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June 30, 2009
L-2009-160
10 CFR 50.36

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Wastewater Permit Number FL0001562
Request for Major Revision and Permit Renewal Notification

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), enclosed is a copy of the request to renew and revise Wastewater Permit Number FL0001562.

The renewal application encompasses the current operating units – fossil Units 1, 2 and 5, nuclear Units 3 and 4, and the proposed nuclear Units 6 and 7. There are no major permit changes requested for the existing fossil and nuclear Units 1-5. The renewal application constitutes a major permit modification due to the proposed construction of the new nuclear Units 6 and 7 inside the permitted Industrial Wastewater Treatment Facility.

Any impact to the Industrial Wastewater Treatment Facility (cooling canal system) from construction of the new nuclear units is temporary in nature and will be addressed via the acquisition of separate permits (e.g. dewatering). Once operational, Units 6 and 7 will not discharge wastewater into the cooling canal system. All wastewater from the new units will be disposed of via Underground Injection Control Wells, which will be authorized under that permit program. Storm water that falls on the Units 6 and 7 site will continue to be released to the cooling canal system as it currently occurs.

Should there be any questions, please contact us.

Very truly yours,

William Jefferson, Jr.
Vice President
Turkey Point Nuclear Plant

Enclosure

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

C001
NRR

ENCLOSURE TO

L-2009-160

APPENDIX 10.2.2.1

INDUSTRIAL WASTEWATER FACILITY PERMIT APPLICATION
#FL0001562-004-IWIN
June 2009

WASTEWATER FACILITY OR ACTIVITY PERMIT
APPLICATION FORM 1
GENERAL INFORMATION

I - IDENTIFICATION NUMBER:

Facility ID FL0001562

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	2CS
D. Does or will this facility (other than those described in A. or B.) discharge process wastewater to ground waters?	X		2CG
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		0127512-002-UO
G. Does or will this facility discharge stormwater associated with industrial activity to surface waters?		X	
H. Is this facility a non-discharging/closed loop recycle system?		X	
I. Is this facility a public water system whose primary purpose is the production of potable water for public consumption and which discharges demineralization concentrate to surface water or groundwater?		X	

III - NAME OF FACILITY: (80 characters and spaces)

FPL Turkey Point Power Plant (Units 1-7)

Facility ID FL0001562

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

A. Name and Title (Last, first, & title)	B. Phone (area code & no.)
Jefferson, William, Plant Vice President	305-246-6113

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: Miami-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 Serv	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 ☐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.: 305-246-6113
E. Street or P. O. Box: 9760 S.W. 344 Street			
F. City or Town: Florida City		G. State: FL	H. Zip Code: 33035

IX - INDIAN LAND:

A. Is the facility located on Indian lands?	☐ Yes	☒ No

Facility ID FL0001562

X - EXISTING ENVIRONMENTAL PERMITS:

A. NPDES Permit No.	B. UIC Permit No.	C. Other (specify)	D. Other (specify)
FL0001562-007IWB/MR	0127512-002-UO	See Form 1-X-C Atch.	NA

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.

XII - NATURE OF BUSINESS (provide a brief description)

Electric Power Generating Station

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.

William Jefferson
A. Name (type or print)

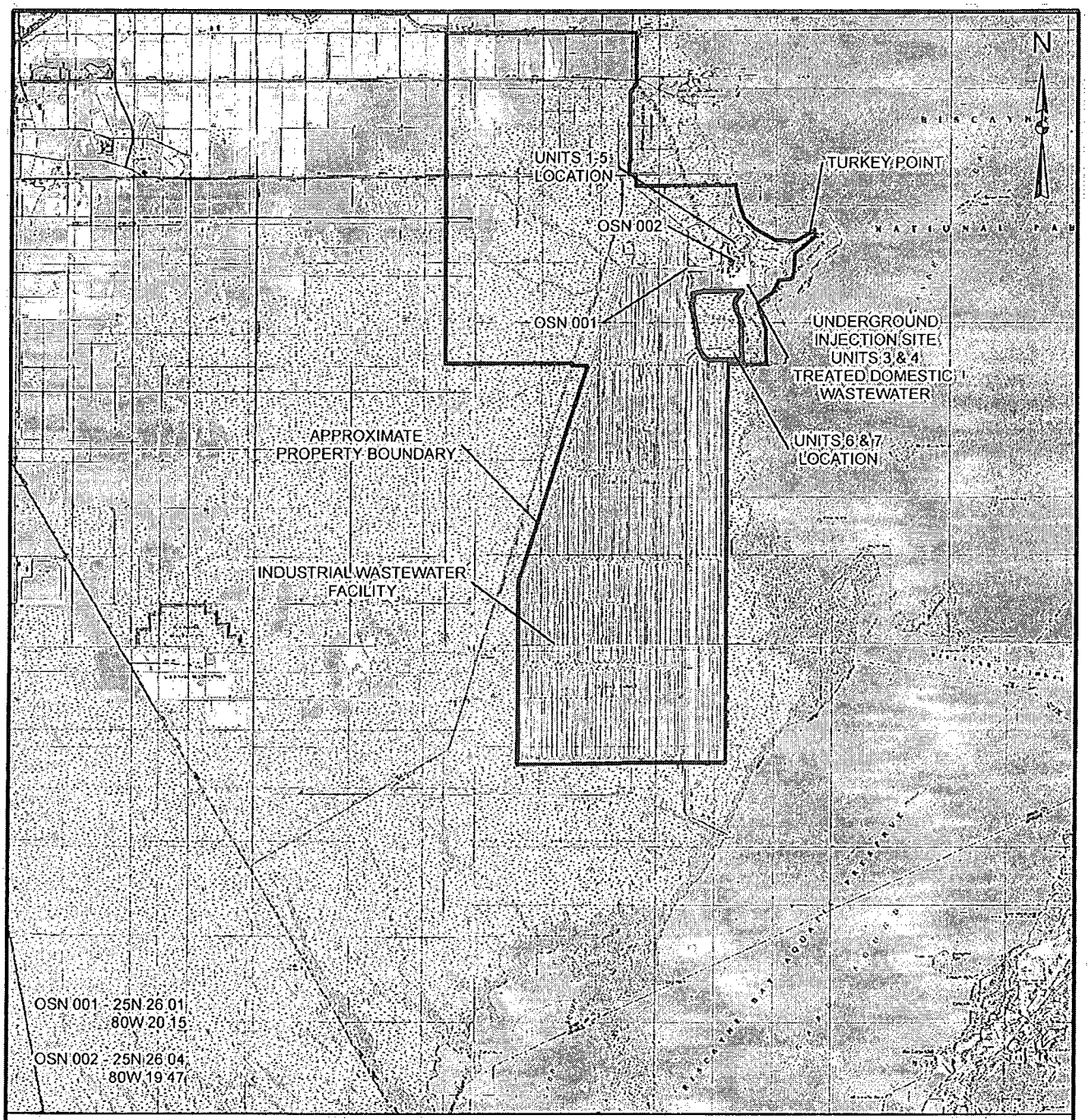
B. Signature

Plant Vice President
Official Title (type or print)

6/25/09
C. Date Signed

Form 1-X-C Attachment
Other Existing Permits (not listed on Form 1)
Florida Power & Light Company - Turkey Point

Permitting Agency	Permit Name	Permit Number
State of Florida Department of Environmental Protection	Domestic Wastewater	FLA013612-002-DW3P
Miami-Dade County Department of PublicWorks	Domestic Wastewater	DWO-000010-2008/2009
Miami-Dade County Department of Environmental Resources Management	Industrial Waste	IW-000003-2008/2009



LEGEND

- Turkey Point Units 6 & 7 Plant Area
- Turkey Point Plant Property

REFERENCES

1. USGS TOPOGRAPHIC MAP, 7.5 MIN. QUADRANGLE MAP SERIES: HOMESTEAD, ARSENICKER KEYS, GLADES, AND CARD SOUND QUADRANGLES, FLORIDA.

