

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

ACCESSION NBR:8808170064 DOC.DATE: 88/08/03 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  
 CONWAY,W.F. Florida Power & Light Co.  
 RECIP.NAME RECIPIENT AFFILIATION  
 Document Control Branch (Document Control Desk)

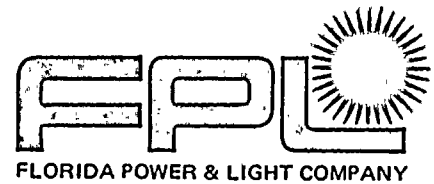
SUBJECT: Forwards application for renewal of NPDES permit for facility submitted to EPA on 880728.

DISTRIBUTION CODE: C001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 3  
 TITLE: Licensing Submittal: Environmental Rept Amdt & Related Correspondence

## NOTES:

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD2-2 LA	1 1	PD2-2 PD	1 1
EDISON,G	1 1		
INTERNAL: AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
ARM/DAF/LFMB	1 0	NRR/DEST/ADE 8H	1 1
NRR/DEST/SGB 8D	1 1	NRR/DREP/RPB 10	4 4
NUDOCS-ABSTRACT	1 1	OGC/HDS2	1 0
<u>REG-FTDE</u> 01	1 1		
EXTERNAL: LPDR	1 1	NRC PDR	1 1
NSIC	1 1		





AUGUST, 3 1988

L-88-334

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

Gentlemen:

Re: Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
NPDES Renewal Application

As required by Section 3.2.3 of the Turkey Point Plant Environmental Protection Plan, attached is a copy of the application for renewal of the NPDES Permit for Florida Power & Light Company's Turkey Point Plant. This application was submitted to the U. S. Environmental Protection Agency on July 28, 1988.

If there should be any questions, please call us.

Very truly yours,

*W. F. Conway*  
W. F. Conway  
Senior Vice President - Nuclear

WFC/TCG/gp

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator,  
Region II, USNRC  
Senior Resident Inspector, USNRC, Turkey Point Plant

8808170064 880803  
PDR ADDCK 05000250  
P PNU

COOL  
11





CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

July 28, 1988

Mr. Bruce R. Barrett, Director  
Water Management Division  
U.S. Environmental Protection Agency  
Region IV  
345 Courtland Street, NE  
Atlanta, GA 30365

Re: Turkey Point Plant  
NPDES Renewal Application  
Permit No. FL0001562

Dear Mr. Barrett:

Enclosed is the NPDES Renewal Application for Florida Power & Light Company's Turkey Point Plant. If there are any questions regarding this application, please direct them to Winifred Perkins at (407) 694-3645 or Ron Hix at (407) 694-3622.

Sincerely,

A handwritten signature in dark ink, appearing to read "T. R. Fair", is written above the typed name.

T. R. Fair  
Manager  
Environmental Permitting & Programs

TRF/RHH/bf

Enclosures

cc: J. P. Subramani - DER  
DERM



<b>FORM 1</b> <b>GENERAL</b>		<b>EPA</b>		<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> <b>GENERAL INFORMATION</b> Consolidated Permits Program <i>(Read the "General Instructions" before starting.)</i>		<b>I. EPA I.D. NUMBER</b> F F L D 0 0 0 7 3 3 6 8 3	
<b>LABEL ITEMS</b>		<b>GENERAL INSTRUCTIONS</b>		If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.			
<b>I. EPA I.D. NUMBER</b>		<b>III. FACILITY NAME</b>		NPDES: FL0001562 FL PWR & LT - TURKEY POINT W SAMUEL TUCKER, ENVIRON MGR PO BOX 313100 MIAMI FL 33101			
<b>V. FACILITY MAILING ADDRESS:</b>		<b>VI. FACILITY LOCATION</b>					
<b>II. POLLUTANT CHARACTERISTICS</b>		<b>INSTRUCTIONS:</b> Complete A through J to determine whether you need to submit any permit application forms to the EPA. 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 box 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 C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.					
<b>SPECIFIC QUESTIONS</b>		<b>MARK 'X'</b> YES NO FORM ATTACHED		<b>SPECIFIC QUESTIONS</b>		<b>MARK 'X'</b> YES NO FORM ATTACHED	
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		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 of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 Industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 Industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
<b>III. NAME OF FACILITY</b>							
1 SKIP TURKEY POINT PLANT							
<b>IV. FACILITY CONTACT</b>							
A. NAME & TITLE (last, first, & title)				B. PHONE (area code & no.)			
2 BURKETT T & CROSS J PLANT MGRS				3 0 5 2 4 6 1 3 0 0			
<b>V. FACILITY MAILING ADDRESS</b>							
A. STREET OR P.O. BOX				B. CITY OR TOWN			
3 P. O. BOX 4769				4 PRINCETON			
C. STATE				D. ZIP CODE			
FL				3 3 0 9 2			
<b>VI. FACILITY LOCATION</b>							
A. STREET, ROUTE, NO. OR OTHER SPECIFIC IDENTIFIER				B. COUNTY NAME			
5 9.5 MI E OF FLA CITY ON PALM DR				D A D E			
C. CITY OR TOWN				D. STATE			
6 FLORIDA CITY				FL			
E. ZIP CODE				F. COUNTY CODE (if known)			
3 3 0 3 4							

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

A. FIRST										B. SECOND									
C	7	4	9	1	1	(specify) ELECTRIC SERVICES					C	7	(specify)						
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
C. THIRD										D. FOURTH									
C	7	(specify)					C	7	(specify)										
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				

## VIII. OPERATOR INFORMATION

A. NAME																														B. Is the name listed in Item VIII-A also the owner?									
C	8	FLORIDA POWER & LIGHT CO.																												<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO									
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44								
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)																				D. PHONE (area code & no.)																			
F = FEDERAL S = STATE P = PRIVATE										M = PUBLIC (other than federal or state) O = OTHER (specify)										P (specify)																			
A										407										694										3635									
E. STREET OR P.O. BOX										P. O. BOX 14000																													
F. CITY OR TOWN																				G. STATE					H. ZIP CODE					IX. INDIAN LAND									
B JUNO BEACH																				FL					33408					Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO									
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44								

## X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)															D. PSD (Air Emissions from Proposed Sources)																
C	9	N	FL0001562												C	9	P														
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
B. UIC (Underground Injection of Fluids)															E. OTHER (specify)																
C	9	U													C	9		I0-13-138992													
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
C. RCRA (Hazardous Wastes)															E. OTHER (specify)																
C	9	R	FLD000733683												C	9		IW0-016													
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44

## 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 its attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in this 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.

