building and planning departments generally maintain certificates of occupancy, building permit files, title and zoning records, deeds and easement information. Some local fire departments have extensive records on the removal and installation of USTs, Emergency Response Contingency Plans and the Community Right-to-Know Emergency Response Plans. Some fire departments and county emergency planning units also maintain material safety data sheets (MSDS) for chemicals used by specific local factories. County health departments can provide information on contaminant releases in the community and effects on public drinking water supplies. Historical societies, rail historians, and local archives may have valuable information about past manufacturing and industrial practices in an area. Other possible sources of information include drilling firms, private water companies, citizens groups, and records from existing and former industries and firms.

7. Interviews with Employees and Local Residents

Some of the most useful local information can be obtained from interviews with neighbors, local residents, and current or retired employees who still reside in the area. They often remember critical information such as how and where wastes were disposed or the location of disposal pits and trenches that are no longer evident. Although their information is generally anecdotal, it can be useful to tailor further investigation during a contaminated materials assessment.

C. Site Visit or Project Walkover

Information developed from the steps above and discussions with the Regional Environmental Unit provide a basis for suspecting if hazardous wastes or contaminated materials are present, and whether a more detailed assessment should be conducted. However, to confirm whether information collected about a site is accurate, a walkover inspection of the site should be performed as early as possible. The preliminary historical background and database searches should be conducted before scheduling a visit to the project site to reduce the risks of exposure to any hazardous or toxic materials.

The features listed below may indicate problems with hazardous wastes or contaminated materials. A summary sheet that can be photocopied and filled out during the walkover inspection is included as Attachment 5.1.D.

1. Visual Evidence of Contamination

Some of these features may be warning signs of contaminated soil or groundwater:

- Soil discoloration or staining
- Stressed or dead vegetation
- Spills, leaks, leachate or discolored water
- Air emissions, odors or smoke
- Evidence of previous fires

Sometimes seeps, rust-colored water or oil sheens are not seen at the project location, but may be observed discharging from embankments at a lower elevation near the area.

2. Structures and Pipelines

Some features are evidence of potential subsurface contamination, especially from leaks and discharges associated with USTs or ASTs. The following features should be noted if they are observed during the site visit:

- Underground or aboveground tanks, including vent or fill pipes
- Pipelines or pipes
- Well casings or riser pipes from monitoring wells
- Refueling or pump islands
- Drums (55 gallon or other size) and chemical containers
- Discarded transformers or evidence of former transformers such as transformer pads
- Surface impoundments or lagoons
- Landfills or dumps
- Dumpsters, or bulk, solid waste
- Railroad tracks or railyards
- Sumps, dry wells or septic systems

In addition, other features should be observed carefully, but are less likely to be associated with contaminated materials:

- Berms or dikes (associated with previous impoundments)
- Air stacks and vent pipes
- Posted signs
- Sewers or manholes
- Drainage ditches
- Floor drains or catch basins
- Authorized storage of hazardous waste

3. Hazardous Materials

Hazardous materials may be stored in buildings and structures, or encountered within the proposed right-of-way. These materials and products should be kept in their original containers. Partly-filled containers should never be mixed together. Disposing of stored materials requires special testing and handling if these wastes have been mixed or if it cannot be confirmed that a drum contains only paint, for example. Stored pesticides or unused chemical products (*e.g.,* paints, solvents, etc.) are not wastes until they must be discarded. A separate assessment for asbestos-containing materials may also be required in some cases.

V. HAZARDOUS WASTE AND CONTAMINATED MATERIALS ASSESSMENTS

The information developed by following the steps discussed above may indicate that further investigation in the form of a hazardous waste or contaminated materials assessment is warranted. Assessments are typically performed by consultants after developing a consultant study workscope with the assistance of the Consultant Management Bureau, and preparing investigation, sampling and analytical plans in coordination with the Regional Environmental Unit and Environmental Analysis Bureau staff.

A. Develop Assessment Objectives

A hazardous wastes and contaminated materials assessment (see Flow Chart 1) can be limited in scope (*i.e.,* sampling stained soils near a salvage yard to determine whether PCB contamination is present), or may include an extensive program of soil borings, geophysical surveys, and analytical sampling of multiple sites along a project corridor. Information developed from the screening will help define the assessment objectives by highlighting what important questions must be answered. For example, some assessments are conducted to determine if special personal protective measures must be used to protect workers from exposure to PCB contamination during project construction. Other assessments may be used to determine whether contaminated materials are hazardous or nonhazardous, to develop disposal options for excess excavated material, or demonstrate that marginally-contaminated material can be safely reused on the project. In some instances assessments have led Department staff to modify the design of the project to avoid acquiring and remediating highly contaminated areas. (The special approaches necessary for petroleum-contaminated soil and water are discussed separately in Chapter 5B.) Assessment plans and reports should describe the specific reasons for the investigation, list the investigation objectives, follow current regulatory policies and use standard, generally accepted procedures.

The critical questions to be answered will determine how many, where, and what types of samples should be collected, and what the results are expected to show. For example, to determine how

much soil has been contaminated by spilled pesticides, closely-spaced soil borings should be advanced and samples from discrete intervals (0 - 2 feet, for example) analyzed for the suspected contaminants. If, on the other hand, a specific volume of contaminated material will be excavated and removed, then more widely-spaced borings should be drilled and composite samples analyzed for a wide range of contaminants to fully characterize the waste material to be disposed.

B. Consultant Services

The Consultant Management Bureau can assist Regional Environmental Units, Project Managers and Designers to obtain the services of a qualified environmental consultant. Their Base Scope of Services provides a full list of all standard workscope items that could be required on even the most complicated hazardous waste and contaminated materials assessments. Staff in the Environmental Analysis Bureau can answer specific questions and assist in developing workscopes for unusual circumstances or when new or innovative methods are proposed or required. The Consultant Management Bureau can also assist in emergency or quick-response situations through hazardous waste consultants under term agreements. Lastly, current lists of consultants approved for Superfund remediation work and other consulting firms that meet the minimum qualifications for hazardous waste investigations are available through the Regional Environmental Unit or from the Environmental Analysis Bureau.

C. Sampling and Testing

Section XII, Summary of Analytical Testing Procedures, describes some of the standard methods and protocols for environmental sampling in hazardous waste and contaminated materials assessments. That summary includes detailed information about using approved laboratories including laboratories under contract to NYSDOT, selecting the best appropriate analytical tests, determining when a waste is hazardous or nonhazardous, following chain-of-custody procedures, and other information about general testing procedures. Chapter 5B will provide specific information on test methods for petroleum-contaminated media that are generally considered non-hazardous solid wastes. (See chart in Attachment 5.1.E.)

D. Interpreting Results

Interpreting analytical results is the most difficult part of a hazardous waste or contaminated materials assessment. The results from a well-designed assessment, however, can determine whether the contaminated material must be managed and disposed as a hazardous waste, whether it can be disposed as a nonhazardous solid waste, or if only marginal contamination exists, it may be beneficially used for backfill without posing a risk to workers, public health or the environment.

Materials that exceed the regulatory levels listed in the table in Attachment 5.1.F when they are tested using the Toxicity Characteristic Leaching Procedure (TCLP) must be managed and disposed

as hazardous wastes. In addition, petroleum-contaminated materials that are ignitable, petroleum products of unknown origin or which have not been tested in a laboratory, and materials contaminated with more than 50 parts per million (ppm; or milligrams per kilogram) of PCBs must be managed as hazardous wastes.

On most NYSDOT projects, however, the analytical results indicate that the soil or other material is NOT a hazardous waste. NYSDOT generally follows current NYSDEC regulations and policies in determining whether and how to reuse or dispose of nonhazardous, marginally-contaminated, or uncontaminated soil or other media. Because these policies vary between different regulatory program areas and are subject to change, Project Managers and Designers should contact the Regional Environmental Unit or Environmental Analysis Bureau staff for information on current State policies. The Environmental Analysis Bureau should also be contacted if NYSDOT staff believe that inappropriate policies and guidance are being used, as for example, if oil spill cleanup values are being used in an area where no spills have occurred.

The assessment results form the basis for developing Special Specifications or Special Notes to ensure that the contractor properly handles and disposes of contaminated materials. For example, Specification 202-3.04, Disposal of Petroleum Storage Tanks, is currently available in NYSDOT's *Standard Specifications.* Other Special Specifications and Special Notes have also been developed for disposing of contaminated materials, construction and demolition debris materials, and petroleum- and PCB-contaminated soils, and can be used or modified for specific projects. A complete list of the current special specifications developed for NYSDOT projects is available through the Design Division's "Electronic Toolbox" on that server.

VI. DESIGN STAGE

Early and careful screening can provide a realistic understanding of what additional specifications must be included in the bid documents to manage or remediate contaminated materials or hazardous wastes, whether special protective measures are required for worker health and safety, and whether highly contaminated materials should be managed by specialized subcontractors. If the assessment finds little or no potential for hazardous wastes or contaminated materials, the Draft Design Report (DDR) should briefly summarize the assessment's findings and state that conclusion.

Some assessments will conclude that hazardous wastes or contaminated materials must be managed and disposed before or during project construction. The Project Manager or Designer should discuss what further steps should be taken with the Regional Environmental Unit or request assistance from Environmental Analysis Bureau staff.

After review by the Regional Environmental Unit or Environmental Analysis Bureau staff, some assessments must also be submitted to regional NYSDEC staff for review. Projects that encounter multiple contaminants, or different areas of contamination along one project corridor may require

review by more than one NYSDEC program. The Regional Environmental Unit should be involved in these discussions with NYSDEC staff, and can help Project Managers and Designers resolve specific technical issues and questions.

On occasion the regulatory requirements of different NYSDEC program areas or regional staff, and U.S. EPA may appear to conflict. Staff in the Environmental Analysis Bureau are available to review these apparent contradictions and work to resolve them through liaisons with NYSDEC's central office program representatives and U.S. EPA staff.

On some projects, the assessment results indicate that further testing is necessary to map out the extent of contamination and to establish a basis for developing realistic clean-up options and goals. The Regional Environmental Unit, assisted by Environmental Analysis Bureau staff, will help Program Managers and Designers develop these additional investigation and sampling programs, and act as the Department's technical representatives before other State and federal regulatory agencies.

Some assessment results have led to the listing of a site on the State's Registry of Inactive Hazardous Waste Sites or the federal National Priorities List. The scope of the contaminant investigations and remedial actions required under those programs is far more rigorous and extensive than the procedures summarized in this guidance document. These investigations must be handled by consultants experienced in hazardous waste investigation and remediation. Environmental Analysis Bureau staff can help identify when the contamination at a site is sufficient to warrant its listing and when specialized consultants must be hired.

VII. CONSTRUCTION STAGE

Wastes and contaminated materials unexpectedly encountered during the construction stage always cause problems, delay the project schedule, and involve additional expense. Field personnel and the Engineer-in-Charge must exercise best judgment in assessing the problem and ensuring that the workers, the public, and the environment are protected from dangerous or toxic materials. Each region's safety and health representative, construction safety coordinator, and the Regional Environmental Unit must be alerted to determine an appropriate and prompt response. NYSDOT's stand-by hazardous waste consultants are available on short notice to help in these situations. The Regional Environmental Unit can help determine if a suspected contaminated material should be segregated or may be acceptable as fill. When a spill or unexpected release of a petroleum or other solvent product is encountered, it MUST be reported to the NYSDEC spills program at (518) 457-7362 within two hours of discovery. Staff in the Environmental Analysis Bureau should also be informed as soon as possible of an unanticipated encounter with contaminated materials. Environmental Analysis Bureau staff can assist by maintaining a liaison with NYSDEC and Health Department program staff, identifying those problems that are beyond the scope of Department staff to resolve, and by developing future clean-up or containment options.

VIII. CITATIONS AND DEFINITIONS

Many of the definitions related to hazardous waste, hazardous substances, and contaminated materials are taken from the Federal and State statutes and regulations that govern them. As a result, the Citations are included with the Definitions in this guidance document. Some of the applicable New York State regulations are available at: www.dec.state.ny.us/website/regs/index.html. Attachment 5.1.G includes a listing of these primary applicable regulations.

Approved State - State approved or authorized by the U.S. EPA under 40 CFR part 271 to administer its' own hazardous waste programs. New York received approval in May, 1985.

ARARs - "Applicable or relevant and appropriate requirements." Federal or State clean-up standards that are set on a case-by-case basis when complying with federal statutes.

Assessment - A detailed investigation of an area to determine whether contaminated materials are present. A hazardous waste and contaminated materials assessment typically involves collecting and analyzing samples of soil, surface water or groundwater, and may include soil gas or geophysical surveys. Banks and real estate firms call these Phase II assessments.

BTEX - Benzene, toluene, ethylbenzene and xylene; four contaminants typically associated with releases of petroleum products such as gasoline that are among the most soluble and mobile.

CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC Section 9601-9657. The federal law that created the Superfund and controls, cleans up, and designates liability for abandoned, uncontrolled or inactive hazardous waste sites. Under CERCLA, all "persons" who own a site contaminated with hazardous substances or wastes are liable for the costs of removal and clean-up. The Department is named as a potentially responsible party (PRP) in a number of ongoing CERCLA lawsuits because of past disposal practices. "Hazardous substances" are defined in this law.

CERCLIS - Comprehensive Environmental Response, Compensation and Liability Information System; a U.S. EPA database.

CFR - Code of Federal Regulations; all federal regulations presently in effect.

Characteristic Waste - A waste that is hazardous because it possesses at least one of these characteristics: (1) corrosivity - if the material dissolves metals or burns skin; (2) reactivity - if the material undergoes violent chemical reactions with water; (3) ignitability - if the material catches fire easily; or (4) toxicity - if the material or fumes can be noxious or poisonous. The U.S. EPA has established standard tests for measuring these characteristics. For example, spent abrasives used to sandblast bridges that are coated with lead-based paint may be characteristic toxic wastes because

of their high lead content. See the NYSDEC regulations in 6 NYCRR 371.3 for a complete definition.

Characterization - Sampling, monitoring and analysis at a facility or site to determine the nature and extent of a contaminant release. Characterization provides the basis for acquiring the necessary technical information to develop and select appropriate cleanup standards and measures.

Contaminated materials - A general phrase that is not defined in federal or State statutes or regulations, but includes hazardous wastes under RCRA, hazardous substances under CERCLA, and other regulated materials such as petroleum-contaminated soil that must be handled as nonhazardous waste.

ECL - Environmental Conservation Law. Specifically, Chapter 43-B of the Consolidated Laws of New York State, that regulates hazardous wastes and substances under Articles 19, 27, 37 and 40.

ELAP - The New York State Department of Health's Environmental Laboratory Approval Program that approves commercial laboratories who analyze environmental samples collected in New York.

EPA - The U.S. Environmental Protection Agency.

EPA Identification Number - The number assigned to each generator and transporter of hazardous waste, and to each treatment, storage and disposal facility.

EPCRA - Emergency Planning and Community Right-to-Know Act; also known as SARA Title III.

EP Tox - Extraction Procedure Toxicity Test. The U.S. EPA formerly used this test to determine if a waste possessed the characteristic of toxicity and must be managed as a hazardous waste. In 1990 the U.S. EPA issued the TCLP test to replace the EP Tox test, and New York adopted this regulatory change in 1995 in 6 NYCRR 371.3(e).

Generator - A producer of hazardous waste.

GIS - Geographic Information Systems; computer-based systems of storing, modeling, manipulating, analyzing and retrieving various kinds of geographic information. NYSDOT has adopted ARCVIEW and ARCINFO as their standard GIS systems.

Hazardous Substance - CERCLA broadly defines hazardous substances to include: (1) all toxic pollutants and hazardous substances under the federal Clean Water Act; (2) hazardous wastes as defined in the Resource Conservation and Recovery Act (RCRA); (3) any hazardous air pollutant of the federal Clean Air Act; and (4) chemicals designated as "imminently hazardous" under the

Toxic Substances Control Act (TSCA). CERCLA, however, excludes crude oil, petroleum products and natural gas products.

Hazardous Waste - As defined in RCRA, a solid (or liquid) waste or combination of solid wastes that, because of quantity, concentration, or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in mortality or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed. Hazardous waste can be "listed wastes" that are generally produced by specific industrial processes, or "characteristic wastes" that exhibit the characteristic of ignitability, corrosivity, reactivity or leachability (as determined by TCLP testing). RCRA specifically exempts some solid wastes, including household waste, cement kiln dust waste and arsenic treated (pressure treated) wood, among many others. See Attachment 5.1.A and 6 NYCRR 371.1(d) for fuller explanations.

HSWA - Hazardous and Solid Waste Amendments of 1984, 42 USC Sections 6901-6987, amendments to RCRA.

Listed Hazardous Waste - A waste from either a specific industrial process or a generic waste (such as a common solvent) that is identified as a hazardous waste. Paint wastes that contain more than 10% of the solvent toluene are listed hazardous wastes, for example. The full set of listed wastes for New York State is given in 6 NYCRR 371.4.

Manifest - A shipping document for tracking and auditing hazardous wastes; the Hazardous Waste Management and Instructions in Appendix 30 of 6 NYCRR, or a shipping document U.S. EPA form 8700-22.

NDM - Navigational dredge material; material dredged or excavated from the waters of the State, including sediment, soil, mud, sand, shells, gravel or other aggregate, for the direct or indirect purpose of establishing or increasing water depth, or increasing the surface or cross-sectional area of a waterway. NDM does not include soil and sediment excavated or removed for the purpose of bridge repair or reconstruction. Because some NDM is contaminated, it is regulated under the federal Clean Water Act.

NPL - National Priorities List. Sites are ranked by the U.S. EPA using the Hazard Ranking System (HRS) in order of those most in need of remediation using federal money. The NPL was promulgated under CERCLA Section 105(a)(8).

NYCRR - The Official Compilation of Codes, Rules and Regulations of the State of New York. Title 6 (6 NYCRR) regulates hazardous wastes under Parts 361, 364, 370, 371, 372, 373-1, 373-2, 373-3, 374, 375, and 376. Some of these regulations can be viewed at www.dec.state.ny.us/website/regs/index.html.

NYSDEC - The New York State Department of Environmental Conservation, that regulates hazardous and nonhazardous wastes in New York.

PCBs - Polychlorinated biphenyls. A class of more than 200 compounds whose manufacture and disposal are regulated under TSCA, and as wastes, are regulated by New York State. Sometimes called "Aroclors," which was a former trade name in the U.S.

PRP - Potentially Responsible Party. A "person" that held title to contaminated land or was partly responsible for the environmental damage and who is also liable for the clean-up costs under CERCLA.

RBCA- Risk-Based Corrective Action; a process developed by the ASTM of addressing contaminated sites in the context of the actual risk they present to human health and the environment rather than requiring cleanup to an inflexible standard; NYSDEC is considering adopting a risk-based policy for petroleum contamination.

RCRA - Resource Conservation and Recovery Act, 42 USC 6901 et. seq. Passed in 1976, RCRA defines and regulates the treatment, storage, transportation and disposal of hazardous wastes from "cradle to grave."

RI/FS - Remedial Investigation/Feasibility Study. A study of a contaminated site and identification of remedial action to be taken.

ROD - Record of Decision. The U.S. EPA's administrative record of what remedial action is to be taken at the site that is remediated under CERCLA.

SARA - Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499, 100 Stat. 1613. SARA refined the Superfund legislation to require reporting of any release of hazardous substances to any environmental medium and expanded the defenses of "innocent landowners" under CERCLA, especially for government entities that acquired contaminated properties by eminent domain if due care and caution were first exercised.

Screening - A brief investigation of an area to determine whether contaminated materials are likely to be present, using published information and observations. Screenings are typically performed by Department staff and do not involve collecting soil or water samples for laboratory analysis. The financial and real estate industries use the term "Phase I Environmental Assessment" for a similar investigation.

Solid Waste - A discarded material that is solid, liquid, semi-solid or contained gaseous material, that results from industrial, commercial, mining and agricultural operations, and from community activities. Some discarded materials such as return irrigation flows or domestic sewage are not

classified as solid wastes. A material is discarded if it is abandoned by being disposed of, burned or incinerated (including being burned as a fuel for the purpose of recovering usable energy), or accumulated before being disposed. A material is disposed if it is discharged, deposited, injected, dumped, spilled, leaked or placed into or on any land or water so that such material or any constituent thereof may enter the environment or be emitted into the air or discharged into groundwater or surface water.

Superfund - See CERCLA.

TCLP - Toxicity Characteristic Leaching Procedure. A revised test method adopted by New York State in 1995 to determine if a material exhibits the characteristic of toxicity, and must be managed as a hazardous waste. U.S. EPA Method 1311.

TSCA - The Toxic Substances Control Act. A law enacted in 1976 that regulates PCB manufacture and disposal, and establishes that most materials containing more than 50 milligrams per kilogram (mg/kg or parts per million) PCBs must be managed as hazardous waste.

UST - Underground Storage Tank. USTs are regulated under the 1984 amendments to RCRA, Section 601, 9001-10 if they contain a "regulated substance" such as petroleum and more than 10% of the tank is below ground.

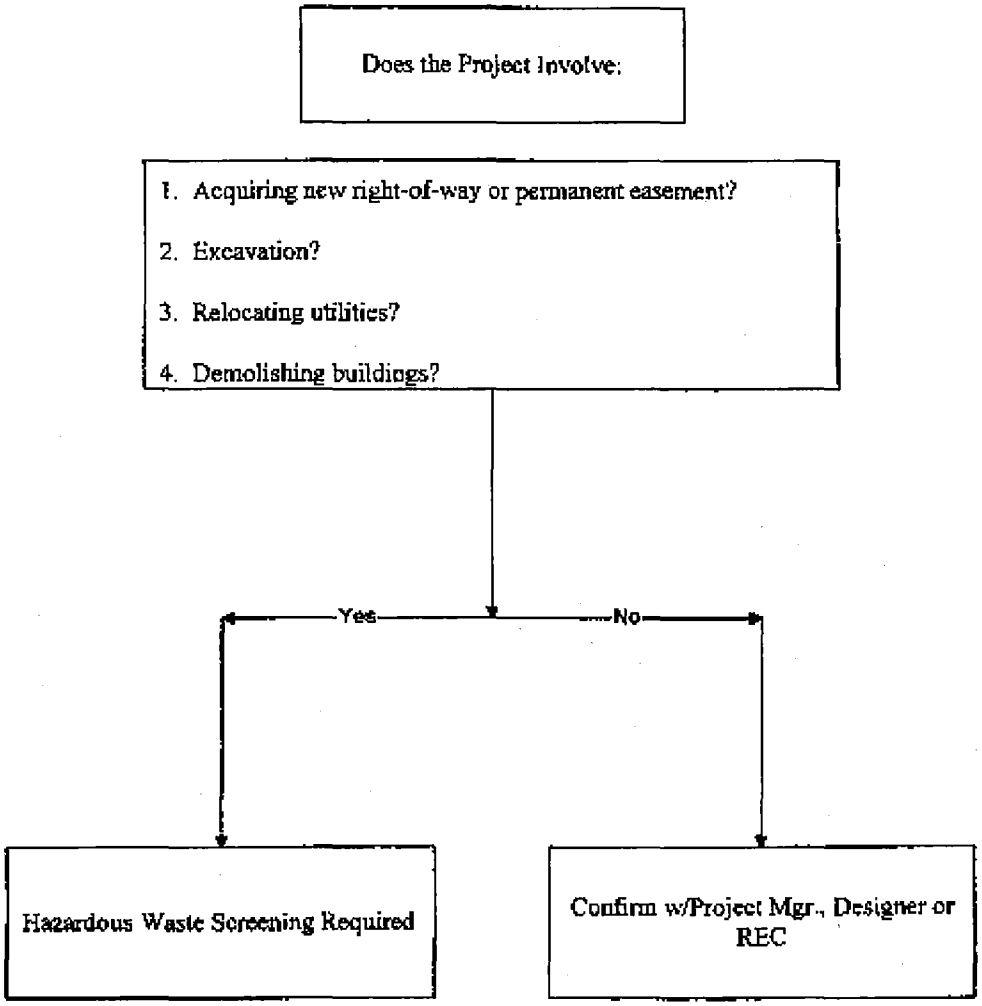
VOC - Volatile organic compound; a family of organic compounds used in paints and solvents and which evaporate readily.

