Industrial NPDES Permit Review Notes

I. Permittee COMMONWEALTH EDISON CO. Permit No. IL 0002186

Facility Name COMMONWEALTH EDISON CO.

City CHICAGO County COOK

Facility Contact MAX COLE OF COMM. ED. Phone No. 312-394-2829

Major ✓ Minor ____ New ____ Reissued ✓ Modified ____

SIC Code 4911 SIC Category FOSSIL FUELED STEAM ELECTRIC GENERATING FACILITY

Brief description of manufacturing operations and discharge sources:

FACILITY HAS CAPACITY OF 702 MW, COAL GAS + OIL ARE THE FOSSIL FUELS USED, OPERATIONAL UNIT #5 7+8 ARE PULVERIZED COAL FIRED FURNACES, UNIT #6 WHICH HAS SIX GAS-FIRED BOILERS IS RETIRED ON-SITE. TWELVE JET TURBINE PEAKING UNITS WHICH USE GAS OR OIL ARE OPERATIONAL ON SITE. THE CHI. SAN. + SHIP CANAL IS SOURCE FOR COOLING + HOUSE SERVICE WATER. CHI. MUNI. WATER IS SOURCE FOR POTABLE, SAN. + BOIL FEED WATER.

II. Name of Receiving Stream CHICAGO SANITARY AND SHIP CANAL

Use Classification: General Use ____ Other (specify) ✓ (SECONDARY CONTACT AND INDIGENOUS AQUATIC LIFE WATER).

7Q10 410 cfs Source of data PREVIOUS APPLICN.

Notifications Needed: Bordering State ____ ORSANCO ____

NIPC ✓ SIMAPC ____ GERPDC ____

III. Federal Categorical Stds. Apply: Yes ✓ No ____

40 CFR 423 Category STEAM ELECTRIC GENERATING STATION,

Subcategories 423.12 + 423.13

IV. Storm Water Classification: Not Covered ____ Category i-x ____ Category xi ____

Application received: Yes ✓ No ____

If category xi, is there exposure: Yes ✓ No ____ No information ____

IEPA Permit Reviewer FRED ROSENBLUM Date ____

V. Discharge Flow (mgd)

Outfall No. 001 Outfall Name CONDENSOR COOLING WATER + HOUSE SERVICE WATER Avg. ____ Max. ____

Outfall No. 001A Outfall Name DEMINERALIZER REGENERANT WASTES Avg. ____ Max. ____

Outfall No. 001B Outfall Name UNITS #1 + #2 BOILER BLOWDOWN + BOILER DRAIN Avg. ____ Max. ____

Outfall No. 001C Outfall Name RECIRCULATING WASTEWATER TREATMENT SYSTEM BLOWDOWN Avg. ____ Max. ____

Outfall No. 001D Outfall Name INTAKE SCREEN BACKWASH Avg. ____ Max. ____

Outfall No. 002 Outfall Name AREA DRAIN RUNOFF (BOILER ROOM AREA) Avg. ____ Max. ____

Source of flow data DMRs

If change from previous permit describe reason —

Federal production-based categorical standards: Yes ____ No ✓

Production rates —

If change from previous permit describe reason —

VI. Evaluation for water quality-based limits needed: Yes ✓ No ____

Date requested from Planning NOVEMBER 22? Date received: 12-19-94

Biomonitoring data available: Yes ✓ No ____

Attachments (as needed):
- ✓ Flow diagram of waste sources, treatment process
- ✓ DMR summary
- ____ FOS sampling data summary
- ____ WQBEL recommendation
- * Biomonitoring recommendation
- ____ Stream survey report

*NO BIOMONITORING RECOMMENDED

VII. Permit Limits Derivation - Outfall 001

Parameter-conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	40CFR 423.13 Fed. Limits* Avg.	40CFR 423.13 Fed. Limits* Max.	WQBEL Avg. (BAT/BCT or BPJ)	WQBEL Max.	Prop. Limits Avg.	Prop. Limits Max.	Mon. Freq. Sample Type	Notes or Comments
Flow											DAILY — CONTIN.	
pH (min. and max.)	6 TO 9	S.U.	6 TO 9	S.U.					6 TO 9	S.U.	2/MO — GRAB	
TEMPERATURE	SEC. 302.408		—				√ (SECONDARY CONTACT AND INDIGENOUS AQUATIC LIFE WATER)				1/WK. CONC. CURVE	
TOTAL RESIDUAL CHLORINE/OXIDANT	—	0.2			—	0.2	—	**	—	** 0.2	DAILY CONTINUOUS	

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3.