A. NAME & OFFICIAL TITLE (type or print)															B. SIGNATURE															C. DATE SIGNED														
T. R. Fair, Manager Environmental Permitting & Programs																														7/29/88														
COMMENTS FOR OFFICIAL USE ONLY																																												
C																																												
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44													



U.S. ENVIRONMENTAL PROTECTION AGENCY  
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER  
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS  
*Consolidated Permits Program*

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

## II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

B. For each outfall, 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. Continue on additional sheets if necessary.

Note: The quantities listed under mass numbers in Part V A, B, and C do not represent mass numbers discharged to the environment but the mass of chemical parameters being recirculated in the cooling system at a given point in time.

OFFICIAL USE ONLY. (effluent guidelines sub-categories)

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 Section III)

1. OUTFALL NUMBER 'list)	2. OPERATION(s) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW				5. DUR- ATION (In days)
		a. DAYS PER WEEK (specify average)	b. MONTHS PER YEAR (specify average)	3. FLOW RATE (In mgd)		b. TOTAL VOLUME (specify with units).		
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
	N/A							

## III. 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 III-B)☐ NO (to Section IV)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?

☐ YES (complete Item III-C)☒ NO (to Section IV)

C. If you answered "yes" to Item III-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

3. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (specify)	2. AFFECTED OUTFALLS (list outfall numbers)
		N/A	

## 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 waste-water 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 IV-B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. INITIAL COM- PLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		Actual	Planned
		N/A			

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

000733683

## V. 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 V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-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.

POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
	N/A		

## 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 byproduct?

☐ YES (list all such pollutants below)☒ NO (go to Item VI-B)

N/A

## VII. 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 VIII)

N/A

## VIII. 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, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

☐ NO (go to Section IX)

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
Environmental Science & Engineering, Inc.	P.O. Box ESE Gainesville, FL 32602	(904) 332-3318	All

## IX. CERTIFICATION

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.

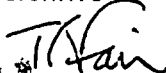
A. NAME & OFFICIAL TITLE (type or print)

T. R. Fair, Manager  
Environmental Permitting & Programs

B. PHONE NO. (area code & no.)

(407) 694-3635

C. SIGNATURE



D. DATE SIGNED

7/29/89

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.

EPA ID NUMBER (copy from Item 1 of Form 1)

PLD000807461

Form Approved  
OMB No. 2010-0086  
Approval expires 7-31-82

OUTFALL NO.

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT						4. NO. OF ANALYSES	3. UNITS (specify if blank)		4. INTAKE (optional)			
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)			a. CONCENTRATION	b. MASS	3. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES	
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS		
a. Biochemical Oxygen Demand (BOD)	1.2	2.6 X 10 <sup>4</sup>	0.6	2.9 X 10 <sup>5</sup>	--	--	2	mg/L	lbs	1.05	3.3 X 10 <sup>5</sup>	2	
b. Chemical Oxygen Demand (COD)	2180	4.7 X 10 <sup>7</sup>	1465	7.2 X 10 <sup>8</sup>	--	--	2	mg/L	lbs	680	2.1 X 10 <sup>8</sup>	2	
c. Total Organic Carbon (TOC)	8.5	1.8 X 10 <sup>5</sup>	6.8	3.3 X 10 <sup>6</sup>	--	--	2	mg/L	lbs	6.5	2.0 X 10 <sup>6</sup>	2	
d. Total Suspended Solids (TSS)	29	6.3 X 10 <sup>5</sup>	28	1.3 X 10 <sup>7</sup>	--	--	2	mg/L	lbs	36	1.1 X 10 <sup>7</sup>	2	
e. Ammonia (as N)	0.10	2.2 X 10 <sup>3</sup>	0.09	4.2 X 10 <sup>4</sup>	--	--	2	mg/L	lbs	0.10	3.1 X 10 <sup>4</sup>	2	
f. pH	VALUE		VALUE		VALUE		*	MGD	--	VALUE		*	
		2592		1953		1245					1245		
g. Temperature (winter)	VALUE		VALUE		VALUE		**	°C		VALUE		**	
		39.2		34.5		32.0					24.5		
h. Temperature (summer)	VALUE		VALUE		VALUE		**	°C		VALUE		**	
		42.7		38.6		37.3					33.8		
i. MINIMUM								STANDARD UNITS					
		8.03		8.06			2						

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X'		3. EFFLUENT						4. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)			
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)			a. CONCENTRATION	b. MASS	3. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES	
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS		
a. Bromide (24959-67-9)	X		<5	--	<5	--	--	--	2	mg/L	lbs	<5	--	2	
b. Chlorine Total Residual	X		Not presently chlorinating							mg/L	lbs				
c. Color	X		42	--	40	--	--	--	2	PCU	--	41	--	2	
d. Turbidity	X		2	--	1	--	--	--	2	#/100ml	--	15	--	2	
e. Nitrate Nitrogen (as N)	X		0.63	1.4 X 10 <sup>4</sup>	0.45	2.2 X 10 <sup>5</sup>	--	--	2	mg/L	lbs	0.46	1.4 X 10 <sup>5</sup>	2	

