



1                   **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2                   **FLORIDA POWER & LIGHT COMPANY**

3                   **TESTIMONY OF RANDALL R. LABAUVE**

4                   **DOCKET NO. 110007-EI**

5                   **JANUARY 12, 2011**

6  
7   **Q.   Please state your name and address.**

8   A.   My name is Randall R. LaBauve and my business address is 700  
9       Universe Boulevard, Juno Beach, Florida 33408.

10 **Q.   By whom are you employed and in what capacity?**

11 A:   I am employed by Florida Power & Light Company (FPL) as Vice  
12       President of Environmental Services.

13 **Q.   Have you previously testified in this docket?**

14 A.   Yes.

15 **Q.   What is the purpose of your testimony in this proceeding?**

16 A.   The purpose of my testimony is to present for Commission review and  
17       approval a new environmental compliance activity, the St. Lucie Plant  
18       Cooling Water Discharge Monitoring Project (the "Project"), which FPL  
19       must undertake at its St. Lucie Nuclear Plant (PSL) starting in 2011, to  
20       comply with Florida Department of Environmental Protection (FDEP)  
21       Administrative Order AO022TL (the "AO") and conditions in Industrial  
22       Wastewater (IWW) Permit No. FL0002208 (the IWW Permit") related to

1 operation and limitations for the St. Lucie Cooling Water System  
2 ("CWS").

3 **Q. Have you prepared, or caused to be prepared under your**  
4 **direction, supervision, or control, an exhibit in this proceeding?**

5 A. Yes. I am sponsoring the following exhibits:

- 6 ● RRL-1 - St. Lucie IWW Permit No. FL0002208
- 7 ● RRL-2 - St. Lucie Administrative Order No. AO022TL

8 **Q. Please briefly describe FPL's proposed Project.**

9 A. As a result of the increased heat output from the extended power  
10 uprate (EPU) project at St. Lucie Unit 1 and Unit 2, the discharge  
11 temperature of the PSL cooling water is expected to increase. This  
12 anticipated increase led FPL to submit to the FDEP a request to modify  
13 the IWW Permit, in order to authorize an increase above the permit's  
14 current discharge temperature limit. The FDEP has approved an  
15 increase in the discharge temperature limit, subject to FPL's complying  
16 with new study and monitoring requirements (and corrective action  
17 requirements if necessary) that are contained in the AO and IWW  
18 Permit.

19

20 At this time, the Project consists of preparing and implementing plans  
21 for (1) monitoring the ambient and CWS discharge water temperature,  
22 and (2) biological monitoring to demonstrate that conditions allow for  
23 the existence of a balanced, indigenous community of fish, shellfish

1 and wildlife near the CWS discharge of PSL. If any corrective actions  
2 are required as a result of the monitoring activities, FPL will petition the  
3 Commission to amend the Project at that time.

4 **Q. Please describe the environmental law or regulation requiring the**  
5 **Project.**

6 A. This Project is required to comply with the AO and IWW Permit, which  
7 are issued by the FDEP pursuant to Section 403.088, Florida Statutes  
8 and Chapter 62-620, Florida Administrative Code. The IWW and AO  
9 Permit are included as exhibits RRL-1 and RRL-2, respectively.

10 **Q. When did the AO and revised IWW Permit become effective?**

11 A. The AO and the revised IWW Permit that require the Project became  
12 effective on December 23, 2010.

13 **Q. Please describe the activities required by the Project.**

14 A. FPL is seeking to recover the costs associated with the following  
15 activities that are required by the AO, which are incorporated into the  
16 amended IWW Permit:

- 17 • Preparation and submittal of an Ambient Monitoring Report  
18 (AMR) to identify an appropriate program for collecting data  
19 on ambient temperatures at the CWS intake structures.
- 20 • Implementation of the AMR by installing, calibrating and  
21 certifying new thermometer(s) to record ambient  
22 temperatures.

- 1                   • Preparation and submittal of a Heated Water Plan of Study  
2                   (HWPOS) to identify an appropriate program for collecting  
3                   data on the impact of the CWS discharge on the temperature  
4                   of surface water near the CWS outfall structures, adjacent  
5                   coastal waters, and the ambient conditions at the CWS  
6                   intake structures.
- 7                   • Implementation of the HWPOS by collecting data for no less  
8                   than 24 months and evaluating whether the data confirm  
9                   FPL's mathematical modeling of the impact of the increased  
10                  heat output from the EPU project.
- 11                  • Preparation and submittal of the Heated Water Report  
12                  reflecting the findings and conclusions of the HWPOS.
- 13                  • Implementation of a Biological Plan of Study (BPOS) by  
14                  collecting data for a period prior to the implementation of the  
15                  EPU project and that extends at least 24 months after the  
16                  EPU project is completed.
- 17                  • Preparation and submittal of the Biological Report reflecting  
18                  the findings of the BPOS.

19   **Q.    Are there any additional requirements in the AO?**

20   **A.**    Yes. If the Heated Water Report fails to demonstrate that the heated  
21           water discharge from PSL meets the requirements of the AO, then FPL  
22           must prepare and submit an Engineering Report to the FDEP, for  
23           review and approval, for the evaluation of engineering options to

1 achieve the applicable discharge limitations. FPL will then be required  
2 to implement the highest ranked option within 24 months of FDEP's  
3 approval of the Engineering Report.

4  
5 In addition, if the Biological Report fails to demonstrate that a  
6 balanced, indigenous population exists as required by the AO, then  
7 FPL must submit a feasibility study report for the evaluation of options  
8 to achieve a balanced, indigenous population. FPL will then be  
9 required to implement the highest ranked option within 24 months of  
10 FDEP's approval of the report.