IX. ADDITIONAL INFORMATION

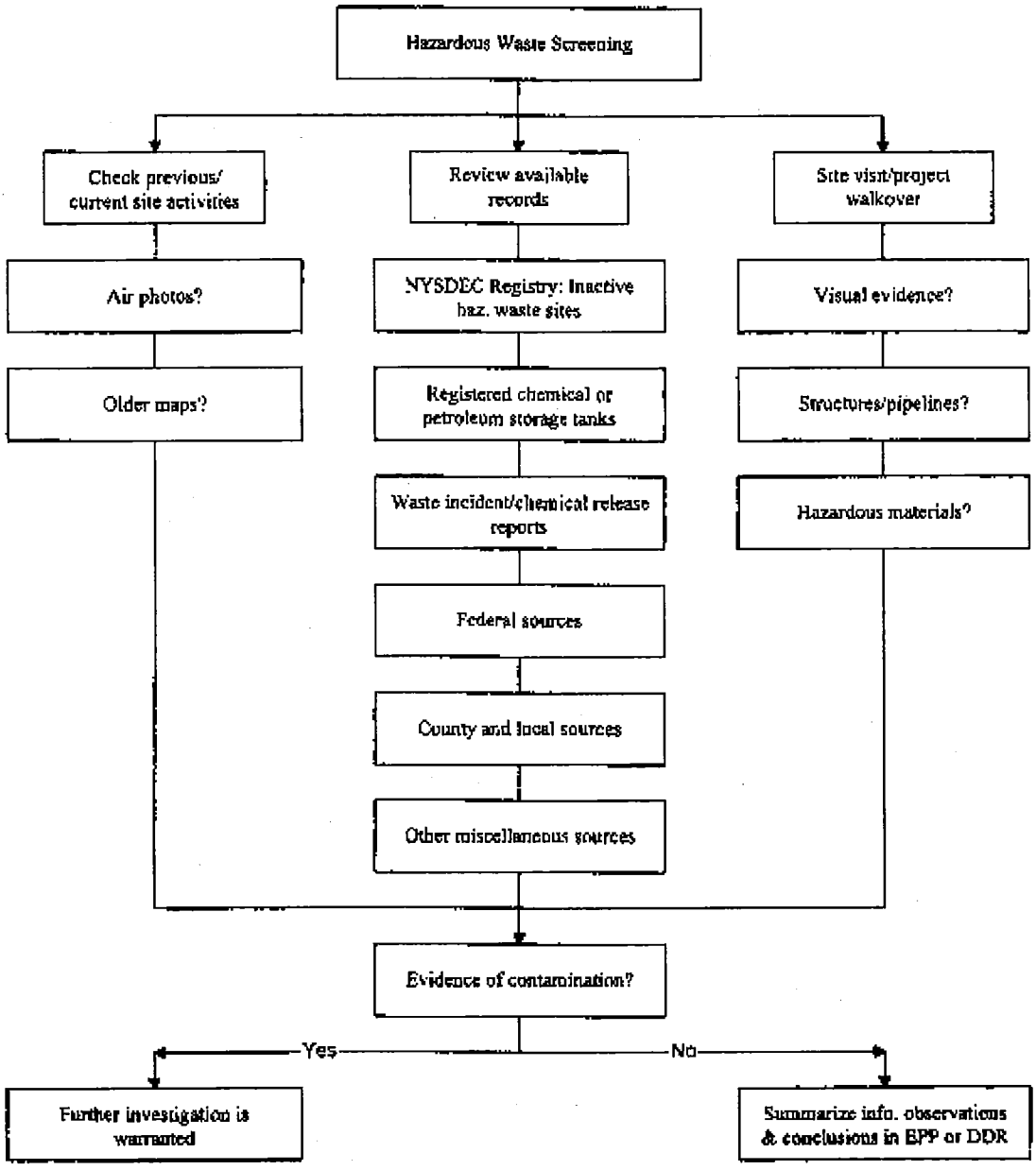
This Project Environmental Guideline was prepared by staff in the Hazardous Waste/Groundwater Section of the Environmental Analysis Bureau. For further information contact the Environmental Analysis Bureau, Building 5-303, 1220 Washington Avenue, Albany, New York 12232-0473; telephone: (518) 457-5672.

X. FLOW CHARTS

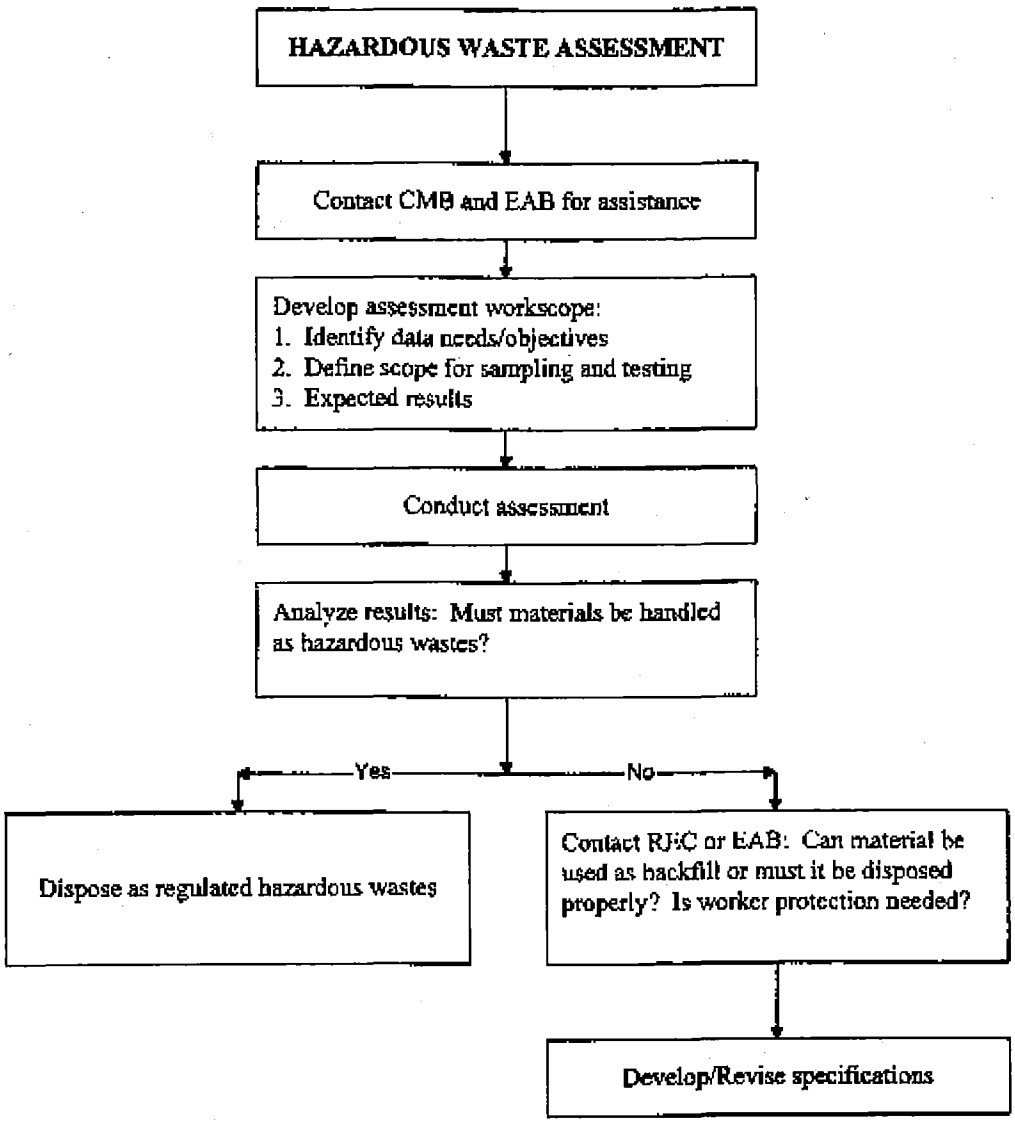
FLOW CHART 1



Flow Chart 2


Hazardous Waste Screening
Check previous/ current site activities
Review available records
Site visit/project walkover
Air photos?
NYSDEC Registry: Inactive haz. waste sites
Visual evidence?
Older maps?
Registered chemical or petroleum storage tanks
Structures/pipelines?
Waste incident/chemical release reports
Hazardous materials?
Federal sources
County and local sources
Other miscellaneous sources
Evidence of contamination?
Yes
No
Further investigation is warranted
Summarize info. observations & conclusions in EPP or DDR

Flow Chart 3


HAZARDOUS WASTE ASSESSMENT
Contact CMB and EAB for assistance
Develop assessment workscope:
1. Identify data needs/objectives
2. Define scope for sampling and testing
3. Expected results
Conduct assessment
Analyze results: Must materials be handled as hazardous wastes?
Yes
No
Dispose as regulated hazardous wastes
Contact RJ:C or EAB: Can material be used as backfill or must it be disposed properly? Is worker protection needed?
Develop/Revise specifications

XI. SUMMARY OF ANALYTICAL TESTING PROCEDURES

This section of Chapter 5.1 briefly describes the most commonly used analytical tests and information about general testing procedures. Because regulatory requirements change and methodologies are continually improved, this section is designed to be revised more frequently than other portions of Chapter 5.1.

A. Background

Sampling data is collected for different reasons. Sampling may be performed to answer questions about potential risks to worker safety. When a known volume of material must be excavated and disposed, sampling data can help determine whether it must be handled and disposed of as hazardous waste, or as nonhazardous, industrial solid waste. Some sampling is performed because federal or State regulations that govern such activities as disposing of soil or sediments contaminated by PCBs (polychlorinated biphenyls) have established threshold concentrations and require specific analyses. Lastly, the Department may have its own objectives for sampling, such as determining whether a particular property is contaminated before deciding whether to acquire it.

Some regulatory programs have standard lists of sampling parameters and test methods. For example, dredged sediments are regulated under the Federal Water Pollution Control Act and Clean Water Act. If contamination is suspected, the material must be tested for a list of 126 compounds and elements known as the "priority pollutants." Materials falling under the jurisdiction of CERCLA (Superfund) are analyzed for the Target Compound List (TCL) which was formerly known as the Hazardous Substances List (HSL). The TCL is a list of 130 compounds and 24 metals that must be analyzed to specific detection limits, and is discussed in more detail in this section.

Some parameters appear on several lists because they pose risks to public health and the environment under a variety of conditions, but the required test methods may differ from one list to another. To confirm that public drinking water supplies are safe, the analytical methods must be able to detect very small concentrations of certain contaminants in the low part per billion range. Testing

suspected hazardous wastes, on the other hand, typically involves measuring a wide variety of substances but without such low detection limits.

Throughout Chapter 5.1 the required detection limits are given as parts per billion (ppb), or micrograms per liter (µg/l) for aqueous samples and micrograms per kilogram (µg/kg) for solids. Other limits are expressed as parts per million (ppm), or milligrams per liter (mg/l) for aqueous samples and milligrams per kilogram (mg/kg) for soil samples. In addition, the Chemical Abstract Service (CAS) Number is also given for some compounds listed in the attachments.

B. Sampling Methods

The U.S. Environmental Protection Agency's (U.S. EPA's) manual "SW-846," Test Methods for Evaluating Solid Waste - Physical/Chemical Methods, 3rd edition, is the standard, generally acceptable guidance document for collecting and analyzing environmental samples for RCRA programs. This document can be viewed online at: www.epa.gov/epaoswer/hazwaste/test/sw846.htm. Samples should generally be collected according to this manual.

C. Collecting The Sample

Any sample collector must know why the sample is being collected and understand the types of contaminants likely to be present. Consultants generally collect samples during hazardous waste assessments because they are trained to anticipate hazards, understand standard safety practices and emergency procedures, and possess the personal protective equipment such as latex gloves or respirators for various level(s) of personal protection.

NYSDOT staff may choose to collect environmental samples in some cases. Before collecting any samples of contaminated materials they should have current training in hazardous waste operations that meets the requirements of OSHA in 29 CFR 1910.120. In addition, NYSDOT staff should not wear "street clothes" and avoid such activities as eating, drinking, chewing gum or tobacco, smoking, or applying cosmetics while they remain in the areas to be sampled. Sample collectors should avoid contact with potential contaminants and not kneel on the ground, or place their equipment on drums, containers or on the ground. Sample collectors should carefully wash their hands and faces upon leaving the area and before eating, drinking, taking breaks, or smoking.

Samples must represent the material to be analyzed, and great care should be used to avoid introducing any other substances into the sample. Sample collectors should wear latex gloves and use sterile laboratory-supplied sample containers.

Some contaminants such as gasoline and other petroleum contaminants quickly evaporate (volatilize) when they are exposed to air. Samples are usually collected in the order of their volatility for this reason, beginning with volatile organic compounds and finishing with samples for metals.

D. Preserving The Sample And Holding Times

Some contaminants begin to change from the time they are collected and must be preserved by various methods. To prevent microbial or chemical degradation, the samples are quickly chilled to 4° Centigrade (40° F.) by placing them in a cooler with ice. In addition, some metals and compounds must be chemically preserved to prevent their alteration. For example, water samples that will be analyzed for metals must be preserved with nitric acid to lower the pH below 2.0. Cyanide, on the

other hand, is a negatively charged ion, and is destroyed by adding acid to the sample; cyanide must be analyzed from a sample that is not acidified. Soil samples generally only require preservation by refrigeration. Despite efforts at preservation, some contaminant concentrations and forms change with time. Attachment 5.1.H lists the required holding times for the most commonly used tests.

E. Chain-of-Custody (Shipping The Samples)

Chain-of-custody forms are used to document that the samples were properly collected, not contaminated with extraneous substances, and delivered within the appropriate holding times. Each person who accepts shipment of the samples should sign the form and note the date and time. An example of a Chain-of-Custody form from a contract laboratory is shown in Attachment 5.1.I.

F. Approved Laboratories

The Environmental Laboratory Approval Program (ELAP) was established by the New York State Department of Health (NYSDOH) to inspect, evaluate, and approve laboratories performing environmental analyses in the State of New York. Laboratories are able to analyze numerous different substances or properties, referred to as analytes. ELAP approves laboratories for examination of over 300 different analytes within the categories of Potable (Public Drinking) Water, Non-Potable Water, Solid/Hazardous Waste, and Air/Emissions. The analytes are grouped into 28 subcategories. Not all laboratories are approved for every analyte within the subcategory.

Department staff should require that only ELAP-approved laboratories be used to conduct analytical testing during hazardous waste assessments. Regional Environmental Units can assist in determining if a laboratory has ELAP approval for the proposed testing, or by contacting the NYSDOH at (518) 474-8519.

G. NYSDOT Contract Laboratories

NYSDOT has contracts with two ELAP-approved laboratories to provide field characterization and laboratory analysis. The contract laboratories offer NYSDOT a substantial discount on prices and a 14 day turn-around time for testing hazardous and nonhazardous wastes, petroleum-contaminated soil and water, and other contaminants typically encountered in transportation projects. Laboratory staff are available to collect samples of unknown materials or test the contents of drums and containers. NYSDOT staff who have training in hazardous waste operations required under OSHA (29 CFR 1910.120) can also collect samples and send them to the laboratory directly.

NYSDOT staff and consultants are strongly urged to use contract laboratories for all their analytical needs. These laboratories provide reliable analytical results at a cost savings to NYSDOT. Contact your Regional Environmental Unit, the Environmental Analysis Bureau or the Main Office

Procurement Bureau at (518) 457-4401 for more information about procedures for using the contract laboratories.

H. Commonly Used Tests

1. U.S. EPA Methods

The U.S. EPA has established standard test methods to ensure reproducible and consistent results among laboratories that analyze environmental samples. These methods are commonly described by their method number, as "Method 8020" rather than "aromatic volatile organics." Generally speaking, the "500 series" are methods developed under the Safe Drinking Water Act, and the "600 series" were developed to analyze municipal and industrial discharges under the Clean Water Act. The 7000 and 8000 series were developed for RCRA and CERCLA solid and hazardous waste programs to analyze samples such as aqueous sludges, tars, soils, and sediments that do not fall into the categories described above. Throughout this section the recommended U.S. EPA methods are given where appropriate.

2. TCLP: Toxicity Characteristic Leaching Procedure

Federal regulations define hazardous wastes in two different ways: (1) "listed wastes" that are generally associated with specific industries and waste-generation processes; and (2) "characteristic wastes" that exhibit one or more of four hazardous characteristics -- ignitability, reactivity, corrosivity or toxicity. Listed wastes are found from time to time on NYSDOT projects, but most of the hazardous wastes we encounter involve materials that exceed toxicity testing thresholds.

In January 1995, New York adopted the Toxicity Characteristic Leaching Procedure (TCLP or U.S. EPA Method 1311). The U.S. EPA promulgated the TCLP to replace an earlier test method, the Extraction Procedure toxicity test ("EP Tox test"). Attachment 5.1.F lists the name, regulatory threshold, and waste code number of all 8 metals and 32 organic constituents of the TCLP.

One TCLP contaminant, benzene, commonly comprises 3% - 4% of gasoline by weight, and also occurs in many other petroleum products. Many states including New York believed that managing spilled petroleum products or used oil as toxic hazardous wastes was not feasible and encouraged the U.S. EPA to suspend the TCLP rule for petroleum-contaminated media. On December 24, 1992, the U.S. EPA agreed to this, subject to additional study.

Most landfills require TCLP testing and a copy of the analytical results as a condition for accepting wastes for disposal.

3. Target Compound List (TCL)

The most commonly used screening method for measuring a wide range of suspected contaminants is the Target Compound List. The TCL (and its predecessor, the HSL) were initially developed to provide high volume, cost effective analyses of environmental materials to support the U.S. EPA's Superfund efforts. A list of the TCL parameters is included as Attachment 5.1.J. Sampling for TCL parameters is generally conducted in instances when the type of contamination is unknown.

4. Petroleum-Contaminated Material

A new Chapter 5.B will include specific steps for identifying, handling, disposing or reusing petroleum-contaminated soil and water. Most petroleum-contaminated media are non-hazardous solid wastes as shown in the chart in Attachment 5.1.E. Gasoline-contaminated wastes may be considered hazardous wastes if they are ignitable, or if the TCLP test results show that they contain 5 mg/l or more of lead. Once the flammable vapors have dissipated, however, gasoline-contaminated debris can generally be handled as a nonhazardous solid waste.

a. Sampling for Petroleum Releases Near USTs

This section describes the analytical methods for petroleum-contaminated soil and groundwater. Both the NYSDEC's current policy -- STARS, the Spill Technology And Remediation Series Memo #1: *Petroleum-Contaminated Soil Guidance Policy* issued in 1992. These procedures are described in the STARS Memo #1 and can be requested through NYSDOT's laboratory contract as "the STARS analysis." They should be used for projects that directly involve UST investigations or where the Department plans to acquire property that historically had USTs or fuel-related activities.

Some of the parameters on the STARS' list are components of asphalt and incompletely-burned hydrocarbon fuels, and are commonly found in surface soils along State highways. For known or suspected petroleum contamination NYSDOT recommends **extracting** all soil samples using the TCLP extraction process (U.S. EPA Method 1311). Soil sample extracts and groundwater samples should then be analyzed using U.S. EPA Standard Methods 8021 plus MTBE (methyl tert-butyl ether) and 8270 (Base/Neutrals only). In cases where the source of the petroleum contaminant is known (*i.e.,* from previous sampling or when sampling near a tank that contained only gasoline), other methods (*e.g.,* U.S. EPA Method 8020) may be used.

Methods 8021 and 8270 can be used for surface water and groundwater samples, but are primarily used for soil samples. The equivalent methods for water and wastewater are U.S. EPA Methods 624 and 625 (Base/Neutrals only). Method 602 is a shorter version of Method 624 and measures the concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX), which are the most mobile components of gasoline. As with Method 8020, commonly used for soils, this method is generally used when the type of petroleum contaminant has already been established. For drinking water,

lower detection limits are necessary. Method 503.1 plus MTBE, which analyzes for volatile aromatic and unsaturated organic compounds, is recommended for drinking water samples.

b. Total Petroleum Hydrocarbons

Testing soil samples for Total Petroleum Hydrocarbons (TPH) is often done to get a rough estimate of the degree of petroleum hydrocarbon contamination in a sample. There are numerous methods for analyzing TPH. Two of the more common methods include U.S. EPA Methods 418.1 and Modified 8015. Because there is a large variation in TPH methods between various laboratories, NYSDEC prefers methods such as 8021 or 8270 that analyze specific compounds. TPH is less expensive and may be acceptable to local landfills if petroleum-contaminated soil will be generated and disposed as part of a NYSDOT project.

c. Determining Petroleum Type

To determine the type of petroleum product present NYSDOH Method 310-13 is typically used. This method is a hydrocarbon scan that helps "fingerprint" gasoline, kerosene, lubricating oils, and fuel oils in water and wastewater. With some modifications it can also be used to identify these different petroleum products in soils, sediment (from rivers, streams, catch basins, etc.), and sludge (from tank bottoms, drums, etc.).

d. Risk-Based Corrective Action (RBCA)

In January 1997, NYSDEC issued their risk-based corrective action (RBCA) policy for petroleum contamination, the *Interim Procedures for Inactivation of Petroleum-Impacted Sites*. The RBCA process represents a streamlined approach for investigation and response to contamination from petroleum releases and is based on the ASTM procedure. RBCA integrates risk assessment practices with traditional site investigation and remedy selection activities in order to determine cost-effective measures for protection of human health and environmental resources. The ultimate endpoint of the RBCA planning process is the closure of sites in a timely, protective, and cost effective manner.