** AFTER 4-1-95, 0.05 mg/L WILL BE EFFECTIVE LIMIT.

VII. Discussion of parameters considered for regulation but not included in permit

NH3-N, HYDRAZINE: ARE NOT EXPECTED TO BE DETECTED IN DISCHARGE

Documents not cited above utilized in permit review FLOW SUMMARY; LETTERS RE. TRC/TRO COMPLIANCE SCHEDULE AND THERMAL IMPACT DEMONSTRATION

Other review comments —

IX. Proposed Special Conditions

- ✓ Flow reporting
- ✓ pH limit/reporting
- ✓ Temperature limits (FOR 2NDARY CONTACT + INDIGENOUS AQUATIC LIFE WATERS).
- — FOG math. composite
- ✓ Monitoring location
- ✓ DMR submission
- ✓ Class K operator
- ✓ Water treatment additives
- ✓ Storm water BAT/BCT AND SWPPP ✓ E. O/W SEPARATOR + SWITCH HOUSE BLDG ROOF DRAINS TO CHI. MUNI COMBINED SEWERS. ✓
- — Biomonitoring
- ✓ NO DISCHARGE OF PCB'S.
- ✓ NO INTAKE MONITORING REQUIRED (316(B) OF CWA).
- ✓ INCORPORATION OF 40 CFR 122.41(N) UPSET PROVISIONS.
- ✓ TRO CONCENTRATION CURVE/MONITORING
- ✓ THERMAL IMPACT DEMONSTRATION.
- ✓ TRC/TRO COMPLIANCE SCHEDULE

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STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject COMM.ED - CRAWFORD

Data IL 0002186

Reviewed by FIR Date

SPECIAL CONDITIONS;

✓ NO DISCHARGE OF COMPLEXED METAL BEARING WASTE-STREAMS + ASSOCIATED RINSES FROM CHEMICAL METAL CLEANING.

✓ INTAKE MONITORING NOT REQUIRED.

✓ NO DISCHARGE OF COLLECTED DEBRIS FROM OUTFALL 001 D.

✓

X. Treatment Types
(check all that apply)

Physical/Chemical Treatment

- ___1A Ammonia Stripping
- ___2A Carbon Adsorption
- ___2N Chemical Hydrolysis
- ___2B Chemical Oxidation
- ___2C Chemical Precipitation
- ✓ 2D Coagulation
- ___2E Dechlorination
- ___2F Disinfection (Chlorine)
- ___2G Disinfection (Ozone)
- ___4I Disinfection (Ultraviolet)
- ___2H Disinfection(Other)
- ___1D Distillation
- ___2I Electrochemical Trtmt.
- ___1E Electrodialysis
- ___1F Evaporation
- ✓ 1G Flocculation
- ___1I Foam Fractionation
- ___1J Freezing
- ___1K Gas Phase Separation
- ___2J Ion Exchange
- ___1O Mixing
- ✓ 2K Neutralization
- ___2L Reduction
- ___1W Solvent Extraction
- ___1X Sorption

Biological Treatment

- ___3A Activated Sludge
- ___3B Aerated Lagoons
- ___3C Anaerobic Treatment
- ___3K Biological Hydrolysis
- ___8F Contact Stabilization
- ___8G Extended Aeration
- ___8D Lagoon(s)
- ___3P 1 Cell Lagoon
- ___3Q 2 Cell Lagoon
- ___3R 3 Cell Lagoon
- ___3S 4 Cell Lagoon
- ___3D Nitrification-Denit.
- ___8E Oxidation Pond or Ditch
- ___3J Polishing Lagoons
- ___6I Rock Filter
- ___3I Rotating Biological Contactors
- ___8B Secondary Treatment
- ___3F Spray Irrigation/ Land Appl.
- ___3G Stabilization Ponds
- ___8C Tertiary Treatment
- ___3M Trtmt. by Plain Aeration
- ___3H Trickling Filtration
- ___6L Two Stage Act. Sludge
- ___6M Vegetative Filter

Discharge Type

- ___8H Constructed Wetland
- ✓ 4A Disch. to Surface Water
- ___4B Ocean Discharge
- ___4C Reuse/Recycle-Treated Eff.
- ___4E Reuse/Sale of Wastewater
- ___6J Subsurface Seepage
- ___4D Underground Injection

Sludge Management

- ___5A Aerobic Digestion
- ___5B Anaerobic Digestion
- ___5C Belt Filtration
- ___5D Centrifugation
- ___5E Chemical Conditioning
- ___5F Chlorine Treatment
- ___5G Composting
- ___5H Drying Beds
- ___5I Elutriation
- ___5J Flotation Thickening
- ___5K Freezing (Sludge Treatment)
- ___5L Gravity Thickening
- ___5M Heat Drying
- ___5N Heat Treatment
- ___5O Incineration
- ✓ 5P Land Application (Sludge)
- ___5Q Landfill
- ___6E Lime Stabilization
- ___5R Pressure Filtration
- ___5S Pyrolysis
- ✓ 5T Sludge Lagoons
- ___6K Thermophilic Digestion
- ___5U Vacuum Filtration
- ___5V Vibration
- ___5W Wet Air Oxidation

Preliminary, Primary, Filtration, Other Treatment

- ___1C Diat. Earth Filtration
- ✓ 1Y Equalization
- ___6A Excess Flow Treatment
- ___1H Flotation
- ___4H Grease Removal
- ___1L Grinding (Comminutors)
- ___1M Grit Removal
- ___3N Holding/Detention Pond
- ___6B Imhoff Tank
- ___1Z Intermittent Sand Filters
- ___6C Irradiation/Beta Ray
- ___6D Irradiation/Gamma Ray
- ___1N Microstraining (Microscreening)
- ___1P Moving Bed Filters
- ___1Q Multimedia Filtration
- ___2M Odor Control
- ✓ 6F Oil-Water Separator
- ___6G Pasteurization
- ___6H Phosphorus Removal
- ___3L Post Aeration
- ___3E Pre-Aeration
- ___8A Primary Treatment
- ___1R Rapid Sand Filtration
- ___1S Reverse Osmosis
- ___1T Screening
- ✓ 1U Sedimentation (Settling)
- ___1V Slow Sand Filtration
- ___4F Temperature Control