## ITEM V-6 CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (If available)	2. MARK 'X'		3. EFFLUENT						4. LIMITS		5. LIMITS		6. LIMITS	
	a. RECEIVED PRESENT	b. RECEIVED FUTURE	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM (If available)	d. SHORT TERM (If available)	e. CONCENTRATION	f. MASS	g. CONCENTRATION	h. MASS	i. CONCENTRATION	j. MASS
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS								
g. Nitrogen, Total Organic (as N)	X		0.12	$2.6 \times 10^3$	0.08	$3.7 \times 10^4$	--	--	2	mg/L	lbs	0.01	$1.6 \times 10^3$	2
h. Oil and Grease	X		< 0.3	--	< 0.3	--	--	--	2	mg/L	lbs	< 0.3	--	2
i. Phosphorus (as P), Total (7723-14-0)	X		0.01	$2.8 \times 10^2$	0.01	$3.2 \times 10^3$	--	--	2	mg/L	lbs	0.01	$2.2 \times 10^3$	2
j. Radioactivity														
(1) Alpha, Total	X		212	--	168	--	--	--	2	pCi/L	--	234	--	2
(2) Beta, Total	X		110	--	100	--	--	--	2	pCi/L	--	67	--	2
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO <sub>4</sub> ) (14808-79-8)	X		2910	$6.2 \times 10^7$	2880	$1.4 \times 10^9$	--	--	2	mg/L	lbs	2800	$8.7 \times 10^8$	2
l. Sulfide (as S)		X												
m. Sulfite (as SO <sub>3</sub> ) (14265-45-3)		X												
n. Surfactants	X		< 0.1	--	< 0.1	--	--	--	2	mg/L	lbs	< 0.1	--	2
o. Aluminum, Total (7429-90-5)	X		< 95	--	< 95	--	--	--	2	ug/L	lbs	< 95	--	2
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)	X		3800	$8.2 \times 10^4$	3595	$1.8 \times 10^6$	--	--	2	ug/L	lbs	3660	$1.1 \times 10^6$	2
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		< 23	--	< 23	--	--	--	2	ug/L	lbs	< 23	--	2
t. Magnesium, Total (7439-95-4)	X		923	$2.0 \times 10^4$	760	$3.7 \times 10^5$	--	--	2	ug/L	lbs	771	$2.4 \times 10^5$	2
u. Molybdenum, Total (7439-98-7)	X		167	$3.6 \times 10^3$	84	$4.1 \times 10^4$	--	--	2	ug/L	lbs	11.3	$3.5 \times 10^3$	2
v. Manganese, Total (7439-96-5)	X		3.5	76	1.8	$8.6 \times 10^2$	--	--	2	ug/L	lbs	1.8	$5.5 \times 10^2$	2
w. Nickel, Total (7440-01-5)		X												
x. Titanium, Total (7440-32-8)	X		< 4	--	< 4	--	--	--	2	ug/L	lbs	< 4	--	2

FLD000807461

001

OMB No. 2040-0042  
Approval expires 7/31/85

CONTINUED FROM PAGE 3 OF FORM 2-C

**PART C** - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT						4. UNITS			5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	8. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (If available)		E. LONG TERM AVERAGE VALUE (If available)		F. NO. OF ANALYSES	G. CONCENTRATION	H. MASS	I. LONG TERM AVERAGE VALUE		J. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X			27	$5.8 \times 10^2$	23	$1.1 \times 10^4$	--	--	2	ug/L	lbs			2
2M. Arsenic, Total (7440-38-2)	X			*						2	ug/L	lbs	2.9	$9.0 \times 10^2$	2
3M. Barium, Total (7440-41-7)	X									2					2
4M. Cadmium, Total (7440-43-0)	X									2					2
5M. Chromium, Total (7440-47-3)	X			9.2	$2.0 \times 10^2$	4.6	$2.2 \times 10^3$	--	--	2	ug/L	lbs			2
6M. Copper, Total (7440-50-8)	X			7.4	$1.6 \times 10^2$	3.7	$1.8 \times 10^3$	--	--	2	ug/L	lbs			2
7M. Lead, Total (7439-92-1)	X									2					2
8M. Mercury, Total (7439-97-6)	X									2	ug/L	lbs	0.5	$1.6 \times 10^2$	2
9M. Nickel, Total (7440-02-0)	X									2					2
10M. Selenium, Total (7782-49-2)	X									2					2
11M. Silver, Total (7440-22-4)	X									2					2
12M. Thallium, Total (7440-28-0)	X			80	$1.7 \times 10^3$	78	$3.8 \times 10^4$	--	--	2	ug/L	lbs	48	$1.5 \times 10^4$	2
13M. Zinc, Total (7440-68-6)	X			3.0	65	1.5	$7.3 \times 10^2$	--	--	2	ug/L	lbs	2.5	$7.6 \times 10^2$	2
14M. Cyanide, Total (1327-12-0)	X									2					2
15M. Phenol, Total (108-95-2)	X			3.0	65	2.5	$1.2 \times 10^3$	--	--	2	ug/L	lbs	14	$4.4 \times 10^3$	2
DIOXIN															
16M. 2,3,7,8-TCDF (1736-76-3)				DESCRIBE RESULTS											
17M. 2,3,7,8-TCDF (1736-76-3)				TESTING NOT REQUIRED											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	ANALYSIS REQUIRED	D. SAMPLE PRESENT	C. SAMPLE RECEIVED	B. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVERAGE (if available)		A. NO. OF ANALYSES	CONCENTRATION	B. MASS	E. LONG TERM AVERAGE VALUE		F. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	X			*						2					
2V. Acrylonitrile (107-13-1)	X									2					
3V. Benzene (71-43-2)	X									2					
4V. 1,1-Dichloro-2-methyl-2-ethyl ether (542-88-1)	X									2					
5V. Bromoform (75-25-2)	X									2					
6V. Carbon Tetrachloride (56-23-5)	X									2					
7V. Chlorobenzene (108-90-7)	X									2					
8V. Chlorodibromomethane (124-48-1)	X									2					
9V. Chloroethane (75-00-3)	X									2					
10V. 2-Chloroethylvinyl ether (110-75-8)	X									2					
11V. Chloroform (67-66-3)	X									2					
12V. 1,1-Dichloro-1-bromoethane (75-31-9)	X									2					
13V. 1,1-Dichloro-1,1-difluoroethane (75-71-4)	X									2					
14V. 1,1-Dichloroethane (75-34-3)	X									2					
15V. 1,2-Dichloroethane (107-06-3)	X									2					
16V. 1,3-Dichloroethylene (75-35-4)	X									2					
17V. 1,2-Dichloropropane (78-87-5)	X									2					
18V. 1,3-Dichloropropane (542-75-8)	X									2					
19V. Ethylbenzene (100-41-4)	X									2					
20V. Toluene (108-88-3)	X									2					
21V. Xylene (106-42-3)	X									2					