RBCA has not yet been adopted in New York State and NYSDEC's current policy, STARS Memo #1, remains in effect. The STARS' policy was developed with conservative assumptions based on residential use of a property rather than as commercial areas or highway rights-of-way. The RBCA process is a tiered approach where the acceptable cleanup values will vary for different properties, and allows a higher level of contamination to remain in place if activity use limitations are placed on the property by the current owner to prevent unrestricted uses in the future, or engineering controls are used to redirect surface water flow away from contaminated areas.

5. Polychlorinated Biphenyls (PCBs) and PCB-Contaminated Sediment

PCBs are included as hazardous wastes in New York State but are generally regulated under another federal law, TSCA, or the Toxic Substances Control Act. Although the manufacture, processing and sale of any PCBs is now prohibited, PCBs were once widely used in electrical equipment and machinery as cooling and insulating fluids. For example, nearly all ballasts in fluorescent lights manufactured before 1979 contain approximately one ounce of PCB-containing fluids, and for this reason construction and demolition (C&D) waste materials that include fluorescent light fixtures cannot be disposed in C&D landfills.

PCBs are likely to be encountered if the property or structure was associated with transformers, capacitors, electromagnets or other types of electrical equipment. Similarly, PCBs are commonly found at salvage yards and scrap metal recyclers, and also along roads that were sprayed with PCB-containing oils for dust control. PCB-contaminated sediments are commonly encountered during bridge repair and reconstruction projects throughout the State, and led to the inclusion of a 40-mile segment of the Hudson River on the NPL. Although PCBs are relatively insoluble in water, they can occur at very high concentrations in river-bottom sediments without showing increased levels in the overlying water column.

If PCBs are suspected to be present, soil samples should be analyzed using U.S. EPA Method 8080 for Organochlorine Pesticides and PCBs. Attachment 5.1.K provides additional information about Method 8080.

I. Questions About Other Analytical Procedures

This section describes some general sampling guidelines and gives information about some of the most commonly used analytical methods among the hundreds that are available. Special methods have also been developed to answer specific questions or distinguish between various contaminant sources.

Additional information about these and other procedures is available by contacting the Regional Environmental Unit in each NYSDOT region, or staff in the Hazardous Waste/Groundwater Section of the Environmental Analysis Bureau, Building 5-303, 1220 Washington Avenue, Albany, New York 12232-0473; telephone (518) 457-5672.

XII. ATTACHMENTS

5.1.A - DEFINITION OF HAZARDOUS WASTE

5.1.B - LIST OF USEFUL REFERENCES

5.1.C - SPILLS REPORT EXAMPLE

5.1.D - SITE INSPECTION CHECKLIST

5.1.E - HAZARDOUS AND NONHAZARDOUS SPILL DEBRIS EXAMPLES

5.1.F - TCLP CONSTITUENTS

5.1.G - APPLICABLE REGULATIONS

5.1.H - SAMPLE COLLECTION REQUIREMENTS

5.1. I - EXAMPLE OF A CHAIN-OF-CUSTODY FORM

5.1.J - TARGET COMPOUND LIST VOLATILES AND CONTRACT REQUIRED QUANTITATION LIMITS

5.1.K - METHOD 8080: ORGANOCHLORINE PESTICIDES AND PCBS

5.1.L - HOUSEHOLD HAZARDOUS WASTE

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

State Superfund Sites

Inactive Hazardous Waste Disposal Site Program

Environmental Remediation Databases - Search for information sites in New York State cleaned up through DER Programs.

The Inactive Hazardous Waste Disposal Site (IHWDS) Program is the State's program for identifying, investigating and cleaning up sites where consequential amounts of hazardous waste may exist. These sites go through a process of investigation, evaluation, cleanup and monitoring that has several distinct stages. For an explanation of the different stages of the investigation and cleanup process, please refer to DER's fact sheets on stages of the investigation and cleanup process.

DER is made aware of potential hazardous waste sites in a variety of ways, including notification by the responsible party and citizen complaints.

An environmental investigation called a Site Characterization (SC) is performed when DER is made aware that hazardous waste has or may have been disposed of at a site. The goal of the SC is to determine whether a site meets the state's definition of an inactive hazardous waste disposal site by confirming the presence of hazardous waste and determining the threat posed by the site to public health or the environment. DER or the potentially responsible party performs the SC. For more information, you can read DER's fact sheet on SCs.

Once the presence of a consequential amount of hazardous waste is confirmed at a site, the site is added to the State's official list of sites and is given a classification code.

Sites that receive a classification of 2 (representing a significant threat to public health and/or the environment and requiring action) usually undergo a detailed environmental investigation, called a remedial investigation. When the parties responsible for the contamination are known, the responsible parties often pay for and perform the investigation and evaluation of cleanup options. At sites where responsible parties cannot be found or are unable or unwilling to fund an investigation, the State pays for the investigation using money from the 1986 Environmental Quality Bond Act, also known as the "State Superfund." The State may try to recover costs from a responsible party after the investigation and cleanup are complete.

Each class 2 site is assigned a project manager. Regional IHWDS Program staff serve as project managers for many inactive hazardous waste disposal sites in their respective regions. Staff in DEC's Albany office serve as project managers for the remaining sites. For sites where state money pays for an investigation, the project manager oversees the investigation and evaluation of cleanup options directly, or he may supervise a consultant hired to do the work. When a responsible party performs an investigation, the project manager reviews and approves investigation work plans and reports and ensures the responsible party performs a thorough and proper investigation. The project manager also works closely with New York State Department of Health staff who ensure that public health concerns are addressed.

The project manager writes the Proposed Remedial Action Plan (PRAP) that outlines the State's preferred method to address the site. The project manager presents the proposed plan at a public

meeting and responds to public comments. After a final plan is selected and the Record of Decision (ROD) is approved, DER staff may remain involved with the design and implementation of the cleanup.

DER staff also perform inspections of sites that have been remediated but continue to have cleanup systems or other controls in place.

More about State Superfund Sites:

Hazardous Waste Site Classification - Inactive Hazardous Waste Disposal Site Classification Definitions

Public Comment on Delisting of Registry Sites - Procedures for commenting on sites delisted from the Inactive Hazardous Waste Inactive Hazardous Waste Site Registry

Inactive Site Remedial Program Fact Sheets - Fact Sheets on phases of New York's inactive hazardous waste disposal site remediation program (Superfund).

Site Characterization (SC) - Fact Sheet on implementing Site Characterizations (SCs) under New York's inactive hazardous waste disposal site remediation program (Superfund).

Interim Remedial Measures (IRM) - Fact Sheet on implementing Interim Remedial Measures (IRMs) under New York's inactive hazardous waste disposal site remediation program (Superfund).

Remedial Investigation/Feasibility Study - Fact Sheet on Remedial Investigations (RIs) under New York's inactive hazardous waste disposal site remediation program (superfund).

Record of Decision (ROD) - Fact Sheet on Records of Decision - Final Agency action for selecting cleanup actions at hazardous waste sites in New York.

Remedial Design and Construction - Fact Sheet on Design and Construction in New York's inactive hazardous waste disposal site remediation program (Superfund).

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Anchor Lith Kem Ko (Anchor Chem)
Site Code: 130021
Program: State Superfund Program
Classification: C
EPA ID Number:

Location

DEC Region: 1
Address: 500 West John Street
City: Hicksville Zip: 11801
County:NASSAU
Latitude: 40.765601810
Longitude: -73.548165510
Site Type: STRUCTURE
Estimated Size: 1.550 Acres

Site Owner(s) and Operator(s)

Current Owner Name: K.B. CO. 2 L.P. C/O SPIEGEL ASSOCIATES
Current Owner(s) Address: 375 N. BROADWAY
JERICHO,NY, 11753
Owner(s) during disposal: Kobar
Current On-Site Operator: ANCHOR CHEMICAL
Stated Operator(s) Address: 500 WEST JOHN STREET
HICKSVILLE,NY 11801

Site Document Repository

Name: HICKSVILLE PUBLIC LIBRARY
Address: 169 JERUSALEM AVENUE
HICKSVILLE,NY 11801

Hazardous Waste Disposal Period

From: 1964 **To:** 1985

Site Description

The Anchor Lith Kem Ko site is located at 500 West John Street in the Village of Hicksville, Town of Oyster Bay, Nassau County, New York. The main site feature is a 28,850 square foot, two story building, a small lawn area in the front, and a paved parking lot in the front and rear of the building. The site is presently active and is zoned for commercial use. The surrounding parcels are predominantly commercial/industrial but recreational areas are located to the north. The nearest residential area is approximately 1,200 feet to the east. Contamination at the site is attributed to the building's past use as a chemical blending and packaging operation. Chemicals utilized during operations included acetone, 1,1,1-trichloroethane (TCA), methylene chloride, 2-butoxyethanol, and isopropyl alcohol. There were several on-site dry wells believed to have been impacted by site operations, as well as six underground storage tanks that failed tank tightness tests in the 1980's. A record of decision was issued for this site by the U.S. Environmental Protection Agency (EPA) on September 29, 1995. Additional investigations were conducted from 2008 to 2010 to evaluate off-site groundwater and soil vapor intrusion. All off-site groundwater concerns and soil vapor intrusion concerns have been adequately addressed and no further action is required. The local geology consists primarily of medium to fine sand with gravel and discontinuous clay layers. The Upper Glacial Aquifer is approximately 50 feet below ground surface and flows towards the south-southwest.

Summary of Project Completion Dates

Projects associated with this site are listed in the Project Completion Dates table and are grouped by Operable Unit (OU). A site can be divided into a number of operable units depending on the complexity of the site and the number of issues associated with a site. Sites are often divided into operable units based on the media to be addressed (such as groundwater or contaminated soil), geographic area, or other factors.

Contaminants of Concern (Including Materials Disposed)

Type of Waste	Quantity of Waste
1,1,1 TCA	UNKNOWN
CHROMIUM	UNKNOWN
LEAD	UNKNOWN
TRICHLOROETHENE (TCE)	UNKNOWN

Site Environmental Assessment

Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were chlorinated organics (TCA) and metals (chromium and lead) within the soil and

groundwater. The 17 underground storage tanks have been abandoned in place. The 7 aboveground storage tanks have been removed. The impacted soils within the dry wells were removed. The site does not present a significant threat to the environment.

Site Health Assessment

Direct contact with contaminants in soil is unlikely because contaminated soils were excavated and properly disposed off the site. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater and/or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of a building, is referred to as soil vapor intrusion. The potential for soil vapor intrusion to occur within the on-site building was evaluated and sampling indicated that soil vapor intrusion is not a concern for the building. In addition, sampling indicates soil vapor intrusion is not a concern for off-site buildings.

For more Information: E-mail Us

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DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Anchor Chemical Superfund Site,

Town of Oyster Bay, Nassau County, New York

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the U.S. Environmental Protection Agency's (EPA's) selection of the remedial action for the Anchor Chemical Superfund Site (the "Site") in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9601 et seq. and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This decision document summarizes the factual and legal basis for selecting the remedy for the Site. An administrative record for the Site, established pursuant to the NCP, 40 CFR 300.800, contains the documents that form the basis for EPA's selection of the remedial action, an index of which is appended to this document (see Appendix III).

The New York State Department of Environmental Conservation (NYSDEC) has been consulted on the planned remedial action in accordance with CERCLA §121(f), 42 U.S.C. §9621(f), and it concurs with the selected no further action remedy (see Appendix IV). A letter of concurrence from the NYSDEC is appended to this document.

DESCRIPTION OF THE SELECTED REMEDY

EPA, in consultation with the State of New York, has determined that the Anchor Chemical Superfund Site does not pose a significant threat to human health or the environment and, therefore, further remediation is not appropriate. This determination is based on the findings of the Remedial Investigation and the baseline Risk Assessment. The risks posed by the Site are within EPA's acceptable risk range and therefore do not pose a threat to human health or the environment.

Although the risks posed by the Site contamination are within the acceptable risk range, four dry wells on Site are contaminated with chromium, lead, 1,1,1 trichloroethane (1,1,1-TCA) and other

volatile compounds (VOCs). Groundwater samples from several monitoring wells on Site also showed concentrations of chromium and 1,1,1-TCA, which were above MCLs. The contaminated soils and sediments from the dry wells will be removed in order to prevent further groundwater contamination. On September 15, 1995, K.B. Company, the owner of the property, was issued a unilateral administrative order and Anchor Lith/Kem-Ko and Chessco Industries, a former owner of Anchor Lith/Kem-Ko, were issued administrative consent orders by the EPA to remove the contaminated sediment and soil from the four dry wells (DWs), designated DW-2, DW-3, DW-6 and DW-8, in order to prevent further groundwater contamination. The excavated materials will be disposed of at a Resource Conservation and Recovery Act (RCRA) approved facility. Groundwater and soil samples will be collected at the Site and analyzed to assess the effectiveness of the removal action. Upon completion of the removal action, EPA will take no further action at the Anchor Chemical Superfund Site.

DECLARATION OF STATUTORY DETERMINATIONS

In accordance with the requirements of CERCLA, as amended, and the NCP, EPA, in consultation with the State of New York, has determined that the Anchor Chemical Superfund Site does not pose a significant threat to human health and the environment. Therefore, no remedial action is necessary.

Because this remedy will not result in hazardous substances remaining on-Site above health-based levels, the five (5) year review will not apply to this action.

William J. Muszynski

9/29/95

Jeanne M. Fox
Regional Administrator

Date

RECORD OF DECISION FACT SHEET
EPA REGION II

Site:

Site name: Anchor Chemical Superfund Site

Site location: Town of Oyster Bay, New York

HRS score: 37.2

Listed on the NPL: June 10, 1986

Record of Decision:

Date signed:

Selected remedy: No Further Action

Lead:

EPA is the lead agency

Primary Contact: Thomas Taccone; telephone number (212) 637-4281

Secondary Contact: Kevin Lynch, Chief, Western New York Section II; telephone number (212) 637-4287

Main PRPs: K.B. Contruction - tel. (212) 940-8700
Anchor/Lith Kem-Ko - tel. (901) 763-6851
Chessco industries - tel. (516) 822-9000

Waste:

Waste type: Chromium, lead, and volatile organic compounds

Waste origin: Releases and spills of chemical products

Estimated waste quantity: 15 cubic yards

Contaminated medium: Soil and sediments

RECORD OF DECISION
DECISION SUMMARY

ANCHOR CHEMICAL SUPERFUND SITE
TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK

United States Environmental Protection Agency
Region II
New York, New York

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SITE NAME, LOCATION AND DESCRIPTION

The Anchor Chemical Superfund Site is located at 500 West John Street in the Village of Hicksville, Town of Oyster Bay, Nassau County, New York (see Figure 1). The surrounding area is predominantly industrial but also has recreational areas.

The Site is bordered to the west by a commercial property, to the south by West John Street and to the Northwest by Cantiague park, a 125 acre recreational facility. A groundwater recharge basin lies to the east of the Site.

The Site is approximately 1.5 acres in size and includes one 28,850 square foot, two-story building. The KoBar Company purchased the Site on September 30, 1964, and in the same year constructed the building for the Anchor Chemical Company. Before the building was constructed, the Site was used for agricultural purposes.

From 1964 to 1978, Anchor Chemical leased the Site from KoBar and began manufacturing, blending and storing chemicals for the graphic arts industry. The company operated two solvent mixing rooms and several container storage areas. In 1964, seventeen (17) underground storage tanks (USTs), which ranged in size from 500 to 4,000 gallons, were installed under the mixing room for Anchor Chemical (see Figure 2). The tanks were used to store chemicals and solvents, such as acetone, 1,1,1-trichloroethane, methylene chloride, 2-butoxyethanol and isopropyl alcohol. The chemicals were also stored in seven aboveground tanks, which ranged in size from 550 to 1,500 gallons. The aboveground tanks were removed from the Site in 1985.

In addition, there are 9 dry wells and one drain, which are located in the parking lot on Site (see Figure 2). The dry wells and drain were installed to collect rainwater run off and drainage from the building. Most of the Site is paved with asphalt. Liquid which collects in the dry wells infiltrates into the soil. None of the dry wells are connected to a sewer.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

In 1978, Anchor Chemicals was purchased by Chessco Industries and became known as Anchor/Lith Kem-Ko. Company operations were terminated in 1985. Since 1985, the following tenants have occupied the Site: from 1985 to 1988, Emery Worldwide Freight, a shipping company; from 1988 to 1992, J. D. Brauner, a furniture manufacturer; from 1992 to 1994, Distributors of America, a distributer of newspaper inserts; and from 1994 to present, Machinery Values, a machinery resale operation.

In 1977, the Nassau County Health Department (NCHD) discovered 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE) and

tetrachloroethene (PCE) in liquid samples near drywell 1, which is located north of the building in the parking lot (see Figure 2). In response, Anchor Chemical submitted a spill prevention plan to the NCDH.

In May 1981, the Nassau County Fire Marshall notified Anchor/Lith Kem-Ko that the 17 USTs on Site had not been registered with the Fire Marshall or tested for leaks. In subsequent testing of 14 of the 17 USTs, 5 tanks failed air over product tank tightness tests. The five tanks were decommissioned in 1983. The three remaining tanks, which were not tested in 1981, were tightness tested in 1982 and 1983, and one of these tanks failed the test. In 1982, the NCDH requested Anchor/Lith Kem-Ko to investigate the possibility of groundwater and soil contamination at the Site.

Three groundwater monitoring wells were installed in September 1982. Groundwater samples taken from the wells contained 24,000 parts per billion (ppb) of 1,1,1-TCA, 1,100 ppb of PCE, 350 ppb of dichloroethane, 170 ppb of chlorodibromomethane, 41 ppb of methylene chloride and 55 ppb of TCE. Soil samples, which were taken during the installation of one well (well number 1), revealed 490 ppb of methylene chloride and 22 ppb of 1,1,1-TCA.

In January 1983, the Site was included on the NYSDEC's list of hazardous waste sites in Nassau County. On June 10, 1986, the Site was added to the federal National Priorities List (NPL).

Subsequent monitoring of the Site by the PRP through 1991 has indicated a decrease in the concentration of contaminants in the groundwater.

On June 2, 1989, EPA issued an Administrative Order on Consent to the K.B. Company, the owner of the property and successor to Kobar, to undertake a remedial investigation/feasibility study (RI/FS) to determine the nature and extent of contamination at the Site and to evaluate options for cleanup. On August 3, 1989, EPA issued an Administrative Order to Chessco Industries, which required it to participate and cooperate with K.B. Company. EPA issued an Administrative Order to Anchor Lith-Kem Ko. on March 31, 1992, which also required it to participate and cooperate in the performance of the RI/FS. RI field work was completed in February 1995, and the RI report was compiled by the PRPs and submitted to the EPA in March 1995. The Risk Assessment was finalized by the EPA on June 2, 1995.

On September 15, 1995, K.B. Company, the owner of the property, Anchor Lith/Kem-Ko and Chessco Industries, a former owner of Anchor Lith/Kem-Ko, were ordered by the EPA to remove the contaminated sediment and soil from four on Site dry wells (DWs) designated DW-2, DW-3, DW-6 and DW-8. K. B. Company was issued a unilateral

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administrative order, while Anchor Lith/Kem-Ko and Chessco industries were issued an administrative consent order for the removal work. A workplan for the drywell removal action was approved by EPA on September 28, 1995. The actual removal of the material from the drywells occurred on September 29, 1995.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

On August 19, 1991, EPA held a public meeting at the Hicksville Library to inform the community of its intent to oversee a remedial investigation of the Site. At the meeting, EPA provided a brief summary of the Site history, an overview of the federal Superfund process and summarized the RI work, which was to occur at the Site.

The RI report, Risk Assessment report, and the Proposed Plan for the Site were released to the public for comment on August 23, 1995. These documents have been made available to the public in the administrative record file at the EPA Docket Room in Region II, New York and the information repositories at the Hicksville Library. The notice of availability for the above-referenced documents was published in Newsday on August 23, 1995 and the Hicksville Illustrated News on August 25, 1995. The public comment period on these documents was held from August 23, 1995, to September 21, 1995.

On September 12, 1995, EPA and the New York State Department of Environmental Conservation (NYSDEC) conducted a public meeting at the Hicksville Library to inform local officials and interested citizens about the Superfund process, to review current and planned remedial activities at the Site, and to respond to any questions from area residents and other attendees.

Responses to the comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary (see Appendix V).

SCOPE AND ROLE OF ACTION

This Record of Decision discusses EPA's selection of no further action for the Site. Based on the findings of the Remedial Investigation (RI) and EPA's baseline Risk Assessment, the risks at the Site are within the EPA's acceptable risk range; therefore, the Site does not pose a threat to the public or the environment.

Four dry wells on Site are contaminated with chromium, lead, 1,1,1 trichloroethane (1,1,1-TCA) and other volatile compounds (VOCs). Groundwater samples from several monitoring wells on Site also revealed concentrations of chromium and 1,1,1-TCA which were above MCLs. Contaminated soils and sediments from the dry wells will be removed in order to prevent further groundwater contamination. On

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September 15, 1995, K.B. Company, the owner of the property, was issued an administrative order and Anchor Lith/Kem-Ko and Chessco Industries, a former owner of Anchor Lith/Kem-Ko, were issued an administrative consent order by the EPA to remove contaminated sediment and soil from four dry wells (DWs) designated DW-2, DW-3, DW-6 and DW-8. A workplan for the drywell removal action was approved by EPA on September 28, 1995. The actual removal of the material from the drywells is occurred on September 29, 1995. Excavated materials will be disposed of at a Resource Conservation and Recovery Act (RCRA) approved facility. Groundwater samples will be collected at the Site and analyzed to assess the effectiveness of the removal action.

SUMMARY OF SITE CHARACTERISTICS

The Remedial Investigation included: 1) inspection and closure of 12 USTs; 2) installation of four shallow and four deep groundwater monitoring wells; 3) three rounds of groundwater samples; 4) two rounds of soil samples from under the USTs; and 5) one round of sediment samples from nine dry wells, one drain and two cesspools.

Inspection and Closure of the Underground Storage Tanks

Figure 3 shows the arrangement of the tanks at the Site. As mentioned above, five of the 17 USTs on-Site (UST numbers 5, 6, 8, 11 and 15) were closed in 1983. Tank closure was performed by filling the USTs with concrete. In June 1991, as part of the RI, the remaining 12 USTs were also filled with concrete.

