

Engineer's Notes,
ETC. for
file
5/28/97

Appendix H-1, Permit History/ID Number Changes

Florida Power & Light
Manatee Power Plant

[DRAFT/PROPOSED/FINAL] Permit No.: 0810010-001-AV
Facility ID No.: 0810010

Permit History (for tracking purposes):

E.U.

<u>ID No</u>	<u>Description</u>	<u>Permit No.</u>	<u>Issue Date</u>	<u>Expiration Date</u>	<u>Extended Date</u>	<u>Revised Date(s)</u>
-001	877 MW Steam Generator #1	AO41-204804	08/30/93	01/14/97		
-002	877 MW Steam Generator #2	AO41-219341	08/30/93	01/14/97		

(if applicable) ID Number Changes (for tracking purposes):

From: **Facility ID No.:** 40MAN410010

To: **Facility ID No.:** 0810010

Notes:

- 1 - AO permit(s) automatic extension(s) in Rule 62-210.300(2)(a)3.a., F.A.C., effective 03/21/96.
- 2 - AC permit(s) automatic extension(s) in Rule 62-213.420(1)(a)4., F.A.C., effective 03/20/96.
- {Rule 62-213.420(1)(b)2., F.A.C., effective 03/20/96, allows Title V Sources to operate



Susan Devere

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell

RECEIVED

MAY 28 1997

**BUREAU OF
AIR REGULATION**

NOTICE OF PERMIT AMENDMENT

CERTIFIED MAIL

Mr. Antonio Rodriguez
Vice President, Power Generation Business Unit
Florida Power & Light Company
P.O. Box 14000
Juno Beach, Florida 33408

Dear Mr. Rodriguez:

Re: Manatee Power Plant - Units 1 and 2
Operation Permit Amendments (ARMS Project 0810010-002-AO)
Permit Numbers: AO41-204804 (Manatee Unit No. 1)
AO41-219341 (Manatee Unit No. 2)

On October 21, 1996, the Department received your request to amend the above permits. The requested amendments consisted of approval to dispose of non-hazardous boiler cleaning waste by incineration and evaporation through injection into the boilers and to add propane as a fuel type for startup for Manatee Units 1 and 2. The Department has reviewed this request and determined that this change is not considered a modification as defined in Rule 62-210.300, F.A.C. and is consistent with current Department guidance. As a result, the requested change can be accomplished by an operation permit amendment. Establishing of the additional permit requirements as federally enforceable will be accomplished at a later date through the issuance of the Title V major source operation permit for this facility.

Therefore, permit numbers AO41-204804 and AO41-219341 are hereby amended as follows:

UNIT NO. 1, PERMIT NO. AO41-204804

Page 1 of 7 Change the 1st paragraph of the Description

From:

For operation of Unit No. 1 at Florida Power & Light Company's (FPL) Manatee Power Plant. Unit 1 is an 800 MW class (with the capability of generating up to 900 MW gross) Foster Wheeler oil fired steam generator. The maximum heat input rate while firing No. 6 fuel oil is 8,650 million (MM) Btu per hour.

To:

For operation of Unit No. 1 at Florida Power & Light Company's (FPL) Manatee Power Plant. Unit 1 is an 800 MW class (with the capability of generating up to 900 MW gross) Foster Wheeler oil fired steam generator. Fuels fired in this boiler are No. 6 residual fuel oil, No. 2 fuel oil, natural gas, propane (primarily as an ignition fuel), and used oil from FPL operations. The maximum heat input rate while firing No. 6 fuel oil is 8,650 million (MM) Btu per hour.

UNIT NO. 2, PERMIT NO. AO41-219341

Page 1 of 7 Change the 1st paragraph of the Description

From:

For operation of Unit No. 2 at Florida Power & Light Company's (FPL) Manatee Power Plant. Unit 2 is an 800 MW class (with the capability of generating up to 900 MW gross) Foster Wheeler oil fired steam generator. The maximum heat input rate while firing No. 6 fuel oil is 8,650 million (MM) Btu per hour.

To:

For operation of Unit No. 2 at Florida Power & Light Company's (FPL) Manatee Power Plant. Unit 2 is an 800 MW class (with the capability of generating up to 900 MW gross) Foster Wheeler oil fired steam generator. Fuels fired in this boiler are No. 6 residual fuel oil, No. 2 fuel oil, natural gas, propane (primarily as an ignition fuel), and used oil from FPL operations. The maximum heat input rate while firing No. 6 fuel oil is 8,650 million (MM) Btu per hour.