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. DELIVERED PRESENT	C. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVERAGE VALUE (if available)		d. NO. OF ANALYSES	e. CONCENTRATION	f. MASS	g. LONG TERM AVERAGE VALUE		h. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)	X			*						2					2
23V. 1,1,2,2-Tetrachloroethane (79-34-8)	X									2					2
24V. Tetrachloroethylene (127-18-4)	X									2					2
25V. Toluene (108-88-3)	X									2					2
26V. 1,2-Trans-Dichloroethylene (186-80-8)	X									2					2
27V. 1,1,1-Trichloroethane (71-55-6)	X									2					2
28V. 1,1,2-Trichloroethane (79-00-5)	X									2					2
29V. Trichloroethylene (79-01-6)	X									2					2
30V. Trichlorofluoromethane (75-69-4)	X									2					2
31V. Vinyl Chloride (75-01-3)	X									2					2
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-87-5)	X									2					2
2A. 2,4-Dichlorophenol (120-83-2)	X									2					2
3A. 2,6-Dimethylphenol (106-87-9)	X									2					2
4A. 2,6-Dichloro-Phenol (1034-52-1)	X									2					2
5A. 2,4-Dinitrophenol (51-28-5)	X									2					2
6A. 3-Nitrophenol (88-72-5)	X									2					2
7A. 4-Nitrophenol (100-02-7)	X									2					2
8A. 2-Nitrophenol (88-72-5)	X									2					2
9A. 3-Nitrophenol (88-72-5)	X									2					2
10A. 4-Nitrophenol (100-02-7)	X									2					2
11A. 2-Nitrophenol (88-72-5)	X									2					2

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK "X"			3. EFFLUENT				4. LONG TERM ANALYSES		5. UNITS		6. INITIAL ANALYSES		7. NO. OF ANALYSES
	A. TESTING REQUIRED	B. SELECTED PRESENT	C. SELECTED ABSENT	3. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (If available)		E. LONG TERM ANALYSES	F. LONG TERM ANALYSES	G. UNITS	H. UNITS	I. LONG TERM ANALYSES		
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS					(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS														
1B. Acenaphthene (83-32-9)	X			*										2
2B. Acenaphthylene (208-96-8)	X													2
3B. Anthracene (120-12-7)	X													2
4B. Benzidine (92-87-5)	X													2
5B. Benzo (a) Anthracene (56-55-3)	X													2
6B. Benzo (a) Pyrene (50-32-8)	X													2
7B. 3,4-Benzo-fluoranthene (205-99-2)	X													2
8B. Benzo (ghi) Perylene (191-24-2)	X													2
9B. Benzo (k) Fluoranthene (207-08-9)	X													2
10B. Bis (2-Chloro-ethyl) Methane (111-91-1)	X													2
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)	X													2
12B. Bis (2-Chloro-propyl) Ether (102-60-1)	X													2
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)	X													2
14B. 4-Bromo-phenyl Phenyl Ether (101-65-3)	X													2
15B. Butyl Benzyl Phthalate (85-68-7)	X													2
16B. 2-Chloro-naphthalene (91-58-7)	X													2
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	X													2
18B. Chrysene (218-01-9)	X													2
19B. Benzo (g,h,i) Anthracene (85-01-3)	X													2
20B. 2-Chloro-3-methyl-6-nitrofluoranthene (90-80-1)	X													2
21B. 2-Chloro-3-methyl-6-nitrofluoranthene (90-80-1)	X													2

FLD000807461

001

State Approval  
 OMB No. 2030-0080  
 Approval expires 7/31/89

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. RECEIVED PRESENT	C. RECEIVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	e. CONCENTRATION	f. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B, 1,4-Dichlorobenzene (106-48-7)	X			*						2					2
23B, 2,3-Dichlorobenzidine (91-84-1)	X									2					2
24B, Dimethyl Phthalate (84-86-2)	X									2					2
25B, Dimethyl Phthalate (131-11-3)	X									2					2
26B, Di-N-Butyl Phthalate (84-74-2)	X									2					2
27B, 2,4-Dinitrotoluene (121-14-2)	X									2					2
28B, 2,6-Dinitrotoluene (606-20-2)	X									2					2
29B, Di-N-Octyl Phthalate (117-84-0)	X									2					2
30B, 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	X									2					2
31B, Fluoranthene (206-44-0)	X									2					2
32B, Fluorene (86-73-7)	X									2					2
33B, Hexachlorobenzene (118-74-1)	X									2					2
34B, Hexachlorobutadiene (67-68-3)	X									2					2
35B, Hexachlorocyclopentadiene (77-47-4)	X									2					2
36B, Hexachloroethane (67-72-1)	X									2					2
37B, Indeno (1,2,3-cd) Pyrene (193-39-5)	X									2					2
38B, Isophorone (78-59-1)	X									2					2
39B, Naphthalene (91-20-3)	X									2					2
40B, N-Propylamine (621-64-7)	X									2					2
41B, N-Nitrosodimethylamine (621-64-7)	X									2					2
42B, N-Nitrosodimethylamine (621-64-7)	X									2					2

## CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT				4. LONG TERM ANALYSIS	5. UNITS	6. DETAIL (if available)		7. ANALYSIS	
	A. TESTING REQUIRED	B. M. L. V. SENT	C. S. L. V. SENT	8. MAXIMUM DAILY VALUE		9. MAXIMUM 30 DAY VALUE (if available)				10. LONG TERM ANALYSIS	11. LONG TERM ANALYSIS		
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						(1) CONCENTRATION
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)													
43B: N-Nitro- iodiphenylamine (86-30-6)	X			*									2
44B: Phenanthrene (83-01-8)	X												2
45B: Pyrene (129-00-0)	X												2
46B: 1,2,4-Trichlorobenzene (120-82-1)	X												2
GC/MS FRACTION - PESTICIDES													
1P: Aldrin (309-00-2)													
2P: DDT (50-67-0)													
3P: DDE (319-84-7)													
4P: DDD (50-67-0)													
5P: DDD (50-67-0)													
6P: Chlordane (50-67-0)													
7P: DDT (50-67-0)													
8P: DDE (319-84-7)													
9P: DDD (50-67-0)													
10P: DDD (50-67-0)													
11P: Endosulfan (115-29-7)													
12P: Endosulfan (115-29-7)													
13P: Endosulfan (115-29-7)													
14P: Endosulfan (115-29-7)													
15P: Endosulfan (115-29-7)													
16P: Endosulfan (115-29-7)													
17P: Endosulfan (115-29-7)													
18P: Endosulfan (115-29-7)													
19P: Endosulfan (115-29-7)													
20P: Endosulfan (115-29-7)													

NO TESTING REQUIRED

FLDQ00807461

001

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. NO. OF ANAL- YSES	4. UNITS		5. INTAKE (optional)		
	A. TEST- ING RE- QUIRED	B. BE- LIEVED PRE- SENT	C. BE- LIEVED AB- SENT	8. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVG. VALUE (if available)			4. CONCN- TRATION	D. MASS	5. LONG TERM AVERAGE VALUE		5. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCN- TRATION	(2) MASS	
GCMS FRACTION - PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)															
18P. PCB-1242 (53469-21-9)															
19P. PCB-1254 (11097-69-1)															
20P. PCB-1221 (11104-28-2)															
21P. PCB-1232 (11141-16-6)															
22P. PCB-1248 (12672-29-6)															
23P. PCB-1260 (11096-82-5)															
24P. PCB-1016 (12674-11-2)															
25P. Toxaphene (8001-35-2)															

NO TESTING REQUIRED



TURKEY POINT PLANT  
GENERAL PLANT DESCRIPTION AND DISCUSSION  
OF MAJOR PROCESSES AND ASSOCIATED  
WASTE STREAMS

Florida Power & Light Company's Turkey Point Plant is located at latitude 25°26'09"N and longitude 80°19'52"W, on Biscayne Bay, approximately nine miles east of Florida City, Florida. The plant and its surrounding area covers approximately 12,700 acres (See Attachment 1).

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 402 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 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 units. All four 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.

Major processes at the Turkey Point Plant which generate wastewater as a function of operating activities for the purpose of steam production to generate electricity are:

<u>Process</u>	<u>Units</u>
1. Boiler and Steam Generator Makeup Water Purification	Fossil and Nuclear
2. Combustion Residue	Fossil Only
3. Boiler Blowdown	Fossil Only
4. Steam Generator Blowdown	Nuclear Only
5. Chemical Volume Control System	Nuclear Only
6. Once-Through Condenser Cooling Water System	Fossil and Nuclear
7. Auxiliary Equipment Cooling Water Systems	Fossil and Nuclear
8. Condensate Polisher	Nuclear Only
9. Intake Screen Wash	Fossil and Nuclear

Information concerning flow rates for the various processes described below may be found in Tables 1, 2, and 3.

1. Boiler and Steam Generator Makeup Water Purification (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 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 condition (regenerated). Cation resins are regenerated with 5%  $H_2SO_4$  (sulfuric acid) where  $H^{+}$  replaces the cations exchanged by the resin during the demineralization process. The anion resin bed is regenerated with 5%  $NaOH$  (Sodium hydroxide), where  $OH^{-}$  replaces anions exchanged by the resin during demineralization.

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

Corrosive anion and cation regenerant waste ( $pH \leq 2.0$  SU or  $\leq 12.5$  SU) is sent to a totally enclosed treatment facility where the pH is adjusted to a range of  $\geq 6.0$  SU to  $\leq 8.5$  SU. This waste is then discharged directly to the cooling canals or routed with the remaining anion and cation regenerant waste and sand and carbon filter backwash waters to the lined concrete neutralization basin (B-1) (see Attachment 2 for location) for neutralization and dilution treatment. Final effluent is discharged to the cooling canals.

## 2. 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 combustible material. The resulting fly ash and slag contain various non-combustible compounds, which are sluiced to one of two solids settling basins (B-2 or B-3) (see Attachment 2 for location). Combustion residue is also accumulated during various maintenance functions. Supernatant from the solids settling basins is discharged to the cooling canals. Residue is chemically fixed on site or removed for vanadium reclamation.

## 3. Boiler Blowdown (Fossil)

Three forms of sodium phosphate are added to the boiler water for control of calcium and magnesium scaling. Ammonia hydroxide is added for pH control. Hydrazine is added for



oxygen removal. Undesirable boiler water contaminants such as  $\text{Cl}^-$  and silica can be introduced from condenser tube leaks. The boiler blowdown is used to control and maintain desirable boiler water chemistry. Boiler blowdown is taken from the bottom of the steam drum and contains such materials as silica (which can deposit on steam turbine blades), dissolved solids such as sodium phosphate mentioned above, 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 into the cooling canals.

#### 4. Steam Generator Blowdown (Nuclear)

High purity water is generated by the water treatment plant by way of carbon filtration and anion and cation exchange demineralization. The high quality water is routed to the steam generator for makeup to the water/steam cycle. Ammonium hydroxide is added for pH control and Amerzine (hydrazine based) is added for oxygen removal. Undesirable contaminants such as  $\text{Cl}^-$  from condenser leaks can contaminate the steam generator water. Strict operating specifications require that suspended and dissolved solids be maintained at very low levels, therefore, when the level of these parameters increase, they must be reduced by steam generator blowdown. This blowdown is routed to the cooling canals.