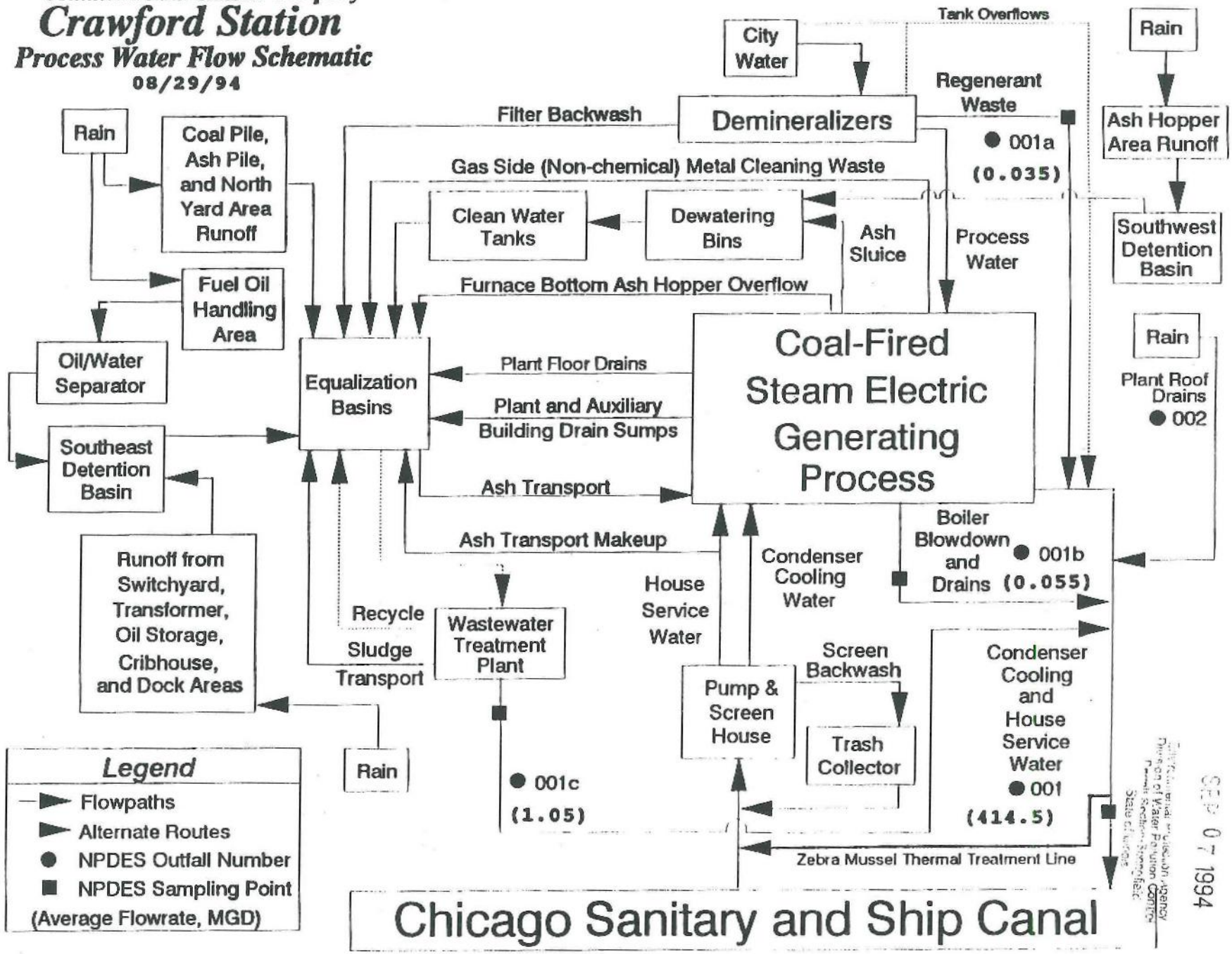
TK:rlc/933v,sp

Commonwealth Edison Company

Crawford Station

Process Water Flow Schematic

08/29/94



SEP 07 1994

ENVIRONMENTAL

Subject COMMONWEALTH EDISON - CRAWFORD ILO002186

Data Flow Chart of Recycle Combined Wastewater (RCWTS) and cycle Ash Sluice Sluice (RASTS) Treatment Systems