UNIT NO. 1, PERMIT NO. AO41-204804

and

UNIT NO. 2, PERMIT NO. AO41-219341

Page 2 of 7 Change Specific Condition No. (3)

From:**(3) Permitted Fuels:**

The only fuels authorized to be burned in this source are, (a) No. 6 residual fuel oil, (b) No. 2 fuel oil, (c) natural gas, or (d) used oil from FPL operations. These fuels may be mixed or burned simultaneously.
[Requested in the permit application].

To:

(3) Permitted Fuels:

The only fuels authorized to be burned in this source are, (a) No. 6 residual fuel oil, (b) No. 2 fuel oil, (c) natural gas, (d) propane (not to exceed 1 million gallons per year based on a 12 month rolling average), or (e) used oil from FPL operations. These fuels may be mixed or burned simultaneously. [Requested in operation permit amendment request dated October 10, 1996]

- - - - -

Page 7 of 7 Change Specific Condition No. (14)

From:

(14) Disposal of Spent Boiler Cleaning Chemicals - Rule 17-4.070(3), F.A.C.

FPL shall not dispose of spent boiler cleaning chemicals by injecting them into this source.

To:

(14) Disposal of Spent Boiler Cleaning Chemicals - Rule 62-4.070(3), F.A.C.

Non-hazardous boiler chemical cleaning waste may be disposed of by incineration and/or evaporation through injection into the boiler under the following conditions:

(a) Upon completion of the cleaning process and prior to waste disposal, representative sampling will be conducted pursuant to 40 CFR 261 Appendix I or other appropriate FDEP approved Comprehensive Quality Assurance Plan sampling technique. Analyses by the Toxicity Characteristic Leaching Procedure (TCLP) for toxicity characteristic metals will be performed to determine whether or not the accumulated waste is hazardous. If the waste is determined to be non-hazardous, then it may be incinerated and/or evaporated in this fossil fuel fired boiler through injection.

(b) The quantity of non-hazardous boiler chemical cleaning waste injected into this boiler shall not exceed 50 gallons per minute and shall not be done during boiler start-up. During the period of injection the boiler operating temperature shall be maintained and necessary steps that represent best operational practice to minimize excess emissions shall be taken. Records of the date, time (beginning and end), and quantity (gallons) of waste material injected shall be maintained for each time that non-hazardous boiler chemical

cleaning waste is injected into this boiler. These records shall be retained for at least a three (3) year period and made available upon request.

Procedures for administrative hearing, mediation, and variance/waiver are described below.

Administrative Hearing

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this permit. A petitioner must 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 (or a request for mediation, as discussed below) 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 of the Florida Statutes, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number, and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by the petitioner;
- (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action;
- (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the permit.

Because the administrative action or proposed action addressed in this 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 of

intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation

A person whose substantial interests are affected by the Department's permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information:

- (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any;
- (b) A statement of the preliminary agency action;
- (c) A statement of the relief sought; and
- (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this permit or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following:

- (a) The names, addresses, and telephone numbers of any persons who may attend the mediation;
- (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time;
- (c) The agreed allocation of the costs and fees associated with the mediation;
- (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation;
- (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen;
- (f) The name of each party's representative who shall have authority to settle or recommend settlement; and
- (g) The signatures of all parties or their authorized representatives.

As provided in section 120.573 of the Florida Statutes, the timely agreement of all parties to mediate will toll the time limitations imposed by sections 120.569 and 120.57 for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement

of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such a modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under sections 120.569 and 120.57 remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

Variance/Waiver

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under section 120.542 of the Florida Statutes. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to this permit.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, FL 32399-3000.