During overhauls (fossil and nuclear) and/or refueling outages (nuclear only) the boilers, 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/ammonia/demineralized water solution. This solution must be drained and discharged to the cooling canals. The solution used to protect the steam generators and condensers in the nuclear plant, when discharged, has a pH of 10.5 standard units and contains 200-300 ppm of hydrazine. Approximately 1,000,000 gallons of the solution is discharged following each overhaul or refueling. (Quantities and hydrazine concentrations discharged by the fossil units are significantly lower than those discharged by the nuclear units.)

#### 5. Chemical Volume Control System (Nuclear)

This waste stream originates from various maintenance and operational activities which take place in the reactor auxiliary building (RAB). Flow from the chemical volume control system is intermittent.

#### 6. Once-Through Cooling Water System (Fossil and Nuclear)

Water is withdrawn from the closed-loop cooling canal system through two intake canals on the east side of the plants

to cool the system condensers. The waste heat from the steam is transferred to the cooling water in the condensers, and the cooling water is discharged back into the cooling canal system on the west side of the plant. With all 12 circulating water pumps operating, the cooling water flow volume is approximately 1,800,000 gpm. At full load, the cooling water temperature rise is about 16°F.

7. Auxiliary Equipment Cooling Water System (Fossil and Nuclear)

An additional 120,000 gpm of water from the cooling canal system is used to cool, via heat exchangers, the closed cooling water system. This water is pumped from the intake structures and is discharged into the discharge canal on the west side of the plant.

8. Condensate Polisher (Nuclear)

The condensate polishers are utilized during the startup of Units 3 and 4. Effluent from this system is discharged directly to the cooling canals. Flow from this system is intermittent. This effluent may contain small amounts of powdered resin.

9. Intake Screen Wash (Fossil and Nuclear)

Intake traveling screens are used to prevent debris from reaching the condensers. Cooling canal water is pumped through spray nozzles to clean these screens. This wash water is routed to a debris pit at the intake area or to the discharge canal.

Plant maintenance is required to maintain the steam production process, to maximize combustion efficiency and to minimize air emissions. Routine maintenance cleaning of key plant equipment is performed at scheduled intervals. Maintenance cleaning operations generally result in the generation of wastewater. Maintenance processes producing wastewater are:

<u>Process</u>	<u>Units</u>
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
8. Miscellaneous	Fossil and Nuclear



Information concerning flow rates for the various maintenance activities described below may be found in Tables 1, 2, and 3.

1. Economizer Hopper Wash (Fossil)

The economizer section of the boiler collects combustion by-products during plant operation resulting in slag formation. Periodically, the interior surfaces of the economizer hoppers are washed. Water washing is performed approximately three times per day. The wash water is discharged to one of two onsite solid 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 the exit gases. Since there is some deposition of sulfur compounds on the preheater surface, wash water is typically acidic. Air preheaters are water washed weekly followed by rinsing with a 15% soda ash and sodium tripolyphosphate solution wash. The air preheater wash effluent is routed to and treated in one of two solid 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 water is discharged to one of the two solid settling basins. Supernatant from these basins is discharged to the cooling canals.

4. Dust Collector (Fly Ash) and Dust Collector Hopper Cleaning (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. The supernatant from these basins is discharged to the cooling canals.

5. Boiler Fireside Wash (Fossil)

Boiler fireside water wash is typically performed a minimum of once a year per unit. The high pressure water wash

is performed to clean combustion products deposited on boiler tubes during boiler operation. This system is designed to pump the boiler fireside wash water to one of two solids settling basins. The 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 three years. Cleaning is usually performed with a 5% HCl (hydrochloric acid) solution with a copper complexer added. Acid washes of internal boiler surfaces are performed to remove inorganic scale and metal oxides from the boiler tube surfaces. The treated water is then discharged to one of two imperviously lined solids settling basins for precipitation of the metals. The supernatant from these basins is discharged to the cooling canals.

7. Equipment Area Routine Cleaning (Fossil)

Floor drains typically receive small amounts of ash and other particulate materials, detergents, and small amounts of lubricating and fuel oils from floor and equipment cleaning and stormwater run-off.

The drains are routed to the cooling canals after treatment via an oil separation device.

8. Miscellaneous

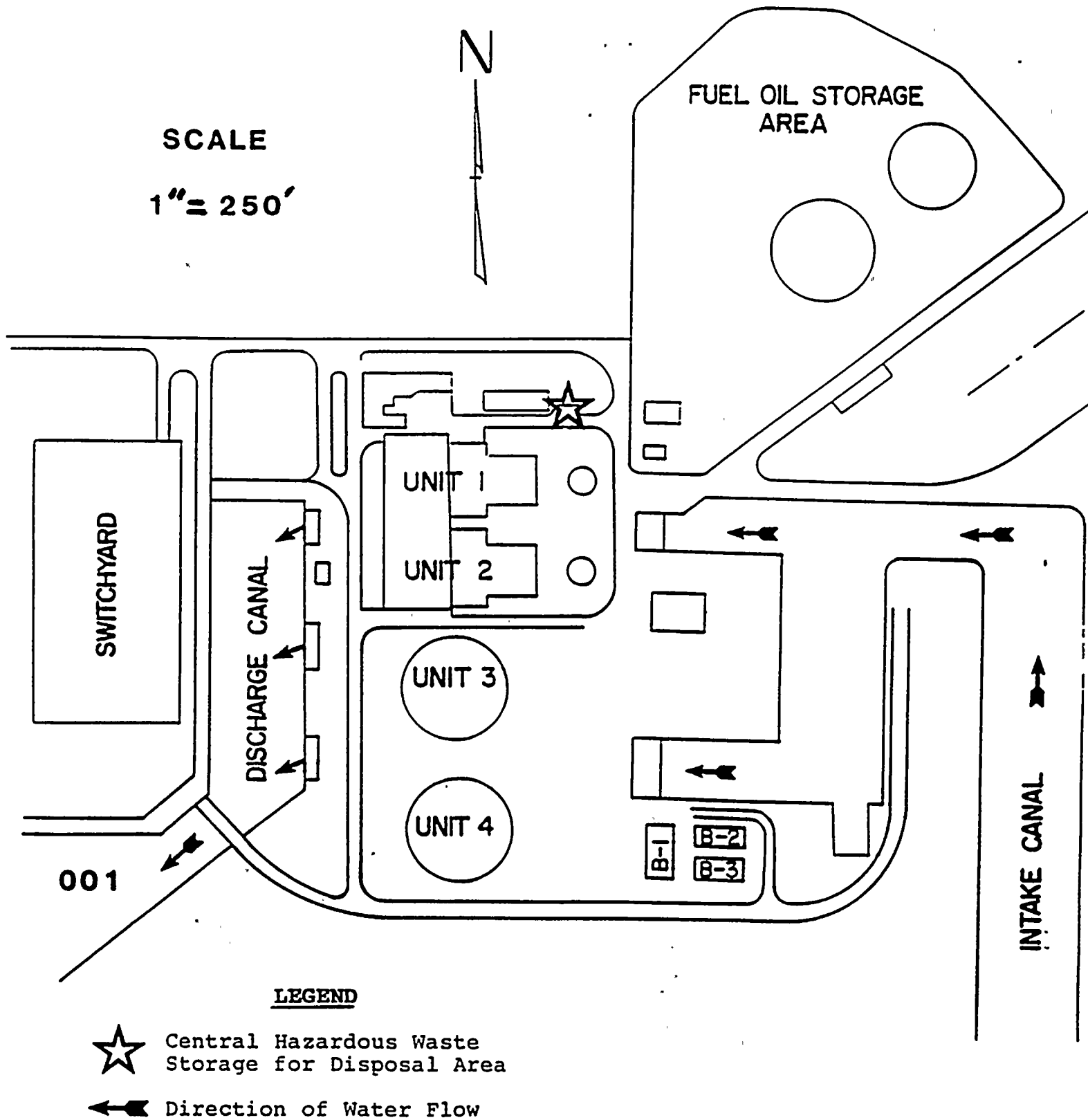
1. Non-Equipment Storm Water Runoff (Fossil and Nuclear)

