CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9711070071 DOC.DATE: 97/10/30 NOTARIZED: NO DOCKET #
FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
HOVEY,R.J. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Notifies of application for renewal of NPDES Permit FL0001562 for plant IAW Section 3.2.3 of plant environ protection plan (App B of OL DPR-31 & DPR-41).W/application.

DISTRIBUTION CODE: C001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 2+9
TITLE: Licensing Submittal: Environmental Rept Amdt & Related Correspondence

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CATEGORY 1 DOCUMENT

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FPL

OCT 30 1997

L-97-229
10 CFR §50.36

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Notification of Application
for Permit Renewal

In accordance with Section 3.2.3 of the Turkey Point Units 3 and 4 Environmental Protection Plan (Appendix B of Facility Operating Licenses DPR-31 and DPR-41), this letter is notification of the Florida Power and Light Company (FPL) application for renewal of the National Pollutant Discharge Elimination System (NPDES) Permit No. FL0001562 for Turkey Point.

By letter L-95-190, dated June 29, 1995, FPL informed the NRC that effective May 1, 1995, the Florida Department of Environmental Protection was granted authority by the United States Environmental Protection Agency (EPA) to administer the NPDES permitting program. By Order from the State of Florida Department of Environmental Protection, issued June 6, 1995, and pursuant to Rule 62-620.105 (10), Florida Administrative Code, the EPA-issued NPDES Permit No. FL0001562 was combined with the State Wastewater Permit IO13-227117 into one document and was renamed Wastewater Permit No. FL0001562. There were no changes or additions to the permits as a result of this administrative change. The renewal application is attached.

If there are any questions, please contact us.

Very truly yours,

RJH

R. J. Hovey
Vice President
Turkey Point Plant

OIH

Attachment

cc: Luis A. Reyes, Regional Administrator, Region II, USNRC
Thomas P. Johnson, Senior Resident Inspector, USNRC, Turkey Point Plant (w/o attachment)

FPL

OCT 30 1997

PTN-LIC-97-047

Mr. Craig Diltz
Industrial Waste Water Section
Mail Station 3545
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Florida Power and Light Company
Turkey Point Plant
Permit Renewal Application
Wastewater Permit Number FL0001562

Enclosed please find the Wastewater Permit renewal application (Form 1, 2CS, and Attachments 1 - 5) for the Florida Power and Light Company's Turkey Point Plant.

Attached is a $6000.00 check for the permit application fee.

If there are any questions regarding this submittal or if any additional information is needed, please contact Bob Bertelson, (305)246-6166.

Very truly yours,

V. A. Kaminskas
Services Manager
Turkey Point Nuclear Plant

Attachments

OIH

cc: DEP Southeast District Office (w/o attachments)
Dade County DERM (w/o attachments)
USNRC, Document Control Desk, Washington, D.C.

DO NOT ACCEPT THIS CHECK UNLESS YOU CAN SEE AN ARTIFICIAL WATERMARK FRONT AND BACK WHEN HELD AT AN ANGLE. THE FACE OF THIS CHECK HAS A COLORED BACKGROUND.

Florida Power & Light Company
EZ Procurement Account

Void if not presented for payment within six months from date of check

9140008246

64-1278
611

FPL
9760 S.W. 344 STREET
FLORIDA CITY, FL 33035

Oct 23 19 97

NationsBank of Georgia, N.A.
Atlanta, Dekalb County, Georgia

Pay THE SUM OF $ 6,000.00

To The Order Of

Florida Dept. of Environmental Protec.
Industrial Wastewater Section
2600 Blair Stone Rd.
Tallahassee, FL 32399 2400
Attn: Craig Diltz Mail Station 3545

Turkey Point Nuclear Plant
(305) 246-6293

By RL Yourquean

⑈9140008246⑈ ⑆067112788⑆ 010 117 7096⑈

SafeChecks

FPL

DETACH AND RETAIN THIS STATEMENT
The attached check is in payment of items described below.
If not correct, please notify us promptly. No receipt desired.

9140008246

DATE	INVOICE	DESCRIPTION	AMOUNT

WASTEWATER PERMIT APPLICATION FORM 1 GENERAL INFORMATION

This form must be completed by all persons applying for a permit to operate a domestic or industrial wastewater facility. See Form 1 to determine which other application forms you will need.

WASTEWATER PERMIT APPLICATION FORM 1 GENERAL INFORMATION

I IDENTIFICATION NUMBER:

Facility ID FLD000733683

II CHARACTERISTICS:

INSTRUCTIONS: Complete the questions below to determine whether you need to submit any permit application forms to the Department of Environmental Protection. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the blank in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements. See Section B of the instructions. See also, Section C of the instructions for definitions of the terms used here.

SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED
A. Is this facility a domestic wastewater facility which results in a discharge to surface or ground waters?		X	
B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters?		X	
C. Does or will this facility (other than those describe in A. or B.) discharge process wastewater, or non-process wastewater regulated by effluent guidelines or new source performance standards, to surface waters?		X	FORM 2CS
D. Does or will this facility (other than those described in A. or B.) discharge process wastewater to ground waters?		X	
E. Does or will this facility discharge non-process wastewater, not regulated by effluent guidelines or new source performance standards, to surface waters?		X	
F. Does or will this facility discharge non-process wastewater to ground waters?		X	
G. Does or will this facility discharge stormwater to surface waters?		X	
H. Is this facility a non-discharging/closed loop recycle system?		X	

III NAME OF FACILITY: (40 characters and spaces)

Turkey Point Power Plant

Facility ID FLD000733683

IV FACILITY CONTACT: (A. 30 characters and spaces)