The petition must specify the following information:

- (a) The name, address, and telephone number of the petitioner;
- (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any;
- (c) Each rule or portion of a rule from which a variance or waiver is requested;
- (d) The citation to the statute underlying (implemented by) the rule identified in (c) above;
- (e) The type of action requested;
- (f) The specific facts that would justify a variance or waiver for the petitioner;
- (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule);
- (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in section 120.542(2) of the Florida Statutes, and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of EPA and by the person under the Clean Air Act unless and until Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

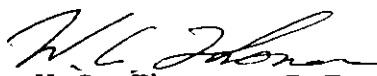
* * * * *

This permit is final and effective on the date filed with the Clerk of the Department unless a timely petition for an administrative hearing is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 62-103.070, F.A.C., or a party requests mediation as an alternative remedy before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. Upon timely filing of a petition or a request for an extension of time to file the petition or a request for mediation, this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate procedure, with the Clerk of the Department in the Office of General Counsel, Douglas Building, 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 the Final Order is filed with the Clerk of the Department.

This amendment letter must be attached to and becomes a part of permit Nos. A041-204804 and A041-219341. If you have any questions please call Mr. David Zell of my staff at (813) 744-6100, ext. 118.

Sincerely,



W.C. Thomas, P.E.
Director Air Program Administrator
Southwest District

DRZ/

copies (non-Certified) to:

- Susan Devore, FDEP BAR Tallahassee, Title V Permit Section
- Manatee County Environmental Action Commission

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT AMENDMENT and all copies were mailed by certified mail before the close of business on 5/27/97 to the listed persons.

FILING AND ACKNOWLEDGEMENT FILED,
on this date, pursuant to Section
120.52(7), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Gloria Bonnie Rife
Clerk

5/27/1997
Date

Date: 4/29/97 2:23:22 P
From: David Zell TPA
Subject: RE: FPL/Manatee, #0810010

The project (0810010-002-AO) I have been assigned is an AO amendment to add propane as a permitted ignition fuel and authorize the disposal of non-hazardous boiler cleaning waste by incineration in the boilers. I hope to get these amendments drafted in the next 2-3 weeks (Day 90 is 06/21).


Dave Zell, SWD Air

Memorandum

File

Florida Department of
Environmental Protection

TO: Bill Thomas, SWD

FROM: Bruce Mitchell 

DATE: April 29, 1997

SUBJECT: Completeness Review of an Application Package for a Title V Operation Permit
Florida Power & Light Co., Manatee: 0810010-001-AV

Enclosed is an application package for a Title V operation permit that is being processed in Tallahassee. Please review the package for completeness and respond in writing by May 30, 1997, if you have any comments. Otherwise, no response is required.

It is very important to verify the compliance statement regarding the facility, since we do not have a readily effective means of determining compliance at the time the application was submitted. Please advise if you know of any emissions unit(s) that were not in compliance at that time and provide supporting information. You should have a copy on file of the original initial Title V permit application submittal. Also, please do not write on these documents.

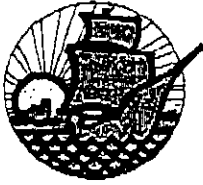
If there are any questions, please call the project engineer, Susan DeVore, at 904/488-1344 or SC: 278-1344.

RBM/bjb

Enclosure

cc: Jerry Kissel

4/30/97 
Reading File



MANATEE COUNTY

BOARD OF COUNTY COMMISSIONERS

January 8, 1997

VIA FAX: 904-922-6979
(904-488-1344 confirmation)
and REGULAR MAIL

Mr. John C. Brown, Jr.
Administrator, Title V Programs
Florida Department of Environmental Protection
2600 Blainstone Road - Twin Towers
Mail Station 5505
Tallahassee, Florida 32399-2400

Re: Permit Renewal Conditions for Manatee Units 1 and 2 - Florida Power & Light, Parrish, FL

Dear Mr. Brown:

I am the County Commissioner for the District 1 seat on the Manatee County Board of County Commissioners. District 1 includes the site of the Florida Power and Light power plant in Parrish, Manatee County, which is also sometimes referred to as Manatee Units 1 and 2.

As an individual Commissioner elected to represent the interests of 46,000-plus Manatee County residents who are my constituents living in County Commission District 1, I am writing to request and urge that you incorporate as a condition of the renewal of the permits for Manatee Units 1 and 2 a requirement that real-time continuous emission monitoring results for Manatee Units 1 and 2 be reported electronically via modem to the Manatee County Environmental Management Department ("EMD"). Through EMD, the Board of County Commissioners of Manatee County administers the Air Pollution Control Code, Ordinance No. 96-22, effective November 5, 1996, and local pollution control programs for Manatee County.

