UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

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NOV 1 1974

Cotter Corporation
ATTN: Mr. David P. Marcott
Executive Vice President
P. O. Box 356
Golden, Colorado 80401

Gentlemen:

This refers to the inspection conducted by Mr. W. B. Grant of our Region III Office on April 10 and 24, 1974, at your Hazelwood, Missouri site and on April 23, 1974, at your Canon City, Colorado Office of activities authorized by AEC Source Material License No. SUB-1022. Reference is also made to the discussions of our findings with you by Mr. Grant on April 26, 1974.

The inspection was an examination of the decommissioning operations at the Hazelwood, Missouri site and consisted of interviews with personnel of B-K Construction Company; consultants of Ryckman, Ederly, Tomlinson and Associates; and, an examination of records at the Canon City, Colorado Office.

The inspection findings showed that during the period of July - October 1973, about 8700 tons of leached barium sulfate containing about seven tons or averaging about 0.08% natural uranium was scooped up for disposal with approximately 39,000 tons of soil, and the resulting uranium concentration was about .0001%. It is our understanding from your contractor that the material was then deposited under about 100 feet of refuse and earth at St. Louis, Missouri County sanitary landfill area No. 1.

The disposal does not appear to be within the intent of the Commission's regulation, 10 CFR Part 40, to allow alteration of the physical nature of Source material (i.e. dilution of solids with nonradioactive source material) in order to obtain a physical mixture which would no longer be subjected to licensing by the Commission.

We have been advised that the Directorate of Licensing is in receipt of your request for license termination, which included the results of the radiation surveys performed at the Hazelwood site. You will receive separate correspondence concerning that request from the Directorate of Licensing.

Sincerely,

John G. Davis, Deputy Director
for Field Operations
Directorate of Regulatory Operations

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

RO Inspection Report No. 040-8035/74-01

Licensee: Cotter Corporation
P. O. Box 356
Golden, Colorado 80401

9200 Latty Avenue
Hazelwood, Missouri

License No. SUB-1022
Category: E
Priority: 3

Type of Licensee: Uranium ore residue storage and shipment

Type of Inspection: Announced, Reinspection

Dates of Inspection: April 10 and 21-24, 1974

Date of Previous Inspection: November 17, 1970

Principal Inspector: W. H. Schultz for W. B. Grant 5-16-74 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: W. H. Schultz for C. E. Norelius 5-16-74 (Date)
Senior Health Physicist
Materials Radiological
Protection Section

SUMMARY OF FINDINGS

Enforcement Action

Contrary to the requirements of 10 CFR 20.301, disposal of licensed material made from July 31, 1973 through October 12, 1973, was in a manner not authorized. (Paragraph 4)

Licensee Action on Previously Identified Enforcement Items

During the last inspection on November 17, 1970, the licensee was cited for the following:

Contrary to 10 CFR 20.201(b), air sample surveys were inadequate to determine concentrations of airborne uranium ore materials to which persons were exposed during drying and loading operations at the Hazelwood, Missouri facility.

The drying operation ceased shortly after the inspection during which the violation was noted. A licensee representative stated that air samples were not taken while loading the remainder of the ore since it contained approximately 40% water and created practically no dust.

Unusual Occurrences

None.

Other Significant Findings

None.

Management Interview

Subsequent to the inspection, Mr. David P. Marcott, Executive Vice President and General Manager, Cotter Corporation, was contacted by telephone and given the results of the inspection. The apparent disposal of licensed source material in a manner not authorized was discussed as was the licensee's determination that the uranium content of residue ore was reduced to a non licensable percentage by the addition of quantities of soil.

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REPORT DETAILS

1. Persons Contacted

David P. Marcott, Executive Vice President, Cotter Corporation
Phillip Feeney, Project Engineer, Ryckman, Edgerley, Tomlinson, and Associates, St. Louis, Missouri
Warren Goff, Cotter Corporation, Health and Safety
John Fontecchio, Plant Accounting, Cotter Corporation
Bob Davis, B&K Construction Company, St. Louis, Missouri

Mr. Kenneth Miller, State of Missouri Bureau of Radiological and Occupational Health was informed of the inspection on April 2, 1974. No representative of that agency was present during the inspection.

2. General Background Information

In early 1966, the Continental Mining and Milling Company, Chicago, Illinois, purchased from the AEC (Bid No. AT-(23-2)-52), ore residues which were stored at the St. Louis Airport. The material was moved from that site during 1966 to the 9200 Latty Avenue, Hazelwood, Missouri site. Continental Mining and Milling possessed License No. SMA-862 for this program. In January 1967, the Commercial Discount Corporation of Chicago, Illinois, took physical possession of the Continental Mining and Milling Company facilities and source material stockpile. License No. SMC-907 was issued to Commercial Discount Corporation on December 29, 1966, allowing possession of the residues, removal of moisture, and shipment to the Cotter Corporation facilities in Canon City, Colorado. In December 1969, the remaining source material was sold to Cotter Corporation who obtained License No. SUB-1022. The Commission's invitation to Bid No. AT-(23-2)-52 dated January 10, 1964, listed the following residues: 74,000 tons of Belgian Congo Pitchblend Raffinate containing about 113 tons of uranium; 32,500 tons of Colorado Raffinate containing about 48 tons of uranium; 1500 tons of barium sulfate cake (unleached) containing about 22 tons of barium sulfate cake (leached) containing about 7 tons of uranium; and approximately 350 tons of miscellaneous residues containing about 2 tons of uranium.