A. Name and Title (Last, first, & title)	B. Phone (area code & no.)
Bertelson, Bob, Sr. Lab Tech	305-246-6166

V FACILITY MAILING ADDRESS: (A. 30 characters and spaces; B. 25 characters and spaces)

A. Street or P.O. Box: 9760 S.W. 344 Street		
B. City or Town: Florida City	State: FL	Zip Code: 33035

VI FACILITY LOCATION: (A. 30 characters and spaces; B. 24 characters and spaces; C. 3 spaces (if known); D. 25 characters and spaces; E. 2 spaces; F. 9 spaces)

A. Street, Route or Other Specific Identifier: 10 mi E of Fl City on 344 St.		
B. County Name: Dade	C. County Code (if known):	
D. City or Town: Florida City	E. State: FL	F. Zip Code: 33034

VII SIC CODES: (4-digit, in order of priority)

1. Code #: 4911	(Specify) Electric Service	2. Code #:	(Specify)
3. Code #:	(Specify)	4. Code #:	(Specify)

VIII OPERATOR INFORMATION: (A. 40 characters and spaces; B. 1 character; C. 1 character (if other, specify); D. 12 characters; E. 30 characters and spaces; F. 25 characters and spaces; G. 2 characters; H. 9 characters)

A. Name: Florida Power & Light Company		B. Is the name in VIII A. the owner? Yes: X No:	
C. Status of Operator: F = Federal; S = State; P = Private; O = Other; M = Public (other than F or S)	(code) P	(specify) Private	D. Phone No.: 561-691-7042
E. Street or P. O. Box: P.O. Box 14000			
F. City or Town: Juno Beach		G. State: FL	H. Zip Code: 33408

IX INDIAN LAND: Is the facility located on Indian lands? Yes:_____ No: X

X EXISTING ENVIRONMENTAL PERMITS:

A. NPDES Permit No.	B. UIC Permit No.	C. Other (specify)	D. Other (specify)
FL0001562	UO-13-277655	See Attachment 1	

XI MAP: Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

See Attachments 2 and 3.

XII NATURE OF BUSINESS (provide a brief description)

Steam electric power generating station consisting of 2 fossil units (Units 1 & 2) and 2 nuclear units (Units 3 & 4). Units 1 & 2 each have 404 megawatt net continuous capability. Units 3 & 4 each have 693 megawatt net continuous capability. All 4 units obtain their once through condenser cooling water from and discharge to a closed cycle recirculating cooling canal system (cooling canals). There are no discharges to waters of the United States from the plant site.

XIII CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

V.A. Kaminskas / R. Sanchez
A. Name (type or print)

B. Signature

Turkey Point Power Plant
Nuclear Plant Services Mgr. / Fossil Plant General Mgr.
Official Title (type or print)

10/22/97 10/22/97
C. Date Signed

WASTEWATER APPLICATION FORM 2CS

PERMIT TO DISCHARGE PROCESS WASTEWATER
FROM NEW OR EXISTING
INDUSTRIAL WASTEWATER FACILITIES
TO SURFACE WATER

FORM

2CS

WASTEWATER APPLICATION FOR PERMIT TO DISCHARGE PROCESS WASTEWATER FROM NEW OR EXISTING INDUSTRIAL WASTEWATER FACILITIES TO SURFACE WATERS

Facility I.D. Number: FLD000733683

Please print or type information in the appropriate areas.

I OUTFALL LOCATION For each outfall, list the X, Y coordinates and the name of the receiving water. (latitude/longitude to the nearest 15 seconds)

A. Outfall No. (list)	B. Latitude			C. Longitude			D. Name of Receiving Water
	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
NA	NA	NA	NA	NA	NA	NA	NA
							Closed Loop Cooling Canal System.
							No discharge to waters of the U.S.

II OUTFALL DESIGN

A. Outfall No.	B. Design Configuration and Construction Materials	C. Distance from shore	D. Diameter	E. Elevation of Discharge Invert (MSL)	F. Receiving Water Depth at POD (MSL)
NA	NA	NA	NA	NA	NA

III RECEIVING WATER INFORMATION

For each surface water that will receive effluent, supply the following information:

A. Name of Receiving Water	B. Check One		C. Classification (See Ch. 62-302, F.A.C.)	D. Type of Receiving Water (canal, river, lake, etc.)
	Fresh	Salt or Brackish		
NA	NA	NA	NA	NA
				Closed Loop Cooling Canals.
				No discharge to
				waters of the U.S.

E. Minimum 7-day 10-year low flow of the receiving water at each outfall (if appropriate). NA

F. Identify and describe the flow of effluent from each outfall to a major body of water. A suitably marked map or aerial photograph may be used. NA, no discharge facility.

G. Do you request a mixing zone under Rule 62-4.244, F.A.C.? If yes, for what parameters or pollutants? NA

IV FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

See Attachment 4.

B. For each outfall, provide a description of:

1. All operations contributing wastewater to the effluent; including process wastewater, sanitary wastewater, cooling water, and stormwater runoff;
2. The average flow contributed by each operation; and
3. The treatment received by the wastewater.

Use the space on the next page. Continue on additional sheets, if necessary.

See Attachment 5.