By separate letter, you also should be receiving a similar request from the Board of County Commissioners of Manatee County based on action taken yesterday at the Board's regular meeting of January 7, 1997.

If you have any questions whatsoever about the foregoing, please feel free to call me during business hours at my office (941-745-3701) or during evening / weekend hours at my home (941-776-3301).

Thank you very much for your time and attention to this matter.

Very truly yours,

Amy E. Stein
County Commissioner
District 1

P.O. Box 1000, Bradenton, Florida 34206
FAX (813) 745-3790
(813) 745-3700

*Beve
for
Manatee Files
I discussed
this w/ Mr. Stein;
suggested we note
no scheduling or
rule authority
for this - but
it could possibly
be done locally
but probably
does not need
to be in
permit.
Not sure know if
you have
any thing else.
HAR wants
to be kept
informed.
JCB*

RECEIVED

NOV 04 1996

DEP ROUTING AND TRANSMITTAL SLIP		BUREAU OF AIR REGULATION
TO: (NAME, OFFICE, LOCATION) 3. _____		
1. <u>TOM CASCIQ.</u>		
2. _____ 5. _____		
PLEASE PREPARE REPLY FOR:		COMMENTS:
____ SECRETARY'S SIGNATURE		<i>RE FP&L MANATEE 10/10/96 LETTER ATTACHED</i>
____ DIV/DIST DIR SIGNATURE		
____ MY SIGNATURE		
____ YOUR SIGNATURE		
____ DUE DATE _____		
ACTION/DISPOSITION		<i>WE'RE PROCESSING THIS AS AN AMENDMENT, BUT THIS MAY TURN INTO A MODIF'N, SINCE THERE ARE SOME CIRCUMSTANCES WHERE NO_x CAN BE GREATER WITH GAS FIRING (UNCONTROLLED NO_x) VS. OIL FIRING.</i>
____ DISCUSS WITH ME		
____ COMMENTS/ADVISE		
____ REVIEW AND RETURN		
____ SET UP MEETING		
____ FOR YOUR INFORMATION		
____ HANDLE APPROPRIATELY		
____ INITIAL AND FORWARD		
____ SHARE WITH STAFF		
____ FOR YOUR FILES		
FROM: <u>JK</u> DATE: <u>10/29/96</u> PHONE: <u>30542-6100 X107</u>		



October 10, 1996

Mr. Jerry Kissel
State of Florida
Department of Environmental Protection
Southwest Florida District
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

D.E.P.
OCT 21 1996
SOUTHWEST DISTRICT
TAMPA

RE: Manatee Power Plant - Units 1 and 2
Permit Nos. A041-204804 & A041-219341
Facility I.D. No.0810010
Modification of Permit - Addition of Fuel Type
& Disposal of Boiler Cleaning Waste

Dear Mr. Kissel:

The purpose of this letter is to request modification of the above listed air permits concerning disposal of non-hazardous boiler cleaning waste by incineration & evaporation by injection and to add propane as a fuel type.

A revision of specific condition number 14, page 7 of 7, is requested to allow for disposal of non-hazardous boiler cleaning waste by incineration & evaporation by injection. Disposal of non-hazardous boiler cleaning waste by incineration & evaporation by injection is addressed in the recent guidance memo (DARM-SS/CE-07) from Howard Rhodes, Director of the Division of Air Resources Management (DARM), which authorizes the injection of non-hazardous boiler chemical cleaning waste with specific injection rate limitations, plus, addresses the modification of permits prohibiting disposal of non-hazardous boiler cleaning waste by injection. The DARM memo is attached for your convenience.

The Title V permit application addressed the disposal of boiler chemical waste disposal.

Manatee Plant requests to add propane as a fuel type in the current permits A041-204804 & A041-219341. New ignitors will be installed in both units to accommodate the new fuel. This addition will incur no additional emission increases, as, propane is a cleaner burning fuel than the light oil currently used for startup. The Title V permit application for this site included propane as a fuel type.

Attached is a line diagram indicating the use of propane in the emission unit process flow.

page 2

Manatee Power Plant - Units 1 and 2

Permit Nos. A041-204804 & A041-219341

Facility I.D. No.0810010

Modification of Permit - Addition of Fuel Type
& Disposal of Boiler Cleaning Waste

A check is enclosed for \$500 to cover the administrative cost per FAC 62-4.050.