Groundwater

Eleven on-Site monitoring wells were sampled in April and November 1992. Two monitoring wells, MW-4 and MW-5S, were re-sampled in February 1995.

All of the wells sampled are screened in the Upper Glacial Aquifer. Monitoring wells MW-4, 5S, 6S and 7S are screened at 70 to 80 feet below land surface (BLS); the deeper wells, MWs-1D, 5D, 6D and 7D, are screened 100 to 120 feet BLS. Figure 3 shows the well locations.

The average depth to the water table at the Site is 50 to 60 feet. The following three water bearing geologic units underlay the Site: the Upper Glacial Aquifer, the Magothy Aquifer and the Lloyd Aquifer. The Upper Glacial and Magothy Aquifers are hydraulically interconnected. Water also flows from the Magothy to the Lloyd Aquifer; however downward movement is extremely slow because of a thick confining clay known as the Raritan Clay, which overlays the Lloyd Aquifer. All three aquifers serve as a source of drinking water for Long Island.

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The direction of groundwater flow is to the southwest. This was determined by the NCDH in 1986 and confirmed during field testing in March and October 1992. In 1985 a Site investigation report, produced by Lockwood, Kessler and Barlett, a consultant hired by K.B. Company, the groundwater was reported to migrate at a rate of approximately 0.45 feet per day.

Organic contaminants were detected in each of the three sample rounds. 1,1,1-TCA was detected in MW-3 (8 ppb, April 1992), in MW-4 (3 ppb, November 1992) and in MW-5S (29 ppb, February 1995). Bis(2-ethylhexyl) phthalate was detected in MW-5S (65 ppb, April 1992) and MW-7S (160 ppb, November 1992). A number of unspecified organic compounds also were detected in groundwater samples from each of the monitoring wells.

Inorganic contamination was found in higher concentrations. Lead and chromium were detected in the groundwater at levels which exceeded both federal and state maximum contaminant levels (MCLs) for drinking water. Samples taken in April 1992 revealed chromium at 317 ppb and 227 ppb in shallow wells MW-2 and MW-3, respectively, and 132 ppb in deep well MW-1D. The November sample round revealed chromium at 1440 ppb in well MW-2 and 1150 ppb in well MW-3.

Lead was detected in shallow wells MW-2 and MW-3 at 74.7 ppb and 30.2 ppb, respectively, for the first round and 240 ppb and 71.5 ppb, respectively, for the second round. MW-5D revealed lead at 31.4 ppb and 40.4 ppb for the first and second rounds.

EPA and New York State MCL and action level concentrations exist for lead, chromium, 1,1,1-TCA and the total concentration of unspecified organic compounds. Water which has concentrations of lead, chromium and unspecified organic compounds which exceed MCL concentrations may not be safe for consumption. New York State MCLs for the contaminants detected in the groundwater are as follows: chromium - 50 ppb, 1,1,1-TCA - 5 ppb, bis(2-ethylhexyl)-phthalate - 50 ppb, and the total concentration of unspecified organic compounds - 100 ppb. The federal EPA MCLs are 200 ppb for 1,1,1-TCA and 100 ppb for chromium. No federal MCL has been established for unspecified organic compounds. For lead, EPA has established an action level of 15 ppb.

EPA believes that the elevated levels of lead, chromium, 1,1,1-TCA and unspecified organic compounds, which were detected in the groundwater, will decrease once the sediments from drywells 2, 3, 6, and 8 are removed. As indicated below, analysis of samples collected from sediments in these dry wells revealed high levels of lead and chromium.

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Soil and Sediments

Minimal concentrations of organic chemical contamination were detected in the soil samples that were obtained from below the underground storage tanks.

Elevated levels of the following contaminants, however, were found in the sediment sample from DW 2: 1,1-DCA (1,600 ppb), 1,1,1-TCA (3,300 ppb), toluene (4,800 ppb), xylene (67,000 ppb) and bis(2-ethylhexyl) phthalate (27,000 ppb). Chromium (Cr) and lead (Pb) contamination were also detected in the sediment samples from DWs 2, 3, 6 and 8 at the following levels: DW 2 - Cr 463 ppm, Pb - 1,210 ppm; DW 3 - Cr 101 ppm, Pb 607 ppm; DW 6 - Cr 240 ppm, Pb 1,120 ppm; and, DW 8 - Cr 198 ppm, Pb 1,620 ppm. Finally, various unspecified organic compounds were detected in the sediments. The following levels (total concentrations) were detected: DW 2- 1,302.5 ppm, DW 3 - 226.2 ppm, DW 6 - 26 ppm and DW 8 - 85.3 ppm.

Removal of soil and sediments from these dry wells should reduce the concentrations of chromium, lead, 1,1,1-TCA, bis(2-ethylhexyl)phthalate, and the total concentration of unspecified organic compounds in the groundwater. Soil and groundwater samples will be collected to confirm the effectiveness of the removal action.

Sediment samples from dry wells 1, 4, 5, 7 and 9 and the drain revealed levels which ranged from 81.3 ppm to 216 ppm for lead and 17.4 ppm to 71 ppm for chromium. These levels are not considered high enough by the EPA and the NYSDEC to have an adverse impact on the groundwater. Therefore, no excavation of the sediments from these dry wells or the drain will be required.

Finally, two cesspools (see Figure 2), which were abandoned in 1982, were sampled. One soil sample was collected from each cesspool. Trace levels of methylene chloride and two pesticides, dieldrin and methoxychlor, were detected.

SUMMARY OF SITE RISKS

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with current and future Site conditions. The baseline risk assessment estimates the human health and ecological risk which could result from the contamination at the Site if no remedial action were taken.

Human Health Risk Assessment

A four-step process is utilized for assessing site-related human health risks for a reasonable maximum exposure scenario. Hazard

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Identification--identifies the contaminants of concern at a site based on several factors such as toxicity, frequency of occurrence, and concentration. Exposure Assessment--estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed. Toxicity Assessment--determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response). Risk Characterization--summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks.

EPA conducted a baseline risk assessment to evaluate the potential risks to human health and the environment associated with the Site in its current state. The Risk Assessment focused on contaminants in the soil and groundwater which are likely to pose significant risks to human health and the environment. A summary of the contaminants of concern in the matrices sampled is provided in Table A.

EPA's baseline risk assessment addresses the potential risks to human health by identifying several potential exposure pathways by which the public may be exposed to contaminant releases at the Site under current and future land-use conditions. However, groundwater and soil exposures were only assessed for a future land use scenario. Groundwater at the Site is not currently used for consumption, so an evaluation of a present exposure scenario is not necessary. In addition, although risks were calculated for future residential development, the Site is zoned for light industry and is not expected to change.

The exposure pathways considered under future uses are listed in Table B. A total of four exposure pathways were quantitatively evaluated under possible on-Site future land-use conditions: ingestion of groundwater, inhalation of groundwater contaminants, incidental ingestion of soil, and dermal contact with soils. The reasonable maximum exposure for each pathway was evaluated. Two other exposure pathways were evaluated qualitatively: dermal contact with groundwater and inhalation of VOC emissions and soil particulates. Both pathways were expected to be less significant because of the short duration of exposures.

Under current EPA guidelines, the likelihood of carcinogenic (cancer-causing) and noncarcinogenic effects as a result of exposure to site chemicals, are considered separately. It was assumed that the toxic effects of the Site-related chemicals would be additive. Thus, carcinogenic and noncarcinogenic risks associated with exposures to individual compounds of concern were

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summed to indicate the potential risks associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and safe levels of intake (Reference Doses, of RfDs). RfDs have been developed by EPA for indicating the potential for adverse health effects. RfDs, which are expressed in units of milligrams/ kilogram-day (mg/kg-day), are estimates of daily exposure levels for humans which are thought to be safe over a lifetime (including sensitive individuals). Estimated intakes of chemicals from environmental media (e.g., the amount of a chemical ingested from contaminated drinking water) are compared to the RfD to derive the hazard quotient for the contaminant in the particular medium. The HI is obtained by adding the hazard quotients for all compounds across all media that impact a particular receptor population.

An HI greater than 1.0 indicates that the potential exists for noncarcinogenic health effects to occur as a result of site-related exposures. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media. The reference doses for the compounds of concern at the Site are presented in Table C. A summary of the noncarcinogenic risks associated with these chemicals across various exposure pathways is found in Table D.

The results of the risk evaluation for the Site indicated a non-cancer risk for the ingestion of groundwater exposure scenario for future residents to be a Hazard Index (HI) of 3 (see Table d). The HI resulted from the presence of four metals: aluminum (HQ of 0.8), arsenic (HQ of 0.3), iron (HQ of 0.8) and manganese (HQ of 0.8). However, each of these metals affects a different target organ. Because the toxicologic effects of the metals are non additive, i.e. their toxic endpoints are different, the actual risk for the Site is probably less than an HI of 3. The HI for ingestion or dermal contact with subsurface soils by excavation workers is less than one.

Potential carcinogenic risks were evaluated using the cancer slope factors developed by EPA for the contaminants of concern. Cancer slope factors (SFs) have been developed by EPA's Carcinogenic Risk Assessment Verification Endeavor for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. SFs, which are expressed in units of $(mg/kg\text{-}day)^{-1}$, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to generate an upper-bound estimate of the excess lifetime cancer risk associated with exposure to the compound at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes the underestimation of the risk highly unlikely.

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The SF for the compounds of concern are presented in Table C. A summary of the carcinogenic risks associated with these chemicals across various exposure pathways is found in Table E.

The carcinogenic risk associated with a future Site resident ingesting groundwater was estimated to be 8×10^{-3}, which represents a probability of 8 people in 100,000 developing cancer as a result of consuming 2 liters of untreated groundwater from the Site for 350 days per year for 30 years. The carcinogenic risk for excavation workers ingesting subsurface soils and sediments was estimated to be 3×10^{-7}. EPA's acceptable cancer risk range is 10^{-4} to 10^{-6}. This represents a one-in-ten-thousand to one-in-a-million increased probability that an individual will develop cancer under the Site specific exposure conditions over a lifetime.

The risk evaluation for the Site indicates that the human health risks associated with the Site are within EPA's acceptable risk range. However, removal of the contaminated soil and sediments from dry wells 2, 3, 6 and 8 should further reduce the potential for future risks as a result of groundwater ingestion by future Site residents because elevated levels of aluminum, lead, arsenic and manganese were detected in the dry wells and are a probable source of contamination to the groundwater. Reducing or eliminating contamination to the groundwater, will also protect the Upper Glacial and the lower Magothy aquifer which serves as a sole source drinking water aquifer for Long Island. Finally, although lead and chromium did not contribute to the calculated risks, they were also detected at elevated concentrations in the sediments of the four dry wells and in groundwater samples above drinking water standards from monitoring wells MW-2, 3 and 5S.

Ecological Risk Assessment

A four-step process is utilized for assessing site-related ecological risks for a reasonable maximum exposure scenario: Problem Formulation--a qualitative evaluation of contaminant release, migration, and fate; identification of contaminants of concern, receptors, exposure pathways, and known ecological effects of the contaminants; and selection of endpoints for further study. Exposure Assessment--a quantitative evaluation of contaminant release, migration, and fate; characterization of exposure pathways and receptors; and measurement or estimation of exposure point concentrations. Ecological Effects Assessment--literature reviews, field studies, and toxicity tests, linking contaminant concentrations to effects on ecological receptors. Risk Characterization--measurement or estimation of both current and future adverse effects.

The Site is located in a primarily urban industrialized area. Except for a narrow strip of lawn and plantings, the Site is

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entirely covered by the existing building or asphalt. There are no significant habitats present at the Site which could potentially support indigenous wildlife receptor species. The Site may however provide a habitat for various non-native species which have adapted to highly urbanized areas (e.g. rats, starlings and pigeons).

Aquatic habitats or wetlands are not present within the vicinity of the Site. Although ecologically significant areas are not known to be located in the vicinity of the Site, potential habitats include cemeteries, school grounds, and Cantiague Park. The 125 acre Cantiague Park includes a golf course and is likely to provide for a variety of wildlife species. However, because of the extensive development and lack of suitable vegetated habitats at the Site, potential receptor species which may inhabit the adjacent Cantiague Park (e.g. various songbirds and small animals) are not expected to frequent the Site. Therefore, the Site poses no ecological risk.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the chemicals of concern, in the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the Risk Assessment

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provides upper-bound estimates of the risks to populations near the Site, and it is highly unlikely to underestimate actual risks related to the Site.

Future land use and future use of public drinking water supplies are difficult to define. For this action, local zoning officials and Site documents including the RI report were consulted for information. Risk scenarios are based on land use and water supply estimates that would result in "reasonable maximum" exposures. The groundwater ingestion scenario may overestimate risk because it assumes that 1) private wells will be installed on or adjacent to the Site and will draw water from contaminated areas, or 2) contaminant concentrations detected in the on-Site monitoring wells will reach private residential wells.

More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the Risk Assessment Report.

STATE ACCEPTANCE

The State of New York concurs with EPA's selected no further action alternative pending successful completion of the drywell removal action. Their letter of concurrence is attached as Appendix IV.

COMMUNITY ACCEPTANCE

Community acceptance of the preferred remedy has been assessed in the Responsiveness Summary portion of this ROD, following review of all public comments received on the RI report and the Proposed Plan. All comments submitted during the public comment period were evaluated and are addressed in the attached Responsiveness Summary.

Comments on EPA's Proposed Plan for the Site were received from the public and the Nassau County Department of Health (DOH). The public commented on the following issues: the source of Site contaminants, Site related cancer incidence, the drywell removal action and deed restrictions for a future sale of the Site property. No specific objections were raised by the public on implementation of the Site remedy, i.e. removal of contaminated soil and sediments from four dry wells and no further action. The Nassau County DOH did not, however, think that the remedy was adequate and recommended that off Site groundwater monitoring be conducted in addition to the removal action.

EPA's specific responses to the comments concerning the Anchor Chemical Superfund Site Proposed Plan can be found in Appendix V.

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SELECTED REMEDY

EPA has determined after reviewing the alternatives and public comments that no further action beyond the successful completion of the drywell removal action is the appropriate remedy for the Site because it best satisfies the requirements of CERCLA §121, 42 U.S.C. §9621, and the NCP's nine evaluation criteria for remedial alternatives, 40 CFR §300.430(e)(9).

An evaluation of all available data, the findings of the RI conducted at the Site, EPA's Risk Assessment, and other supporting data and documentation indicate that the Site risks are within EPA's acceptable risk range and that a no further action decision is protective of human health and the environment.

In addition, although groundwater sampling results indicate some occurrence of contaminants exceeding MCLs, the distribution of the contaminants indicated either off Site sources or localized contamination. Furthermore, the removal action conducted by the PRPs will remove any potential source of contamination to the groundwater. EPA believes that elevated levels of lead chromium, 1,1,1-TCA and unspecified organic compounds which were detected in the groundwater will decrease once the sediments from drywells 2, 3, 6 and 8 are removed.

DOCUMENTATION OF SIGNIFICANT CHANGES

There are no significant changes from the preferred alternative presented in the Proposed Plan.

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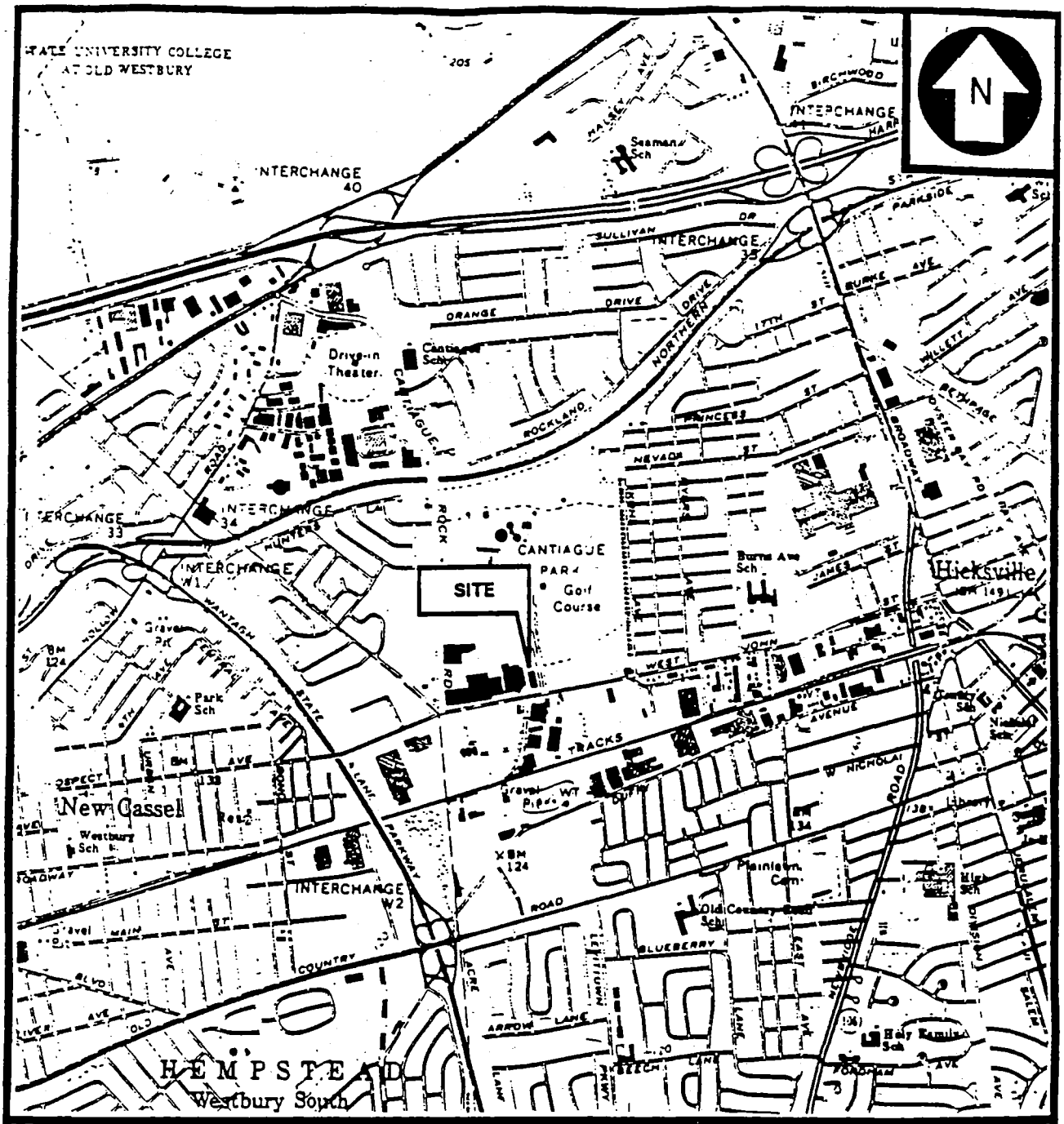
APPENDIX I