Storm Water (rainfall) within the plant operating area collects in floor drains and is routed directly to the cooling canals.

2. Sanitary Sewer (Fossil and Nuclear)

Sanitary waste from showers, water closets, and other personnel-related water wastes are routed to a county-approved on-site septic tank system on the fossil side. On the nuclear side there is a sewage treatment plant which discharges to a well onsite.

## TURKEY POINT PLANT



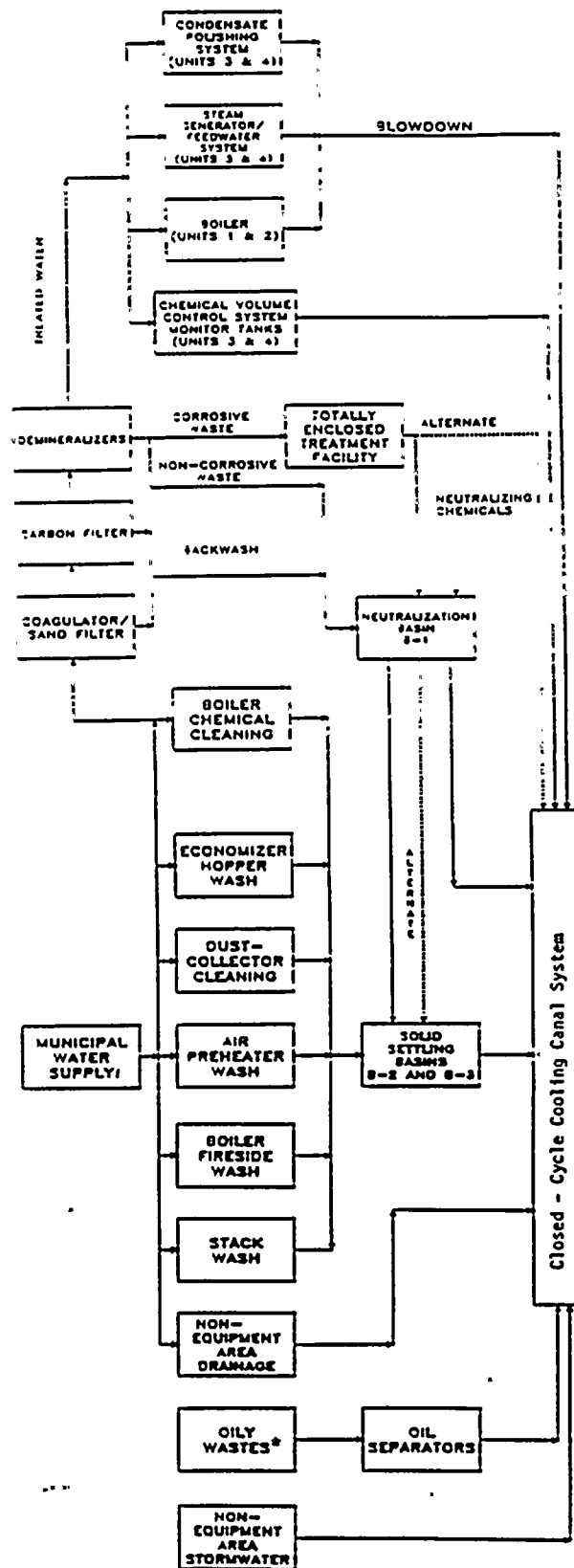
11-11-11

00

1

1

Attachment 3  
Turkey Point Plant - Waste Flow Diagram



\* Includes Water from Equipment Area Cleaning and Stormwater Run-Off

Attachment 4

DRINKING WELL INVENTORY WITHIN A ONE-QUARTER MILE  
RADIUS OF THE TURKEY POINT PLANT

FPL is not aware of any drinking water wells located within one-quarter mile of the Turkey Point Plant. Drinking water for facilities located in this area, including the Turkey Point Plant is provided by Metro-Dade Water & Sewer Authority.