Reviewer by Date

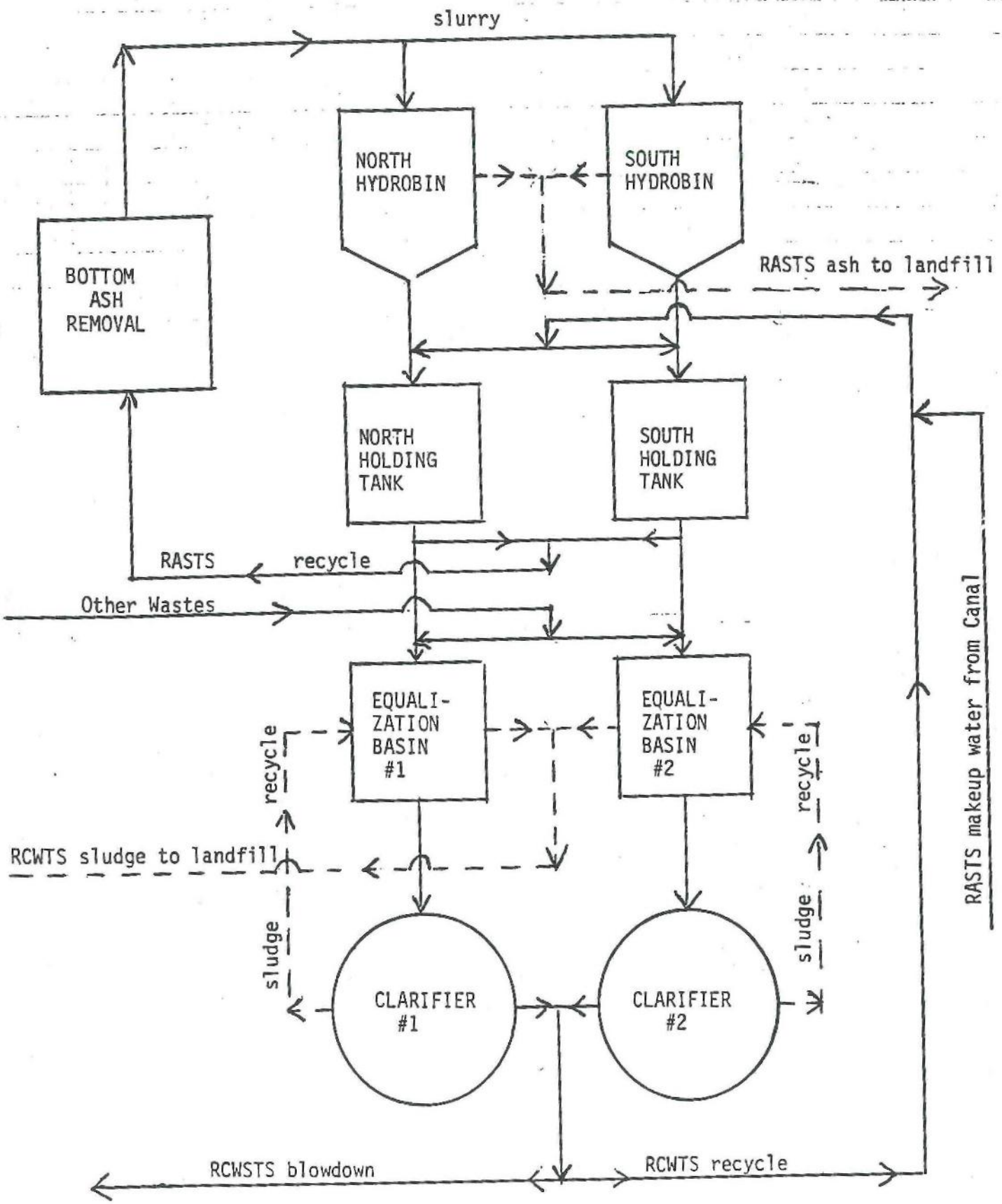


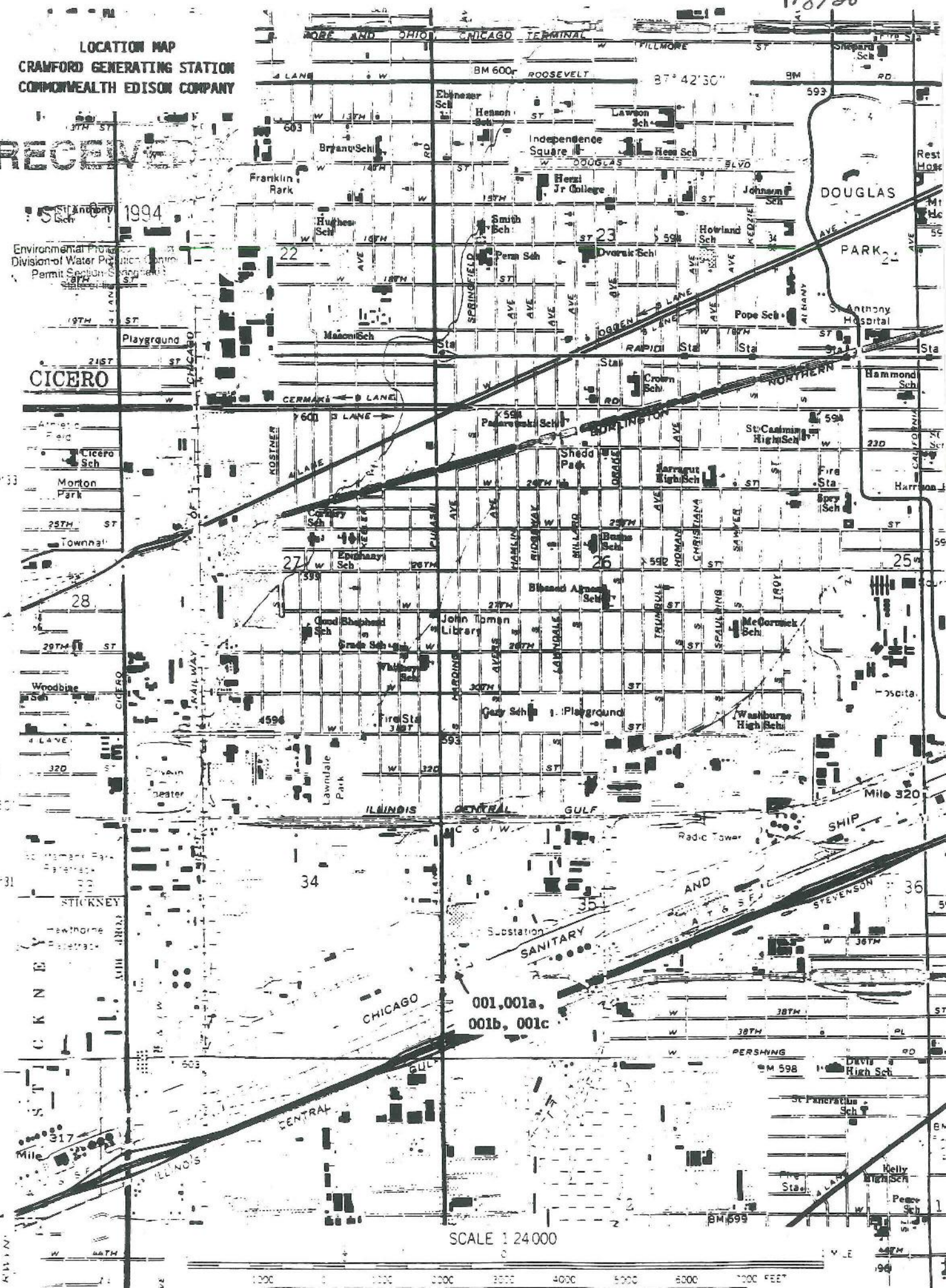
Figure 4

ATTACHMENT 2

P. 8/20

LOCATION MAP
CRAWFORD GENERATING STATION
COMMONWEALTH EDISON COMPANY

RECEIVED
Sep 1 1994
Environmental Protection
Division of Water Pollution Control
Permit Section



VII. Permit Limits Derivation - Outfall 001A

423.12

Parameter-conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max.	Prop. Limits Avg.	Prop. Limits Max.	Mon. Freq. Sample Type	Notes or Comments
Flow	—	—	—	—	—	—	—	—	—	—	DAILY-CONTIN.	
pH (min. and max.)	—	—	—	—	—	—	—	—	—	—	—	—
TSS	15	30	15	30	30	100			15	30	1/mo. - GRAB (8 HR. COMP. **)	
O+G	15	20	15	30	15	20			15	20		

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3.

**SAMPLE SHALL BE 8-HR COMP. IF EQUALIZATION TANK IS BYPASSED FOR MAINTENANCE PURPOSES.

VII. Permit Limits Derivation - Outfall 001B
40 CFR 423.12

Parameter-conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max.	Prop. Limits Avg.	Prop. Limits Max.	Mon. Freq. Sample Type	Notes or Comments
Flow											DAILY	CONTIN.
pH (min. and max.)	—	—							—	—	—	—
TSS	15	30	15	30					15	30	1/MO 8-HR COMP.	
O+G	15	20	15	30	15	20			15	20	1/YR GRAB	

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3.

VII. Permit Limits Derivation - Outfall 001C