11 **Q. Is FPL currently seeking authorization to recover the costs**  
12 **associated with these additional activities?**

13 A. No; not at this time. If any corrective actions are required as a result of  
14 the Heated Water Report or Biological Report, FPL will petition the  
15 Commission to recover those costs as an amendment to the Project.

16 **Q. What are the projected total O&M costs necessary to complete**  
17 **the Project?**

18 A. The total estimated O&M costs necessary to complete the Project are  
19 \$2,567,000 associated with the preparation and implementation of the  
20 AMR, HWPOS, BPOS, and Heated Water and Biological reports.

21 **Q. What are the projected total capital costs necessary to complete**  
22 **the Project?**

1 A. FPL estimates that it will incur approximately \$467,000 to acquire and  
2 install the temperature monitoring equipment and SONAR equipment  
3 required for the Project. Through extensive research and consultation  
4 with experts, FPL believes that the most effective and efficient way to  
5 perform population counts for indigenous fish, shellfish and wildlife in  
6 connection with the BPOS is to use the specialized SONAR equipment  
7 and therefore plans to propose this method of biological monitoring to  
8 the FDEP.

9 **Q. Has FPL estimated the 2011 ECRC recoverable costs for the**  
10 **Project?**

11 A. Yes. In 2011, FPL projects to incur \$234,000 in capital costs,  
12 associated with the preparation and implementation of the Ambient,  
13 Thermal and Biological Monitoring programs. FPL projects to incur  
14 \$549,000 of O&M costs associated with the preparation and  
15 implementation of the AMR, HWPOS, BPOS, and Ambient and  
16 Biological Monitoring programs.

17 **Q. How will FPL ensure that the costs incurred for the Project are**  
18 **prudent and reasonable?**

19 A. FPL plans to obtain competitive bids for all aspects of the Project:

- 20 ● The AMR feasibility study report
- 21 ● Implementation of the ambient monitoring program
- 22 ● The HWPOS
- 23 ● Implementation of the HWPOS

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● Implementation of the Biological Plan of Study (BPOS)

In addition, the studies themselves are based on implementation of the highest ranked alternative for complying with the AO and amended IWW Permit. The ranking system is based in part upon the cost of the alternatives. Thus, FPL is implementing the Project in a manner that seeks to minimize its costs.

**Q. Is FPL recovering the costs of these activities through any other mechanism?**

A. No. The requirements of the AO and amended IWW Permit were not known or anticipated at the time that the minimum filing requirements for FPL's most recent rate case were prepared and the costs of these activities are not being recovered through any other mechanism.

**Q. Does this conclude your testimony?**

A. Yes.

FLORIDA POWER & LIGHT COMPANY

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
INDUSTRIAL WASTEWATER FACILITY PERMIT NO. FL0002208  
ST. LUCIE PLANT

RRL-1  
DOCKET NO. 110007-EI  
EXHIBIT \_\_\_\_\_  
PAGES 1-9



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Mimi A. Drew  
Secretary

## NOTICE OF PERMIT

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

In the Matter of an  
Application for Permit by:

Florida Power & Light  
Mr. Richard L. Anderson  
Vice President  
6501 S. Ocean Dr  
Jensen Beach, Florida 34957

St. Lucie County  
St. Lucie Plant  
NPDES Permit No. FL0002208

Enclosed is Permit FL0002208, issued under Section 403.0885, Florida Statutes, and DEP Chapter 62-620, Florida Administrative Code, authorizing an increase in the permitted temperature limitation, from 113 to 115°F, for the heated cooling water within the discharge canal at the St. Lucie Plant Units 1 and 2. The St. Lucie Plant is located at 6501 S. Ocean Dr., Jensen Beach, Florida 34957 in St. Lucie County.

Any party to this order (permit) has the right to seek judicial review of the permit under Section 120.68, Florida Statutes, by the filing of a Notice of Appeal under Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department of Environmental Protection, Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000 and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this notice is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

A handwritten signature in cursive script, appearing to read "Janet G. Llewellyn".

Janet G. Llewellyn  
Director

Division of Water Resource Management

2600 Blair Stone Road  
Tallahassee, FL 32399-2400  
(850) 245-8336

Florida Power & Light  
St. Lucie Plant

Page 2 of 2  
Permit FL0002208

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 12-21-2010 to the listed persons.

[Clerk Stamp]

FILING AND ACKNOWLEDGMENT

FILED, on this date, under Section 120.52 (9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Whitley Shields 12-21-2010  
(Clerk) (Date)

Copies furnished to:

Copies furnished by certified mail to:

Chief, NPDES Permitting Section, EPA Region 4, Atlanta, GA  
Chairman, Board of St. Lucie County Commissioners  
Ron Hix, FPL

Copies furnished by intradepartmental mail to:

Mike Halpin, P.E., DEP Tallahassee  
Justin Wolfe, Esq., DEP Tallahassee  
Linda Brien, P.G., DEP West Palm Beach  
Michael Hambor, DEP West Palm Beach

**STATE OF FLORIDA  
INDUSTRIAL WASTEWATER FACILITY PERMIT**

Additions to the permit are identified by *italics* and underline. Deletions are identified by ~~strikethrough~~.