PROJECT: TURKEY POINT UNITS 6 & 7 PROJECT

TITLE: FORM I - XI ATTACHMENT SITE LOCATION MAP

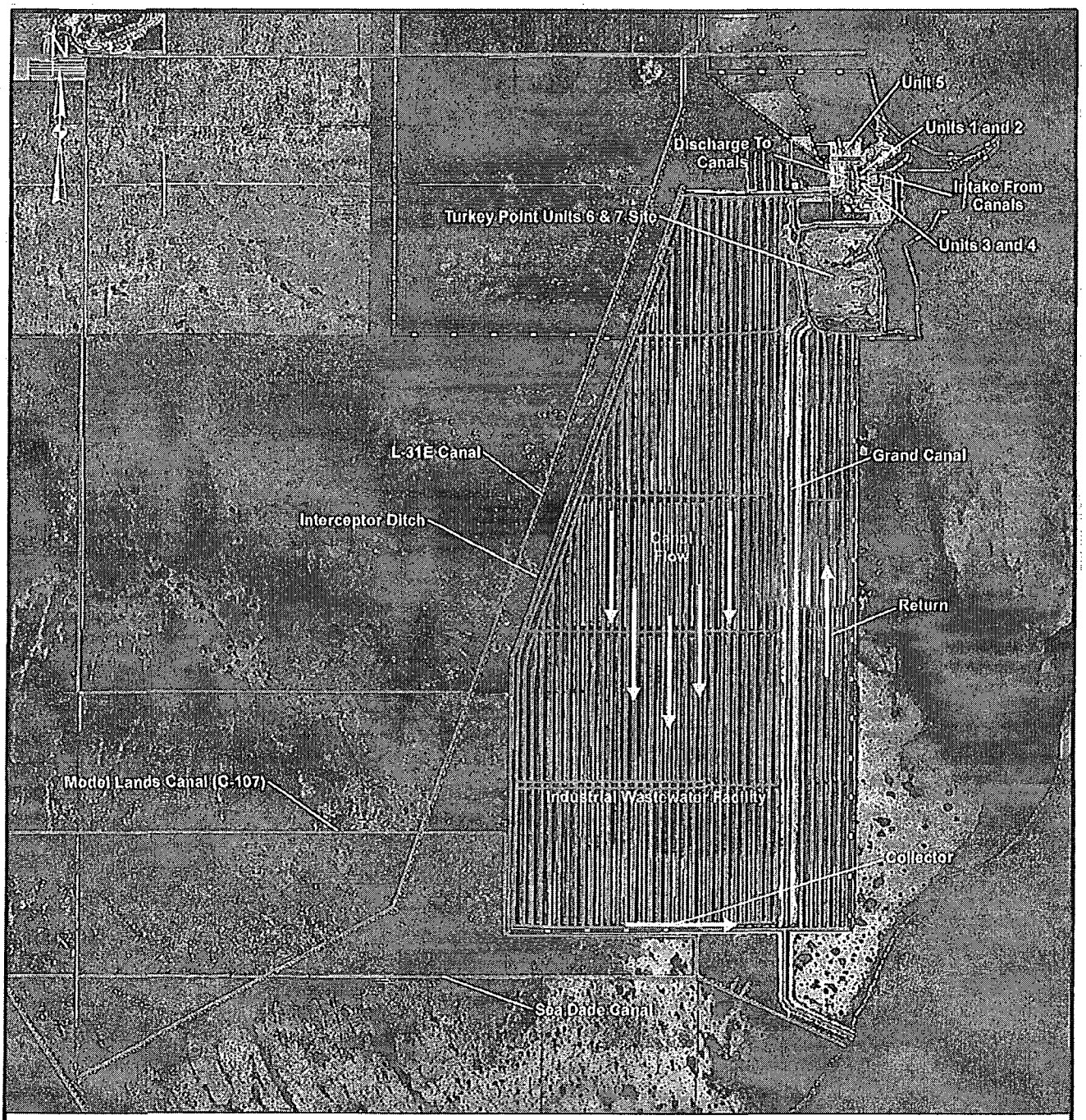
FPL

FILE No. 03397584Q001

REV. 0

PLOT DATE 6/14/2009

FIGURE 1



5,400 0 5,400
Feet

LEGEND

- Canals
- Turkey Point Plant Property

REFERENCES

1. Imagery, Miami-Dade County, 2007.

PROJECT
TURKEY POINT UNITS 6 & 7 PROJECT

TITLE
FORM I - XI ATTACHMENT
TURKEY POINT COOLING CANAL SYSTEM

FPL

FILE No. 03387584Q002
REV. 0
PLOT DATE 6/14/2009

FIGURE
2

FORM
2CS

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

Facility I.D. Number: FL0001562

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	These are internal outfalls that discharge
002	NA	NA	NA	NA	NA	NA	to the Closed-loop Cooling Canal System
							No Discharge to Waters of the U.S.

II OUTFALL DESIGN

A. Outfall No. (List)	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

Facility I.D. Number: FL0001562

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
	☐	☐		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).

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.

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

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.

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.

(1) Outfall No. (List)	(2) Operation(s) Contributing Flow		(3) Treatment		
	(a) Operation (list)	(b) Avg. Flow & Units	(a) Description	(b) List Code from Table 2CS-1	
002	Solids Settling Basin	17,235 gal/day	Sedimentation (Settling)	1-U	
			Chemical Treatment	2-C	
001	Closed-loop Cooling Canals	1.92 MGM	Evaporation/Sedimentation	1-F	1-U
	Unit 5 CT Blowdown	2,444 gpm	Chemical Treatment	2-F, 2-H	2-K
	Unit 5 Wastewater Sump	3,040 gpm	Physical/Chemical treatment	1-O, 1-U	2-K
	Units 6 & 7 Stormwater	No Change	Sedimentation (Settling)	1-U	
NA	Units 6 & 7 Wastewater	25 MGD (est.)	Underground Injection	4-D	

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) ☐ No (go to D. below)

(1) Outfall No. (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	
002	Solids Settling Basin	0-7	0-12	.01724	NA	NA	NA	NA

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

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

V PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ 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) ☒ 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
a. Quantity per Day	b. Units of Measure	c. Operation, Product, Materials, Etc. (specify)	(list outfall nos.)
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) ☒ 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
Dimethyl amine	Boiler/StmGen Blowdown	NA	NA

Facility I.D. Number: FL0001562

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) ☒ 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) ☒ 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) ☒ NO (go to Section XI)

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

Facility I.D. Number: FL0001562

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.

FPL has been working with Miami-Dade Water and Sewer Department (MDWASD) to make the Turkey Point Plant part of the area-wide wastewater treatment system. Turkey Point Units 6 & 7 will use reclaimed water from MDWASD as makeup water to the circulating water system. When reclaimed water is fully available, the Turkey Point facility may utilize up to 90 MGD. Domestic wastewater generated by the facility will be managed onsite and will not be released to the 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.

	NA
Signature	Company Name
NA	Address NA
Name (please type)	NA
	NA
(Affix Seal)	Florida Registration No.: NA
	Telephone No:: NA
	Date

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 (Please type or print)	Signature
NA	
Telephone No. (area code & No.)	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.