Facility I.D. Number: FLD000733683

(1) Outfall # (List)	(2) Operation(s) Contributing Flow		(3) Treatment		
	(a) Operation (list)	(b) Avg. Flow & Units	(a) Description	(b) List Code from Table 2CS-1	
NA	NA	NA	NA	NA	NA

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?
___ Yes (complete the following table) X No (go to D. below)

(1) Outfall # (List)	(2) Operation(s) Contributing Flow (List)	(3) Frequency		(4) Flow				
		(a) Days per Week (specify avg.)	(b) Months per Yr. (specify avg.)	(a) Flow Rate (in mgd)		(b) Total Volume (specify with units)		(c) Duration (in days)
				Long Term Avg.	Max. Daily	Long Term Avg.	Max. Daily	
NA	NA	NA	NA	NA	NA	NA	NA	NA

D. Describe practices to be followed to ensure adequate watewater treatment during emergencies such as power loss and equipment failures causing shutdown of pollution abatement equipment of the proposed/permitted facilities.
NA

E. List the method(s) and location(s) of flow measurement.
NA

V PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?
X Yes (complete Item V-B) ___ No (go to Section VI)

B. Are the limitations in the applicable guideline expressed in terms of production (or other measure of operation)?
___ Yes (complete Item V-C) X No (go to Section VI)

C. If you answered "yes" to Item V-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. Affected Outfalls (list outfall nos.)
a. Quantity per Day	b. Units of Measure	c. Operation, Product, Materials, Etc. (specify)	
NA	NA	NA	NA

VI IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement order, enforcement compliance schedule letter, stipulations, court orders, and grant or loan conditions.

_____ Yes (complete the following table) _X_ No (go to Item VI-B)

1. Identification of Condition, Agreement, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	a. No.	b. Source of Discharge		a. Required	B. Projected
NA	NA	NA	NA	NA	NA

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

_____ Mark "X" if description of additional control programs is attached.

VII INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided. NOTE: Tables VII-A, VII-B, and VII-C are included on separate sheets number VII-1 through VII-9.

D. Use the space below to list any of the pollutants listed in Table 2CS-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. Pollutant	2. Source	1. Pollutant	2. Source
NA	NA	NA	NA

VIII POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item VII-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or by-product?

_____ YES (list all such pollutants below) X NO (go to IX)

NA

IX BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

_____ YES (identify the test(s) and describe their purposes below) X NO (go to Section X)

NA

X CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

_____ YES (list the name, address, telephone number, and certification number of, and pollutants analyzed by each such laboratory or firm below)

X NO (go to Section XI)

A. Name	B. Address	C. Telephone (area code & no.)	D. Pollutants Analyzed (list)
NA	NA	NA	NA

XI CONNECTION TO REGIONAL POTW

A. Indicate the relationship between this project and area regional planning for wastewater treatment. List steps to be taken for this industrial wastewater facility to become part of an area-wide wastewater treatment system.
There are currently no plans to integrate this facility into an area-wide wastewater treatment system.

XII-A CERTIFICATIONS FOR NEW OR MODIFIED FACILITIES

This is to certify the engineering features of this pollution control project have been designed by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signature

NA
Company Name

NA
Name (please type)

Address: NA

(Affix Seal)

Florida Registration No. NA

Telephone No. NA Date: NA

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NA
Name & Official Title (type or print)

Signature

NA
Telephone No. (area code & no.)

NA
Date Signed

XII-B CERTIFICATIONS FOR PERMIT RENEWALS

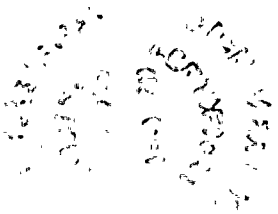
This is to certify the engineering features of this pollution control project have been examined by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department.

Dick Verduin
Signature

Florida Power and Light
Company Name

Dick Verduin
Name (please type)

Address: 700 Universe Blvd
P.O. Box 14000
Juno Beach, FL 33408



(Affix Seal)

Florida Registration No. 0019914

Telephone No. (561) 691-2614 Date: 10/15/97

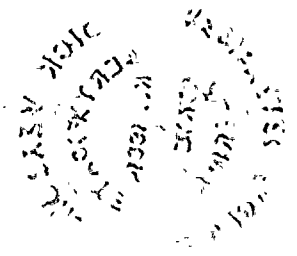
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

V.A. Kaminskas, Nuclear Plant Services Manager
R. Sanchez, Fossil Plant General Manager
Name & Official Title (type or print)

Signature

305-246-1300
Telephone No. (area code & no.)