<b>PERMITTEE:</b>	<b>PERMIT NUMBER:</b>	FL0002208 (Major) (Rev. F)
FPL - St. Lucie Power Plant	<b>PA FILE NUMBER:</b>	FL0002208-003-IW1S
6501 S. Ocean Drive	<b>ISSUANCE DATE:</b>	January 20, 2006
Jensen Beach, FL 34957	<b>REVISION DATE:</b>	December 23, 2010
	<b>EXPIRATION DATE:</b>	January 19, 2011

**RESPONSIBLE AUTHORITY:**

Richard L. Anderson  
Vice President

**FACILITY:**

St. Lucie Power Plant  
Units 1 and 2  
Hutchinson Island  
St. Lucie County, Florida

Latitude: See Note Below    Longitude: See Note Below

Note: Latitude and longitude are not shown at the Permittee's request, 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.

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and applicable rules of the Florida Administrative Code (F.A.C.). Compliance with Administrative Order AO022TL is a specific requirement of this permit. The above named Permittee is hereby authorized to operate the facilities shown on the application and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

The facility consists of two nuclear powered steam electric generating units (Unit 1 and Unit 2) each with a nominal rating of 953 MW. The radioactive component of the discharge is regulated by the U.S. Nuclear Regulatory Commission under the Atomic Energy Act, and not by the Department or the U.S. Environmental Protection Agency under the Clean Water Act.

**WASTEWATER TREATMENT:**

Facility discharge and treatment include the following. Once-through non-contact condenser cooling water (OTCW) and auxiliary equipment cooling water (AECW) are chlorinated. Low volume waste (LVW) (consisting of water treatment system wastewater, steam generator/boiler blowdown, and equipment area floor drainage), non-radioactive wastes/liquid radiation waste, and stormwater associated with industrial activity are treated by chemical/physical processes including neutralization, settling, ion exchange and micro filtration. Non-industrial stormwater and intake screen wash water are discharged without treatment.

**PERMITTEE:**

FPL - St. Lucie Power Plant  
6451 S. Ocean Dr.  
Jensen Beach, FL34957

**PERMIT NUMBER:** FL0002208 (Rev. F)  
**Revision date:** December 23, 2010  
**Issuance date:** January 20, 2006  
**Expiration date:** January 19, 2011

*Additions to the permit are identified by italics and underline. Deletions are identified by strikethrough.*

**EFFLUENT DISPOSAL:**

**Surface Water Discharge:**

An existing discharge (1487 MGD permitted maximum daily flow, 1,362 reported annual average daily flow) of OTCW and AECW via outfall D-001 to the onsite discharge canal to the point of discharge (POD) thence to the Atlantic Ocean, a Class III marine water.

**Internal Outfalls:**

Existing intermittent discharges from internal outfalls I-003 (Liquid Radiation Waste), I-005 (Steam Generator Blowdown), I-007 (Intake Screen Wash Water) and I-008 (Evaporation/Percolation Basin).

**Stormwater Discharges:**

Existing intermittent stormwater discharges from internal outfalls I-06B (Former Oil Storage Area) and I-06C (Non-Industrial Related Stormwater) and I-06D (Spent Nuclear Fuel Dry Storage Area) to the intake canal via an outlet control structure. Discharge from I-06D will intermittently include wash-down water consisting of potable water with no additives.

**IN ACCORDANCE WITH:** The limitations, monitoring requirements and other conditions as set forth in Part I through Part VIII on pages 3 through 18 of this permit.

PERMITTEE:  
 FPL - St. Lucie Power Plant  
 6451 S. Ocean Dr.  
 Jensen Beach, FL34957

PERMIT NUMBER: FL0002208 (Rev. F)  
 Revision date: December 23, 2010  
 Issuance date: January 20, 2006  
 Expiration date: January 19, 2011

*Additions to the permit are identified by italics and underline. Deletions are identified by strikethrough.*

**I. Effluent Limitations and Monitoring Requirements**

**A. Surface Water Discharges**

1. During the period beginning on the issuance date and lasting through the expiration date of this permit, the Permittee is authorized to discharge via Outfall D-001 (OTCW and AECW from Units 1 and 2). Such discharge shall be limited and monitored by the Permittee as specified below:

Parameters (units)	Discharge Limitations		Monitoring Requirements		
	Daily Average	Instantaneous Maximum	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	--	Report	Hourly	Pump logs	FLW-1
Discharge Temperature Water <i>During Normal Operation</i> (DEG. F)	--	See Cond. I.A.3. and I.A.4.	Hourly	Recorder	EFF-2
<i>Discharge Temperature Water During Maintenance Activities</i> (DEG. F)	--	<i>117</i> <i>See Cond. I.A.3. and I.A.4.</i>	<i>Hourly</i>	<i>Recorder</i>	<i>EFF-2</i>
Temp. Diff. Between Intake and Discharge <i>During Normal Operation</i> (DEG.F)	--	30 See Cond. I.A.3. and I.A.4.	Hourly	Calculated	INT-1, EFF-2
<i>Temp. Diff. Between Intake and Discharge During Maintenance Activities</i> (DEG.F)	--	<i>32</i> <i>See Cond. I.A.3. and I.A.4.</i>	<i>Hourly</i>	<i>Calculated</i>	<i>INT-1, EFF-2</i>
Oxidants, Total Residual (MG/L)	--	0.10 See Cond. I.A.7.	Continuous	Recorder See Cond. I.A.5.	EFF-2
Oxidants, Free Available (MG/L)	0.2 See Cond. I.A.7.	0.5 See Cond. I.A.7.	Every Other Month	Multiple Grabs See Cond. I.A.6.	EFF-1
Chlorination Duration (Minutes)	120, See Cond. I.A.7.		Daily	Logs	EFF-1
Whole Effluent Toxicity (Acute)	See Cond. I.A.8.				EFF-2

2. Effluent samples shall be taken at the monitoring site locations listed in permit condition I.A.1 and as described below:

Sample Point	Description of Monitoring Location
FLW-1	Pump log or recorder
INT-1	At plant intake structure within the intake canal

PERMITTEE: FPL - St. Lucie Power Plant  
 6451 S. Ocean Dr.  
 Jensen Beach, FL34957

PERMIT NUMBER: FL0002208 (Rev. F)  
 Revision date: December 23, 2010  
 Issuance date: January 20, 2006  
 Expiration date: January 19, 2011

*Additions to the permit are identified by italics and underline. Deletions are identified by strikethrough.*

Sample Point	Description of Monitoring Location
EFF-1	Outlet corresponding to the individual condenser from Unit 1 or Unit 2
EFF-2	Within the discharge canal upstream of the discharge piping to the Atlantic Ocean

3. ~~At the point of discharge monitoring location EFF-2, the heated water temperature from the diffusers shall not exceed 113°F, before notification to the Department for power uprate completion for Units 1 and 2, or 115°F, after notification to the Department for power uprate completion for Units 1 and 2, or and 30°F above ambient at any time except that the maximum discharge temperature shall be limited to 117°F or and 32°F above ambient during condenser or circulating water system maintenance, throttling circulating water pumps to minimize use of chlorine, or fouling of circulating water system. The ambient temperature may be measured at a point within the discharge intake canal until installation of thermometer(s) in accordance with Administrative Order A0022TL.~~ In determining the temperature differential, the time of travel through the plant may be considered. The permittee shall submit with the Discharge Monitoring Report a summary of cooling water system maintenance activities and associated maximum discharge temperature reading and temperature difference above ambient. In the event that discharge temperature exceeds ~~113°F~~ the temperature limitations, the Permittee shall notify the Department within 5 days.

Circulating water system maintenance (including, but not limited to, condenser and / or circulating water pump maintenance) shall mean:

- a. repair or scheduled preventive activities that maintain the facility's circulating water system and its support systems within its as-designed capacity; and
- b. results in at least one circulating water pump being shut down, or equivalent loss of heat removal, on each unit being shut down.

4. Discharge from Outfall D-001 shall not cause the ocean surface temperature to exceed 97°F as an instantaneous maximum at any point. Heated water discharged from the multi-port diffuser shall not exceed 17 °F above ambient temperature in the receiving body of water outside a thermal mixing zone of 10.7 acre-feet (13,198 cubic meters, 466,092 cubic feet). The mixing zone shall be bounded by an area extending 1,385.5 feet seaward from the most landward discharge port, 21.0 feet to each side of the discharge pipe axis and 8.0 feet in height above the bottom of the discharge. Heated water discharged from the Y-diffuser shall not exceed 17° F above ambient temperature in the receiving body of water outside a thermal mixing zone bounded by a circle with a radius of 115.82 meters, centered on the terminus of the Y-Port diffuser and extending upward from the bottom 8.31 meters, encompassing a mixing zone that shall not exceed 453,613 square feet (42,142 square meters). The total area of the thermal mixing zone for the facility (multi-port and Y-port diffusers) shall not exceed 511,804 square feet (47,548 square meters).
5. If automated TRO monitors are inoperable for more than 7 days, TRO monitoring shall be conducted at least one time per week on not less than three grab samples during daylight hours. Additional grab samples shall be obtained during periods of TRO discharge from condensers.
6. A "multiple grab" sample for FAO from Outfall D-001 for FAO/TRO monitoring shall consist of individual grab samples collected at the approximate beginning of FAO/TRO discharge and once every 15 minutes thereafter until the end of FAO/TRO discharge.
7. Free available oxidants (FAO) shall not exceed an average concentration of 0.2 mg/l and a maximum instantaneous concentration of 0.5 mg/l at the outlet corresponding to an individual condenser during any chlorination period. Additionally, TRO shall not exceed a maximum instantaneous concentration of 0.10 mg/l at any one time as measured at the POD prior to discharge to the Atlantic Ocean. Auxiliary equipment cooling water may receive continuous low-level chlorination. Neither FAO nor total residual oxidants (TRO) may be

DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A

When Completed mail this report to: Department of Environmental Protection, Wastewater Compliance Evaluation Section, MS 3551, 2600 Blair Stone Road, Tallahassee, FL 32399-2400

PERMITTEE NAME: Florida Power and Light (FPL)  
 MAILING ADDRESS: 6501 S Ocean Dr  
 Jensen Beach, Florida 34957-2041

PERMIT NUMBER: FL0002208-004-IWB

LIMIT: Interim (Pre-Uprate)  
 CLASS SIZE: MA  
 MONITORING GROUP NUMBER: D-001  
 MONITORING GROUP DESCRIPTION: OTCW and AECW from Units 1 and 2  
 RE-SUBMITTED DMR:   
 NO DISCHARGE FROM SITE:   
 MONITORING PERIOD From: \_\_\_\_\_ To: \_\_\_\_\_

REPORT FREQUENCY: Monthly  
 PROGRAM: Industrial

FACILITY: St. Lucie Power Plant  
 LOCATION: 6501 S Ocean Dr  
 Jensen Beach, FL 34957