Signature

Gregory M. Powell

Name (please type)

(Affix Seal)

Golder Associates, Inc (Certificate of Authorization No. 1670)

Company Name

Address 9428 Baymeadows Road

Suite 400

Jacksonville, FL 32256

Florida Registration No.: 31165

Telephone No:: 904-363-3430

Date 6/23/09

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.

William Jefferson, Plant Vice President

Name & Official Title (Please type or print)

Signature

305-246-6113

Telephone No. (area code & No.)

6/25/09

Date Signed

Form 2CS Attachment Summary

Florida Power & Light Company – Turkey Point Plant

Page 16

I.A, B, C & D: These internal outfalls discharge to closed-loop cooling canals, which are also an industrial wastewater facility. There is no discharge to waters of the U.S. and no discharge to surface waters of the State. The cooling canals are not lined; therefore, there may be a release to Class G-III groundwater.

IB & C: Latitude and Longitude are not shown for purposes of Homeland Security pursuant to federal regulations found at 18 CFR 388.113(c)(i) and (ii) and by Presidential Directive dated December 17, 2003.

II.A through F: Not Applicable. There is no discharge to waters of the U.S. and no discharge to surface waters of the State.

Page 17

III. A through G: Not Applicable. There is no discharge to waters of the U.S. and no discharge to surface waters of the State.

Page 17

IV.A. See Attachment III.A: FPL Turkey Point Power Plant General Plant Description

IV.A. See Attachment III.A-1: Flow Diagram Turkey Point Fossil Plant Units 1 &2.

IV.A. See Attachment III.A-2: Flow Diagram Turkey Point Nuclear Plant Units 3 & 4.

IV.A. See Attachment III.A-3: Flow Diagram Turkey Point Combined Cycle Plant Unit 5.

IV.A. See Attachment III.A-4: Flow Diagram Turkey Point Nuclear Plant Units 6 & 7.

IV.B. See Attachment III.B-1: Operations Contributing Wastewater to the Internal Outfalls.

IV.B. See Attachment III.B-2: Plant Maintenance Activities, For All Units.

Page 19

IV.D See Attachment III.D-1: Practices to Ensure Wastewater Treatment during Power Loss.

IV.E Flows are metered at the water supplies.

Page 20

VII.A, B, & C, Including Tables VII-A, VII-B and VII-C: Zero discharge facility. No point source discharges to waters of the U.S. or surface waters of the State. No discharge point to

groundwater of State. All internal outfalls discharge to closed-loop cooling canals/industrial wastewater facility.

Page 21

VIII. Potential Discharges: The following chemicals are used at the facility for the following purposes:

Continuum AEC3145 and Corrshield MD4100	Cooling Tower
Inhibitors AZ8101 and OP8413	Cooling Tower
Sulfuric acid	Cooling Tower
Sodium hypochlorite	Cooling Tower
Foamtrol AF2290	Cooling Tower
Biocides such as Spectrus CT1300 or equivalent	Cooling Tower
Soda ash, polymer, hydrated lime,	Water Treatment Chemicals
Betz Dearborn DCL30, Hypersperse MDC120	Water Treatment Chemicals
Kleen MCT103 and MCT511	Water Treatment Chemicals
ROClean L212, ROClean L403, ROClean P111, ROClean L811	RO Membrane Cleaning
Hydrazine, carbohydrazide, monoethanolamine (EIA)	Boiler/Steam Gen Blowdown
Molybdate, Tolytriazole and Nitrite	Aux Equipment Cooling System

A minor revision has been submitted to FDEP to change chemical vendors to supply equivalent products. The revision was approved by FDEP on April 15, 2009 as a minor revision C to Industrial Wastewater Permit Number FL0001562.

FORM
2CG

WASTEWATER APPLICATION FOR PERMIT TO DISCHARGE PROCESS WASTEWATER FROM NEW OR EXISTING INDUSTRIAL WASTEWATER FACILITIES TO GROUND WATER

Facility I.D. Number: FL0001562

Please print or type information in the appropriate areas.

I DISCHARGE LOCATION For each location, list the X,Y coordinates and, where applicable, the name of the land application site.

(latitude/longitude to the nearest 15 seconds)

A. Discharge Location No. (list)	B. Latitude			C. Longitude			D. Name of Land Application
	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
001	NA	NA	NA	NA	NA	NA	These are internal outfalls that discharge
002	NA	NA	NA	NA	NA	NA	to the Closed-loop Cooling Canal System
							No Discharge to Waters of the U.S.

II LAND APPLICATION DESIGN

A. Discharge No.	B. Design Configuration and Construction Materials	C. Cover Crop	D. Application Rate	E. Land Application Area	F. Ground Water
NA	NA	NA	NA	NA	NA

Form 62-620.910(4)
(Effective November 29, 1994)

Facility I.D. Number: FL0001562

III 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 discharge points. 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.

B. For each discharge location, provide a description of:

1. All operations contributing wastewater to the effluent; including process wastewater, sanitary wastewater, cooling water, and storm water runoff;

2. The average flow contributed by each operation; and

3. The treatment received by the wastewater.

Use the space below. Continue on additional sheets, if necessary.

(1) Discharge Location No.	(2) Operation(s) Contributing Flow		(3) Treatment		
	(a) Operation (list)	(b) Avg. Flow & Units	(a) Description	(b) List Code from Table 2CG-1	
002	Solids Settling Basin	17,235 gal/day	Sedimentation (Settling)	1-U	
			Chemical Treatment	2-C	
001	Closed-loop Cooling Canals	1.92 MGM	Evaporation/Sedimentation	1-F	1-U
	Unit 5 CT Blowdown	2,444 gpm	Chemical Treatment	2-F, 2-H	2-K
	Unit 5 Wastewater Sump	3,040 gpm	Physical/Chemical Treatment	1-O,1-U	2-K
	Units 6 & 7 Stormwater	No Change	Sedimentation (Settling)	1-U	
NA	Units 6 & 7 Wastewater	25 MGD (est.)	Underground Injection	4-D	

Form 62-620.910(4)
(Effective November 29, 1994)

III Contd.

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittant or seasonal?

☒ Yes (complete the following table) ☐ No (go to D. below)

(1) Outfall # (List)	(2) Operations(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	
002	Solids Settling Basin	0-7	0-12	0.01724	NA	NA	NA	NA

*For land application systems, also include the Rest Period.

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

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

IV 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 orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ Yes (complete the following table) ☒ No (go to Item VI-B)

1. Identification of Condition, Agreement, Etc.	2. Affected Discharge Locations		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.

Facility I.D. Number: FL0001562

V INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding--Complete one set of tables for each discharge location -- Annotate the location number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets number V-1 through V-10.

D. Use the space below to list any of the pollutants listed in Table 2CG-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
Dimethyl amine	Boiler/ StmGen Blowdown	NA	NA

VI POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-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) ☒ NO (go to VII)

NA

VII CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V 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)

☒ NO (go to Section VIII)

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

Form 62-620.910(4)
(Effective November 29, 1994)

Facility I.D. Number: FL0001562

VIII 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.

FPL has been working with Miami-Dade Water and Sewer Department (MDWASD) to make the Turkey Point Plant part of the area-wide wastewater treatment system. Turkey Point Units 6 & 7 will use reclaimed water from MDWASD as makeup water to the circulating water system. When reclaimed water is fully available, the Turkey Point facility may utilize up to 90 MGD. Domestic wastewater generated by the facility will be managed onsite and will not be released to the area-wide wastewater treatment system.