Parameter-conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* (40 CFR 423.12) Avg.	Fed. Limits* (40 CFR 423.12) Max.	WQBEL Avg.	WQBEL Max.	Prop. Limits Avg.	Prop. Limits Max.	Mon. Freq. Sample Type	Notes or Comments
Flow											DAILY-CONTIN.	
pH (min. and max.)	6 TO 9	S.U.	6 TO 9	S.U.	6 TO 9	S.U.			6 TO 9	S.U.	1/WK-GRAB	
TSS	15	30	15	30	30	100			15	30	1/WK-24 HR. COMP.	
O+G	15	20	15	30	15	20			15	20	1/WK-GRAB	
IRON	1	1	2	4	1	1			1	1	1/mo.-24 HR COMP **	
COPPER	0.5	1	0.5	1	1	1			0.5	1	1/mo.-24 HR COMP **	

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3.

** FREQUENCY SHALL BE DAILY DURING DISCHARGE OF NON-CHEMICAL METAL CLEANING WASTES.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject COMM ED-CRAWFORD
Data IL0002186
Reviewed by FLR Date

OUTFALL 001: CONDENSOR COOLING WATER + HOUSE SERVICE WATER.

DISCHARGE CONSISTS OF:

	APPROX. FLOW: (MGD)
1. CONDENSOR COOLING WATER	414.5
2. HOUSE SERVICE WATER	9.0
3. DEMINERALIZER REGENERANT WASTES (001A)	0.035
4. BOILER BLOWDOWN (001B)	0.055
5. BOILER DRAIN (PART OF 001B)	INTERMITTENT
6. RECIRCULATING WWT SYSTEM BLOWDOWN (001C)	1.05
7. INTAKE SCREEN BACKWASH (001D)	INTERMITTENT

SODIUM HYPOCHLORITE AND SODIUM BROMIDE ARE ADDED TO CONDENSORS FOR BIFOULING CONTROL AND ZEBRA MUSSEL CONTROL. SINCE ZEBRA MUSSEL CONTROL IS ACHIEVED THROUGH RECIRCULATION OF HOT WATER, NO SPECIAL CONDITIONS RE/- ZEBRA MUSSEL CONTROL ARE REQUIRED.