COUNTY: St. Lucie  
 OFFICE: Southeast District

Parameter		Quantity or Loading	Units	Quality or Concentration	Units	No. Ex.	Frequency of Analysis	Sample Type
Flow	Sample Measurement							
PARM Code 50050 Mon. Site No. EFF-1	Permit Requirement	Report (Inst. Max.)	MGD				Hourly	Pump Logs
Temperature (F), Water (During Normal Operation)	Sample Measurement							
PARM Code 00011 Mon. Site No. EFF-2	Permit Requirement			113 (Inst. Max.)	Deg F		Hourly	Meter
Temperature (F), Water (During Maintenance Activities)	Sample Measurement							
PARM Code 00011 Mon. Site No. EFF-2	Permit Requirement			117 (Inst. Max.)	Deg F		Hourly	Meter
Temperature (F), Water	Sample Measurement							
PARM Code 00011 Mon. Site No. INT-1	Permit Requirement			Report (Inst. Max.)	Deg F		Hourly	Meter
Temp. Diff. between Intake and Discharge (During Normal Operations)	Sample Measurement							
PARM Code 61576 Mon. Site No. INT-1, EFF-2	Permit Requirement			30 (Inst. Max.)	Deg F		Hourly	Calculated
Temp. Diff. between Intake and Discharge (During Maintenance Activities)	Sample Measurement							
PARM Code 61576 Mon. Site No. INT-1, EFF-2	Permit Requirement			32 (Inst. Max.)	Deg F		Hourly	Calculated
Oxidants, Total Residual	Sample Measurement							
PARM Code 34044 Mon. Site No. EFF-2	Permit Requirement			0.10 (Inst. Max.)	mg/L		Continuous	Meter

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.

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE (mm/dd/yyyy)

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

ISSUANCE/REISSUANCE DATE:

DEP Form 62-620.910(10), Effective Nov. 29, 1994

Docket No. 110007-E1  
 St. Lucie IWW Permit No. FL0002208  
 Exhibit RL-1, Page 8 of 9

DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A

When Completed mail this report to: Department of Environmental Protection, Wastewater Compliance Evaluation Section, MS 3551, 2600 Blair Stone Road, Tallahassee, FL 32399-2400

PERMITTEE NAME: Florida Power and Light (FPL)  
 MAILING ADDRESS: 6501 S Ocean Dr  
 Jensen Beach, Florida 34957-2041

PERMIT NUMBER: FL0002208-004-IWB

FACILITY: St. Lucie Power Plant  
 LOCATION: 6501 S Ocean Dr.  
 Jensen Beach, FL 34957

LIMIT: Final (Post-Uprate)  
 CLASS SIZE: MA  
 MONITORING GROUP NUMBER: D-001  
 MONITORING GROUP DESCRIPTION: OTCW and AECW from Units 1 and 2  
 RE-SUBMITTED DMR:   
 NO DISCHARGE FROM SITE:   
 MONITORING PERIOD From: \_\_\_\_\_ To: \_\_\_\_\_

REPORT FREQUENCY: Monthly  
 PROGRAM: Industrial

COUNTY: St. Lucie  
 OFFICE: Southeast District

Parameter		Quantity or Loading	Units	Quality or Concentration	Units	No. Ex.	Frequency of Analysis	Sample Type
Flow	Sample Measurement							
PARM Code 50050 1 Mon. Site No. FLW-1	Permit Requirement	Report (Inst. Max.)	MGD				Hourly	Pump Logs
Temperature (F), Water (During Normal Operation)	Sample Measurement							
PARM Code 00011 1 Mon. Site No. EFF-2	Permit Requirement			115 (Inst. Max.)	Deg F		Hourly	Meter
Temperature (F), Water (During Maintenance Activities)	Sample Measurement							
PARM Code 00011 Q Mon. Site No. EFF-2	Permit Requirement			117 (Inst. Max.)	Deg F		Hourly	Meter
Temperature (F), Water	Sample Measurement							
PARM Code 00011 R Mon. Site No. INT-1	Permit Requirement			Report (Inst. Max.)	Deg F		Hourly	Meter
Temp. Diff. between Intake and Discharge (During Normal Operations)	Sample Measurement							
PARM Code 61576 1 Mon. Site No. INT-1, EFF-2	Permit Requirement			30 (Inst. Max.)	Deg F		Hourly	Calculated
Temp. Diff. between Intake and Discharge (During Maintenance Activities)	Sample Measurement							
PARM Code 61576 Q Mon. Site No. INT-1, EFF-2	Permit Requirement			32 (Inst. Max.)	Deg F		Hourly	Calculated
Oxidants, Total Residual	Sample Measurement							
PARM Code 34044 1 Mon. Site No. EFF-2	Permit Requirement			0.10 (Inst. Max.)	mg/L		Continuous	Meter

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.

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE (mm/dd/yyyy)

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

ISSUANCE/REISSUANCE DATE:

DEP Form 62-620.910(10), Effective Nov. 29, 1994

Docket No. 110007-E1  
 St. Lucie IWW Permit No. FL0002208  
 Exhibit RRL-1, Page 9 of 9

FLORIDA POWER & LIGHT COMPANY

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ADMINISTRATIVE ORDER NO. AO022TL  
ST. LUCIE POWER PLANT

RRL-2  
DOCKET NO. 110007-EI  
EXHIBIT \_\_\_\_\_  
PAGES 1-8

BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF:

Florida Power and Light, Inc.  
6501 S. Ocean Drive  
Jensen Beach, Florida 34957

Administrative Order No. AO022TL

St. Lucie Power Plant  
DEP Permit No: FL0002208

ADMINISTRATIVE ORDER

I. STATUTORY AUTHORITY

The Department of Environmental Protection (Department) issues this Administrative Order under the authority of Section 403.088(2)(f), Florida Statutes (F.S.). The Secretary of the Department has delegated this authority to the Director of the Division of Water Resources Management, who issues this order and makes the following findings of fact.