10/22/97 10/22/97
Date Signed

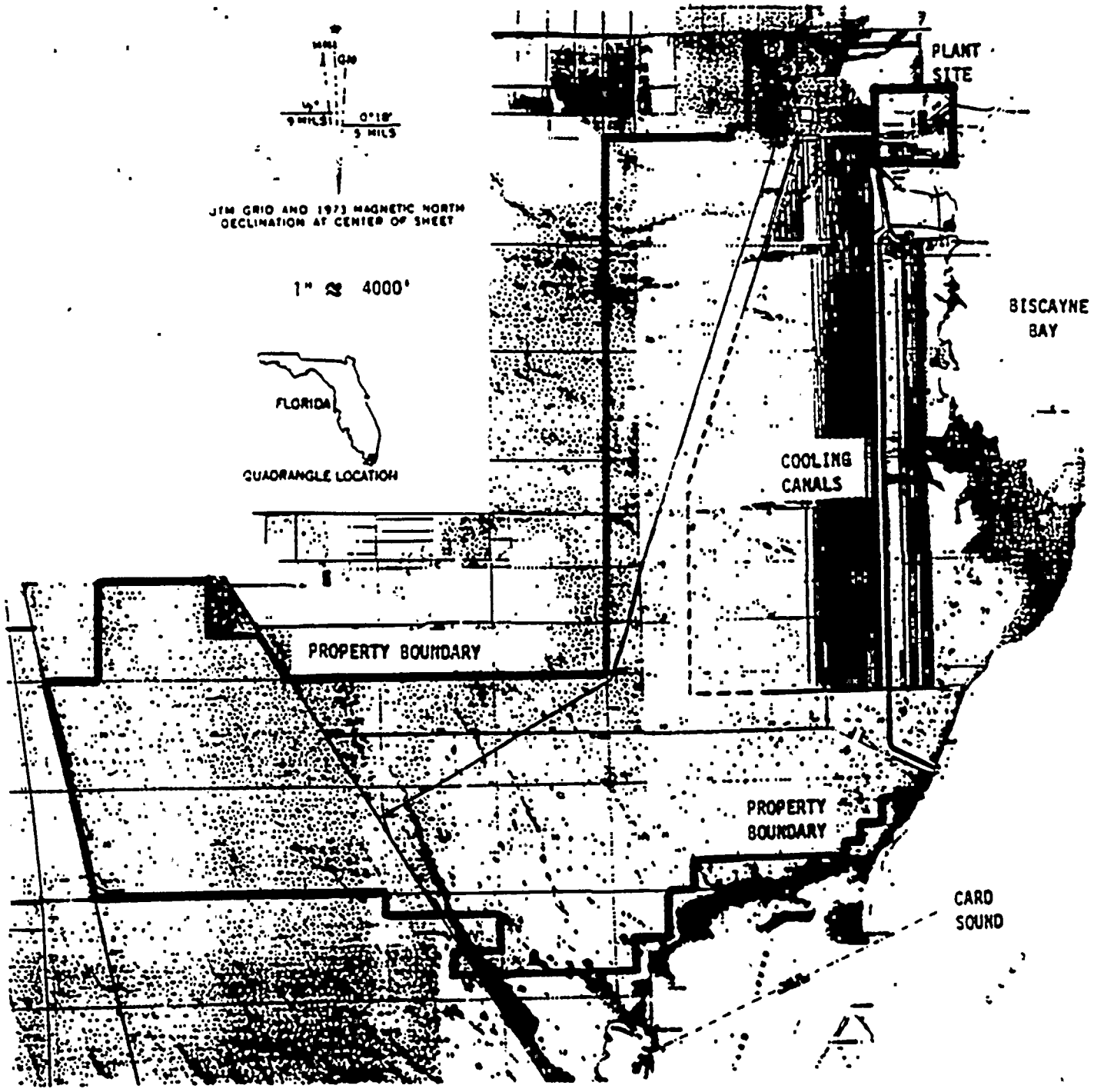


Attachment 1

Florida Power & Light Company
Turkey Point Power Plant
Water Permits List

Permitting Agency	Permit Name	Permit Number
State of Florida Department of Environmental Protection (FDEP)	National Pollutant Discharge Elimination System (NPDES)	FL0001562
State of Florida Department of Environmental Protection (FDEP)	Industrial Wastewater	IO 13-227117
State of Florida Department of Environmental Protection (FDEP)	Domestic Wastewater	FLA013612-001
State of Florida Department of Environmental Protection (FDEP)	Underground Injection Control for Domestic Wastewater	UO 13-277655
South Florida Water Management District (SFWMD)	FPL / SFWMD Agreement Groundwater Monitoring & Interceptor Ditch Operation	4-FPL-22 8046/306
Metropolitan Dade County Department of Environmental Resources Management (DERM)	Domestic Wastewater Annual Operating Permit	DWO-00010-97 (P) 08
Metropolitan Dade County Department of Environmental Resources Management (DERM)	Industrial Waste Type 0-4 Annual Operating Permit	IW-00016 (4) / MSP-00010-97 08
Metropolitan Dade County Department of Environmental Resources Management (DERM)	Industrial Waste Type 0-4 Annual Operating Permit	IW-00003 (4) / MSP-00010-97 08

Attachment 2



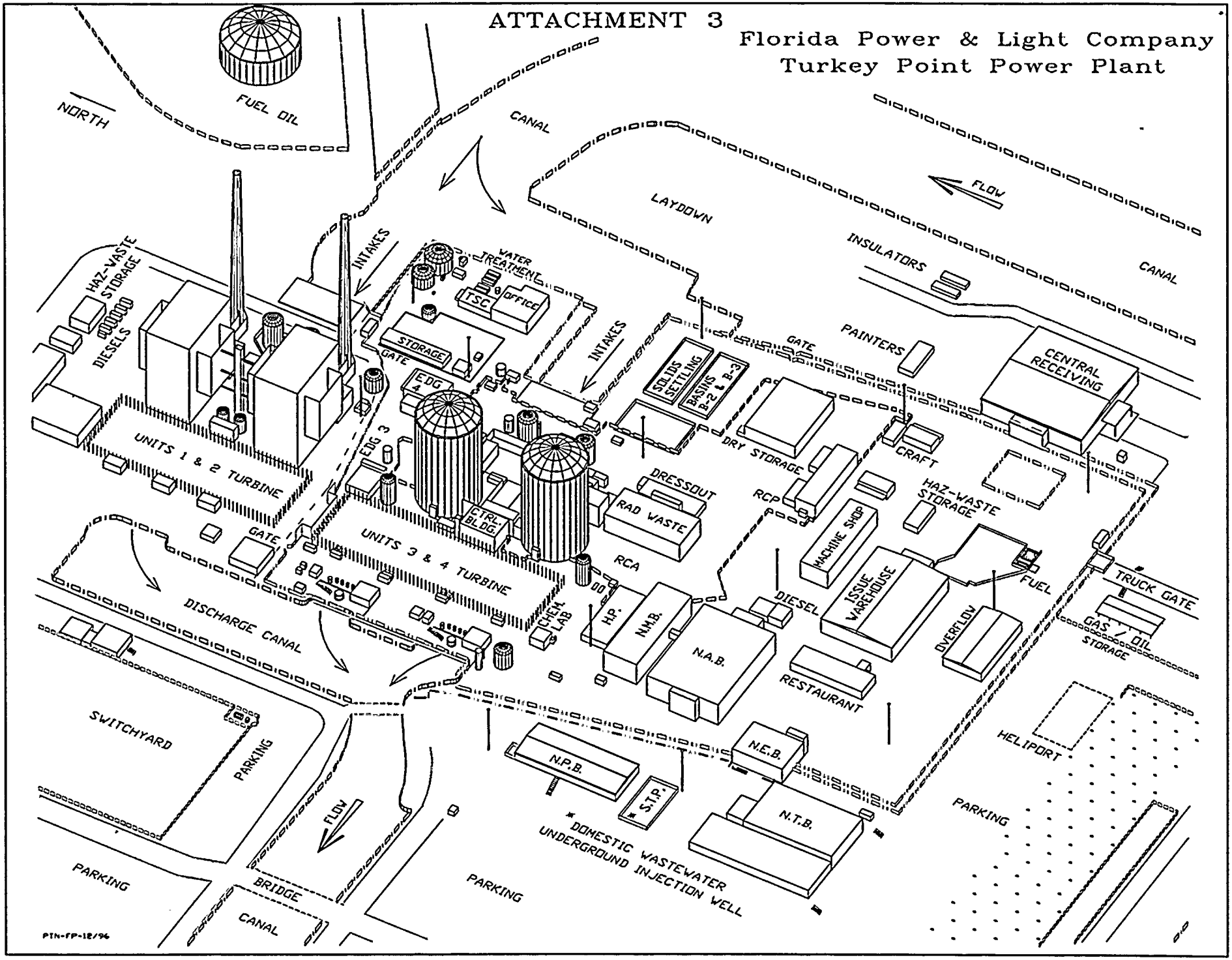
Florida Power & Light Company
Turkey Point Plant