IX-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.

_____	NA
Signature	Company Name
NA	Address NA
Name (please type)	NA
	NA
(Affix Seal)	Florida Registration No.: NA
	Telephone No:: _____ Date _____

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 (type or print)	Signature
NA	
Title	_____
NA	Date Signed
Telephone No. (area code & No.)	

Form 62-620.910(4)
(Effective November 29, 1994)

Facility I.D. Number: FL0001562

IX-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.

Signature

Gregory M. Powell

Name (please type)

(Affix Seal)

Golder Associates, Inc (Certificate of Authorization No. 1670)

Company Name

Address 9428 Baymeadows Road

Suite 400

Jacksonville, FL 32256

Florida Registration No.: 31165

Telephone No:: 904-363-3430 Date 6/23/09

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.

William Jefferson

Name (type or print)

Plant Vice President

Title

305-246-6113

Telephone No. (area code & No.)

Signature

6/25/09

Date Signed

Form 62-620.910(4)
(Effective November 29, 1994)

Form 2CG Attachment Summary

Florida Power & Light Company – Turkey Point Plant

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I.A, B, C & D: These internal outfalls are routed to closed-loop cooling canals, which are also an industrial wastewater facility. There are no point source discharges to waters of the U.S. and no discharge to surface waters of the State. The cooling canals are not lined; therefore, there may be a release to Class G-III groundwater.

1B & C: Latitude and Longitude are not shown for purposes of Homeland Security pursuant to federal regulations found at 18 CFR 388.113(c)(i) and (ii) and by Presidential Directive dated December 17, 2003.

II.A, B, C, D, E & F: There is no Land Application at this facility and no discharge point to groundwater. The groundwater is Class G-III.

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III.A. See Attachment III.A: FPL Turkey Point Power Plant General Plant Description

III.A. See Attachment III.A-1: Flow Diagram Turkey Point Fossil Plant Units 1 &2.

III.A. See Attachment III.A-2: Flow Diagram Turkey Point Nuclear Plant Units 3 & 4.

III.A. See Attachment III.A-3: Flow Diagram Turkey Point Combined Cycle Plant Unit 5.

III.A. See Attachment III.A-4: Flow Diagram Turkey Point Nuclear Plant Units 6 & 7.

III.B. See Attachment III.B-1: Operations Contributing Wastewater to the Internal Outfalls.

III.B. See Attachment III.B-2: Plant Maintenance Activities, For All Units.

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III.D See Attachment III.D-1: Practices to Ensure Wastewater Treatment during Power Loss.

III.E Flows are metered at the water supplies.

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V.A, B, & C, Including Tables V-A, V-B and V-C: Zero discharge facility. No point source discharges to waters of the U.S. or surface waters of the State. No discharge point to groundwater of State. All internal outfalls are routed to closed-loop cooling canals/industrial wastewater facility.

VI. Potential Discharges: The following chemicals are used at the facility for the following purposes:

Continuum AEC3145 and Corrshield MD4100	Cooling Tower
Inhibitors AZ8101 and OP8413	Cooling Tower
Sulfuric acid	Cooling Tower
Sodium hypochlorite	Cooling Tower
Foamtrol AF2290	Cooling Tower
Biocides such as Spectrus CT1300 or equivalent	Cooling Tower
Soda ash, polymer, hydrated lime,	Water Treatment Chemicals
Betz Dearborn DCL30, Hypersperse MDC120	Water Treatment Chemicals
Kleen MCT103 and MCT511	Water Treatment Chemicals
ROClean L212, ROClean L403, ROClean P111, ROClean L811	RO Membrane Cleaning
Hydrazine, carbohydrazide, monoethanolamine (EIA)	Boiler/Steam Gen Blowdown
Molybdate, Tolytriazole and Nitrite	Aux Equipment Cooling System

A minor revision has been submitted to FDEP to change chemical vendors to supply equivalent products. The revision was approved by FDEP on April 15, 2009 as a minor revision C to Industrial Wastewater Permit Number FL0001562.

Form 2CG ATTACHMENT III.A.

FLORIDA POWER & LIGHT COMPANY

TURKEY POINT POWER PLANT

GENERAL PLANT DESCRIPTION

Florida Power & Light Company (FPL) Turkey Point Plant is located adjacent to Biscayne Bay at 9760 S.W. 344th Street, Florida City, Florida 33035. The Turkey Point plant property covers approximately 11,000 acres (Form 1-XI Attachment).

The existing facility consists of five electrical generating units: Two oil/natural gas-fired units (Units 1 and 2), two nuclear units (Units 3 and 4) and one natural gas-fired combined cycle unit (Unit 5). The two 400-MW (nominal) oil/natural gas-fired electric generation units have been in service since 1967 (Unit 1) and 1968 (Unit 2). These units currently burn residual fuel oil and/or natural gas with a maximum equivalent sulfur content of one (1) percent. The two 700-MW (nominal) nuclear units have been in service since 1972 (Unit 3) and 1973 (Unit 4). Construction, design, and operational aspects are essentially the same for both nuclear units.

Units 1 through 4 obtain their once-through condenser cooling water from, and release to, a closed-loop cooling canals/industrial wastewater facility. Process water for Units 1 and 2 is obtained from the Upper Floridan Aquifer and/or from MDWASD. Units 3 and 4 obtain process water from MDWASD.

Unit 5 is a natural gas-fired combined cycle power plant with a generating capacity of 1150-MW (nominal). Turkey Point Unit 5 began operation in 2007. Unit 5 uses cooling towers and obtains cooling water from Upper Floridan Aquifer wells. Process water is obtained from Upper Floridan wells and/or from MDWASD. Unit 5 wastewater is discharged to the closed-loop cooling canals/industrial wastewater facility.

The Turkey Point plant property includes 5,900-acres closed-loop cooling canal system that serves Units 1 through 4 for cooling and Units 1 through 5 as an industrial wastewater facility. There are no point source discharges to waters of the United States, or to surface waters of the State from the plant site.

Wastewater generated by the existing Turkey Point Plant (Units 1 through 5) consists of non-contact once through condenser cooling water (OTCW), auxiliary equipment cooling water (AECW), cooling tower blowdown, low-volume waste (LVW) and stormwater. LVW consists of chemical treatment system wastewater, boiler blowdown, heat recovery steam generator blowdown, reverse osmosis concentrate, condensate polishing system backwash water and other process wastestreams. Stormwater includes stormwater associated with industrial activity and stormwater not associated with industrial activity. LVW, equipment area stormwater and non-equipment area stormwater/drainage is released either directly to the onsite closed-loop