FIGURES

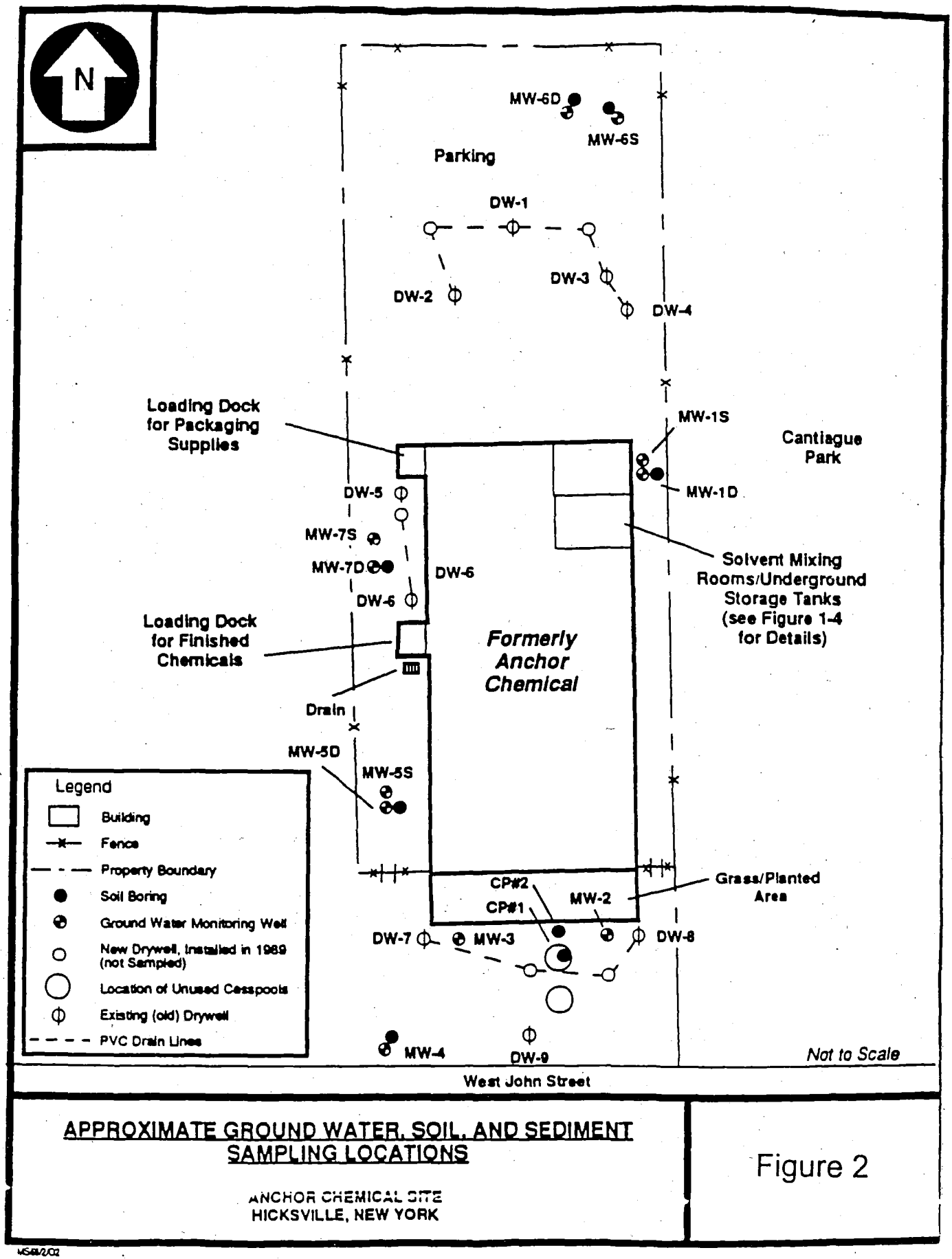


BASE MAP IS A PORTION OF THE FOLLOWING USGS 7.5' SERIES QUADRANGLE:
HICKSVILLE, NY, 1967; PHOTOREVISED 1979

LOCATION MAP

ANCHOR CHEMICAL PROPERTY
HICKSVILLE, NEW YORK

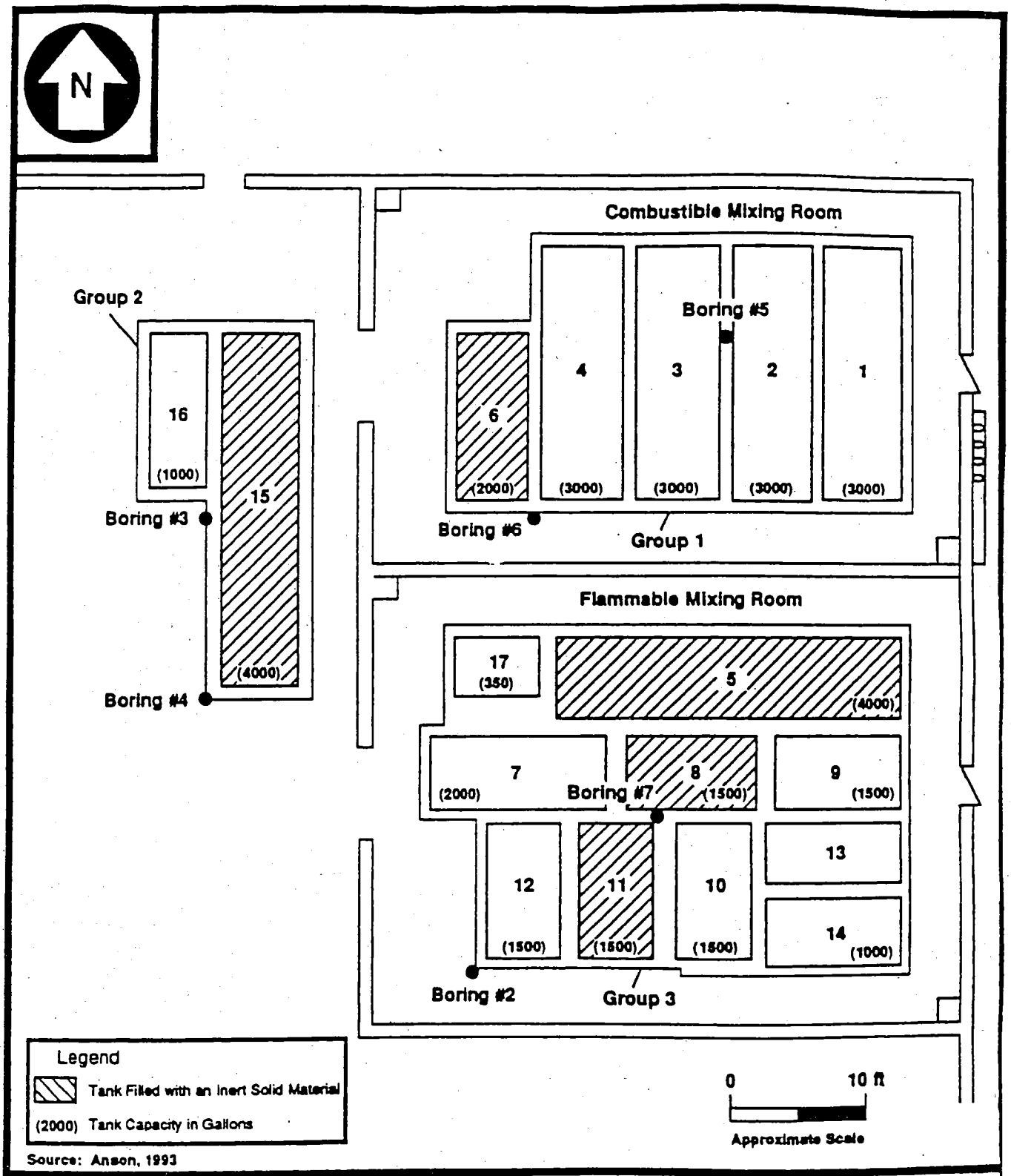
Figure 1



APPROXIMATE GROUND WATER, SOIL, AND SEDIMENT SAMPLING LOCATIONS

ANCHOR CHEMICAL SITE
HICKSVILLE, NEW YORK

Figure 2



Source: Anson, 1993

LOCATION OF INDOOR BORINGS AND UNDERGROUND STORAGE TANKS

ANCHOR CHEMICAL SITE
HICKSVILLE, NEW YORK

Figure 3

APPENDIX II

TABLES

TABLE A:

CONTAMINANTS OF CONCERN, FREQUENCY OF DETECTION, RANGE OF CONCENTRATIONS DETECTED, 95% UPPER CONFIDENCE LEVEL CONCENTRATION VALUES USED IN THE RISK ASSESSMENT

SUMMARY STATISTICS FOR THE ANCHOR CHEMICAL SITE

SUMMARY STATISTICS FOR THE ANCHOR CHEMICAL SITE

UNITS: all water analyses are ug/L; organic soils are ug/Kg; inorganic soils are mg/Kg.

TYPE=Ground Water

Class	Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Highest Conc. Locat.	Arithmetic Mean Conc.	95 Pct. Upp. Conf. Limit	Lowest Observed Det.Limit	Highest Observed Det.Limit
VOCs	1,1,1-Trichloroethane	6	22	2.00	8.00	MW-3	3.48	4.13	5.00	10.00
	1,1-Dichloroethane	1	22	2.00	2.00	MW-5S-II	3.61	4.21	5.00	10.00
	1,2-Dichloroethene (tot)	1	22	3.00	3.00	MW-5S-II	3.66	4.23	5.00	10.00
	Acetone	1	22	150.00	150.00	MW-1S-II	12.59	12.53	10.00	21.00
	Chloromethane	1	22	2.00	2.00	MW-1S-II	4.06	5.27	10.00	10.00
BNAs	4-Methylphenol	1	22	3.00	3.00	MW-1S-II	5.82	6.52	10.00	50.00
	Butylbenzylphthalate	7	22	1.00	2.00	MW-1D-II	4.75	7.13	10.00	50.00
	Chrysene	1	22	1.00	1.00	MW-7D-II	5.73	7.01	10.00	50.00
	Di-n-octylphthalate	2	21	1.00	3.00	MW-4-II	5.67	7.06	10.00	50.00
	Diethylphthalate	3	22	1.00	2.00	MW-1S-II	4.55	5.57	10.00	10.00
	Fluoranthene	1	22	1.00	1.00	MW-7D-II	5.73	7.01	10.00	50.00
	Pyrene	3	22	1.00	3.00	MW-5S-II	5.65	7.22	10.00	50.00
	bis(2-Ethylhexyl)phthalate	13	22	5.00	160.00	MW-7S-II	28.68	53.04	10.00	20.00
Pest/PCBs	Heptachlor epoxide	1	22	0.05	0.05	MW-1S-II	0.03	0.03	0.05	0.05
Inorganics	Aluminum	17	22	314.00	53100.00	MW-2-II	6984.61	29941.17	100.00	520.00
	Arsenic	3	22	6.40	9.20	MW-2-II	2.37	3.09	2.00	10.00
	Barium	20	22	7.00	230.00	MW-2-II	57.96	136.00	3.00	19.20
	Cadmium	1	22	6.00	6.00	MW-7S	2.07	2.45	1.90	9.70
	Calcium	22	22	5880.00	50500.00	MW-5D-II	15868.41	20439.81	.	.
	Chromium	22	22	11.00	1440.00	MW-2-II	204.10	496.06	.	.
	Cobalt	3	22	10.50	20.30	MW-1-II	5.31	8.91	2.00	14.00
	Copper	17	22	26.00	179.00	MW-3-II	67.90	126.23	17.00	27.00
	Iron	22	22	450.00	40300.00	MW-2-II	6488.36	14695.18	.	.
	Lead	19	19	10.20	240.00	MW-2-II	40.66	66.40	.	.
	Magnesium	22	22	550.00	3070.00	MW-3-II	1740.95	2210.94	.	.
	Manganese	22	22	8.20	402.00	MW-3-II	91.42	151.15	.	.
	Mercury	5	22	0.06	0.20	MW-3	0.08	0.13	0.04	0.20
	Nickel	17	22	8.20	97.40	MW-1S-II	30.46	61.22	7.90	10.00
	Potassium	19	22	1010.00	61500.00	MW-5D	5798.07	7523.74	1690.00	1960.00
	Sodium	22	22	2090.00	52500.00	MW-2-II	10529.55	34908.10	.	.
	Vanadium	6	22	6.00	72.60	MW-2-II	10.48	24.75	1.00	6.00
	Zinc	18	19	45.00	342.00	MW-5D-II	99.26	131.41	65.50	65.50

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SUMMARY STATISTICS FOR THE ANCHOR CHEMICAL SITE (CONTINUED).

SUMMARY STATISTICS FOR THE ANCHOR CHEMICAL SITE

UNITS: all water analyses are ug/L; organic soils are ug/Kg; inorganic soils are mg/Kg.

TYPE=MW-6S and MW-6D/Ground Water

Class	Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Highest Conc. Locat.	Arithmetic Mean Conc.	95 Pct. Upp. Conf. Limit	Lowest Observed Det.Limit	Highest Observed Det.Limit
BNAs	Butylbenzylphthalate	2	4	1.00	2.00	MW-6S-II	3.25	39.59	10.00	10.00
	Di-n-octylphthalate	1	4	1.00	1.00	MW-6S-II	4.00	87.96	10.00	10.00
	bis(2-Ethylhexyl)phthalate	2	4	5.00	6.00	MW-6S	7.50	21.34	10.00	20.00
Inorganics	Aluminum	2	4	353.00	803.00	MW-6S-II	387.75	2373.68	371.00	419.00
	Barium	4	4	7.00	75.70	MW-6S-II	40.70	2959.42	.	.
	Calcium	4	4	12400.00	24200.00	MW-6S-II	17450.00	28924.41	.	.
	Chromium	4	4	13.00	54.40	MW-6S-II	36.50	200.84	.	.
	Copper	2	4	33.00	79.80	MW-6S-II	33.83	1464.39	10.00	27.00
	Iron	4	4	458.00	1370.00	MW-6S-II	792.25	2025.63	.	.
	Lead	2	2	25.20	29.40	MW-6S-II	27.30	29.40	.	.
	Magnesium	4	4	1670.00	2760.00	MW-6S-II	2212.50	3089.16	.	.
	Manganese	4	4	20.90	92.00	MW-6D	53.58	270.84	.	.
	Nickel	2	4	20.90	22.00	MW-6D	12.96	375.63	7.90	10.00
	Potassium	4	4	2270.00	5010.00	MW-6D	3645.00	7596.05	.	.
	Sodium	4	4	10600.00	14000.00	MW-6S	12100.00	14331.68	.	.
	Zinc	3	3	48.00	97.00	MW-6S-II	79.73	354.88	.	.

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SUMM. / STATISTICS FOR THE ANCHOR CHEMICAL SITE (CONTINUED).

SUMMARY STATISTICS FOR THE ANCHOR CHEMICAL SITE

UNITS: all water analyses are ug/L; organic soils are ug/Kg; inorganic soils are mg/Kg.

TYPE=Deep Subsurface Soils

Class	Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Highest Conc. Locat.	Arithmetic Mean Conc.	95 Pct. Upp. Conf. Limit	Lowest Observed Det.Limit	Highest Observed Det.Limit
VOCs	2-Butanone	2	20	32.00	37.00	MW-7D(56-58')	8.78	10.77	10.00	21.00
BNAs	bis(2-Ethylhexyl)phthalate	6	20	36.00	400.00	IB-6(60-62')	106.77	253.83	330.00	693.00
Pest/PCBs	Heptachlor	1	20	0.20	0.20	MW-7D(114-116)	4.49	7.46	8.00	16.00
Inorganics	Aluminum	20	20	290.00	2130.00	IB-3(30-34')	888.35	1150.63	.	.
	Arsenic	16	20	0.24	1.90	IB-1(15-17')	0.70	1.03	0.40	0.40
	Barium	11	19	0.02	12.30	IB-3(30-34')	3.04	6.91	0.40	3.10
	Cadmium	4	20	0.59	0.92	IB-3(35-39')	0.48	0.58	0.40	1.40
	Calcium	1	16	160.00	160.00	IB-1(15-17')	31.06	44.94	21.50	74.00
	Chromium	16	20	1.40	23.20	MW-7D(56-58')	4.19	5.61	2.30	4.50
	Cobalt	2	20	1.50	1.60	IB-3(30-34')	0.95	1.09	1.00	2.00
	Iron	19	19	695.00	9140.00	IB-3(35-39')	3114.26	4574.22	.	.
	Lead	13	17	0.62	2.10	MW-6D(60-62')	1.00	1.27	0.83	1.30
	Magnesium	16	16	7.50	473.00	IB-3(30-34')	124.79	379.08	.	.
	Manganese	20	20	7.20	93.30	IB-3(30-34')	30.34	45.47	.	.
	Nickel	1	19	1.50	1.50	IB-3(30-34')	1.02	1.48	0.20	2.40
	Potassium	3	20	91.50	220.00	IB-3(30-34')	156.21	245.63	80.00	420.00
	Selenium	1	20	0.76	0.76	MW-5D(115-117)	0.36	0.62	0.40	0.80
	Sodium	2	16	164.00	201.00	MW-7D(56-58')	106.17	317.23	16.00	890.00
	Vanadium	8	20	1.40	6.10	IB-3(35-39')	1.97	2.58	1.20	3.50
	Zinc	7	13	3.10	12.90	IB-3(35-39')	4.47	10.36	1.70	4.80

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SUMMARY STATISTICS FOR THE ANCHOR CHEMICAL SITE (CONTINUED).

SUMMARY STATISTICS FOR THE ANCHOR CHEMICAL SITE

UNITS: all water analyses are ug/L; organic soils are ug/Kg; inorganic soils are mg/Kg.

TYPE=Sediments

Class	Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Highest Conc. Locat.	Arithmetic Mean Conc.	95 Pct. Upp. Conf. Limit	Lowest Observed Det.Limit	Highest Observed Det.Limit
VOCs	1,1,1-Trichloroethane	1	10	3300.00	3300.00	DW-2	330.30	102396.91	5.50	1150.00
	1,1-Dichloroethane	1	10	1600.00	1600.00	DW-2	220.30	29760.35	5.50	1150.00
	Carbon Disulfide	2	10	5.00	21.00	DW-9	167.20	13739.66	5.50	2100.00
	Ethylbenzene	1	10	4000.00	4000.00	DW-2	540.30	205239.90	5.50	1150.00
	Toluene	4	10	5.00	4000.00	DW-2	571.63	901548.53	5.50	1100.00
	Total Xylenes	1	10	47000.00	47000.00	DW-2	6760.30	79976639.91	5.50	1150.00
SVOCs	1-Methylnaphthalene	1	10	3900.00	3900.00	DW-2	1301.98	2994.05	339.90	2999.70
	Benzo(a)pyrene	2	10	500.00	1100.00	DW-8	1034.91	1900.96	339.90	2999.70
	Benzo(b)fluoranthene	2	10	1000.00	2700.00	DW-8	1236.91	2480.21	339.90	2999.70
	Benzo(k)fluoranthene	2	10	560.00	1700.00	DW-8	1092.91	2106.12	339.90	2999.70
	Benzoic Acid	1	10	73.00	73.00	DW-5	9412.90	65294.75	8720.00	16544.00
	Butylbenzylphthalate	6	10	48.00	9200.00	DW-2	1676.77	13690.72	1798.50	2999.70
	Chrysene	8	10	230.00	2000.00	DW-8	956.87	2578.16	339.90	2999.70
	Di-n-butylphthalate	3	10	72.00	2500.00	DW-2	1165.15	4062.60	1798.50	2999.70
	Fluoranthene	4	10	410.00	3400.00	DW-8	1151.87	2729.00	339.90	2999.70
	Indeno(1,2,3-cd)pyrene	1	10	1500.00	1500.00	DW-8	1131.92	2181.22	339.90	2999.70
	Naphthalene	1	10	9500.00	9500.00	DW-2	1941.90	8120.06	339.90	2999.70
	Phenanthrene	5	10	190.00	1500.00	DW-8	769.94	2068.98	339.90	2999.70
	Pyrene	5	10	34.00	4500.00	DW-8	1130.27	9106.82	1798.50	2999.70
	bis(2-Ethylhexyl)phthalate	3	10	21000.00	27000.00	DW-2	9610.00	60726.93	1000.00	12000.00
Pest/PCBs	4,4'-DDE	6	9	10.00	146.00	DW-2	42.44	479.35	6.00	9.44
	Dieldrin	6	9	16.00	106.00	DW-2	33.33	233.65	6.00	9.44
	Endrin	2	9	12.00	36.00	DW-2	8.95	17.27	6.00	12.00
	Methoxychlor	7	9	7.50	126.00	DW-4	35.66	91.56	34.40	38.40
	alpha-BHC	1	9	103.00	103.00	DW-2	22.67	106.43	3.44	6.00
	beta-BHC	1	9	8.20	8.20	DW-9	3.09	6.40	3.44	6.00
	gamma-chlordane	2	9	3.40	29.00	DW-8	22.56	66.94	34.40	60.00
Inorganics	Aluminum	10	10	1410.00	11100.00	DW-8	4723.50	9376.31	.	.
	Antimony	3	10	9.80	12.00	DW-1	5.38	8.29	6.40	6.40
	Arsenic	9	10	0.79	3.70	DW-2	2.10	3.92	0.00	0.00
	Barium	10	10	9.70	90.20	DW-2	39.20	78.12	.	.
	Calcium	10	10	1300.00	22900.00	DW-3	10363.00	26305.34	.	.
	Chromium	10	10	17.40	463.00	DW-2	124.46	400.50	.	.
	Cobalt	8	10	3.10	11.30	DW-8	5.02	11.00	3.40	3.40
	Copper	10	10	8.30	266.00	DW-2	67.90	257.62	.	.
	Iron	10	10	3810.00	22700.00	DW-8	12444.50	20604.89	.	.
	Lead	10	10	81.30	1620.00	DW-8	562.33	2004.60	.	.
	Magnesium	10	10	950.00	14100.00	DW-8	5797.50	15318.92	.	.
	Manganese	10	10	51.45	109.00	DW-9	107.55	159.66	.	.
	Mercury	2	9	0.26	0.34	DW-7	0.11	0.22	0.10	0.10
	Nickel	10	10	8.70	21.50	DW-2	13.04	19.71	.	.
	Potassium	10	10	186.00	615.00	DW-6	333.10	453.01	.	.
	Sodium	6	6	447.00	1240.00	DW-8	766.00	1296.77	.	.
	Thallium	2	10	0.28	0.33	DW-2	0.16	0.26	0.20	0.20
	Vanadium	10	10	3.30	81.00	DW-8	30.29	92.46	.	.
	Zinc	10	10	24.60	1770.00	DW-2	386.00	1964.01	.	.

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TABLE B:

EXPOSURE PATHWAYS CONSIDERED

ANCHOR CHEMICAL SITE: SUMMARY OF EXPOSURE PATHWAYS

		TIME-FRAME EVALUATED		DEGREE OF ASSESSMENT			
Pathway	**Receptor**	**Present**	**Future**	**Quant.**	**Qual.**	**Rationale for Selection or Exclusion**	**Data Grouping**
Ground Water							
Ingestion of Ground Water	Resident	No	Yes	X		Ground water is domestic and commercial water supply for Nassau County. Current exposure is not known to be occurring.	All ground water samples.
Inhalation of Ground Water Contaminants during Showers	Resident	No	Yes	X		Expected to be less significant than exposure via ingestion.	Same as above.
Inhalation of Contaminants that Volatilize from Ground Water and Seep into Basements	Resident	No	No			Depth to ground water, 60 feet, precludes exposure via this pathway.	
Dermal Contact with Ground Water	Resident	No	Yes		X	Expected to be less significant than exposure via ingestion and inhalation during showering.	
Soils and Sediments							
Incidental Ingestion of Soils	Excavation Worker	No	Yes	X		Entire site is paved, so current exposure to surface soil contaminant is not occurring. Exposure to site soils may occur during excavations for future site development.	All soil samples, including drywell and drain samples, collected to a depth of no more than 15 feet.
Dermal Contact with Soils*	Excavation Worker	No	Yes	X		Entire site is paved, so current exposure to surface soil contaminant is not occurring. Exposure to site soils may occur during excavations for future site development.	All soil samples, including drywell and drain samples, collected to a depth of no more than 15 feet.
Inhalation of VOC Emissions and Particulates from Soils	Excavation Worker	No	Yes		X	Expected to be less significant than exposure via ingestion and dermal contact.	

*Cadmium, PCBs, and dioxin only (if present).