Location: Homestead, Arsenicker Keys, Glades and Card Sound Quadrangles

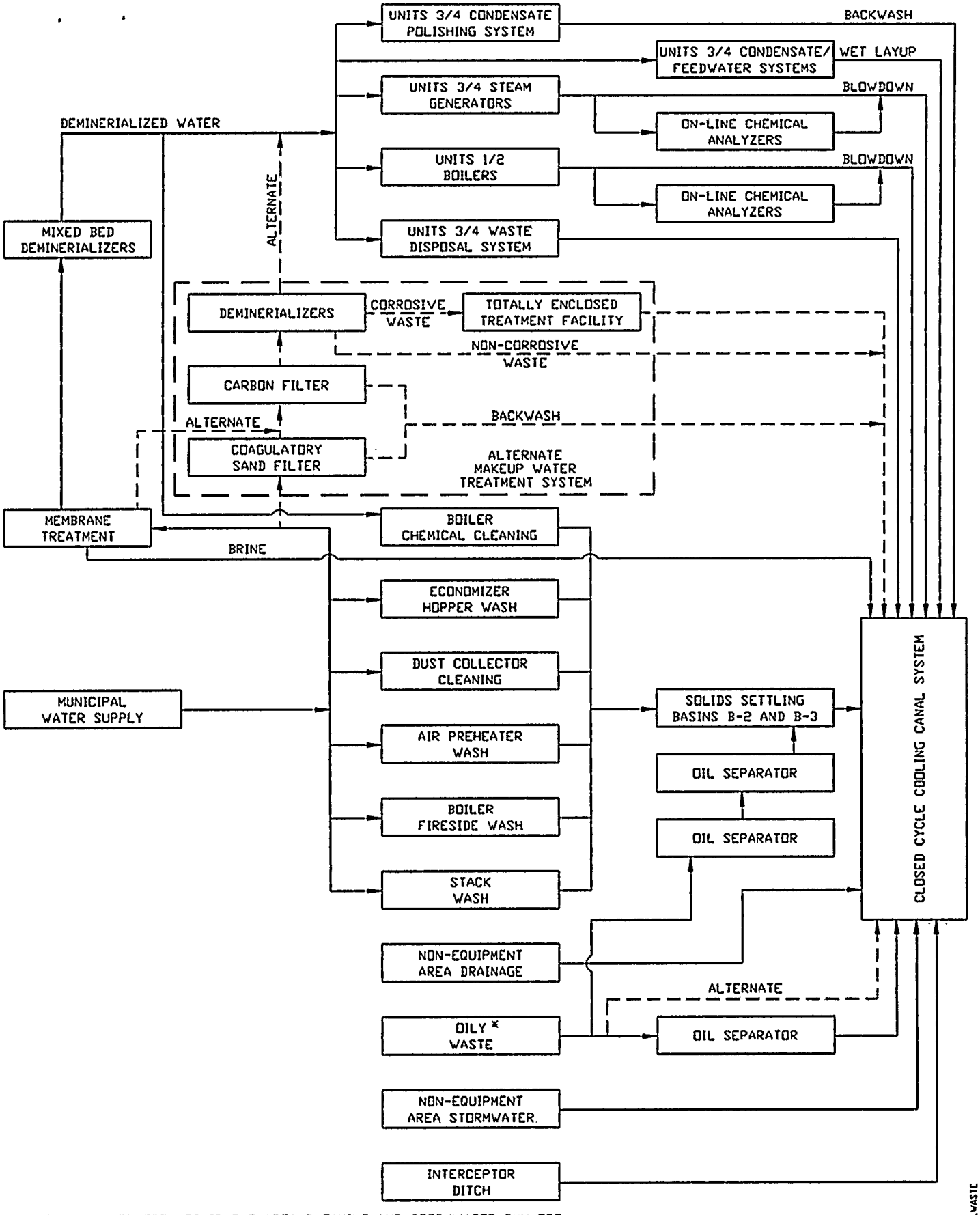
Dade County, Florida

ATTACHMENT 3

Florida Power & Light Company
Turkey Point Power Plant



ATTACHMENT 4
TURKEY POINT PLANT – WASTE FLOW DIAGRAM



* INCLUDES WATER FROM EQUIPMENT AREA CLEANING AND STORMWATER RUN-OFF

Attachment 5

FLORIDA POWER & LIGHT COMPANY
TURKEY POINT POWER PLANT
GENERAL PLANT DESCRIPTION

Florida Power & Light Company's Turkey Point Power Plant is located at approximately latitude 25° 26' 09'' N and longitude 80° 19' 52" W, on Biscayne Bay, ten miles east of Florida City, Florida. The plant and its surrounding area covers approximately 25,000 acres. (Attachment 2)