II. FINDINGS OF FACT

1. Florida Power and Light (FPL or Permittee) is a "person" as defined under Section 403.031(5), F.S.
2. The Permittee owns and operates a nuclear steam electric power generating facility known as St. Lucie power plant ("Facility"). The Facility, located at 6501 S. Ocean Drive, Jensen Beach St. Lucie County, Florida 34957, discharges industrial wastewater into waters of the state as defined in Section 403.031(13), F.S.
3. The Permittee has filed an application for revision of NPDES Permit No. FL0002208 (Permit), under Section 403.088(2), F.S.
4. The Permit expires on January 19, 2011. The Permittee has applied for renewal of the Permit 180 days before the expiration date. Hence, the Department may administratively continue the Permit, if necessary, after the expiration date of the Permit pursuant to Rules 62-620.335(1)-(4), F.A.C.
5. The Permittee is planning to increase the generating capacity of its two existing nuclear units (Units 1 and 2) at the Facility by an additional 106 megawatts each. Known in the industry as a "power uprate," this effort entails modifying or replacing existing plant components such as the turbine generators, valves and certain control systems to increase electric generation capacity.
6. Units 1 and 2 use once-through cooling water from the Atlantic Ocean to remove heat from the main condensers via a circulating water system. The condensers are located in each unit's secondary system, where steam is cooled to liquid water before being returned to the steam generators to complete the secondary loop. Cooling water is pumped from the Atlantic Ocean through three offshore intake structures into the plant's intake canal. This water is then pumped through the main condensers for each unit. Heated cooling water is released to the onsite discharge canal and then to open waters, as defined in Rule 62-302.520(3)(f), F.A.C., of the Atlantic Ocean through existing offshore pipes and diffusers.
7. After the power uprate is completed, the cooling water flow rate will remain unchanged; however, using thermodynamic models, the temperature in the discharge canal is predicted to increase by 2°F under normal operating conditions. The modeling effort indicates that the heated water released to

Administrative Order No. AO022TL  
FPL St. Lucie Power Plant  
NPDES Permit No. FL0002208

the Atlantic Ocean meets the surface temperature and adjacent coastal water requirements in Rule 62-302.520(4)(c), F.A.C., and the thermal mixing zone requirements in the existing Permit.

8. The Permittee anticipates commencing commercial operation of the repowered nuclear units sequentially in December 2011 (Unit 1) and July 2012 (Unit 2).
9. Rule 62-302.520(6)(a), F.A.C., authorizes the Department to establish mixing zones for thermal discharges from once-through cooling water systems, on a case-by-case bases, when supported by a demonstration, as provided in Section 316(a) of the Clean Water Act and regulations promulgated thereunder, including Title 40 of the Code of Federal Regulations (40 CFR) Parts 122 and 125, that assures the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on the body of water.
10. Under 40 CFR Section 125.73, existing sources can base their 316(a) demonstration on a lack of appreciable harm instead of completing predictive studies. However, under 40 CFR Section 125.72(c), the type of detailed studies contemplated under 125.72(a) and (b) can be required whenever the Department determines it to be necessary. The Permittee collected a substantial amount of biological data in support of its 316(a) demonstration from the mid 1970's to early 1980's. After examining the record of prior 316(a) determinations for the Facility after those dates, the Department has determined that a need exists for a more thorough examination of the balanced, indigenous population, the identification of representative important species, and a closer examination of whether the temperature limitations are protective.
11. Sections 403.088(2)(e) and (f), F.S., allow the Department to issue, renew, or reissue a permit for the discharge of wastewater into waters of the state, which may not immediately meet all applicable rule requirements, if the permit is accompanied by an order establishing a schedule for achieving compliance with all permit conditions if criteria specified in the order are met.
12. The Department finds that the granting of an operation permit will be in the public interest; and,
13. This order and associated wastewater Permit FL0002208 constitute the Department's authorization to discharge pollutants to waters of the state under the NPDES and its determination that the Facility is in compliance with Section 403.088, F.S. This order includes an implementation schedule.

### III. ORDER

Based on the foregoing findings of fact,

#### IT IS ORDERED,

14. No later than 90 days after the effective date of this Order, the Permittee shall prepare and submit for the Department's review and approval a feasibility study report (Ambient Monitoring Report) for 1) the identification and evaluation of potential locations in the Atlantic Ocean that are near the Facility's ocean intake structure and meet the requirements of Rule 62-302.520(3)(a), F.A.C., for permanently siting remote thermometers; and 2) the evaluation of commercially available remote thermometers. Each option, which shall consist of a location and a thermometer, shall be ranked based on equal weighting of technical and economic feasibility. The results of the ranking shall be presented in the Ambient Monitoring Report. In addition, the Ambient Monitoring Report shall include a plan and schedule for implementing the highest ranked option. The schedule shall include milestones and the completion date. The implementation shall take no longer than 18 months from the effective date of this Order.

Administrative Order No. AO022TL  
FPL St. Lucie Power Plant  
NPDES Permit No. FL0002208