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TABLE C:

ORAL CHRONIC AND SUBCHRONIC TOXICITY VALUES

TOXICITY VALUES FOR CONTAMINANTS OF CONCERN AT THE ANCHOR CHEMICAL SITE

Chemical	CARCINOGENIC Weight of Evidence Classification		Oral Slope Factor (mg/kg/day)-1	CHRONIC Chronic Oral RfD (mg/kg/day)	SUBCHRONIC Subchronic Oral RfD (mg/kg/day)
Volatiles					
Carbon disulfide	–			1.00E-01 a	1.00E-01 b
1,1-Dichloroethane	C	a		1.00E-01 b	1.00E+00 b
Ethylbenzene	D	a		1.00E-01 a	1.00E+00 b
Toluene	D	a		2.00E-01 a	2.00E+00 b
1,1,1-Trichloroethane	D	a		9.00E-02 b	9.00E-01 b
Xylenes	D	a		2.00E+00 a	4.00E+00 b
BNAs					
Benzoic acid	D	a		4.00E+00 a	4.00E+00 b
Benzo(a)pyrene	B2	a	7.30E+00 a		
Benzo(b)fluoranthene	B2	a	7.30E-01 d		
Benzo(k)fluoranthene	B2	a	7.30E-01 d		
Benzylbutylphthalate	C	a		2.00E-01 a	2.00E+00 b
Bis(2-ethylhexyl)phthalate	B2	a	1.40E-02 a	2.00E-02 a	2.00E-02 b
4-Chloroaniline	–			4.00E-03 a	4.00E-03 b
Chrysene	B2	a	7.30E-02 d		
Diethylphthalate	D	a		8.00E-01 a	8.00E+00 b
Di-n-butyl phthalate	D	a		1.00E-01 a	1.00E+00 b
Di-n-octyl phthalate	–			2.00E-02 b	2.00E-02 b
Fluoranthene	D	a		4.00E-02 a	4.00E-01 b
Indeno(1,2,3-cd)pyrene	B2	a	7.30E-01 d		
2-Methylnaphthalene	–				
Naphthalene	D	a			
Phenanthrene	D	a			
Pyrene	D	a		3.00E-02 a	3.00E-01 b
Pesticides					
alpha-BHC	B2	a	6.30E+00 a		
beta-BHC	C	a	1.80E+00 a		
gamma-Chlordane (r)	B2	a	1.30E+00 a	6.00E-05 a	6.00E-05 b
4,4' DDE	B2	a	3.40E-01 a		
Dieldrin	B2	a	1.60E+01 a	5.00E-05 a	5.00E-05 b
Endrin	D	a		3.00E-04 a	3.00E-04 b
Methoxyclor	D	a		5.00E-03 a	5.00E-03 b
Inorganics					
Aluminum	D	c		1.00E+00 c	1.00E+00 e
Antimony	–			4.00E-04 a	4.00E-04 b
Arsenic	A	a	2.00E+00 f	3.00E-04 a	3.00E-04 b
Barium	–			7.00E-02 a	7.00E-02 b
Beryllium	B2	a	4.30E+00 a	5.00E-03 a	5.00E-03 b
Cadmium	B1	a		5.00E-04 a,g	5.00E-04 e
Chromium, total	–			8.76E-01 h	8.77E-01 h
Cobalt	–				
Copper	D	a		5.50E-02 c	5.50E-02 e
Iron	D	c		5.00E-01 c	5.00E-01 e
Lead	B2	a			
Manganese	D	a		5.00E-03 a,j	1.00E-01 b
Mercury	D	a		3.00E-04 b	3.00E-04 b
Nickel	A	a		2.00E-02 a,j	2.00E-02 b
Thallium	–			7.00E-05 b,k	7.00E-04 b,k
Vanadium	–			7.00E-03 b	7.00E-03 b
Zinc	D	a		3.00E-01 b	3.00E-01 b

a. From IRIS.
b. From HEAST.
c. Interim value from RCAO.
d. Oral slope factor for B(a)P used for PAHs classified as B2 carcinogens with the TEFs applied.
e. Chronic RfD used as Subchronic RfD if no Subchronic value is available per RAGS.
f. Alternate oral slope factor derived from unit risk in IRIS.
g. Cadmium RfD is for water; 1.0E-03 mg/kg/day is RfD for food.
h. Value is weighted-average value of the Hex and Tri RfDs assuming 7 parts Tri to 1 part Hex.
i. Manganese RfD is for water; RfD for food is 1.4E-1 mg/kg/day.
j. Value is for nonchloride, nonsulfate salts.
k. Value is for Thallic oxide.

TABLE D:

NONCARCINOGENIC RISK ESTIMATES FOR EACH EXPOSURE PATHWAY AND RECEPTOR ASSESSED.

SUMMARY OF NONCARCINOGENIC HAZARD INDICES (HI)
ESTIMATED FOR THE ANCHOR CHEMICAL SITE

Scenario	Receptor	Present/Future	Chronic HI[a]
Ground Water			
Ingestion	Onsite and/or Adjacent Resident	F	$3 \times 10^{+0}$*
Inhalation	Onsite and/or Adjacent Resident	F	2×10^{-4} $3 \times 10^{+0}$*
Subsurface Soil and Sediments			
Ingestion	Excavation Worker	F	4×10^{-1}[b]
Dermal Contact	Excavation Worker	F	4×10^{-4}[b] 4×10^{-1}

[a]Chemical-specific risk assessment summary information is presented in the risk spreadsheets in Appendix B.
[b]HI is based on Subchronic Protective Body Dose.

*Exceeds unity.

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TABLE E:

CARCINOGENIC RISK ESTIMATES

SUMMARY OF CARCINOGENIC RISK ESTIMATED FOR THE ANCHOR CHEMICAL SITE

Scenario	Receptor	Present/Future	Total Risk[a]
Ground Water			
Ingestion	Onsite and/or Adjacent Resident	F	8×10^{-5}*
Subsurface Soil and Sediments			
Ingestion	Excavation Worker	F	3×10^{-7}

*Exceeds 10^{-4} risk

[a]Chemical-specific risk assessment summary information is presented in the risk spreadsheets in Appendix B.

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APPENDIX III

ADMINISTRATIVE RECORD INDEX

ANCHOR CHEMICALS SITE
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS

1.0 SITE IDENTIFICATION

1.1 Background - RCRA and Other Information

P. 100001 - 100001 Map: "Property on West John Street", prepared by Holzmacher, McLendon & Murrell, prepared for Jerry Spiegel Associates, April 18, 1967.

1.4 Site Investigation Reports

P. 100002 - 100104 Letter to Mr. Norman H. Nosenchuck, Director, Division of Solid Waste, New York State Department of Environmental Conservation, from Mr. Donald R. Ganser, Project Manager, Woodward-Clyde Consultants, Inc., re: Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Phase I - Preliminary Investigation, Anchor Chemicals, June 3, 1983. (Attached report: untitled, prepared by Woodward-Clyde Consultants, Inc., undated.)

3.0 REMEDIAL INVESTIGATION

3.2 Sampling and Analysis Data/Chain of Custody Forms

P. 300001 - 300321 Letter to Ms. Dorothy Allen, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Disposal of Soil and Water, Anchor Chemical Site, December 20, 1991. (Attached: 1. Report: Quality Assurance Review, The Anchor Chemical Project, prepared by Environmental Standards, Inc., prepared for Anson Environmental, December 10, 1991. 2. Report: untitled, prepared by Environmental Standards, Inc., undated.)

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P. 300322 - 300510 Letter to Ms. Dorothy Allen, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Enclosed data sheets for Anchor Chemical Site, February 4, 1992. (Attached: "Validated Data, All Drywells (First Sampling), undated.)

P. 300511 - 300609 Letter to Ms. Dorothy Allen, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Enclosed data sheets for the composite soil samples, April 7, 1992. (Attached: "Section 2, Analytical Results", undated.)

P. 300610 - 300615 Facsimile transmittal sheet to Ms. Dorothy Allen, U.S. EPA, from Mr. Dean Anson, Anson Environmental, Ltd., re: TCLP, CLP data validation soil composite, April 8, 1992. (Attached: 1. Letter to Ms. Fritzi Mazzola, Anson Environmental, from Mr. Donald J. Lancaster, Senior Quality Assurance Chemist, Environmental Standards, Inc., re: Quality assurance review of the data package for the TCLP analysis of Sample #1, #2, #3 (composite sample), March 25, 1992. 2. Report: Section 1: Quality Assurance Review, prepared by Mr. Donald J. Lancaster, Senior Quality Assurance Chemist, Environmental Standards, Inc., March 25, 1992.)

P. 300616 - 300631 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Enclosed validated results for the first round of groundwater samples, July 24, 1992. (Attached: "Section 2, Analytical Results", undated.)

P. 300632 - 300713 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Enclosed validated data from soil and groundwater samples, August 13, 1992. (Attached: "Composite Soil Sampling from Drums (Soil Originally Brought onto the Site to Sand the Parking Lot)", undated.)

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P. 300714 - 300726 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Enclosed validated data from groundwater samples, August 20, 1992. (Attached: Analytical results, undated.)

P. 300727 - 300776 Letter to Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, Federal Projects Section, New York State Department of Environmental Conservation, from Mr. Dean Anson II, Anson Environmental Ltd., re: Disposal of soil cuttings, September 9, 1992. (Attached data, undated.)

P. 300777 - 300789 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Request for a copy of validated data, September 17, 1992. (Attached: 1. Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Request for a copy of validated data, September 18, 1992. 2. Sampling information, undated.)

P. 300790 - 300799 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Validated data from the soil samples taken from indoor borings #3 and 4, September 21, 1992. (Attached data, undated.)

P. 300800 - 300820 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Sampling requirements and data, September 24, 1992. (Attached: "Drywell Sediment Sampling", undated.)

P. 300821 - 300825 Facsimile transmittal sheet to Mr. Tom Taccone, U.S. EPA, from Ms. Fritzi Gros-Daillon, Anson Environmental, Ltd., re: Anchor Chemical - Well 1-S Installation Log, July 21, 1993. (Attached: Sampling information, undated.)

P. 300826 - 300829 Facsimile transmittal sheet to Mr. Tom Taccone, Project Manager, U.S. EPA, from Mr. Dean Anson, Anson Environmental, Ltd., re: Enclosed corrected charts, November 3, 1993. (Attached: 1. Table 3-3, "Well Development Data", undated. 2. Table 4-6, "Indoor Borings, OVM Readings and Samples Selected", undated. 3. Table 4-10, "Specific Capacity Tests", undated.)

P. 300830 - 300847 Letter to Mr. Thomas Taccone, Project Manager, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Validated Results from Cesspool Sampling, Anchor Chemical Superfund Site, November 10, 1993. (Attached: 1. Report: Section 1: Quality Assurance Review, prepared by Mr. LeRoy F. Wenrick, Quality Assurance Chemist, Environmental Standards, Inc., October 29, 1993. 2. A. Organic Data, undated. 3. B. Inorganic Data, undated.)

P. 300848 - 300860 Letter to Mr. Kevin Kubik, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Additional information prepared by the data validator for the samples analyzed from indoor borings #1 and #2, January 3, 1994. (Attached: 1. Report: Section 1: Quality Assurance Review, prepared by Mr. William S. Strohben, Jr., Quality Assurance Chemist, Environmental Standards, Inc., March 2, 1992. 2. "Section 6, Case Narratives and Chain-of-Custodies", undated.)

P. 300861 - 300862 "Completed Analysis Report, Anchor Chemical", March 31, 1995.

P. 300863 - 300869 Letter to Ms. Alison Devine, Region II ARCS Project Officer, U.S. EPA, from Mr. Robert D. Goltz, P.E., ARCS II Program Manager, CDM Federal Programs Corporation, re: Letter Report, Summary of Split Sampling Results of Soil and Groundwater Samples, Anchor Chemical Site, Hicksville, New York, June 15, 1995. (Attached report: Letter Report, Summary of Split Sampling Results of Soil and Groundwater Sampling, Anchor Chemical Site, Hicksville, New York, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, June 15, 1995.)

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P. 300870 - 300871 Facsimile transmittal sheet to Mr. Tom Taccone, U.S. EPA, from Mr. Dean Anson, Anson Environmental, Ltd., re: Table 1-2, Anchor Chemical, July 20, 1995. (Attached: Table 1-2, "Volatile Organic Compounds Detected at Quantifiable Concentrations in Groundwater at the Anchor Chemical Site (concentrations in ug/L) (Roux 1991)", undated.)

3.3 Work Plans

P. 300872 - 301139 Plan: Work Plan Remedial Investigation and Feasibility Study, Anchor Chemical Site, Hicksville, New York, prepared by Roux Associates, Inc., prepared for Spiegel Associates, May 4, 1990.

P. 301140 - 301309 Plan: Project Operations Plan, Remedial Investigation, Anchor Chemical Site, Hicksville, New York, prepared by Roux Associates, Inc., prepared for Spiegel Associates, April 10, 1991.

P. 301310 - 301490 Plan: Work Plan, Remedial Investigation, Anchor Chemical Site, Hicksville, New York, prepared by Roux Associates, Inc., prepared for Spiegel Associates, April 10, 1991.

3.4 Remedial Investigation Reports

P. 301491 - 301656 Guidance Document: Investigation of Contaminated Aquifer Segments, Nassau County, New York, prepared by Nassau County Department of Health, and Dvirka and Bartilucci, Consulting Engineers, June 1986.

P. 301657 - 301700 Letter to Ms. Dorothy Allen, Project Manager, U.S. EPA, Region II, from Mr. Richard G. Leland, Rosenman & Colin, re: Forwarding enclosed "Tank Closure Report", September 17, 1991. (Attached report: Tank Closure Report, prepared by Roux Associates, Inc., prepared for Spiegel Associates, August 23, 1991.)

USEPA 004397

P. 301701 - 301789 Letter to Ms. Dorothy Allen, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Enclosed "Quality Assurance Review, The Anchor Chemical Project" Report, April 22, 1992. (Attached: 1. Letter to Mr. Dean Anson, Anson Environmental, from Mr. Rock J. Vitale, Quality Assurance Specialist/Principal, Environmental Standards, Inc., re: Enclosed "Quality Assurance Review, The Anchor Chemical Project" Report, April 16, 1992. 2. Report: Quality Assurance Review, The Anchor Chemical Project, prepared by Environmental Standards, Inc., prepared for Anson Environmental, April 16, 1992.)

P. 301790 - 301803 Letter to Mr. Tom Taccone, ERRD/NYCSB2-W, U.S. EPA, from Mr. Arthur Block, Senior Regional Representative, Public Health Service, Agency for Toxic Substances and Disease Registry, Department of Health and Human Services, re: Revised Site Review and Update (SRU) for Anchor Chemicals/Lith Kem-Ko, Hicksville, Nassau County, NY, December 6, 1994. (Attached report: Site Review and Update, Anchor/Lith Kem-Ko, Hicksville, Nassau County, New York, prepared by The New York State Department of Health, November 16, 1994.)

P. 301804 - 301967 Report: Volume 1, Remedial Investigation Report, Anchor Chemical Site, Hicksville, New York, prepared by Anson Environmental Ltd., prepared for K.B. Company, March 1995.

P. 301968 - 302032 Report: Volume 2, Remedial Investigation Report, Appendix A - D, Anchor Chemical Site, Hicksville, New York, prepared by Anson Environmental Ltd., prepared for K.B. Company, March 1995.

P. 302033 - 302170 Report: Volume 3, Remedial Investigation Report, Appendix E, Anchor Chemical Site, Hicksville, New York, prepared by Anson Environmental Ltd., prepared for K.B. Company, March 1995.

P. 302171 - 302282 Report: Volume 4, Remedial Investigation Report, Appendix F - M, Anchor Chemical Site, Hicksville, New York, prepared by Anson Environmental Ltd., prepared for K.B. Company, March 1995.

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P. 302283 - 302318 Report: Remedial Investigation Report Supplement, Anchor Chemical Site, Hicksville, New York, prepared by Anson Environmental Ltd., prepared for K.B. Company, April 1995.

P. 302319 - 302633 Letter to Mr. Arthur D. Sanders, President, K.B. Company, c/o Jerry Speigel Associates, Mr. Dean Anson, Anson Environmental, and Richard G. Leland, Esquire, Rosenman and Colin, from Ms. Carole Petersen, Chief, New York/Caribbean Superfund Branch II, U.S. EPA, re: Anchor Chemical Superfund Site; Final Risk Assessment, June 2, 1995. (Attached report: Final Risk Assessment, Anchor Chemical Site, Hicksville, New York, prepared by TRC Environmental Corporation, prepared for Emergency and Remedial Response Division, U.S. EPA, April 1, 1994.)

3.5 Correspondence

P. 302634 - 302698 Letter to Ms. Dorothy Allen, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, and Mr. Stanley Sucharski, Co-Facility Coordinator, Anson Environmental, re: Field conditions requiring the modification of the Project Operations Plan, January 28, 1992. (Attached: 1. Marine Pollution Control, Well Experience Log, Boring Logs; 2. Boring Logs for MW-1D; 3. Description of Soil Sample MW1-D (122"); 4. Resumes of Individuals who Examined the Samples from MW-1D; 5. Drilling Contractor Contacts, Telephone Conversation Logs; 6. Validated Laboratory Data; 7. Unvalidated Laboratory Data.)

P. 302699 - 302703 Letter to Mr. Bernard J. Bottomley, Director, Engineering and Administrative Services, Newsday, from Mr. Dean Anson II, Anson Environmental, re: Information about Drywell #2 at Anchor Chemical, March 12, 1992. (Attached: 1. Letter to Mr. Art Sanders, Spiegel Associates, from Mr. Bernard J. Bottomly, Newsday, re: Anchor Chemical information, February 14, 1992. 2. Letter to Janette Payne, Esquire, Times-Mirror, from Richard G. Leland, Esquire, Rosenman and Colin, re: Anchor Chemical documents, February 5, 1992.)

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P. 302704 - 302704 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, re: Validated data for soil cuttings drummed during installation of the monitoring wells and the indoor borings, September 14, 1992.

P. 302705 - 302707 Letter to Mr. Dean Anson, Anson Environmental, Ltd., from Ms. Carole Petersen, Chief, NY/Caribbean Superfund Branch II, U.S. EPA, re: Anchor Chemical Superfund Site; Second Round of RI Sampling; Format for Submission of RI Data, September 30, 1992. (Attached: "Risk Assessment Data Format Requirements", prepared by TRC Environmental Corporation, undated.)

P. 302708 - 302709 Facsimile transmittal sheet to Ms. Dorothy Allen, U.S. EPA, from Mr. Dean Anson, Anson Environmental, Ltd., re: Anchor Chemical, April 30, 1993. (Attached letter to Ms. Dorothy Allen, Project Manager, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental Ltd., re: 120 drums of soil cuttings scheduled for removal on May 10th and 11th, April 28, 1993.)

P. 302710 - 302711 Letter to Mr. Thomas Taccone, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Direction of Groundwater Flow, Anchor Chemical Superfund Site, June 21, 1993.

P. 302712 - 302716 Letter to Mr. Thomas Taccone, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Direction of Groundwater Flow, Anchor Chemical Superfund Site, July 13, 1993. (Attached: 1. Map: "West John Street, Monitoring Well Location Plan, Hicksville, New York", prepared by Mr. Albert W. Tay, April 21, 1992. 2. Map: "West John Street, Monitoring Well Location Plan, Hicksville, New York", prepared by Mr. Albert W. Tay, April 21, 1992. 3. "Typical Leeching Pool Detail", undated.)

P. 302717 - 302726 Letter to Mr. Arthur D. Sanders, President, K.B. Company, c/o Jerry Spiegel Associates, Richard G. Leland, Esquire, Rosenman and Colin, and Mr. Dean Anson, Anson Environmental, Ltd., from Ms. Carole Petersen, Chief, NY/Caribbean Superfund Branch II, U.S. EPA, re: EPA Comments on the Draft Remedial Investigation Report for the Anchor Chemical Superfund Site, August 5, 1993.

P. 302727 - 302729 Letter to Mr. Thomas Taccone, Work Assignment Manager, U.S. EPA, Emergency and Remedial Response Division, from Mr. Andre Bridgett, Project Manager, TRC Environmental Corporation, re: Ground Water Flow Direction and Sampling Needs, August 24, 1993. (Attached map: "West John Street, Monitoring Well Location Plan, Hicksville, New York", prepared by Mr. Albert W. Tay, April 21, 1992.)

P. 302730 - 302732 Letter to Mr. Thomas Taccone, Work Assignment Manager, U.S. EPA, Emergency and Remedial Response Division, from Mr. Andrew G. Hargens, TRC Geologist, TRC Environmental Corporation, re: Clarification of Observed Field Sampling Procedures, December 7, 1993.

P. 302733 - 302734 Letter to Mr. Thomas Taccone, Project Manager, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Anchor Chemical Superfund Site, Cesspool Sampling Locations, February 15, 1994. (Attached map: "500 West John Street, Cesspool Sampling Locations", prepared by Anson Environmental, Ltd., undated.)

P. 302735 - 302736 Letter to Mr. Tom Taccone, EPA Work Assignment Manager, U.S. EPA, Emergency and Remedial Response Division, from Ms. Susan W. Stoloff, Project Manager, TRC Environmental Corporation, re: Tentatively Identified Compounds 1,4-Dioxane and 2-Butoxyethanol, April 5, 1994.

USEPA 004401

P. 302737 - 302742 Letter to Mr. Arthur D. Sanders, President, K.B. Company, c/o Jerry Spiegel Associates, Richard G. Leland, Esquire, Rosenman and Colin, Mr. Dean Anson, Anson Environmental, and S. Sucharski, Blasland, Bouck and Lee, from Ms. Carole Petersen, Chief, NY/Caribbean Superfund Branch II, U.S. EPA, re: EPA comments on the Revised Draft Remedial Investigation Report for the Anchor Chemical Superfund Site, May 6, 1994.

P. 302743 - 302743 Letter to Mr. Tom Taccone, Project Manager, U.S. EPA, from Richard G. Leland, Esquire, Rosenman and Colin, re: EPA Comments on the Revised Draft Remedial Investigation Report for the Anchor Chemical Superfund Site, May 12, 1994.

P. 302744 - 302747 Letter to Mr. Thomas Taccone, U.S. EPA, Region II, from Mr. Dean Anson II, Anson Environmental, Ltd., re: Responses to EPA May 6, 1994 Comments on the Revised Draft Remedial Investigation Report for the Anchor Chemical Superfund Site, May 31, 1994.

P. 302748 - 302749 Letter to Richard G. Leland, Esquire, Rosenman and Colin, from James Doyle, Esquire, Assistant Regional Counsel, Office of Regional Counsel, U.S. EPA, re: Draft Remedial Investigation Report, Anchor Chemical Superfund Site, June 29, 1994.

P. 302750 - 302752 Facsimile transmittal sheet to James Doyle, Esquire, U.S. EPA, from Richard G. Leland, Esquire, Rosenman and Colin, re: Enclosed letter regarding the draft remedial investigation report for Anchor Chemical Superfund Site, July 11, 1994. (Attached letter to James Doyle, Esquire, Assistant Regional Counsel, Office of Regional Counsel, U.S. EPA, Region II, from Richard G. Leland, Esquire, Rosenman and Colin, re: Draft Remedial Investigation Report, Anchor Chemical Superfund Site, July 11, 1994.)

P. 302753 - 302754 Letter to Richard G. Leland, Esquire, Rosenman and Colin, from James Doyle, Esquire, Assistant Regional Counsel, Office of Regional Counsel, U.S. EPA, re: Issues at the Anchor Chemical Superfund Site, Hicksville, New York, July 18, 1994.

P. 302755 - 302807 Letter to Mr. Thomas Taccone, New York/Caribbean Compliance Branch, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Remedial Investigation Report Revisions, Anchor Chemical Superfund Site, August 3, 1994. (Attached: "Anchor RI Response", July 1994.)

P. 302808 - 302812 Letter to Mr. Marsden Chen, Section Chief, New York State Department of Environmental Conservation, Federal Project Section, and Mr. Thomas Taccone, Project Manager, U.S. EPA, Region II, from Helen Collier Mauch, Esquire, Rosenman and Colin, re: Enclosed memorandum prepared by Anson Environmental Ltd. setting forth the technical basis for request for no further action in connection with Tank 14, August 29, 1994. (Attached letter to Richard Leland, Esquire, Rosenman and Colin, from Mr. Dean Anson II, Anson Environmental, Ltd., re: Tank Investigation, Anchor Chemical Site, August 29, 1994.)