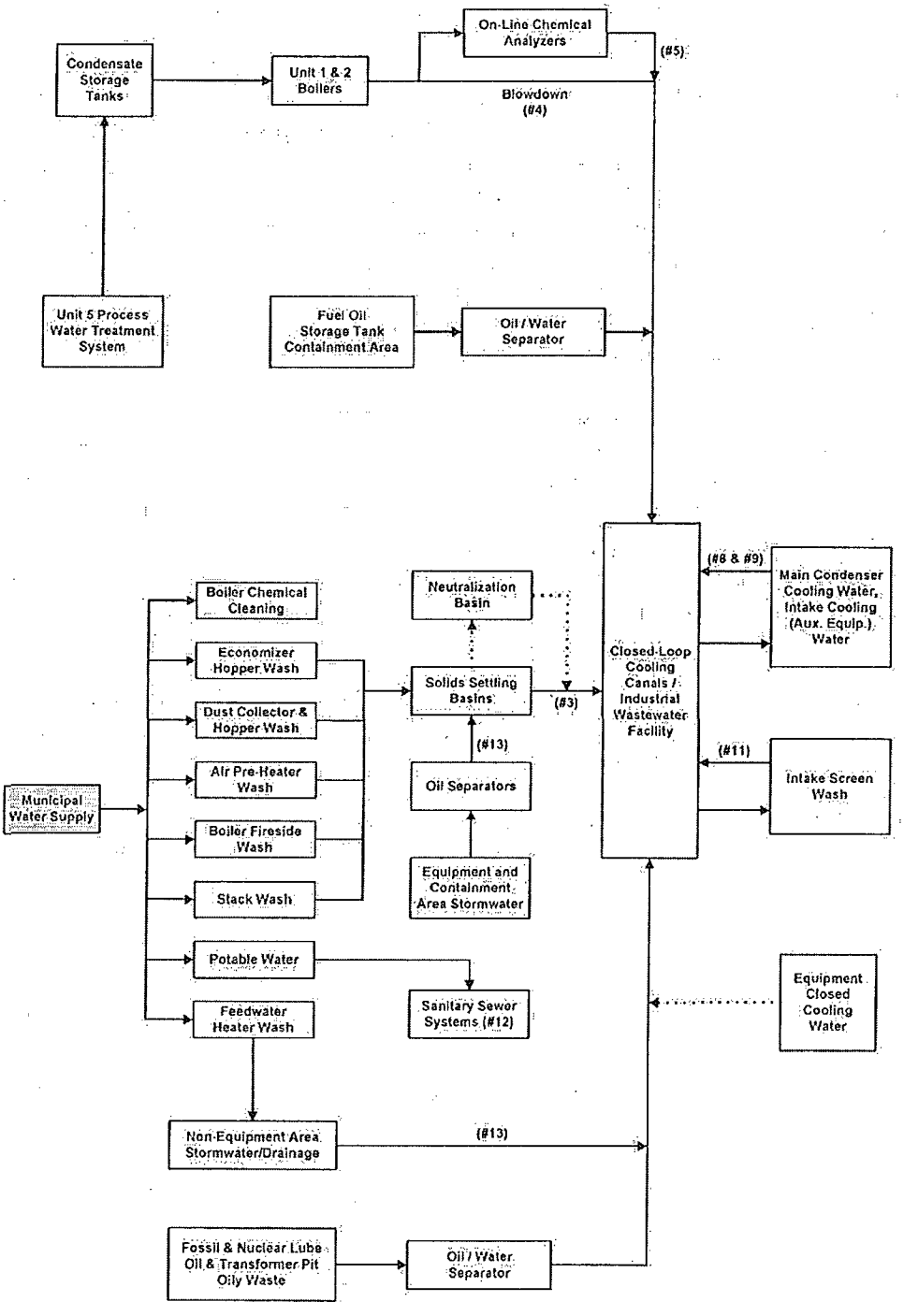
cooling canal system or indirectly to the same system after treatment via oil/water separator, solids settling basin and/or neutralization basin. The closed-loop cooling canal system does not discharge to surface waters of the state.

Two new nuclear units (Units 6 & 7), with in-service dates of 2018 and 2020, are proposed for the FPL Turkey Point Plant. Units 6 & 7 will contribute approximately 2,200 MW (net) of new generation to FPL's system. The Units 6 & 7 Site will be south of the existing Unit 4, within the closed-loop cooling canal system/industrial wastewater facility, on approximately 300 acres. Water for these units will be obtained from a reclaimed water supply, a saline water supply, and a potable water supply. The circulating water system will use mechanical draft cooling towers. Reclaimed water from MDWASD will be used as makeup water to the circulating water system. When reclaimed water is not available in sufficient quantity, saltwater from radial collector wells will be used as makeup for the circulating water system.

Potable water will be used as makeup water for the service water system. The potable water supply will also provide water to the potable water system, fire protection system, demineralized water treatment system and other miscellaneous uses. Cooling tower blowdown and other site wastewater streams will be collected in a common blowdown sump and injected through deep injection wells. The deep injection wells will meet the requirements established by the Florida Department of Environmental Protection (FDEP) (Rule 62.528, F.A.C.), and the underground injection control program permit. The only operational discharge from the Units 6 & 7 Site to the closed-loop cooling canal system will be stormwater.

Stormwater from the Units 6 & 7 Site and the associated nuclear administration building, training building and parking area, which is adjacent to the industrial wastewater facility, will continue to be released to the industrial wastewater facility.

A separate stormwater management system will be designed and constructed for the FPL reclaimed water treatment facility and the radial collector well area. All other wastewater generated by the operation of Units 6 & 7 will be released through the deep injection wells.



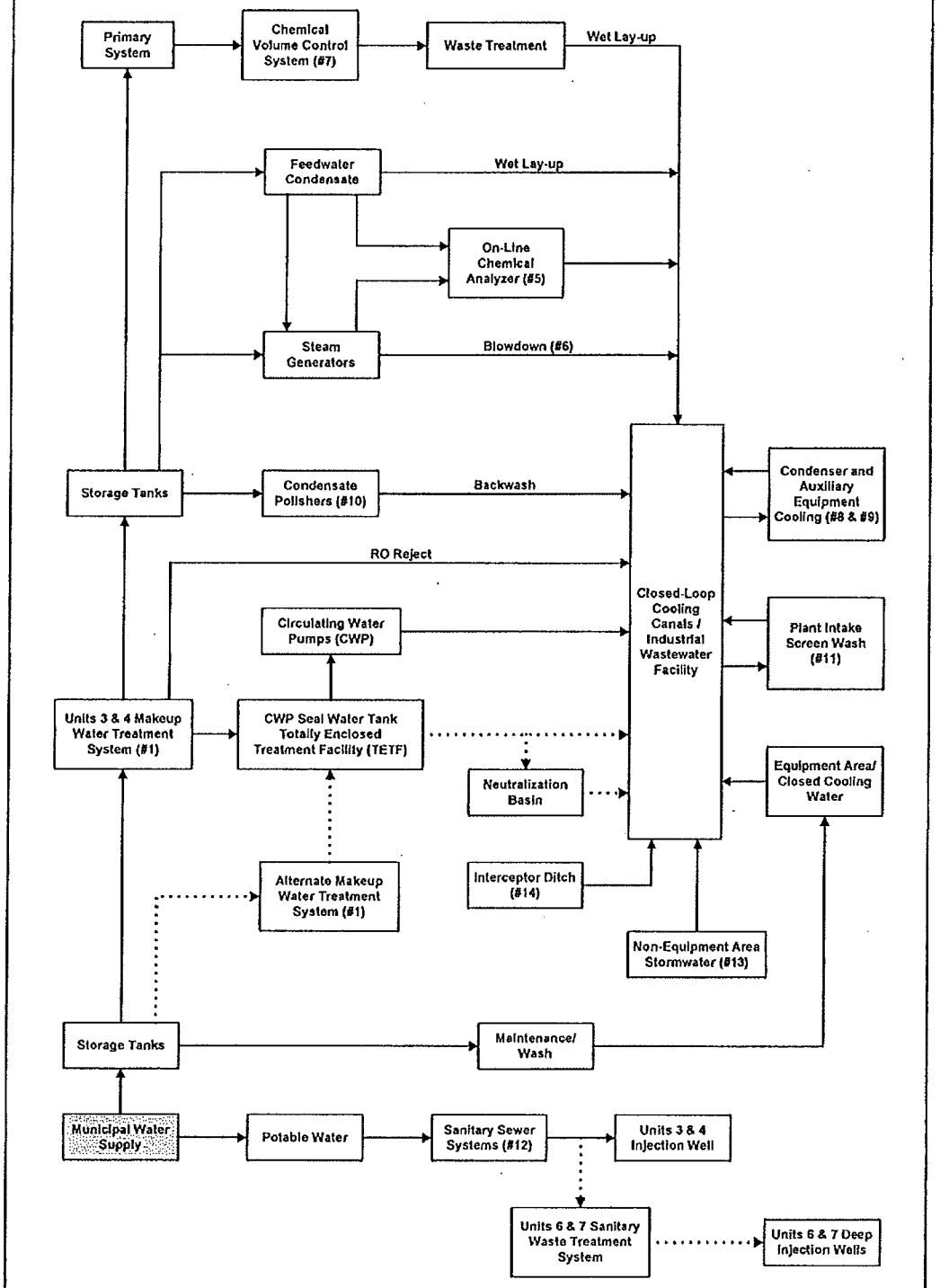
Note: Numbers in parentheses correspond to process flow description numbers (Form 2CG Attachment III.B-1).