ON AUG. 10, 1993 PERMIT WAS MODIFIED TO INCLUDE A COMPLIANCE SCHEDULE ON TRC/TRO FOR USE OF HALOGENS FOR BIFOULING CONTROL. A LIMIT OF 0.05 MG/L FOR TRC/TRO IS TO BE ACHIEVED BY APRIL 1, 1995. THIS SPECIAL CONDITION ALSO REQUIRED A PRELIMINARY REPORT TO BE SUBMITTED 3 MOS. AFTER 8-10-93 MODIFICATION, INTERIM PROGRESS REPORTS TO BE SUBMITTED 12 MO. AND 18 MO. AFTER MODIFICATION AND FINALLY ACHIEVEMENT OF COMPLIANCE. THE PRELIMINARY REPORT AND FIRST INTERIM REPORT HAVE BEEN SUBMITTED. THUS, AN INTERIM REPORT NEEDS TO BE SUBMITTED BY 2-10-95. BEFORE 4-1-95, 0.2 MG/L IS APPLICABLE LIMIT, EFFLUENT IS CURRENTLY > 0.05 MG/L. IN THE FUTURE, INSTEAD OF CHLORINE AND/OR BROMINE BIOCIDE ADDNS., THE CONDENSOR TUBES WOULD BE DRIED USING HOT AIR DURING PERIODS WHEN PLANT IS OUT OF SERVICE. THE SLIME WOULD FLAKE OFF WHEN UNITS STARTS UP AGAIN. THESE HALOGENS WOULD ONLY BE USED FOR ZEBRA MUSSEL CONTROL.

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OUTFALL 001 CONTINUED:

TRO IS NOT TO BE DISCHARGED FROM ANY UNIT FOR > 2HR/DAY. CONC. CURVE TO BE SUBMITTED FOR TRC/TRO. FREQUENCY + DURATION OF DOSING + AMT. OF HALOGEN SHALL BE REPORTED ON DMR'S. CONC. INSTANTANEOUS TRC/TRO FROM CURVE.

THE FIRST PLAN OF STUDY FOR THE THERMAL IMPACT STUDY HAS BEEN SUBMITTED TO IEPA. HOWEVER, INTERIM + FINAL REPORTS ARE PENDING. ALSO, IEPA/USEPA APPROVAL ARE PENDING. STUDY WAS PART OF 8-10-93 MODIFICATION. *

APPLICABLE REGS.: 40 CFR 423.13
35IAC 302.408, 304.125

BAT/BCT FOR TREATED STORMWATER

NO BIOMONITORING IS NECESSARY. SPECIAL CONDITION REL BIOMONITORING WAS ELIMINATED

*NOTE! IN AGREEMENT W/ TASK FORCE + COMM. ED., THERMAL IMPACT SUDY WILL HAVE COMPLIANCE EXTENDED FROM TWO TO THREE YRS.

STATE OF ILLINOIS
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ADM 39
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Subject COMMED—CRAWFORD

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Reviewed by FLR Date

OUTFALL 001A: DEMINERALIZER REGENERANT WASTES.

FLOWS; LONG TERM AVG.: 0.035
MAX. MO. AVG.: 0.04
DAILY MAX.: 0.073

EQUALIZATION, BUFFERING W/CIRCULATING WATER OCCURS. WASTES CONSIST OF EXCESS H_2SO_4, CAUSTIC AND RINSEWATER THAT IS USED TO REGENERATE THE ION EXCHANGE RESIN BEDS THAT SUPPLY PURE WATER REQUIRED BY BOILERS.

APPLICABLE REGS: 35 IAC 304.102, 124-125
40 CFR 423.12

BAT/BCT FOR TREATED STORMWATER.

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054-002

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OUTFALL 001 B: UNITS #7+#8 BOILER BLOWDOWN + BOILER DRAIN:

DISCHARGE CONSISTS OF:

	APPROX. FLOW (MGD)
1. BOILER BLOWDOWN	0.055
2. BOILER DRAIN	INTERMITTENT

BUFFERING W/CIRCULATING WATER OCCURS. WASTES CONSIST OF ULTRA-PURE WATER WHICH HAS BEEN TREATED FOR PH CONDITIONING AND DISSOLVED OXYGEN REMOVAL. UNDER NORMAL CONDITIONS, THIS WASTE WILL CONSIST OF ≅; 7 MG/L PHOSPHATE; 0.3 MG/L AMMONIA AN UNDETECTED AMT. OF HYDRAZINE. HYDRAZINE MONITORING IS NOT REQUIRED SINCE IT IS USED IN MANNER IN WHICH IT IS NOT LIKELY TO BE DETECTED IN DISCHARGE.