The plant consists of two fossil fuel units (Units 1 and 2) and two nuclear units (Units 3 and 4). Units 1 and 2 each have 404 megawatt net continuous capability. Unit 1 was put into commercial service in 1967 and Unit 2 was put into commercial service in 1968. Construction, design, and operational aspects are essentially the same for both fossil units. Units 3 and 4 each have 693 megawatt net continuous capability. Unit 3 was put into commercial service in 1972 and Unit 4 was put into commercial service in 1973. Construction, design, and operational aspects are essentially the same for both nuclear units. All four units obtain their once through condenser cooling water from and discharge to a closed cycle recirculating cooling canal system. There are no discharges to waters of the United States from the plant site.

IDENTIFICATION OF MAJOR PROCESSES AND ASSOCIATED WASTES FOR ALL UNITS

Production Related Activities:

Major processes and associated Units at the Turkey Point Power Plant, which generate wastewater as a function of steam production to generate electricity, are as follows:

	Major Process	Associated Units
1.	Steam Generator Makeup Water Treatment System	Nuclear
2.	Boiler Makeup Water Treatment System	Fossil
3.	Alternate Makeup Water Treatment System	Fossil and Nuclear
4.	Combustion Residue	Fossil
5.	Boiler Blowdown	Fossil
6.	Steam Generator Blowdown	Nuclear
7.	Chemical Volume Control System	Nuclear
8.	Main Condenser Cooling Water System	Fossil and Nuclear
9.	Intake Cooling (Auxiliary Equipment Cooling) Water System	Fossil and Nuclear
10.	Condensate Polisher	Nuclear
11.	Plant Intake Screen Wash	Fossil and Nuclear
12.	Sanitary Sewer Systems	Fossil and Nuclear

1. Steam Generator Makeup Water Treatment System (Nuclear)

Municipal water is passed through a vendor supplied water treatment system consisting of activated carbon filters for the removal organic and inorganic suspended solids. The filtered water then passes through a reverse osmosis unit to remove total dissolved solids and silica. This is followed by a forced draft aerator for the removal of carbon dioxide. Subsequently, hydrazine is added to the influent for deoxygenating purposes. This mixture is then passed through an activated carbon media to catalyze the reaction, and then further treated by an ion exchange bed to remove any carbon impurities or hydrazine overfeed. The effluent is further purified via a mobile flow demineralizer that removes cations and anions. The final purification involves the passing of the mixture through a cation/anion polishing mixed bed.

All regenerations of the resin beds are performed off-site at the vendor's service center.

The carbon filters are backwashed with municipal water to remove trapped suspended solids previously filtered from the process water. The backwash water is discharged to the cooling canals.

It is necessary to inject sulfuric acid to the influent of the reverse osmosis unit to reduce the pH to between 6.0 s.u. and 8.5 s.u. This maintains the solubility of the calcium carbonate that is used in the reverse osmosis unit. The reject water from this process will have a pH of between 6.0 s.u. and 8.5 s.u. and is discharged to the cooling canals.

2. Boiler Makeup Water Treatment System (Fossil)

Municipal water is passed through an Ionics water treatment system. After passing through multi-media filters and a decarbonator the water enters a triple membrane trailer. The multi-media filter requires occasional backwashing. The quality of the backwash water that is discharged to the cooling canal system is essentially the same as the inlet municipal water supplied by Dade County. During backwashing there will be no reject or process water from the triple membrane trailer, since it is out of service during this step.

The three water treatment processes contained in the triple membrane trailer, and listed in order of treatment are ultrafiltration, reverse osmosis, and electrodeionization. The reject water, approximately 106 gpm from the ultrafiltration and reverse osmosis processes, is discharged to the cooling canals. Reject water from the final electrodeionization process is recycled to the reverse osmosis feed tank. The product water from the triple membrane trailer, approximately 200 gpm, is sent to the mixed bed demineralizers for final polishing prior to entering the condensate storage tanks. During the infrequent occasions that the product water from the mixed beds does not meet specifications for use as makeup water it is discharged to the cooling canals. The quality of this water is similar to the inlet water.

All regeneration of the mixed bed demineralizers are performed off-site by the vendor.

To enhance the performance of the water treatment equipment, chemicals such as sulfuric acid, flowcon, caustic soda, and sodium bisulfite are added at various points in the process. Any waste streams generated during routine membrane cleaning will be neutralized (pH adjustments) prior to discharge to the cooling canals.

3. Alternate Makeup Water Treatment System (Fossil and Nuclear)

Municipal water is passed through a coagulator and a fine sand filter to remove suspended solids and then passed through activated carbon filters for additional removal of organic and inorganic suspended solids. The softened, filtered water is further purified by passing through a cation resin bed where cations such as Mg and Ca are removed, and then through an anion resin bed where anions such as SO_4 and Cl are removed. Finally, it passes through a polishing mixed bed containing both cation and anion resins.

After a period of use, the anion and cation resins become exhausted and must be returned to their original adsorptive capacity (regenerated). Cation resins are regenerated with 5% H_2SO_4 (sulfuric acid) where the H+ replaces the cations exchanged by the resins during the demineralization process. The anion resin bed is regenerated with 5% NaOH (sodium hydroxide), where OH- replaces anions exchanged by the resin during regeneration.