15. No later than 30 days after installing the new thermometer(s), the Permittee shall provide a certification to the Department, signed and sealed by a licensed Professional Engineer, that the thermometer(s) have been properly installed and calibrated.
16. Until the Permittee has installed and calibrated new thermometer(s) for ambient temperature monitoring, the Permittee shall calculate the temperature rise above ambient at Outfall D-001 by subtracting the temperature measured at INT-1 from that measured at EFF-2. Monitoring locations INT-1 and EFF-2 are defined in condition I.A.2 of Permit No. FL0002208.
17. No later than 180 days after the effective date of this Order, the Permittee shall prepare and submit for the Department's review and approval a plan of study (Heated Water POS) and schedule to confirm the results of the mathematical model used for simulating the near and far field extent of the Facility's heated water discharge. The Heated Water POS shall be designed and implemented to demonstrate that the heated water discharge from the Facility: 1) does not raise the surface temperature near the Facility's open ocean outfalls to more than 97°F; and 2) does not heat adjacent coastal waters more than the limitations specified in Rule 62-302.520(4)(b), F.A.C. This study also shall evaluate whether and to what extent the heated water discharge raises the cooling water entering the Facility above ambient temperature. The study shall commence no later than 90 days after completion of both uprate projects for Unit 1 and 2. The study shall last no less than 24 months from commencement. The results of the study shall be submitted in a report (Heated Water Report) to the Department for review and approval no later than 60 days after the approved Heated Water POS completion date. The schedule shall include milestones and the completion date.
18. If the Heated Water Report fails to demonstrate that the heated water discharge from the Facility meets the discharge limitations in Part III.17 of this Order, the Permittee shall prepare a feasibility study report (Engineering Report) for the evaluation of engineering options to achieve the discharge limitations. The Engineering Report shall be submitted to the Department for review and approval no later than 180 days after any Department determination that heated water from the discharge fails to meet the discharge limitations in Part III.17 of the Order. The options shall be ranked based on equal weighting of technical and economic feasibility. The results of the ranking shall be presented in the Engineering Report. In addition, the Engineering Report shall include a plan and schedule for implementing the highest ranked option. The schedule shall include milestones and the completion date. The implementation shall take no longer than 24 months from Department approval.
19. The Permittee shall provide a status report demonstrating progress toward compliance with the discharge limitation every six months following the approval of the Engineering Report, until compliance is achieved pursuant to Section I.A. of the Permit. The status reports shall document accomplishment of milestones established by the schedule in the approved Engineering Report.
20. No later than 90 days after the effective date of this Order, the Permittee shall prepare and submit for the Department's review and approval a biological plan of study (Biological POS) and schedule. Biological POS shall be designed to generate information relevant to the following elements: 1) "a population typically characterized by diversity at all trophic levels;" 2) "the capacity to sustain itself through cyclic seasonal changes;" 3) "presence of necessary food chain species;" 4) "non-domination of pollution-tolerant species;" and 5) "indigenous." Each of these elements is discussed in more detail in Paragraphs III. 21-25 of this Order. In addition to the foregoing elements, the Biological POS shall also include provisions for the identification of Representative Important Species (e.g., a list of threatened, endangered, thermally sensitive, or commercially or recreationally valuable species in up- and down-stream of the study area). Representative Important Species is defined as "species which are representative, in terms of their biological needs, of a balanced, indigenous community of shellfish, fish and wildlife in the body of water into which a discharge of heat is made." The study shall collect data pre- and post-completion of the uprate of Units 1 and 2 and shall last no less than 24 months after completion of the uprate. The results of the study shall be submitted in a report

Administrative Order No. AO022TL  
FPL St. Lucie Power Plant  
NPDES Permit No. FL0002208

(Biological Report) to the Department for review and approval no later than 90 days after the approved Biological POS completion date. The schedule shall include milestones and the completion date.

21. "A population typically characterized by diversity at all tropic levels" means that all of the major tropic levels present in the unaffected portion of the Atlantic Ocean should be present in the heat affected portions. The Department recognizes that community structure differences will occur, however, the number of species represented in each tropic level in the unaffected portions should be reasonably similar in the heat affected portions of the ocean. Sampling and analysis of fish and invertebrate communities should be done such that the major tropic levels are identified and represented by reasonably similar species distributions. Also, the Biological POS shall be expanded to include some observations of wildlife (i.e., water fowl, mammals, amphibians, etc.) both upstream and immediately downstream of the discharge point that may be impacted by the thermal discharge.
22. "The capacity to sustain itself through cyclic seasonal changes" means that any additional thermal stress will not cause significant community instability during times of natural extremes in environmental conditions. Community data shall be collected during normal seasonal extremes as well as during optimal seasonal conditions. Data shall be compared between heat affected and unaffected portions of the ocean to account for normal community changes corresponding with change in season.
23. "Presence of necessary food chain species" means that the necessary food webs remain intact so that communities will be sustaining. Exhaustive food web studies are not necessary provided that planktonic invertebrate, fish and wildlife communities are otherwise healthy, i.e., represented by sufficiently high species diversity and abundance (appropriate for that portion of the ocean) for the identified tropic levels and sustaining through normal seasonal changes.
24. "Non-domination of pollution-tolerant species" means that in the case of a thermal effluent, community assemblages in heat affected portions of the ocean dominated by heat tolerant species do not constitute a balanced, indigenous population. The Department recognizes that because all species have varying levels of thermal tolerance, communities in the heat affected portions of the ocean may possess altered assemblages in terms of species present and abundance. All community data should be collected, analyzed and presented to clearly demonstrate that affected communities have not shifted to primarily heat tolerant assemblages.
25. "Indigenous" means a community that may include historically non-native species introduced in connection with a program of wildlife management and species whose presence or abundance results from substantial, irreversible environmental modifications. Normally, however, such a community will not include species whose presence is attributable to the introduction of pollutants that will be eliminated by compliance by all sources with Section 301(b)(2) of the Clean Water Act, and may not include species whose presence or abundance is attributable to alternative effluent limitations imposed pursuant to a thermal zone of mixing. The Department recognizes that non-indigenous species are present in aquatic systems in Florida. All community data shall be analyzed and presented to demonstrate that community assemblages in the heat affected portions of the ocean are not significantly different from non-affected communities with regard to the number of non-indigenous species in the assemblages.
26. If the Biological Report fails to demonstrate that a balanced, indigenous population exists based on the criteria listed in Paragraphs III.16 of this Order, the Permittee shall prepare a feasibility study report (Report) for the evaluation of options to achieve a balanced, indigenous population. The Report shall be submitted to the Department for review and approval no later than 90 days after any Department determination that heated water from the discharge fails to meet the discharge limitations in Part III.20 of the Order. The options shall be ranked based on equal weighting of