APPLICABLE REGS.: 40 CFR 423.12
304.102; 124+125

BAT/BCT FOR TREATED STORMWATER

9/16/20

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject COMM. ED. — CRAWFORD

Data IL 0002186

Reviewed by FLR Date

OUTFALL 001 C: RECIRCULATING WWT SYSTEM BLOWDOWN

DISCHARGE CONSISTS OF:	APPROX. FLOW (MGD)
1. ASH SLUICE WATER	
2. ASH HOPPER OVERFLOW	
3. COAL PILE RUNOFF	INTERMITTENT
4. NON-CHEMICAL METAL CLEANING WASTES	INTERMITTENT
5. DEMINERALIZER FILTER BACKWASH	
6. BOILER + TURBINE BUILDING FLOOR DRAINS	
7. FUEL OIL HANDLING AREA RUNOFF	INTERMITTENT
8. UNIT #7 AIR COMPRESSOR COOLING WATER	
9. COAL STORAGE AREA #2 RUNOFF	INTERMITTENT
10. SETTLING BASIN AREA #3 RUNOFF	INTERMITTENT
11. ASH PILE AREA #18 RUNOFF	INTERMITTENT
12. YARD DRAINAGE AREAS #15 + 16	INTERMITTENT
13. SOUTH DETENTION BASIN CONSISTING OF AREA RUNOFF FROM:	" " INTERMITTENT
A. TRANSMISSION TERMINAL AREAS #5, 6 + 12	" "
B. TRANSFORMER #7	" "
C. OIL STORAGE AREAS #8+9	" "
D. POWER BLOCK AREA #11	" "
E. ASH HOPPER + CRUSH HOUSE AREA #13	" "
F. DOCK CONVEYER AREA #22	" "

TREATMENT CONSISTS OF EQUALIZATION, PH ADJUSTMENT, CHEMICAL PRECIPITATION, COAGULATION, FLOCCULATION, SEDIMENTATION, SLUDGE LAGOONS AND LAND APPLICATION. ALUMINUM SULFATE AND ANIONIC POLYMERS AID FLOCCULATION + SEDIMENTATION. CAUSTIC/SULFURIC ACID ARE USED FOR PH ADJUSTMENT. IN THE PAST, NITRITE HAS BEEN USED FOR PERIODIC DRAIN OF ~~BEARING~~ COOLING WATER SYSTEM; 500 MG/L DISCHARGED TO OPEN POND — NITRITE WILL CONVERT TO NITRATE.

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OUTFALL 001C CONTINUED:

APPLICABLE REGS.: 40 CFR 423.12
35 IAC 304.102, 124, 105.

BAT/BCT FOR TREATED STORMWATER

SAMPLING FREQUENCY FOR IRON (T) AND COPPER (T) SHALL BE DAILY DURING DISCHARGE OF NO-CHEMICAL METAL BEARING WASTES. THERE SHALL BE NO DISCHARGE OF COMPLEXED METAL BEARING WASTESTREAMS + ASSOCIATED RINSES.

OUTFALL 001D: INTAKE SCREEN BACKWASH

NO INTAKE MONITORING REQUIRED (PURSUANT TO 316(B) OF CWA IT WOULD BE REQD) PURSUANT TO USEPA LETTERS TO COMMED. DATED 2-19-75 AND 6-1-76.

THERE SHALL BE NO DISCHARGE OF COLLECTED DEBRIS.

OUTFALL 002: AREA 14 RUNOFF (BOILER RM. AREA)

FALL UNDER STORMWATER POLLUTION PREVENTION PLAN.

STATE OF ILLINOIS
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ADM 39
054-002

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Reviewed by FLR Date

DMR SUMMARY

OUTFALL 001

	FLOW (MGD) AVE-MAX.	INTAKE TEMP° (F) MIN-MAX.	DISCHARGE TEMP° (F) MIN-MAX.	PH (S.U.)	TRC (mg/L) MAX.	DURATION OF CHLOR. (MIN/DAY / UNIT)	AMT. OF Chlorine USED (LB/DAY)	FREQ. OF CHLOR. (X/DAY / UNIT)	AMT. SODIUM BROMIDE USED (LB/DAY)
10-94	490.2-576	59-74	62-82	7.4-7.7	.08	120	96	3	170-175
9-94	347-575.8	59-80	63-93	7.7-8.4	.17	120	96	3	170-175
8-94	450-576	68-86	69-97	7.6-7.7	0.09	120	96	3	104-175
7-94	487.3-584.4	49-85	70-93	7.6	0.11	120	65	3	52-109
6-94	421-525.8	66-83	66-91	7.4-7.6	0.12	120	69	3	98-115
5-94	345-567	57-84	57-91	7.3	0.11	120	57	3	79-109
4-94	156-216	43-78	47-65	7.3-7.4	0.11	120	42	3	55-79
3-94	475-567.2	28-57	44-71	7.4-7.5	0.18	120	63	3	68-114
2-94	455-567	21-49	39-61	7.4	0.17	120	90	3	77-170
1-94	494-567	30-55	38-62	7.3-7.8	0.17	120	90	3	44-170
12-93	453-467.8	37-66	41-74	7.3-7.6	0.19	120	62	3	77-112
11-93	349-485	49-69	49-87	7.1-7.4	0.17	60	45	3	44-105
10-93	389-576	39-78	66-92	7.3-7.5	0.15	80	69	2	62-142
9-93	521-576	60-82	67-91	7.4-7.6	0.18	80	124	2	122-230
8-93	401-576	66-85	69-92	7.4-7.6	0.19	80	115	2	29-204
7-93	495-575.8	64-82	64-92	7.4-7.5	0.12	120	156	2	161-306
6-93	441-783.2	56-80	61-88	7.3-7.4	0.13	120	104	2	106-219
5-93	383-567.2	51-82	56-91	7.3-7.6	0.2	120	83	3	80-131
4-93	523.5-559	42-63	47-69	7.4-7.5	0.08	120	70	3	88-119
3-93	398.3-559	36-52	37-63	7.4-7.5	0.14	120	52.4	3	22-87.5
2-93	320-558.6	35-53	35-64	7.4-7.6	0.13	120	35	2	22-62
1-93	441.3-567.2	37-47	37-54	7.4-7.9	0.15	120	35.1	2	60.2-64