Flow Diagram Units 1 and 2
Attachment III.A-1

Flow diagrams.vsd/Units 1 & 2

Legend:
Regular Path
Alternate Path

FPL



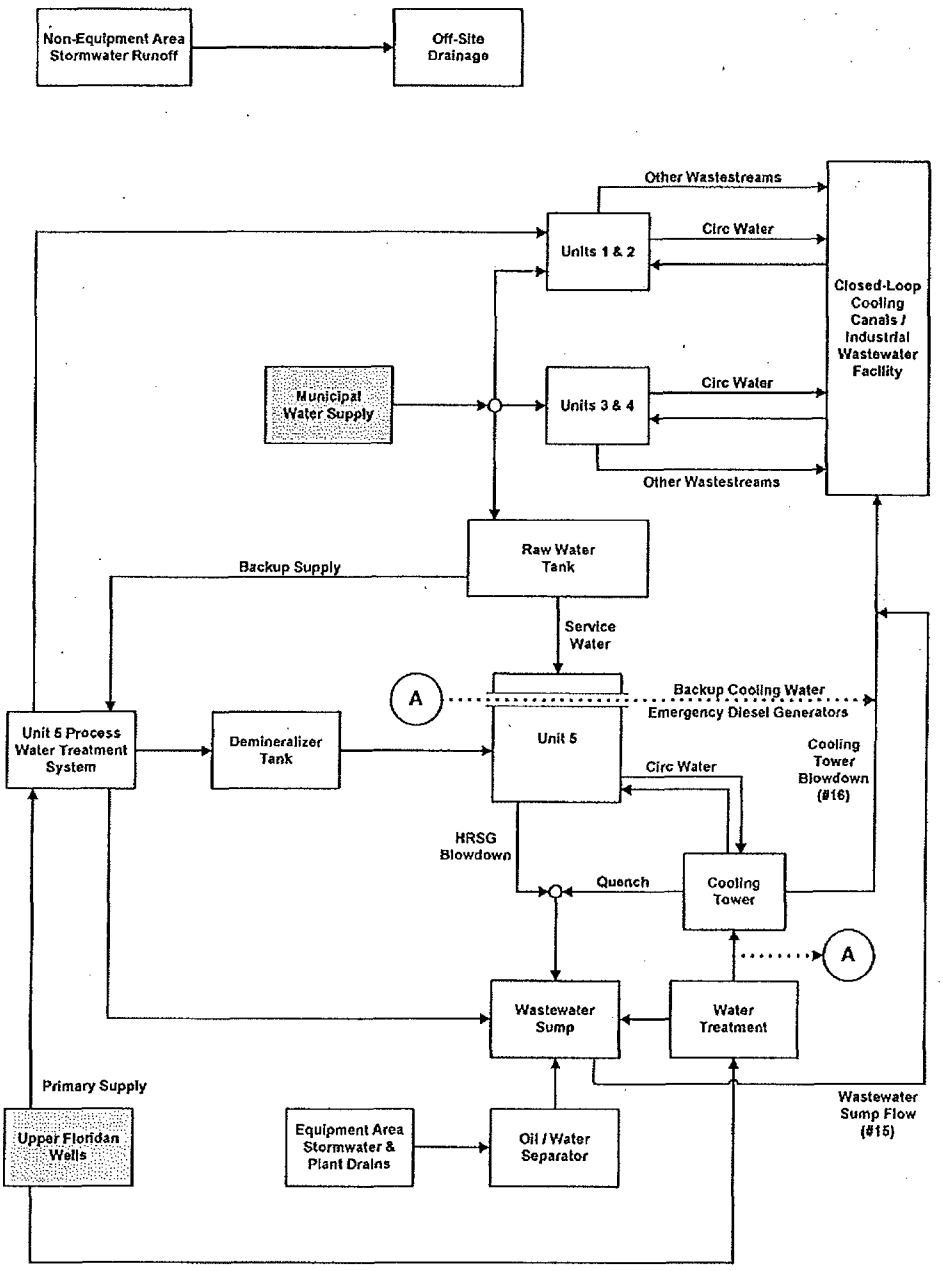
Note: Numbers in parentheses correspond to process flow description numbers (Form 2CG Attachment III.B-1).

Flow Diagram Nuclear Units 3 and 4
Attachment III.A-2

Flow diagrams.vsd\Units 3 & 4

Legend
Regular Path
Alternate Path

FPL.



A = Backup cooling water system for emergency diesel generators

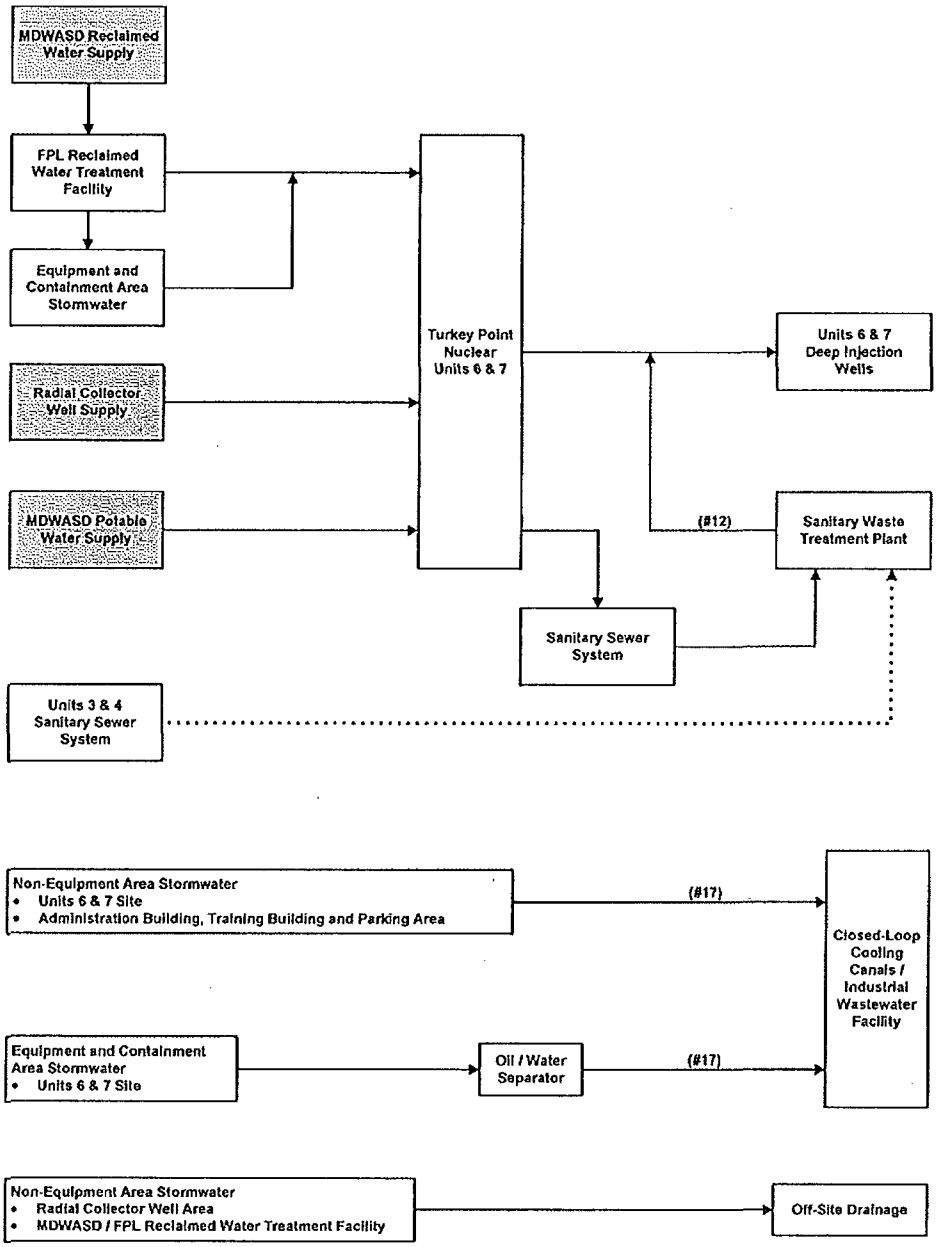
Note: Numbers in parentheses correspond to process flow description numbers (Form 2CG Attachment III.B-1).