## Attachment 5

## TURKEY POINT

## 40 C.F.R. 117.12 (a)(2) DISCLOSURE

CHEMICAL	LIST NUMBER	TYPICAL USE	STORED ON SITE AVG. MAX.	QUANTITIES PURCHASED	PHYSICAL STATE	DISPOSAL METHOD
Ammonium Hydroxide	28	Feedwater pH control	825 gal. 1150 gal.	55 gal. drum	liquid	Boiler/Steam Generator Blowdown
Disodium Phosphate	245	Boiler Water Treatment	625 lb. 750 lb.	50 lb. bag	solid	Boiler Blowdown
Sodium Hydroxide	241	Anion Regenerant	5,000 gal. 8,000 gal.	3,000 gal. truckload	liquid	Neutralization Basin
Sulfuric Acid	251	Cation Regenerant	5,000 gal. 8,000 gal.	3,000 gal. truckload	liquid	Neutralization Basin
Trisodium Phosphate	246	Boiler Water Treatment	625 lb. 750 lb.	50 lb. bag	solid	Boiler Blowdown
Paint Thinners and Solvents	Toluene 263 Xylene 277	Paint Thinners and Solvents	330 gal. 440 gal.	55 gal. drum	liquid	Approved Chem. Waste Disposer
Potassium Bichromate	216	Corrosion Control	50 lb. 100 lb.	10 lb. bag	solid	Approved Chem. Waste Disposer
Potassium Chromate	217	Corrosion Control	50 lb. 100 lb.	10 lb. bag	solid	Approved Chem. Waste Disposer

TABLE 1  
TURKEY POINT PLANT  
UNITS 1 & 2  
WATER DISCHARGE FLOWRATES

<u>Category</u>	<u>Average Annual Flowrate (gallons/yr)</u>
<u>Cooling Water:</u>	
- Main Condenser Cooling	= 289,091 x 10 <sup>6</sup>
- Auxiliary Cooling	= 12,609 x 10 <sup>6</sup>
- Screen Wash	= 159 x 10 <sup>6</sup>
Sub-Total Cooling and Screen Wash Water Related Flows	= 301,859 x 10 <sup>6</sup>
<u>Blowdown:</u>	
- Boiler	= 2,733,000
<u>Process/Maintenance:</u>	
- Boiler Chemical Cleaning	= 210,000*
- Air Preheater	= 4,257,000
- Stack Wash	= 53,000
- Boiler Fireside Wash	= 1,104,000
- Hopper & Drain Flush	= 3,627,000
- Dust Collector Wash	= 3,522,000
Total To Solids Settling Basin	= 12,563,000
<u>Floor/Equipment Area Drainage:</u>	
- Equipment Area Drainage to Oily Water Separators (East & Dike Area)**	= 2,891,000
- Non-Equipment Area Drainage	= 11,773,000
<u>Water Purification Plant Wastes:</u>	
- Boiler Water Make-Up Pretreat: (Coagulator Blowdown)	= 6,885,000
(Sandfilter Backwash)	= 2,943,000
- Make-up Treatment (Carbon Filter (Backwash)	= 631,000
- Demineralizers (Cation/Anion/Mixed Bed)	= 9,145,000
Sub-Total to Neutralization Basin	= 19,814,000

\* Discharge to Neutralization Basin For Treatment

\*\* Discharged to Fuel Oil Tank Farm Diked Area

1947

10

180

1948

10

1949

TABLE 2  
TURKEY POINT PLANT  
UNITS 3 & 4  
WATER DISCHARGE FLOWRATES

<u>Category</u>	<u>Average Annual Flowrate (Gallons/Yr)</u>
<u>Cooling Water:</u>	
- Main Condenser Cooling Water	= 655,970 x 10 <sup>6</sup>
- Auxiliary Cooling Water	= 50,455 x 10 <sup>6</sup>
- Screen Wash	= 191 x 10 <sup>6</sup>
Sub-Total Cooling and Screen Wash Water Related Flows	= 706,616 x 10 <sup>6</sup>
<u>Blowdown:</u>	
- Steam Generator	= 139,810,000
- Condensate Polisher	= 683,000
<u>Process/Maintenance:</u>	
- Chemical Volume Control System Monitor Tanks	= 4,888,000
<u>Floor/Equipment Area Drainage:</u>	
- Equipment Area Drainage to oily water Separator (West)	= 631,000
- Non-Equipment Area Drainage	= 28,225,000
<u>Water Purification Plant Wastes:</u>	
- Steam Generator Make-Up Pretreatment: (Coagulator Blowdown)	= 32,955,000
(Sandfilter Backwash)	= 14,139,000
- Make-up Treatment (Carbon filter Backwash)	= 2,786,000
- Demineralizers (Cation/Anion/Mixed Bed)	= 41,995,000
Sub-Total to Neutralization Basin	= 91,875,000

1111  
1111

11111111

TABLE 3  
TURKEY POINT PLANT  
WATER DISCHARGE FLOWRATE SUMMARY  
Avg. Flowrates

<u>Category</u>	<u>Gallons/Yr</u>	<u>Gallons/Day</u>
<u>Cooling Water:</u>		
- Units 1 & 2	301,859 x 10 <sup>6</sup>	
- Units 3 & 4	706,616 x 10 <sup>6</sup>	
Total	1,008,475 x 10 <sup>6</sup>	2,763 x 10 <sup>6</sup>
<u>Floor/Equipment Area Drainage</u> <u>(Units 1, 2, 3, 4):</u>		
- Oily (To Oil/Water Separators)	3,522,000	
- Non-Oily	39,998,000	
Total	43,520,00	119,000
<u>Chemical Waste Treatment</u> <u>Facility (Units 1, 2, 3, 4):</u>		
- Solids Settling Basins (For Fossil Process/ Maintenance Wastes)	12,563,000	
- Neutralization Basin (For Water Plant Wastes)	111,689,000	
Total	124,252,000	340,000
<u>Blowdowns:</u>		
- Boiler (Units 1 & 2)	2,733,000	
- Steam Generator (Units 3 & 4)	139,810,000	
- Condensate Polishing (Units 3 & 4)	683,000	
Total	143,226,000	392,000
<u>Chemical Volume Control System</u>		
- Monitoring Tanks (Units 3 & 4):	4,888,000	13,000