RO:III inspected this licensed program on November 17, 1970. At that time, the licensee was in the process of drying and shipping residues to the Colorado facility. One violation, as described earlier in this report, was noted.

3. Organization and Administrative Control

Mr. David P. Marcott is Executive Vice President and General Manager of Cotter Corporation. The corporation moved its home office to P. O. Box 356, Golden, Colorado, in 1972. The licensee has an agreement with B&K Construction Company, St. Louis, to maintain control over the site and to remove material in accordance with direction from the licensee. The licensee has also contracted a consultant firm Ryckman, Edgerley, Tomlinson, and Associates of St. Louis, to handle the health physics and decontamination of the Hazelwood site.

4. Program

In August 1970, Cotter Corporation began drying and shipping the remaining residues from the St. Louis site, to their mill in Canon City, Colorado, at the rate of about 400 dry tons of material per day. This operation which was performed for Cotter by B&K Construction Company continued until about November 1970 when problems with the dryer, used to reduce the moisture content of the ore caused a halt in activities.

According to reports, records, and interviews with licensee representatives all of the remaining residues were shipped during the August to November period with the exception of approximately 10,000 tons of Colorado raffinate and 8700 tons of leached barium sulfate.

B&K Construction Company representative stated that his original instructions from Cotter Corporation were to load and ship the piles of ore residue according to location and color. He said the residues were distinctly different in color and the yellowish Congo raffinate plus the Colorado raffinate (reddish) were shipped as instructed to Canon City. The leached barium sulfate (whitish) was not shipped.

According to licensee representatives, the site remained unoccupied until mid 1973 when the remaining Colorado raffinate was shipped to Canon City without drying. The only residue then remaining at the site was the 8700 tons of leached barium sulfate. Records maintained by Cotter Corporation showed that this material contained from 0.05% to 0.1% or approximately 7 tons of uranium as U_3O_8. Licensee representatives stated, and records of invoices paid to B&K Construction Company show, that this material along with approximately 38,000 to 39,000 tons of soil removed from the top

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12 to 18 inches of the Latty Avenue site was disposed of in St. Louis County sanitary land fill area No. 1 on Old Bridge Road over the period July 31 through October 12, 1973. Based on this information, the licensee is in violation of 10 CFR 20.301 "Waste Disposal, General Requirement" in that he disposed of licensed material in a manner not authorized.

A B&K Construction Company representative said that, as directed by Cotter Corporation, the barium sulfate cake material was spread over a considerable portion of the site and then removed along with the top soil. He added that he thought that this was done to reduce the weight, as the cake material was very heavy and he did not want to fill a truck with only this material.

This material was hauled to the land fill area and used as cover for part of the several hundred truckloads of garbage and refuse that are shipped to the land fill area site every week. The licensee estimates that the barium sulfate is probably buried under 100 feet of garbage at this time. The trucks were hosed out after hauling this material.

5. Facilities and Equipment

The plot of ground known as 9200 Latty Avenue, Hazelwood, Missouri consists of a 3.5 acre plot on which four buildings are located and a 7.5 acre plot which was used for the storage of the ore residues. The larger plot is leased from the Norfolk and Western Railway Company which also has a spur line adjacent to the licensee's facility. One building, used formerly as the office and living quarters, is completely boarded up. The other three are empty and in a bad state of repair.

All the loading and drying equipment was said to have been hosed down after completion of the operation. It was either in storage at B&K Construction Company's yard, St. Ann, Missouri or had been sent to Canon City, Colorado. The residue piles appeared to have been removed and the ground returned to at or near its original level. Radioactive Material signs were noted to be in place along the fence line but the gates were open and some of the fence line had been knocked down.

6. Surveys

Representatives of the licensee stated that no surveys or assays of the material removed were made. It was segregated through location

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and color only. The only surveys were those made of the remaining land surface to determine if it read less than 0.6 mr/hr at the surface as measured by a thin (1.4 mg/cm^2) end window GM instrument. A representative of Ryckman, Edgerley, Tomlinson, and Associates stated that if the survey showed 0.6 mr/hr or less, no further removal of soil was done. If it was higher, soil was removed until the radiation was 0.6 mr/hr or less. He added that B&K Construction removed the top 12-18 inches of the site and in most cases, backfilled to the original level before any surveys were made. He said only one small 10 foot by 10 foot area was found above 0.6 mr/hr and that the rest of the area averaged less than 0.1 mr/hr.

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