P. 302813 - 302817 Letter to Mr. Arthur D. Sanders, President, K.B. Company, c/o Jerry Spiegel Associates, Richard G. Leland, Esquire, Rosenman and Colin, Mr. Dean Anson, Anson Environmental, and S. Sucharski, Blasland, Bouck and Lee, from Ms. Carole Petersen, Chief, NY/Caribbean Superfund Branch II, U.S. EPA, re: Anchor Chemical Superfund Site, EPA Comments on the Revised Draft Remedial Investigation Report, September 30, 1994.

P. 302818 - 302818 Letter to Mr. Tom Taccone, New York/Caribbean Compliance Branch, U.S. EPA, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Monthly Report for September, 1994, Anchor Chemical Superfund Site, October 4, 1994.

P. 302819 - 302821 Letter to Mr. Thomas Taccone, Remedial Project Manager, U.S. EPA, from Ms. Susan E. Boone, Work Assignment Manager, CDM Federal Programs Corporation, re: Evaluation of Additional Proposed Soil Borings Upon Baseline Risk Assessment, Oversight of Expanded Remedial Investigation Activities, Anchor Chemical Site, Hicksville, New York, December 14, 1994.

P. 302822 - 302841 Letter to Mr. Thomas Taccone, U.S. EPA, Region II, from Mr. Dean Anson II, Co-Facility Coordinator, Anson Environmental, Ltd., re: Responses to EPA September 30, 1994 Comments on Revised Remedial Investigation Report, Anchor Chemical Site, December 28, 1994. (Attached: Information regarding the Anchor Chemical Site)

P. 302842 - 302842 Letter to Mr. Fred Elsen, U.S. EPA, from Ms. Fritzi Mazzola Gros-Daillon, Anson Environmental, Ltd., re: Analytical Standards for 1,4-Dioxane, Anchor Chemical Superfund Site, Hicksville, New York, January 13, 1995.

P. 302843 - 302843 Letter to Mr. Thomas Taccone, Project Manager, U.S. EPA, NY/Caribbean Superfund Branch II, from Helen Collier Mauch, Esquire, Rosenman and Colin, re: Request to provide EPA's comments on the revised remedial investigation report ahead of schedule, January 30, 1995.

P. 302844 - 302844 Letter to Helen Collier Mauch, Esquire, Rosenman and Colin, from James Doyle, Esquire, Assistant Regional Counsel, Office of Regional Counsel, U.S. EPA, re: Draft Remedial Investigation Report Comment Letter, Anchor Chemical Superfund Site, February 1, 1995.

P. 302845 - 302847 Letter to Mr. Arthur D. Sanders, President, K.B. Company, c/o Jerry Spiegel Associates, Richard G. Leland, Esquire, Rosenman and Colin, and Mr. Dean Anson, Anson Environmental, from Ms. Carole Petersen, Chief, NY/Caribbean Superfund Branch II, U.S. EPA, re: Anchor Chemical Superfund Site, EPA Comments on the Revised Draft Remedial Investigation Report, February 21, 1995.

P. 302848 - 302848 Letter to Mr. Thomas Taccone, U.S. EPA, Region II, from Mr. Dean Anson II, Anson Environmental, Ltd., re: Anchor Chemical Superfund Site, Supplemental Report to RI, April 12, 1995.

6.0 STATE COORDINATION

6.3 Correspondence

P. 600001 - 600001 Letter to Ms. Dorothy Allen, Eastern NY/Caribbean Section II, U.S. EPA, Region II, from Mr. Jonathan Greco, Federal Projects Section, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Disposal of Investigation Derived Soils, Anchor Lith Kem-ko Site, December 1, 1992.

P. 600002 - 600005 Letter to Mr. Thomas Taccone, Western NY/Caribbean Section II, U.S. EPA, Region II, from Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Draft Remedial Investigation Report, Anchor Chemical Site, June 9, 1993.

P. 600006 - 600021 Letter to Mr. Thomas Taccone, Western NY/Caribbean Section II, U.S. EPA, Region II, from Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Groundwater Flow Direction, Anchor Chemical Site, June 22, 1993. (Attached: Anchor Chemical Site information, undated.)

P. 600022 - 600023 Letter to Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, from Mr. Thomas Taccone, Project Manager, Western New York Section II, U.S. EPA, re: NYSDEC's Comments on the Anchor Chemical Draft RI Report, August 12, 1993.

P. 600024 - 600024 Letter to Mr. Tom Taccone, Western NY/Caribbean Section II, U.S. EPA, Region II, from Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Additional Groundwater Sampling, Anchor Lith Kem-Ko, October 5, 1993.

USEPA 004405

P. 600025 - 600026 Letter to Mr. Tom Taccone, Western NY/Caribbean Section II, U.S. EPA, Region II, from Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Draft Final Remedial Investigation, Anchor Lith Kem-Ko, November 16, 1993.

P. 600027 - 600028 Letter to Ms. Dorothy Allen, U.S. EPA, Region II, from Mr. Michael J. Hughes, Environmental Health Specialist II, Bureau of Toxic Substance Assessment, State of New York Department of Health, re: Preparation of a Site Review and Update (SRU) for the Anchor Lith Kem-Ko Site, January 21, 1994.

P. 600029 - 600029 Letter to Mr. Thomas Taccone, U.S. EPA, Region II, from Mr. Jonathan Greco, Engineering Geologist I, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Dean Anson's May 31, 1994 Response to Comments on RI, Anchor Lith Kem-Ko Site, June 6, 1994.

P. 600030 - 600030 Letter to Mr. Tom Taccone, Western NY/Caribbean Section II, U.S. EPA, Region II, from Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Future Actions at the Anchor Lith Kem-Ko Site, May 2, 1995.

P. 600031 - 600031 Letter to Mr. Sal Ervolina, Director, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, from Ms. Carole Petersen, Chief, New York/Caribbean Superfund Branch II, U.S. EPA, re: Draft Proposed Plan, Anchor Chemical Site, June 9, 1995.

P. 600032 - 600032 Letter to Ms. Kathleen Callahan, Director, Emergency and Remedial Response Division, U.S. EPA, Region II, from Mr. Michael O'Toole, Jr., Director, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Anchor Chemical Site, Proposed Plan, July 7, 1995.

P. 600033 - 600033 Letter to Mr. Tom Taccone, Western NY/Caribbean Section II, U.S. EPA, Region II, from Mr. Jonathan Greco, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation, re: Technical Comments on Proposed Plan - Anchor Chemical Site, July 10, 1995.

7.0 ENFORCEMENT

7.3 Administrative Orders

P. 700001 - 700029 Administrative Order on Consent, In the Matter of Anchor Chemical, K.B. Company, Respondent, Index No. II CERCLA-90208, June 2, 1989. (Attached: "Appendix I, Order on Consent, Index Number II CERCLA-90208, Statement of Work for 500 West John Street, Hicksville, New York", prepared by Roux Associates, Inc., prepared for Rosenman & Colin, April 26, 1989.)

P. 700030 - 700043 Administrative Order, In the Matter of Anchor Chemical, Chessco Industries, Inc., Respondent, Index No. II CERCLA-90218, August 3, 1989.

P. 700044 - 700056 Administrative Order, In the Matter of the Anchor Chemical Site, Anchor/Lith-Kem Ko, Inc., Respondent, Index No. II CERCLA-20205, March 31, 1992.

P. 700057 - 700081 Administrative Order On Consent, In the Matter of the Anchor Chemical Site, Anchor Lith/Kem Ko., Inc., and Chessco Industries, Respondents, Index No. II CERCLA-94-0220, August 29, 1995.

P. 700082 - 700102 Administrative Order, In the Matter of the Anchor Chemical Site, K.B. Company, Respondent, Index Number II-CERCLA-95-0209, August 29, 1995.

USEPA 004407

10.0 PUBLIC PARTICIPATION

10.2 Community Relations Plans

P. 1000001 - 1000033 Letter to Ms. Cathy Moyik, Regional Project Officer, Emergency and Remedial Response Division, U.S. EPA, from Mr. Charles Feinberg, Regional Manager, Alliance Technologies Corporation, re: Revised Final Community Relations Plan, June 7, 1991. (Attached report: Community Relations Plan, Anchor Chemical Site, Hicksville, Nassau County, New York, Community Relations Support, prepared by Alliance Technologies Corporation, prepared for Emergency and Remedial Response Division, U.S. EPA, June 6, 1991.)

10.6 Fact Sheets and Press Releases

P. 1000034 - 1000041 Fact Sheet: Superfund Program Fact Sheet, Anchor Chemical Site, Hicksville, New York, EPA Begins Remedial Investigation at the Anchor Chemical Superfund Site, prepared by U.S. EPA, Region II, August 1991.

USEPA 004408

APPENDIX IV

STATE LETTER OF CONCURRENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York 12233

Michael D. Zagata
Commissioner

SEP 29 1995

Ms. Kathleen Callahan
Director
Emergency & Remedial Response Division
U.S. Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007-1866

Re: Anchor Chemical Site ID No. 130018
Record of Decision

Dear Ms. Callahan:

The New York State Department of Environmental Conservation has reviewed the record of decision for the Anchor Chemical site. The Department concurs with the selected remedy of no further action as it is detailed in the above-referenced document.

If you have any questions, please contact Mr. Jonathan Greco, of my staff, at (518) 457-3976.

Sincerely,

Charles M. Goddard

for Michael J. O'Toole, Jr.
Director
Division of Hazardous Waste Remediation

Attn: Tom Taccone

Post-it® Fax Note 7671	Date 9/29/95 # of pages ▶ 1
To K. Callah / B McCabe	From Charles Goddard
Co./Dept. EPA	Co. DEC
Phone #	Phone # (518) 457-0730
Fax #	Fax # (518) 485-8404

APPENDIX V

RESPONSIVENESS SUMMARY

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I. RESPONSIVENESS SUMMARY OVERVIEW

This Responsiveness Summary provides a summary of citizen comments and concerns and the responses by the U.S. Environmental Protection Agency ("EPA") to those comments regarding the Remedial Investigation (RI) and Risk Assessment Reports and Proposed Plan for the Anchor Chemical Superfund Site (the "Site"). All comments summarized in this document have been considered in EPA's final decision for selection of a no further action remedy for the Site.

EPA's public comment period, which started on August 23, 1995 and ended on September 21, 1995, provided interested parties with the opportunity to comment on the RI, Risk Assessment and Proposed Plan for the Site. A public meeting was held to discuss implementation of the Site remedy (i.e, removal of contaminated soil and sediments from four drywells and no further action). The meeting was held at the Hicksville Public Library, in Hicksville, New York on September 12, 1995 at 7:00 p.m.

An evaluation of all available data, the findings of the RI conducted at the Site, EPA's Risk Assessment, and other supporting data and documentation indicate that the Site risks are within EPA's acceptable risk range and that a no further action decision is protective of human health and the environment.

Although the risks posed by the Site contamination are within the acceptable risk range, four dry wells on Site are contaminated with chromium, lead, 1,1,1 trichloroethane (1,1,1-TCA) and other volatile organic compounds (VOCs). Groundwater samples from several monitoring wells on Site also showed concentrations of chromium and 1,1,1-TCA, which were above MCLs. The contaminated soils and sediments from the dry wells were removed in order to prevent further groundwater contamination. The excavated materials will be disposed of at a Resource Conservation and Recovery Act (RCRA) approved facility. Groundwater and soil samples will be collected at the Site and analyzed to assess the effectiveness of the removal action. Upon completion of the removal action, EPA will take no further action at the Anchor Chemical Superfund Site.

During the public meeting, the local community reaction to the preferred alternative was, for the most part, favorable. However, there was a concern raised by the Nassau County Department of Health about the potential for contamination to affect public and private drinking water wells, which are downgradient from the Site. The nearest public supply well is approximately one mile downgradient. Also, the Site is in an area which is zoned for industry. According to the Nassau County Department of Buildings, the nearest area which is zoned for residential development is approximately one half mile

downgradient from the Site. Because of the large distances from the Site to the nearest public wells, any contamination which reaches the wells would be greatly reduced, such that any contaminants would be well below MCL levels.

II. BACKGROUND ON COMMUNITY INVOLVEMENT

During the course of the RI and Proposed Plan, EPA has sought to promote community awareness of activities at the Anchor Chemical Site through local newspaper articles, fact sheets, press releases, public notices and public information meetings.

EPA heard from only a few members of the community and local public officials. Public meetings were held in the Community Room of the Hicksville Public Library, Hicksville, New York on August 21, 1991, and September 12, 1995.

EPA's initiated its community relations efforts by developing a Community Relations Plan in October 1990, which included an outline of community concerns, required and suggested community relations activities, and a comprehensive list of federal, state, and local contacts. Site information repositories were established at EPA's Region II office in New York City and the Hicksville Library in the Town of Oyster Bay, New York.

To obtain public input on the RI and the proposed remedy, a public comment period was established from August 23, 1995, to September 21, 1995. A public notice appeared in Newsday on August 23, 1995, and in the Hicksville Illustrative News on August 25, 1995. The public meeting was held on September 12, 1995.

Approximately 15 people attended the meeting. The audience consisted of residents, and state and local government officials. A summary of the questions posed during the meeting is included in the following section.

III. COMPREHENSIVE SUMMARY OF COMMENTS AND RESPONSES

Public comments on the Proposed Plan received from August 23, 1995 through September 21, 1995 are summarized and addressed below. Section A summarizes the written comments received during the public comment period. Section B summarizes those comments received at the public meeting held on September 12, 1995.

A. SUMMARY OF EPA's RESPONSES TO WRITTEN COMMENTS

USEPA 004414

Comments from State Senator Carl L. Marcellino

Comment 1: Who has oversight responsibility for the round of groundwater samples after the drywell removal action is completed?

EPA Response: The U.S. Environmental Protection Agency, Region II.

Comment 2: Has the air quality issue been addressed? Also, what about asbestos contamination of the building?

EPA Response: Air quality monitoring was performed to determine the concentration of VOCs on Site during the field sampling portion of the Remedial Investigation. This included monitoring personal space as well as the ambient air around samples obtained. The monitoring did not reveal any problems.

Asbestos was not handled at the Site. However, there may be some asbestos in the building, which is currently being used as a warehouse for used machinery. In the event that the building is demolished, asbestos-containing material and debris would be regulated under the Clean Air Act. Any asbestos removal, would be the responsibility of the building owner.

Comments from the Nassau County Department of Health

Comment 1: The preferred alternative should be modified to include off-Site monitoring of wells to determine if groundwater contamination has migrated downgradient of the Site. The Site is located in close proximity to the Westbury Water District supply wells No. 12 and 12A.

EPA Response: EPA does not believe that off-Site groundwater monitoring is needed. District public water supply wells 12 and 12A are each approximately 1 mile downgradient from the Site. As contaminated groundwater moves off Site, the concentration of contaminants will decrease as the "plume" spreads out and diffuses. At a distance of one mile downgradient, the concentration of VOCs from the site should be well below the Maximum Contaminant Levels for drinking water. In addition, because the area in which the Anchor Site is located is zoned for industry, one would expect that other sources of contamination exist between the Site and any potentially affected wells. One would not be able to determine the separate contributions of other potential sources from the Anchor Site. In addition, the Nassau County Health Department periodically monitors public supply wells under existing programs, i.e., the Safe Drinking Water Act.

USEPA 004415

Comment 2: A private well survey should be performed to determine if any private supply or irrigation wells are present within one-half mile downgradient of the site. If residential private wells are located, water samples should be collected and analyzed for VOCs and metals.

EPA Response : According to the Zoning and Planning Examination Division of the Nassau County Department of Buildings, the nearest residential zone downgradient from the Site is located more than one-half mile in a downgradient direction from the Site. As such, no private well survey will be conducted. It should also be noted that the NYSDOH has a program where they can sample and analyze private wells in the vicinity of hazardous waste sites.

Comment 3: All drywell clean-outs should be performed using the requirements for potential vapor emissions which are outlined in a New York State Department of Health (NYSDOH) procedures manual.

EPA Response: EPA has reviewed the referenced requirements for responding to potentially harmful vapor emissions and will require that they be followed during the drywell removals.

Comment 4: Has the contamination from this Site reached the public drinking supply?

EPA Response : Groundwater at the Site flows to the southwest. The nearest public water supply wells are located 1.2 and 1.3 miles downgradient from the Site. No contamination has been traced in the public water supply system to the current contamination at the Anchor Chemical site. These wells are sampled periodically by the Nassau County Health Department. Groundwater contaminant concentrations identified at the Site would diffuse and significantly diminish by the time they reached (if they reached) the drinking wells. In addition, there may be other sources of contamination located between the Anchor Chemical site and the public supply wells, thereby precluding the specific identification of any contaminants detected.

B. SUMMARY OF EPA's RESPONSES TO COMMENTS RECEIVED AT THE PUBLIC MEETING

Comment 1: EPA stated at the September 12, 1995 meeting that soils under tank #14 were sampled to determine the presence of 2-butoxyethanol. Since the contaminant was not detected at this location, where did it come from?

EPA Response : The presence of 2-butoxyethanol in the soil probably resulted from leaks and spills during Site operations. The compound does not occur naturally in soil.

USEPA 004416

Comment 2: At what point in the investigation process is it determined that the problem is at its worst in order to properly remediate, or has it dissipated before there is an opportunity to remediate?

EPA Response: In the case of the Anchor Chemical Site, the highest concentrations of contaminants have already occurred. Soil and groundwater samples collected from 1982 to 1985 showed higher concentrations of VOC contamination. Since the tanks were sealed, levels of contamination have been substantially reduced. This particular source of contamination to the groundwater has been eliminated, and any contamination in the groundwater has been mitigated.

Comment 3: Has a study been performed on the incidences of cancer in the area around the Site? Are there any figures available on whether the cancer rate is higher in this area because of Site operations or contamination?

Response: A representative of the Nassau County Health Department responded at the September 12, 1995, meeting by stating that the Department has a cancer registry for all cancer cases listed in the County or locally. While the County does not perform cancer assessments, the New York State Department of Health does. Such a study has been performed for this area. In sum, the results show that there are no elevated levels of cancer associated with this Site above what would be expected for this area.

Comment 4: Regarding removal of soils from the drywells, how deep and wide are the wells and how much soil is expected to be removed? Finally, what is/are the determining factor(s) to ascertain that the correct amount of soil has been removed?

EPA Response : Drywells at the Site are approximately 2 feet in diameter and extend to a depth of approximately 17 feet below land surface (BLS). EPA proposes to remove approximately 2 feet of soil from 4 pre-existing drywells. This should be about 2 feet below the bottom concrete ring of each drywell, or 19 ft BLS. The remaining soils and sediment will be sampled and analyzed for contamination. Sample data collected for the Remedial Investigation show that the contaminants are present in higher concentrations near the surface; concentrations diminished as samples were drawn from increasingly greater depths.

Ultimately, soils will be removed at a depth of approximately 19 feet BLS in such a fashion that it allows the drywell to remain structurally intact. (Excessive soil removal may cause the walls of the drywell to slump.) Groundwater samples will be taken 6-12 months after the removal action to confirm the effectiveness of the soil removal from the drywells.

USEPA 004417

Comment 5: While EPA proposes to remove soils below the concrete base of the drywells, what consideration is being given to the potential for contamination to reside in soils on the sides of the drywells?

EPA Response: Results of the Remedial Investigation show that contaminants are concentrated in the bottom of the drywells, rather than around the sides, because the native soils are porous and water percolates downward. EPA believes that most of the contamination has adhered to fine particles which have collected on top of the natural soil in the drywells. These particles wash into the drain and clog pores of the natural sand. These fine particles are typically receptor sites for contaminants. This theory is supported by the fact that samples at incremental depths into the native soil contained very low concentrations of contaminants.

Comment 6: Will the soil being removed from drywells pose a danger to neighbors of the Site?

EPA Response: Soil and sediment will be evacuated into a tank truck. Air monitoring will be conducted on Site during the removal operation. If harmful levels are detected, operations will be halted and corrective measures instituted before operations are resumed.

Comment 7: If, in the future, the property were to be purchased for residential use, would there be any notification that this was a Superfund site and is a record maintained for a certain period of years that acknowledges that this was a Superfund site?

EPA Response : After the drywell removals, EPA will propose that the Site be taken off the National Priorities List (NPL). The process of removing a site from the NPL includes public notice and input and the State has to concur with the proposal. If no contamination is detected after the removal action, EPA would most likely not require that a restriction be placed in the deed. In the event that known contamination remains, the law requires EPA to reevaluate the Site every 5 years if contamination would not allow for unlimited use and unrestricted exposure. EPA does not believe such a scenario will develop for the Anchor Chemical site. Also, see response to comment 9.

Comment 8: Reconfirming earlier discussions, if a contaminated site is cleaned up, there will be no documentation in the deed transaction? Does not real estate law require disclosure?

EPA Response: EPA is not aware of any such requirement; however New York State Real estate laws are not "applicable" requirements which EPA is required to consider in the site remedy selection

USEPA 004418

process. The clean up of this Site will allow for unlimited use and unrestricted exposure. In addition, when a Superfund site is cleaned up and deleted from the NPL, it is no longer considered a Superfund site and no such documentation should be required to protect human health.

Comment 9: Prospective buyers of the property should be made aware of the previous nature and extent of contamination at the site.

EPA Response: Once the drywell removal action is complete, EPA will propose that the Site be deleted from the National Priorities List (NPL). The EPA maintains a data base which contains a complete history of each NPL Site. The data base, which is called the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), is available to the public. A prospective buyer can contact EPA and request information on a site from the CERCLIS database.

Comment 10: Explain the dramatic increase in concentrations for inorganic compounds and Tentatively Identified Compounds (TICs) between the April 1992 and November 1992 sampling events (e.g., 317 to 1440 ug/l chromium).

EPA Response: A high degree of variability among results for specific compounds is to be expected from the small number of groundwater samples. EPA recognizes presence of these contaminants and the need to address the contamination.

Comment 11: Has the Hooker plant been cleaned up?

EPA Response: There is a Record of Decision for that Site to contain the contamination and to clean up the facility. However, there is a larger problem associated with the site: the fact that contamination has migrated off the property. Since the Hooker property is adjacent to the Grumman property and the Navy facility, there is a groundwater plume of contaminants emanating from these sites. The New York Department of Environmental Conservation is addressing this situation.

Comment 12: How many Superfund (EPA or State) sites are there in the area?

EPA Response: There are two Federal Superfund sites in Hicksville, New York. There are also 9 sites under state jurisdiction within a radius of approximately one mile of the Site.

USEPA 004419

C. REMAINING CONCERNS

At this time, there are two issues of concern which remain. First, the results of the soil and groundwater samples which will be taken to confirm the effectiveness of the drywell removals and secondly, the deletion of the Site from the NPL.