Flow Diagram Combined-Cycle Unit 5
Attachment III.A-3

Flow diagrams.vsd\Unit 5

Legend
Regular Path
Alternate Path

FPL



MDWASD = Miami-Dade Water and Sewer Department

Note: Numbers in parentheses correspond to process flow description numbers (Form 2CG Attachment III.B-1).

Flow Diagram Nuclear Units 6 & 7
Attachment III.A-4

Flow diagrams.vsd/Units 6 & 7

Legend
Regular Path
Alternate Path

FPL

Form 2CG Attachment III.B-1
OPERATIONS CONTRIBUTING WASTEWATER
TO THE INTERNAL OUTFALLS
FROM 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. Unit 3 & 4 Make-up Water Treatment System	Nuclear
2. Boiler Make-up Water Treatment System	Fossil & Unit 5 CC
3. Combustion By-Products	Fossil
4. Boiler and HRSG Blowdown	Fossil & Unit 5 CC
5. On-line Chemical Analyzer Waste	All Units
6. Steam Generator Blowdown	Nuclear
7. Chemical Volume Control System	Nuclear
8. Main Condenser Cooling Water System	Fossil & Nuclear
9. Auxiliary Equipment Cooling Water System	Fossil & Nuclear
10. Condensate Polishers	Nuclear
11. Plant Intake Screen Wash	Fossil & Nuclear
12. Sanitary Sewer Systems	Fossil & Nuclear
13. Stormwater	Fossil, Nuclear & Unit 5 CC
14. Interceptor Ditch	All Units
15. Wastewater Treatment System	Unit 5 CC
16. Cooling Tower Blowdown	Unit 5 CC
17. Stormwater	Units 6 & 7 Nuclear
18. Wastewater	Units 6 & 7 Nuclear

1. **Unit 3 & 4 Make-up Water Treatment System (Nuclear)**

   Municipal water is passed through a vendor-supplied water treatment system consisting of activated carbon filters for the removal of 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 the deoxygenating purposes. This is then passed through an activated carbon media to catalyze the reaction, and then further treated by 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. The treated water is typically directed into storage tanks for use in the nuclear units.

All regenenerations of the resin beds are performed off-site at the vendors' 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 closed-loop 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 standard units (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 closed-loop cooling canals.

Alternate Make-up Water Treatment System

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 sodium (Na), magnesium (Mg), and calcium (Ca) are removed, and then through an anion resin bed where anions such as sulfate (SO_4) and Chlorides (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 $\geq$12.5 s.u.) is sent to a totally enclosed treatment facility where the pH is adjusted to a range of between >2.0 s.u. to <12.5 s.u. This wastewater is routed to the neutralization basin where, if necessary, the pH is adjusted to $\geq$ 6.0 s.u. to $\leq$ 8.5 s.u. and then discharged to the closed-loop cooling canal system. Alternatively, the wastewater can be discharged to the closed-loop cooling canal system after the pH has been adjusted to > 6.0 s.u. to < 8.5 s.u.

2. Boiler Make-up Water Treatment System (Fossil & Unit 5 CC)

Boiler make-up for Units 1 & 2 is supplied by the Unit 5 Process Water Treatment System. The primary supply source is from Floridan aquifer wells, with backup from the municipal water supply.

3. **Combustion By-Products (Fossil)**

All combustion by-products waste streams from Units 1 and 2 are sent to B2 and B3 Solids Settling Basins for treatment. B2 Basin dimensions are 170 ft x 50 ft x 7.8 ft and it is a lined basin. B3 Basin dimensions are 170ft x 50 ft x 7.8 ft and the basin is lined. Soda ash and citric acid are the chemicals used in the treatment of the solids settling basins. The supernatant is discharged to the closed-loop cooling canal system or alternatively routed to the neutralization basin prior to discharge through Internal Outfall 002.

A carbon re-injection 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 that are sluiced to one of the two solids settling basins. 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 closed-loop cooling canals. Ash is sent to a filter press and disposed of in accordance with state and federal regulations.

Economizer Hopper Wash (Fossil)

The economizer section of the boiler collects combustion by-products during plant operations, resulting in slag formation. Periodically, the interior surface of the economizer hopper is washed. This washing typically is performed daily or as needed. The wash water is discharged to one of two on-site settling basins. The supernatant from these basins is discharged to the closed-loop cooling canals. Prior to discharge, the waste stream undergoes pH adjustments.

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 washed with water on an as needed basis and usually followed by rinsing with water. The air preheater waste effluent is routed to, and treated in, one of two solids settling basins.

Stack Wash (Fossil)

Each stack is washed approximately every five years to remove combustion products, which adhere 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 closed-loop cooling canals.

Dust Collector and Dust Collection Hopper Wash (Fossil)

Particulate materials collected by the dust collectors falls into dust collector hoppers and are injected into the boiler for re-burning, or is sluiced to one of the solids settling basins. At present, the collectors and hoppers are 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 closed-loop cooling canals.

Boiler Fireside Wash (Fossil)

Boiler fireside washing is typically performed once per year per unit or as needed. 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 waste water to one of two solids settling basins. Supernatant from these basins is discharged to the closed-loop cooling canals.

4. **Boiler & HRSG Blowdown (Fossil & Unit 5 CC)**

High purity water generated by the plants' water treatment system for Units 1,2 and 5 is used for makeup to the boiler/HRSG water/steam cycle. During the continual vaporization of water occurring in the boiler, dissolved solids build up in the boiler water and must be controlled by the 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 the boiler blowdown is routed to the closed-loop cooling canals.

5. **On-Line Chemical Analyzer Waste (All Units)**

A very low volume of sample water is diverted from various locations within the steam cycle to online chemical analyzers to test water chemistry. A very small quantity of chemical effluent from these analyzers is discharged to the closed-loop cooling canals along with the blowdown.