The sand and carbon filters are backwashed with municipal water to remove trapped suspended solids previously filtered from the process water.

Corrosive anion and cation regenerant waste ($pH \leq 2.0$ s.u. or ≥ 12.5 s.u.) is sent to a totally enclosed treatment facility where the pH is adjusted to a range of between ≥ 6.0 s.u. to ≤ 8.5 s.u. This waste water is discharged directly to the cooling canals.

Some of the components from both the Primary and Alternate Makeup Water Treatment Sytems may be used to provide makeup water, however, the majority of the components for the Alternate Makeup Water Treatment System are out of service (see attachment 4).

4. Combustion Residue (Fossil)

A carbon reinjection system provides a means for collecting carbon and unburned by-products of combustion in the flue gases. This carbon residue is recycled back into the boiler fire to maximize the use of combustion material. The resulting fly ash and slag contain various non-combustible compounds which are sluiced to one of two solids settling basins (see attachment 4). Combustion residue is also accumulated during various maintenance functions. Supernatant from the solids settling basins is treated with citric acid or soda ash, if needed, to adjust pH to proper limits prior to discharging to the cooling canals. Residue is chemically fixed on-site prior to being disposed.

5. Boiler Blowdown (Fossil)

High purity water generated by the plants' water treatment system is used for makeup water to the boilers water/steam cycle. During the continual vaporization of water occuring in the boiler, dissolved solids build up in the boiler water and must be controlled by boiler blowdown.

Two forms of sodium phosphate are added to the boiler water for control of calcium and magnesium scaling. Ammonium hydroxide is added for feedwater pH control. Hydrazine is added for dissolved oxygen removal. Undesirable boiler water contaminants such as Cl- and silica can be introduced from condenser tube leaks resulting in contamination of the boiler water. When dissolved solids reach unacceptable levels they must be reduced by boiler blowdown. Boiler blowdown is taken from the bottom of the steam drum which contains such contaminants as silica, sodium phosphate dissolved solids, calcium or magnesium phosphate sludge, and metals such as copper and iron. Some of the boiler blowdown flashes into steam and discharges into the atmosphere. The remaining liquid portion of boiler blowdown not recovered and reused is routed to the cooling canals.

During overhauls of the boilers, feedwater systems and/or condensers may be placed in a static mode where the internal metal surfaces of these components must be protected from corrosion. The typical method used is to fill these systems with a hydrazine/amerzine/ammonia/demineralized water solution. This solution is drained and discharged to the cooling canals. The solution when discharged has a pH range of 9.0 s.u. to 9.8 s.u. and contains very low levels of hydrazine.

A small sample stream of the boiler blowdown is diverted to on-line chemical analyzers to test water chemistry within the boiler. A very small quantity of chemical effluent from these analyzers is discharged to the cooling canals along with the blowdown.

6. Steam Generator Blowdown (Nuclear)

High purity water generated by the plants' water treatment system is routed to the condensers for makeup to the water/steam cycle. Ammonium hydroxide is added for pH control and hydrazine is added for dissolved oxygen removal. Strict operating specifications require that suspended and dissolved solids be removed from steam generator water by continuous steam generator blowdown. This blowdown is routed to the cooling canals.

During overhauls and/or refueling outages the steam generators, feedwater systems, and/or condensers may be placed in a static mode where the internal metal surfaces of these components must be protected from corrosion. The typical method used is to fill the system with a hydrazine/amerzine/ammonia/demineralized water solution. This solution has a pH range of 9.0 s.u. to 10.5 s.u. and usually contains less than 300 ppm hydrazine. Approximately 1,000,000 gallons of this solution may be discharged to the cooling canals following each overhaul or refueling outage. Subsequent testing in the discharge canal, for hydrazine concentrations following discharges, has shown hydrazine values to be less than 10 ppb.

A small sample stream of the steam generator blowdown is diverted to on-line chemical analyzers to test water chemistry within the steam generator. A very small quantity of chemical effluent from these analyzers is discharged to the cooling canals along with the blowdown.

7. **Chemical Volume Control System (Nuclear)**

This waste stream originates from various maintenance and operational activities which take place within the Reactor Auxiliary Building. Discharges from the Chemical Volume Control System are intermittent, and are strictly regulated by the Atomic Energy Act and the Nuclear Regulatory Commission.

8. **Main Condenser Cooling Water System (Fossil and Nuclear)**

Condenser cooling water is withdrawn from the closed-loop cooling canal system through two intake canals on the east side of the units. The waste heat from the steam condensation is transferred to the cooling water in the condensers which discharge back to the closed-loop cooling canal system on the west side of the units. With all 12 circulating water pumps operating the cooling water flow is rated at 1,800,000 gpm.

9. **Intake Cooling (Auxiliary Equipment Cooling) Water System (Fossil and Nuclear)**

An additional 120,000 gpm of water from the closed-loop cooling canal system is used to cool, via heat exchangers, the closed component cooling water system. Actual equipment cooling is accomplished by an aqueous molybdate solution which is recirculated through the various pieces of equipment to be cooled and then through the aforementioned heat exchangers.

10. **Condensate Polisher (Nuclear)**

The condensate polishers are utilized during the operation of Units 3 and 4. Backwash water from this system is discharged to a holding tank, then to a filtration system prior to being discharged to the cooling canals. Flow from this system is intermittent. This effluent may contain small amounts of powdered resin.

11. **Intake Screen Wash (Fossil and Nuclear)**

Periodically, it is necessary to clean the traveling screens associated with the intake cooling water pumps to prevent debris from reaching the condensers. Cooling canal water is pumped through spray nozzles to clean the screens and then the wash stream is returned to a debris pit at the intake area or to the discharge canal.