USEPA 004420

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT

I. HEADING

Date: July 22, 1996

Subject: Anchor Chemicals
Hicksville, Nassau County, New York

From: Akhil Verma, OSC

To: R. Caspe, EPA
B. Mcabe, EPA
B. Bellow, EPA
R. Salkie, EPA
G. Zachos, EPA
J. Witkowski, EPA
J. LaPadula, EPA
K. Lynch, EPA
T. Taccone, EPA
R. Cahill, EPA
T. Johnson, EPA
G. Dominach, EPA
E. Schaaf, EPA
J. Doyle, EPA
R. Burns, OIG
M. O' Toole, NYSDEC
T. Vickerson, NYSDOH
D. Spiess, NCDH
USCG
START

POLREP NO. : 2 and FINAL

II. BACKGROUND

Site No:	G1
CERCLIS No:	NYD001485226
Response Authority:	CERCLA
NPL Status:	NPL Site
Start Date:	September 29, 1995
Completion Date:	July 11, 1996
Status of Action Memorandum:	N/A (Removal Action by PRPs)

USEPA 007523

III. SITE INFORMATION

The Anchor Chemical Corporation site (Site) includes the Anchor Chemical Corporation facility which is approximately 1.5 acres in size and is located at 500 West John Street in Hicksville, Nassau County, New York. The Site includes a building where chemical blending and packaging operations were conducted.

Anchor Chemical Corporation, later known as Anchor-Lith Kem Ko., (hereinafter referred to as Anchor) operated at the Site between the years of 1964 and 1984. Anchor engaged in the blending and packaging of chemicals for the graphic arts industry.

Site inspections in 1977 by the Nassau County Department of Health (NCDH), and meetings between Anchor and NCDH, indicated that during the production, mixing, and deliveries of chemicals, spillage occurred which contaminated dry wells at the Site. Water samples taken on July 27, 1977 from the dry well at the north end of the Facility contained elevated levels of 1,1,1-trichloroethane, trichloroethylene and tetrachloroethylene.

Sampling and analysis of the groundwater from the monitoring wells in 1982 indicated presence of several organic contaminants. Sampling results subsequent to the December 1982 have indicated that contaminant concentrations in groundwater at the Site have decreased over time.

The Site was listed on the National Priorities List (NPL) of known or threatened releases of hazardous substances, codified at 40 C.F.R. Part 300, Appendix B, as established pursuant to Section 105(a)(8)(B) of CERCLA, 42 U.S.C. § 9605(a)(8)(B).

Additional sampling and analyses of site groundwater and soils, and contents of dry wells, as a part of a remedial investigation and feasibility study (RI/FS) during 1991, detected chromium, lead, and organic compounds in certain dry wells and in groundwater. The contamination of four dry wells (dry wells # 2,3,6, and 8), was considered as a potential source of contamination at the Site.

The areas surrounding the Anchor Chemical Site include residential areas, and the Cantiaque Park and golf course is located 100 yards north of the Site. Approximately 90,000 people within 3 miles of the Site draw their drinking water from municipal and private wells. Approximately 12,000 people live within a mile of the Anchor facility; 11 schools are situated within 1 1/2 miles of the Site.

USEPA 007524

IV. RESPONSE INFORMATION

A. Previous Actions Taken

Previous actions taken at the Site include pressure testing of underground storage tanks (USTs), containing solvents and other products, and their decommissioning in the 1980s.

An RI/FS, consistent with administrative orders issued to the PRPs, was conducted during 1989-1992. Information obtained during the RI revealed that the dry well contamination, discussed above, is a potential source of continuing contamination at the Site, and must be addressed.

Based upon the conditions present at the Site, EPA issued an Administrative Order on Consent (AOC), and an unilateral Administrative Order (AO) to the PRPs to undertake a removal action at the Site. The AOC, Index Number II- CERCLA-94-0220, and the AO, Index Number II-CERCLA-95-0209, became effective September 15, 1995. These orders require the PRPs to remove and properly dispose of liquid, sediments, and soils from the dry wells # 2,3,6, and 8, described above.

Pursuant to the above referenced 1992 administrative orders, the PRPs initiated the removal action on September 29, 1995. The elements of the removal action consisted of:

- removal of any liquid, sediments, and soils from the bottom of dry wells # 2, 3, 6, and 8;

- excavation of sediments and soils from dry wells to a depth of two feet below the bottom edge of the concrete rings. The excavation would stop should slumping soil conditions occur, resulting in instability of the dry wells;

- securing completed excavations by backfilling with clean fill material;

- post- excavation soil sampling, and sampling of evacuated liquid and sediments for characterizing them for their proper disposition.

All of the above, except disposal of the waste material generated from the dry well removal activities, were completed on September 30, 1995. One holding tank containing 4,600 gallons of water, and two rolloffs storing approximately 15.4 tons of sediments/sludge remained on site, pending waste characterization results. Details of the September 1995 removal action are described in the POLREP #1, dated October 11, 1995.

A Record of Decision (ROD) was signed by EPA on September 30, 1995, upon completion of the above described removal action.

USEPA 007525

B. Current Removal Actions

As discussed above, upon completion of the removal activities on September 30, 1995, one holding tank containing approximately 4,600 gallons of water and two rolloffs storing excavated sediments/sludge (originally estimated 15.4 tons) remained on site for disposal, pending waste characterization results.

On October 27, 1995, EPA received the waste characterization analytical data for the stored water, together with a request on behalf of the PRPs, to discharge the subject water into the on site drywells. After reviewing the information provided by the PRPs removal contractor, EPA did not have any objections to the discharge of the water in the drywells (EPA's letter, dated November 2, 1995). On November 10, 1995, all the stored water from the holding tank was finally discharged into the drywell DW # 3.

Waste characterization results for sediments/sludge material stored in rolloffs, together with a request for off-site recycling/disposal of this material, were submitted to EPA through the removal contractor's letters dated, November 22 and 30, 1995. Upon review of all information provided, EPA did not have any objections to the off-site disposition of the subject material (EPA's letter, dated December 5, 1995).

Sediment/sludge disposal was conducted on February 29, 1996. During disposal of this material, 1,800 gallons of water which had resulted from the settling of the highly saturated sediments in the rolloffs over the elapsed time, was transported off-site to Paradise Heating Oil, Inc. (NY0000041830) of Ossining, New York for treatment and disposal. The remaining material, sediment/sludge, was transported to Soil Safe, Inc. (MDN 000000004) in Baltimore, Maryland for treatment and recycling. According to the Certificate of Recycle from Soil Safe, Inc., 21.35 tons of petroleum contaminated soil was recycled into a sub-base product for paving purposes. Actual wt. removed from the Drs

In accordance with the requirements of the administrative orders, the Removal Action Final Report was submitted by the PRPs removal contractor to EPA on May 3, 1996. However, a certification, signed by a representative of the PRPs, was not included in the report. A facsimile of this certification from Chessco Industries, Inc., one of the PRPs, was received by the OSC on July 11, 1996.

Based upon the review of the Removal Action Final Report and witness of the removal activities on September 29 and 30, 1995, the technical requirements of administrative orders pertaining to the removal action have been complied with. July 11, 1996 marks the completion the completion date of the removal action described in this

C. Next Steps

None.

USEPA 007526

D. Key Issues

None

V. COSTS

Based upon verbal communication with the PRPs contractor, costs of the removal action, described above is estimated by the OSC to be approximately $ 50,000.

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U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT

I. HEADING

Date: October 11, 1995

Subject : Anchor Chemicals
Hicksville, Nassau County, New York

From: Akhil Verma, OSC Akhil P Verma

To: K. Callahan, EPA
R. Salkie, EPA
M. Randol, EPA
ERD, Washington
G. Zachos, EPA
J. Witkowski, EPA
K. Lynch, EPA
T. Taccone, EPA
J. Doyle, EPA
B. McCabe, EPA
R. Byrnes, OIG
M. O' Toole, NYSDEC
T. Vickerson, NYSDOH
D. Spiess, NCDH
USCG
TAT

POLREP NO. : 1

II. BACKGROUND

Site No:	G1
CERCLIS No:	NYD001485226
Response Authority:	CERCLA
NPL Status:	NPL Site
Start Date:	September 29, 1995
Completion Date:	N/A (Expected October 30, 1995)
Status of Action Memorandum:	N/A (Removal Action by PRPs)

III. SITE INFORMATION

The Anchor Chemical Corporation site (Site) includes the Anchor Chemical Corporation facility which is approximately 1.5 acres in size and is located at 500 West John Street in Hicksville, Nassau County, New York. The Site includes a building where chemical blending and packaging operations were conducted.

Anchor Chemical Corporation, later known as Anchor-Lith Kem Ko., (hereinafter referred to as Anchor) operated at the Site between the years of 1964 and 1984. Anchor

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engaged in the blending and packaging of chemicals for the graphic arts industry.

Site inspections in 1977 by the Nassau County Department of Health (NCDH), and meetings between Anchor and NCDH, indicate that during the production, mixing, and deliveries of chemicals, spillage occurred which contaminated dry wells at the Site. Water samples taken on July 27, 1977 from the dry well at the north end of the Facility contained concentrations of 1,1,1-trichloroethane at 2,500 parts per billion (ppb), trichloroethylene at 15,000 ppb, and tetrachloroethylene at 20,000 ppb.

Three monitoring wells were installed at the Site. Sampling and analysis of the groundwater from the these monitoring wells in 1982 indicated presence of several organic contaminants. Concentration of 1,1,1-trichloroethane (1,1,1-TCA) as high as 11,000 ppb was reported in analyses of samples from one of the monitoring wells. Sampling results subsequent to the December 1982 have indicated that contaminant concentrations recorded from the three wells at the Site have decreased over time.

Sampling and analyses of site groundwater and soils, and contents of dry wells, as a part of a remedial investigation and feasibility study (RI/FS) during 1991, detected chromium, lead, and organic compounds in certain dry wells. Levels of lead, chromium and 1,1,1- TCA at 1,620 parts per million (ppm), 463 ppm and 3.3 ppm, respectively, were reported in sediment samples collected from dry wells # 2, 3, 6, and 8. Analyses of groundwater samples, also collected during the RI, detected concentrations of lead, chromium and 1,1,1- TCA at 240 ppb, 1440 ppb and 29 ppb, respectively. The contamination of these four dry wells (dry wells # 2,3,6, and 8), was considered as a potential source of contamination at the Site.

The areas surrounding the Anchor Chemical Site include residential areas, and the Cantiague Park and golf course is located 100 yards north of the Site. Approximately 90,000 people within 3 miles of the Site draw their drinking water from municipal and private wells. Approximately 12,000 people live within a mile of the Anchor facility; 11 schools are situated within 1 1/2 miles of the Site.

The Site is included on the National Priorities List (NPL) of known or threatened releases of hazardous substances, codified at 40 C.F.R. Part 300, Appendix B,

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as established pursuant to Section 105(a)(8)(B) of CERCLA, 42 U.S.C. § 9605(a)(8)(B).

IV. RESPONSE INFORMATION

A. Previous Actions Taken

Previous actions taken at the Site include pressure testing of underground storage tanks (USTs), containing solvents and other products, and their decommissioning in the 1980s.

An RI/FS, consistent with administrative orders issued to the PRPs during 1989-1992, has also been conducted. Information obtained during the RI revealed that the dry well contamination, discussed previously, is a potential source of continuing contamination at the Site, and must be addressed.

Based upon the conditions present at the Site, EPA issued an Administrative Order on Consent (AOC), and an unilateral Administrative Order (AO) to the PRPs to undertake a removal action at the Site. The AOC, Index Number II- CERCLA-94-0220, and the AO, Index Number II-CERCLA-95-0209, became effective September 15, 1995. These orders require the PRPs to remove and properly dispose of liquid, sediments, and soils from the dry wells # 2,3,6, and 8, described above.

B. Current Removal Actions

Pursuant to the administrative orders, the PRPs initiated the removal action on September 29, 1995. The elements of the removal action consisted of:

- removal of any liquid, sediments, and soils from the bottom of dry wells # 2, 3, 6, and 8;
- excavation of sediments and soils to a depth of two feet below the bottom edge of the concrete rings. The excavation would stop should slumping soil conditions occur, resulting in instability of the dry wells;
- securing completed excavations by backfilling with clean fill material;
- post- excavation soil sampling, and sampling of evacuated liquid and sediments for characterizing them for their proper disposition.

A Removal Plan, including a Work Plan, a Health and Safety Plan (HASP), and a Quality Assurance/Quality

USEPA 007520

Control (QA/QC) Plan for sampling and analyses, was submitted to EPA for review and comments, prior to the implementation of the removal action. EPA provided oversight of the removal action.

The PRPs removal contractor mobilized at the Site on September 29, 1995. EPA's OSC and a member of TAT, and the PRPs representatives were present on site during the removal activities.

After delineating work zones (i.e. exclusion and contamination zones), liquid (water) from dry well # 8 was pumped out utilizing a Vactor 2100 Series vacuum truck. Due to slow pumping rate of the Vactor, a decision was made to switch to high capacity hydraulic pumping of the remaining three dry wells.

A total of approximately 4,600 gallons of water (estimate by the contractor) was pumped out from all four dry wells. Pumped water was stored on site in a 21,000 gallon portable holding tank, pending analytical results of water samples.

Upon completion of water removal, removal of sediments/soils from dry wells started utilizing the Vactor vacuum truck. Sediments from dry well # 8 were removed until "clean"/native yellow sand was visible at the bottom of the well. Approximately, 4 feet of sediments/sludge (from 15 feet 2 inches to 19 feet 6 inches) was removed from this dry well. The contractor estimated that the removed solids from dry well # 8 corresponded to approximately 4 tons. The excavated sediments had an appearance of a black/tarry caked-like material.

Next, sediments/sludge from dry well # 3 was vacuumed out to yellow sands. According to the contractor, approximately 2.5 feet of solids (from 17 feet to 19.5 feet), corresponding to 2.4 tons, were removed from dry well # 3.

After completion of sediment removal from dry wells # 3 and 8, post-excavation samples were collected from the bottom of these dry wells, using a sewer clam shell excavator. Collection of samples, including decontamination, followed the QA/QC Plan protocols.

Removal of sediments from the two remaining dry wells resumed on September 30, 1995. During sediment removal from dry well # 2, a large, thick concrete block in the center of the base of the well was encountered, which hindered the removal operation. Most of the material were

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removed from around and above the concrete. Approximately 4.5 feet of sediments/sludge, estimated at 4.4 tons by the contractor, were removed from a depth of approximately 14.5 feet to a depth of 19 feet from this well.

During excavation of material, from dry well # 6, EPA was advised of occurrence of material slumping/caving in around the perimeter. EPA, upon visual observation from above (not easy), noted this possibility; all agreed (PRP representatives, the contractor, Vactor operator, EPA) to proceed slow and cautiously to remove as much material as possible and fill the excavation with an excess of clean fill. Most of the sediments from the center of the well were removed to yellow sands; some around the perimeter were not disturbed. After collecting a sample from the bottom of the well, pea gravel was poured to approximately 10 inches above the bottom dry well ring for stability. Approximately 4 feet 9 inches of solids (from 14 feet 8 inches to 19 feet 5 inches), corresponding to 4.6 tons were removed from this well.

Background and dry wells atmosphere were monitored using a photo-ionization detector (PID) through out the removal work. PID readings remained at 0 ppm during all field activities. All exclusion zone work were performed in Modified Level D personal protective equipment.

C. Next Steps

One tank holding approximately 4,600 gallons of water, and two rolloffs storing approximately 15.4 tons of excavated sediments/sludge from all of the four dry wells remain on site, pending analytical results of water and sediment/sludge samples. After receiving laboratory characterization results in the next few weeks, materials would be properly disposed of.

D. <u>Key Issues</u>

None

V. COSTS

Based upon verbal communication with the PRPs contractor, costs of the removal action, described above is estimated by the OSC to be approximately $ 50,000.

USEPA 007522

40 CFR Part 300

National Oil and Hazardous

Substances Pollution Contingency Plan;

National Priorities List

AGENCY: Environmental Protection Agency

ACTION: Notice of Intent to Delete the Anchor Chemicals Superfund Site from the National Priorities List; Request for Comments.

SUMMARY: The United States Environmental Protection Agency (EPA), Region 2, announces its intent to delete the Anchor Chemicals Superfund Site (Site) from the National Priorities List (NPL) and requests public comment on this action. The NPL constitutes Appendix B to the National Oil & Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. Section 9601 et seq. EPA and the New York State Department of Environmental Conservation (NYSDEC) have determined that all appropriate response actions have been completed and no further action by the responsible parties is appropriate under CERCLA. In addition, EPA and NYSDEC have determined that response activities conducted to date at the Site have been protective of public health, welfare, and the environment.

DATES: Comments concerning the deletion of the Site from the NPL may be submitted on or before **(Insert date 30 days after publication in the FR)**.

ADDRESSES: Comments should be submitted to:

Thomas Taccone

Remedial Project Manager

U.S. Environmental Protection Agency, Region 2

290 Broadway, 20th Floor

New York, New York 10007-1866

Comprehensive information on the Site is contained at:

U.S. Environmental Protection Agency, Region 2

Superfund Records Center

290 Broadway, Room 1828

New York, New York 10007-1866

(212) 637-4308

Hours: Mon.-Fri. 9:00am - 5:00 pm

Information on the Site is also available for viewing at the Site Administrative Record Repository located at:

Hicksville Library

Community Room

169 Jerusalem Avenue

Hicksville, L.I. 11801

Tel. (516) 931-1417

Hours: Mon.-Thurs. 9:00 am - 9:00 pm or Fri.-Sat. 9:00 am - 5:00 pm

For further information, please contact Mr. Taccone at the address above or by telephone at (212) 637-4281 or by electronic mail at "Taccone.Tom@epamail.epa.gov."

SUPPLEMENTARY INFORMATION:

Table of Contents:

I. Introduction

II. NPL Deletion Criteria

III. Deletion Procedures

IV. Basis for Intended Site Deletion

I. Introduction

EPA Region 2 announces its intent to delete the Anchor Chemicals Superfund Site (the Site) from the National Priorities List (NPL) and requests public comment on this deletion. The NPL is Appendix B to the National Oil & Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to Section 105 of CERCLA, as amended. EPA identifies sites that

appear to present a significant risk to public health, welfare, or the environment and maintains the NPL as the list of those sites. Sites on the NPL may be the subject of remedial actions financed by the Hazardous Substances Superfund Response Trust Fund (the Fund). Pursuant to Section 300.425(e)(3) of the NCP, any site deleted from the NPL remains eligible for Fund-financed remedial actions, if conditions at the site warrant such action.

EPA will accept comments concerning the deletion of the Site from the NPL for 30 days after publication of this notice in the Federal Register.

Section II of this notice explains the criteria for deleting sites from the NPL. Section III discusses procedures that EPA is using for this action. Section IV discusses how the Site meets the NPL deletion criteria.

II. NPL Deletion Criteria

The NCP establishes the criteria that the Agency uses to delete sites from the NPL. In accordance with 40 CFR Section 300.425 (e)(1)(i)-(iii), sites may be deleted from the NPL where no further response is appropriate. In making this determination, EPA, in consultation with the NYSDEC, will consider whether any of the following criteria has been met:

(i) Responsible parties or other persons have implemented all appropriate response actions required; or

(ii) All appropriate Fund-financed responses under CERCLA have been implemented, and no further response action by responsible parties is appropriate; or

(iii) A remedial investigation has shown that the release poses no significant threat to public health or to the environment and, therefore, taking remedial measures is not appropriate.

III. Deletion Procedures

The NCP provides that EPA shall not delete a site from the NPL until the State in which the release was located has concurred, and the public has been afforded an opportunity to comment on the proposed deletion. Deletion of a site from the NPL does not affect responsible party liability or impede Agency efforts to recover costs associated with response efforts. The NPL is designed primarily for information purposes and to assist Agency management.

EPA Region 2 will accept and evaluate public comments before making a final decision to delete the Site. The following procedures were used for the intended deletion of the Site:

1. EPA Region 2 issued a Record of Decision for the Site in September 1995, which stated that no remedial action was necessary, since the Site did not pose an unacceptable threat to human health and the environment.
2. EPA has recommended deletion.
3. The NYSDEC concurred with the deletion decision in a letter dated July 7, 1999.

4. Concurrent with this Notice of Intent to Delete, a notice has been published in a local newspaper and has been distributed to appropriate federal, state and local officials, and other interested parties.

5. EPA has made available the relevant documents to this decision at the addresses listed above.

The comments received during the comment period will be evaluated before any final decision is made. EPA Region 2 will prepare a Responsiveness Summary, if necessary, which will address any siignificant comments received during the public comment period.

If, after consideration of the comments it receives, EPA decides to proceed with the deletion, the EPA Regional Administrator will place a Notice of Deletion in the Federal Register. The NPL will reflect this deletion in the next final update. Public notices and copies of the Responsiveness Summary, if any, will be made available to local residents by EPA Region 2.

IV. Basis for Intended Site Deletion

The following summary provides a brief description and history of the Anchor Chemicals Superfund Site and the Agency's rationale for recommending deletion of the Site, in the Town of Oyster Bay, Nassau County, New York, from the NPL.

The Site is approximately 1.5 acres in size and includes one 28,850 square foot, two-story building. Most of the Site is paved with asphalt. The KoBar Company purchased the Site on September 30,

1964, and in the same year constructed the building for the Anchor Chemical Corporation. Before the building was constructed, the Site property was used for agricultural purposes.

From 1964 to 1978, Anchor Chemical manufactured, blended and stored chemicals for the graphic arts industry. Seventeen underground storage tanks (USTs), which ranged in size from 500 to 4,000 gallons, were used by the company at the Site to store chemicals and solvents, such as acetone, 1,1,1-trichloroethane (1,1,1-TCA), methylene chloride, 2-butoxyethanol and isopropyl alcohol. The chemicals were also stored in seven aboveground tanks which were removed from the Site in 1985. The tanks ranged in size from 550 to 1,500 gallons.

In addition, there are nine dry wells and one drain on-Site. The dry wells and drain were installed to collect rainwater runoff and drainage from the building. Liquid which collects in the dry wells infiltrates into the soil. None of the dry wells are connected to a sewer.

In 1977, the Nassau County Health Department (NCHD) discovered 1,1,1-TCA, trichloroethene (TCE) and tetrachloroethene (PCE) in liquid samples near the dry wells. In subsequent testing of 14 of the 17 USTs, six tanks failed air-over-product tank tightness tests, indicating that the tanks had the potential to leak. Five tanks were decommissioned in 1983; the remaining twelve were decommissioned in 1991. In 1982, the NCDH requested Anchor/Lith Kem-Ko, the operators, to investigate the possibility of groundwater and soil contamination at the Site.

Three groundwater monitoring wells were installed in September 1982. Groundwater samples taken from the wells contained elevated levels of 1,1,1-TCA, PCE, dichloroethane, chlorodibromo-