Administrative Order No. AO022TL  
FPL St. Lucie Power Plant  
NPDES Permit No. FL0002208

- technical and economic feasibility. The results of the ranking shall be presented in the Report. In addition, the Report shall include a plan and schedule for implementing the highest ranked option. The schedule shall include milestones and the completion date. The implementation shall take no longer than 24 months from Department approval of the Report.
27. The Permittee shall provide a status report demonstrating progress toward a balanced, indigenous population every six months following the approval of the Report, until a balanced, indigenous population is achieved. The status reports shall document accomplishment of milestones established by the schedule in the approved Report.
  28. Monitoring results shall be submitted in accordance with the Permit.
  29. The Permittee shall maintain and operate its facilities in compliance with all other conditions of the Permit.
  30. This Order may be modified through revisions as set forth in Chapter 62-620, F.A.C. Unless otherwise specified herein, reports or other information required by this order shall be sent to: Industrial Wastewater Section, ATTN: Mail Station 3545, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, with a copies sent to: Industrial Wastewater Section, Department of Environmental Protection, Southeast District, 1801 SE Hillmoor Drive, Suite C-204, Port St. Lucie, Florida 34952 and Industrial Wastewater Section, Department of Environmental Protection, Southeast District, 400 N. Congress Avenue, Suite A, West Palm Beach, Florida 33416.
  31. This order does not operate as a permit under Section 403.088, F.S. This order shall be incorporated by reference into NPDES Permit No. FL0002208, which shall require compliance by the Permittee with the requirements of this order.
  32. Failure to comply with the requirements of this order shall constitute a violation of this order and Permit No. FL0002208, and may subject the Permittee to penalties as provided in Section 403.161, F.S.
  33. This order is final when filed with the clerk of the Department, and the Permittee then shall implement this order unless a petition for an administrative proceeding (hearing) is filed in accordance with the notice set forth in the following Section.
  34. If any event occurs that causes delay or the reasonable likelihood of delay, in complying with the requirements of this order, the Permittee shall have the burden of demonstrating that the delay was or will be caused by circumstances beyond the reasonable control of the Permittee and could not have been or cannot be overcome by the Permittee's due diligence. Economic circumstances shall not be considered circumstances beyond the reasonable control of the Permittee, nor shall the failure of a contractor, subcontractor, materialman or other agent (collectively referred to as "contractor") to whom responsibility for performance is delegated to meet contractually imposed deadlines be a cause beyond the control of the Permittee, unless the cause of the contractor's late performance was also beyond the contractor's control. Delays in final agency action on an application for a relief mechanism are eligible for consideration under this paragraph, provided that none of those delays were a result of late submission by the Permittee. Upon occurrence of an event causing delay, or upon becoming aware of a potential for delay, the Permittee shall notify the Department orally at: the Department's Southeast District office, (772) 871-7662, within 24 hours or by the next working day and shall, within seven calendar days of oral notification to the Department, notify the Department in writing at: with a copies sent to: Industrial Wastewater Section, Department of Environmental Protection, Southeast District, 1801 SE Hillmoor Drive, Suite C-204, Port St. Lucie, Florida 34952 of the anticipated length and cause of the delay, the measures taken or to be taken to prevent or minimize the delay and the timetable by which Facility intends to implement these measures. If the

Administrative Order No. AO022TL  
FPL St. Lucie Power Plant  
NPDES Permit No. FL0002208

delay or anticipated delay has been or will be caused by circumstances beyond the reasonable control of the Permittee, the time for performance hereunder shall be extended for a period equal to the delay resulting from such circumstances.

#### IV. NOTICE OF RIGHTS

A person whose substantial interests are affected by the Department's decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57 of the F.S. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Petitions by the applicant or any of the parties listed below must be filed within twenty-one days of receipt of this written notice. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within twenty-one days of publication of the notice or within twenty-one days of receipt of the written notice, whichever occurs first.

Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within twenty-one days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

- (a) The name, address, and telephone number of each petitioner; the Department permit identification number and the county in which the subject matter or activity is located;
- (b) A statement of how and when each petitioner received notice of the Department action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department action;
- (d) A statement of the material facts disputed by the petitioner, if any;
- (e) A statement of facts that the petitioner contends warrant reversal or modification of the Department action;
- (f) A statement of which rules or statutes the petitioner contends require reversal or modification of the Department action; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under Section 120.573, F.S., is not available for this proceeding.

This action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of the Department.

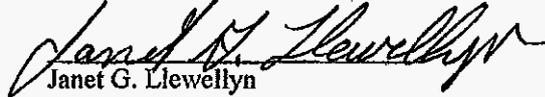
Any party to the order has the right to seek judicial review of the order under Section 120.68, F.S., by the filing of a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk

Administrative Order No. AO022TL  
FPL St. Lucie Power Plant  
NPDES Permit No. FL0002208

of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department.

DONE AND ORDERED on this 17<sup>th</sup> day of DEC. 2010 in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION



Janet G. Llewellyn  
Director  
Division of Water Resource Management

CLERK STAMP

FILED AND ACKNOWLEDGED on this date, under Section 120.52(7) of the Florida Statutes, with the designated Department Clerk, receipt of which is acknowledged.

\_\_\_\_\_  
Clerk

\_\_\_\_\_  
Date

Copies furnished to Permit Distribution List