12. **Sanitary Sewer (Fossil and Nuclear)**

Sanitary waste from showers, water closets, toilets, etc. are routed to county approved on-site septic systems for the fossil and land management facilities.

The nuclear units' domestic wastewater is routed to an on-site, county and state approved, contact stabilization sewage treatment plant. Effluent from this treatment plant is discharged to an on-site, state approved, underground injection well. Sewage sludge generated by this plant is transported to the approved offsite facility.

IDENTIFICATION OF PLANT MAINTENANCE ACTIVITIES FOR ALL UNITS

Plant Maintenance Activities:

Routine scheduled plant maintenance is required to maintain the steam production process, to maximize combustion efficiency and to minimize air emissions. Maintenance cleaning operations generally utilize water, which afterwards, contains the waste of the cleaning operation. Maintenance processes producing water-related wastes are as follows:

Maintenance Process		Associated Units
1.	Economizer Hopper Wash	Fossil
2.	Air Preheater Wash	Fossil
3.	Stack Wash	Fossil
4.	Dust Collector Wash	Fossil
5.	Boiler Fireside Wash	Fossil
6.	Boiler Waterside Chemical Cleaning	Fossil
7.	Equipment Area Routine Cleaning	Fossil and Nuclear
8.	Non-Equipment Area Stormwater	Fossil and Nuclear
9.	Feedwater Heater Wash	Fossil
10.	Equipment Closed Cooling Water Systems	Fossil and Nuclear

1. **Economizer Hopper Wash (Fossil)**

The economizer section of the boiler collects combustion by-products during plant operations, resulting in slag formation. Periodically, the interior surfaces of the economizer hoppers are washed. This washing is performed approximately three times per day. The wash water is discharged to one of two on-site settling basins. The supernatant from these basins is discharged to the cooling canals.

2. **Air Preheater Wash (Fossil)**

Air preheaters operate in an atmosphere near the dewpoint of boiler exit gas. Since there is some deposition of sulfuric compounds on the preheater surface, wash water is typically acidic. Air preheaters are water washed on an as needed basis and usually followed by rinsing with a soda ash solution. The air preheater wash effluent is routed to, and treated in, one of two solids settling basins. Supernatant from these basins is discharged to the cooling canals.

3. **Stack Wash (Fossil)**

Each stack is washed approximately every five years to remove combustion products which have adhered to the interior stack surfaces. The stack wash is discharged to one of two solids settling basins. Supernatant from these basins is discharged to the cooling canals.

4. **Dust Collector and Dust Collection Hopper Wash (Fossil)**

Particulate materials collected by the dust collectors falls into dust collector hoppers and is either reinjected into the boiler for reburning, or is sluiced to one of the solids settling basins. At present, the collectors and hoppers are not routinely washed. However, if clogging occurs, the appropriate section may be taken apart and the loose ash removed. The ash is caught within a curbed area and is sluiced to one of two solids settling basins. Supernatant from these basins is discharged to the cooling canals.

5. **Boiler Fireside Wash (Fossil)**

Boiler fireside washing is typically performed a minimum of once per year per unit. The high pressure wash water is utilized to clean combustion products deposited on boiler tubes during operation. This system is designed to pump the boiler fireside wash water to one of two solids settling basins. Supernatant from these basins is discharged to the cooling canals.

6. **Boiler Waterside Chemical Cleaning (Fossil)**

Boiler water tube internal surfaces are typically cleaned every 5-10 years. The cleanings are performed to remove inorganic scale and metal oxides deposited on the boiler internal tube surfaces. The cleaning is typically completed using the Citrosolv (diammonium citrate) three step process. A hazardous waste determination is performed on the effluent from Step 1 (spent cleaning solution). Should the Step 1 spent solution be determined to be a non-hazardous waste it is either burned/evaporated, in accordance with the applicable air permit stipulations, or sent off-site. If the effluent from Step 1 is determined to be a hazardous waste, a hazardous waste determination will be performed on the Step 2 (cascade rinse) effluent. Should the Step 2 cascade rinse be determined to be a non-hazardous waste it is routed to the solids settling basins or sent off-site. If the effluent from Step 2 is determined to be hazardous, a hazardous waste

determination will be performed on the Step 3 (rinses) effluent. Should the Step 3 rinses be determined to be a non-hazardous waste it is routed to the solids settling basins or sent off-site. The effluent from these processes is sent to the solids settling basin for precipitation of metals. The supernatant from these basins is discharged to the cooling canals.

7. **Equipment Area Routine Cleaning (Fossil and Nuclear)**

Equipment area floor drains, particularly during periods of plant washdown activities, typically receive small amounts of particulate material, lubricating and fuel oils, as well as stormwater runoff. Equipment area drains which can receive oil are routed to oil/water separators prior to being discharged to the cooling canals.

8. **Non-Equipment Area Stormwater Runoff (Fossil and Nuclear)**

Storm water runoff within the plant non-equipment areas collects in drainage channels and floor drains, then typically through a series of stormwater catch basins before being discharged directly to the cooling canals.

9. **Feedwater Heater Wash (Fossil)**

After a unit overhaul, typically each of the five(5) low pressure feed water heaters will be flushed with condensate water. The waste water will go through the storm drains and discharged to the cooling canals. The condensate waste water will have low levels of silica, chloride, phosphate, calcium, and magnesium.

10. **Equipment Closed Cooling Water Systems (Fossil and Nuclear)**

Molybdates, nitrates, nitrites, and azoles for corrosion control are used in Plant equipment closed cooling water systems, such as the Component Cooling Water System, the Turbine Plant Cooling Water System, air conditioning coolant systems, the cooling jackets of diesel driven pumps and compressors coolant systems. During routine maintenance of this equipment the cooling water is discharged to the cooling canals.