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject: COMM. ED – CRAWFORD

Data: IL0002186

Reviewed by: FLR Date:

OUTFALL 001A

	FLOW (MGD)	TSS (mg/L)	O+G (mg/L)
10-94	.035-.06	6	—
9-94	.035-.06	6	—
8-94	.034-.067	6	—
-94	.037-.08	10	—
6-94	.034-.058	5	—
5-94	.035-.073	3	—
4-94	.021-.056	2.5	—
3-94	.039-.073	6	—
2-94	.021-.065	4.5	<1
1-94	.04-.07	6.5	—
12-93	.037-.07	2.5	—
11-93	.04-.07	3.5	—
10-93	.0339-.068	3	—
9-93	.03-.07	2.5	—
-93	.035-.073	5.5	—
7-93	.034-.06	4	—
6-93	.033-.073	8	—
5-93	.026-.054	5	—
4-93	.03-.065	5	—
3-93	.025-.073	7.5	—
2-93	.023-.073	4	<1
1-93	.03-.073	6.5	—

OUTFALL 001B

	FLOW (MGD)	TSS (mg/L)	O+G (mg/L)
10-94	.066-.277	2.5	—
9-94	.048-.152	4	—
8-94	.08-.138	2	—
7-94	.036-.066	3.5	—
6-94	.042-.107	1.5	—
5-94	.104-.208	7	—
4-94	.043-.099	2	—
3-94	.046-.071	4.5	—
2-94	.031-.068	3	<1
1-94	.062-.0955	3	—
12-93	.062-.109	4	—
11-93	.064-.14	3.5	—
10-93	.048-.084	3.5	—
9-93	.043-.097	3.5	—
8-93	.05-.147	4	—
7-93	.0538-.1552	3.5	—
6-93	.0493-.0982	4.5	—
5-93	.0493-.0982	4.5	—
4-93	.0398-.126	4	—
3-93	.027-.0426	3	—
2-93	.0276-.0938	3.5	<1
1-93	.0564-.0955	3.5	—

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OUTFALL 001C

	FLOW (MGD)	PH (S.U.)	TSS (mg/L) AVE-MAX →	O&G (mg/L) →	IRON (T) (mg/L)	COPPER (T) (mg/L)
10-94	0.94-1.39	8.7-8.9	8.7-8.9	1.1-3	0.12	<0.02
9-94	0.74-1.34	8.3-8.8	8.6-10.5	<1	0.10	<0.02
8-94	1.03-1.32	8.1-8.8	6.5-10	<1	0.13	<0.02
-94	1.22-1.56	8-8.7	8.4-11	<1	0.06	<0.02
6-94	1.06-1.86	7.6-8.7	7.2-10	<1	0.05	0.06
5-94	0.92-1.5	6.3-8.6	7.7-10.5	<1	0.09	0.03
4-94	0.58-0.84	7.6-8.7	8.7-9.5	<1-2	0.17	<0.02
3-94	1.15-1.62	7.7-8.7	8.2-9.5	<1	0.09	<0.02
2-94	0.86-1.2	8.3-8.8	8-9.5	<1	0.17	<0.02
1-94	1.11-1.86	7.7-8.7	9.7-11.5	<1	0.32	0.02
12-94	0.88-1.43	7.5-8.4	8.5-9.5	<1	0.27	0.02
11-94	0.95-1.98	8-8.8	6.5-7.5	<1	0.17	0.02
10-94	1.56-2.46	7.9-8.7	6.6-9.5	1.5-3	<0.05	<0.02
9-94	1.33-2.76	7.7-8.4	6.2-9	<1	<0.05	<0.02
-94	1.4-2.1	6.2-8.6	6.7-7.5	<1-2	<0.05	0.04
7-94	0.77-1.14	7.8-8.8	6.4-8.5	<1-2	<0.05	<0.02
6-94	1.1-1.74	7.5-8.5	8.3-10.5	<1	0.27	<0.02
5-94	0.88-1.44	8.1-8.9	7.1-9	1-2	0.09	<0.02
4-94	0.81-1.05	7.3-8.4	8.2-10	<1	0.18	0.07
3-94	0.82-1.30	7.6-8.8	7.5-12.5	<1	0.25	<0.02
2-94	1.02-1.38	8.2-8.8	7.3-9.5	<1	0.34	<0.02
1-94	0.84-1.08	7.5-8.4	7.7-9.5	<1	0.05	0.03