6. **Steam Generator Blowdown (Nuclear)**

High purity water generated by the plants' make-up water treatment system is routed via storage tanks to the condensers for makeup to the water/steam cycle. Advanced

amines such as ammonium hydroxide, ethanolamine (ETA) and dimethylamine (DMA) or equivalent are added for pH and corrosion control and hydrazine or equivalent 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 closed-loop 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/carbohydrazine/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 that 300 ppm hydrazine. Approximately 1,000,000 gallons of this solution may be discharged to the closed-loop cooling canals following each overhaul or refueling outage. Testing in the discharge canal for hydrazine concentrations, following the discharges, has shown hydrazine values to be less than 10 ppb.

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 for Units 1 through 4 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. **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 for Units 1 through 4. Actual equipment cooling is accomplished by aqueous molybdate-nitrite-tolytriazole (TTA) solution that is re-circulated through the various pieces of equipment to be cooled and then through the aforementioned heat exchangers. Sodium hydroxide and nitric acid may be added for pH control.

10. Condensate Polishers (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/resin collection system prior to being discharged to the closed-loop 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 the canal system via a debris screen at the intake area or to the discharge canal.

12. Sanitary Sewer (Fossil and Nuclear)

Sanitary waste from showers, water closets, toilets, etc. is 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, approved, underground injection well. Wastewater residuals generated by this plant are transported to an approved offsite facility.

When Units 6 & 7 sanitary waste treatment system and deep injection wells are operational, sanitary waste from Units 3 & 4 will be routed to the new system and the Units 3 & 4 sanitary system will no longer be used.

13. Stormwater (Fossil, Nuclear and Unit 5 CC)

Non-Equipment Area Stormwater runoff for Units 1 through 4 collects in drainage channels and floor drains, then typically through a series of stormwater catch basins before being released to the closed-loop cooling canals. Non-Equipment Area Stormwater for Unit 5 is routed to a stormwater detention basin and released to local drainage.

Equipment and Containment Area Stormwater floor drains typically receive small amounts of particulate material, lubricating and fuel oils. The Equipment and Containment Area Stormwater drains, which can receive oil, are routed to oil/water separators then to the Solids Settling Basins prior to being discharged to the closed-loop cooling canal system.

14. **Interceptor Ditch (All Units)**

The Interceptor Ditch restricts inland movement of closed cooling canal water by maintaining a seaward groundwater gradient during times when a natural seaward gradient does not exist. Normally, during the wet season (June - November) and the early part of the dry season, a natural seaward gradient does exist. During the rest of the year, however, it may be necessary to artificially generate a seaward gradient by pumping water out of the Interceptor Ditch to the cooling canal.

15. **Wastewater Treatment System (Unit 5 Combined Cycle)**

The Unit 5 wastewater treatment system effluent includes cooling water and process water treatment system effluent, HRSG blowdown, quench water from the cooling towers, equipment area stormwater and plant drains. Equipment area stormwater is routed to an oil/water separator and then to the wastewater solids settling /neutralization basin (sump). The other waste streams are collected in the sump before discharge to the closed-loop cooling canals/industrial wastewater facility.

16. **Cooling Tower Blowdown (Unit 5 Combined Cycle)**

Blowdown from the Unit 5 cooling towers is released to the closed-loop cooling canals/industrial wastewater facility. Unit 5 obtains cooling water from the Upper Floridan. Under rare conditions, if power is lost to the cooling towers, cooling water will be diverted from the cooling towers and used to cool emergency diesel generators using a once-through non-contact cooling system. The cooling water will then be discharged to the closed-loop cooling canals/industrial wastewater facility.

17. **Stormwater (Units 6 & 7)**

Stormwater is the only operational release from Turkey Point Units 6 & 7 to the closed-loop cooling canal system. All other wastewater from these units is discharged through the deep injection wells.

Non-equipment area stormwater runoff from the plant will collect in drainage channels and floor drains, and then will typically flow through stormwater catch basins before being released directly to the closed-loop cooling canals/industrial wastewater facility.

Equipment and containment area stormwater floor drains typically receive small amounts of particulate material, lubricating and fuel oils. The Equipment and Containment Area Stormwater drains, which can receive soil/oil, are routed to oil/water separators then to solids settling basins prior to being released to the closed-loop cooling canals/industrial wastewater facility.

Non-equipment area storm water runoff from the Reclaimed Water Treatment Facility and the Radial Collector Well area will be released to off-site drainage. Equipment and containment area stormwater from the Reclaimed Water Treatment Facility will be routed back into the process flow.

18. Wastewater (Units 6 & 7)

All wastewater from Units 6 & 7, except for stormwater, will be routed to the deep injection wells that will be permitted through, and will meet the requirements of, the Underground Injection Control Program.

Form 2CG Attachment III.B-2
IDENTIFICATION OF PLANT MAINTENANCE ACTIVITIES FOR ALL UNITS

Maintenance Process	Associated Units
1. Boiler Waterside Chemical Cleaning	Fossil
2. Boiler Cold/Wet Lay-up	All Units
3. Equipment Area Routine Cleaning	All Units
4. Feedwater Heater Wash	Fossil
5. Equipment Closed Cooling Water Systems Maintenance	Fossil and Nuclear

1. Boiler Waterside Chemical Cleaning (BCCM) - Fossil

Boiler water tube internal surfaces are typically cleaned every 5-10 years. These cleanings are performed to remove inorganic scale and metal oxides that are deposited on the ID of the tube surfaces. The cleaning solvents of choice (in order of preference) are Tetraammonium Ethylenediaminetetraacetate (or Tetraammonium EDTA), Diammonium EDTA, Diammonium Citrate (byproduct is citric acid), or a similar type material. After completion of the boiler cleaning, the spent solution (known as boiler chemical cleaning material or BCCM) and subsequent rinses are collected into a series of temporary 20,000-gallon storage tanks (Frac Tanks). These tanks are connected to each other through a common manifold. A hazardous waste determination is then performed on a representative number of tanks as determined by the Waste Analysis Plan. BCCM that is determined to be non-hazardous is evaporated on site in an operational boiler in accordance with the applicable air permit stipulations. In some cases, non-hazardous waste may be disposed off-site in approved wastewater disposal facility. BCCM that is determined to be hazardous (very infrequent) will typically be disposed of off-site at a permitted waste facility.

2. Boiler Cold/Wet Lay-up

During plant overhauls the boilers, feedwater systems and/or condensers may be placed in a static mode where the internal metal surfaces of these components need to be protected against surface corrosion. The typical method to protect this equipment is through the use of ammoniated demineralized water solution. Ammonium Hydroxide is added to ultra pure water to raise the pH to above 9.0 s.u. In some cases where dissolved oxygen may risk damaging the metal components, a small amount of hydrazine may also be used. This water remains in place until system start-up and operation. In some cases, the ammoniated water will be drained and sent to the closed-loop cooling canal system.

3. **Equipment Area Routine Cleaning (All Units)**

Equipment area floor drains typically receive small amounts of particulate material, lubricating and fuel oils, as well as wash water and stormwater. Equipment area drains, which can receive oil, are routed to oil/water separators prior to being discharged to the closed-loop cooling canals.

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

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

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

Molybdates, nitrites, and tolyltriazoles 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 water is discharged to the close-loop cooling canals.

The nuclear plant's closed cooling water systems are infrequently treated with the biocide, gluteraldehyde or isothiazolin to prevent biological corrosion. However, the biocides are not discharged to the closed-loop cooling canal system.