If you have any questions, please contact me at (407) 625-7637.

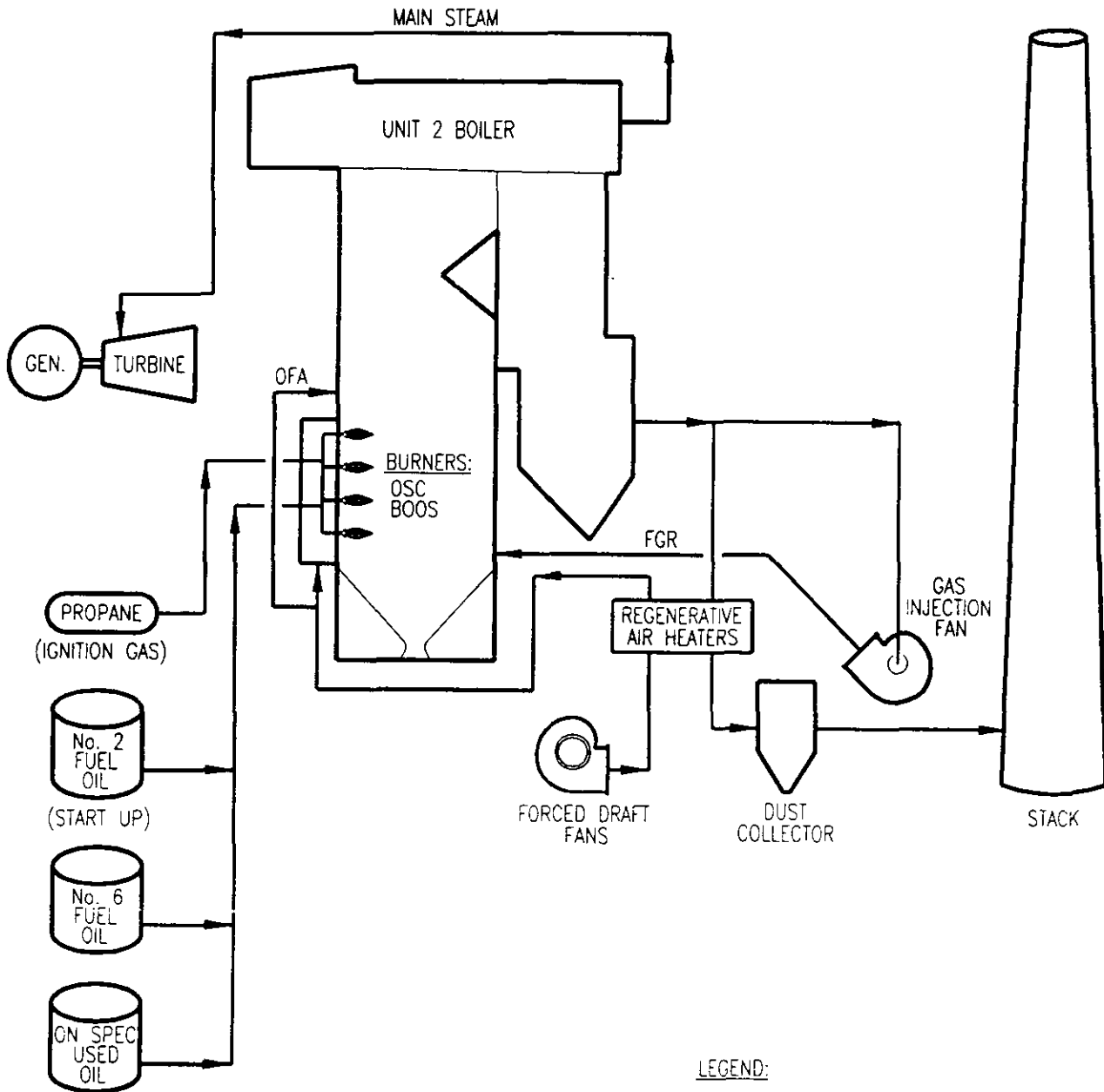
Sincerely,



Mary J. Archer
Environmental Specialist

Enclosures: (2)

cc: Manatee County Environmental Management Department.



LEGEND:

OSC: OFF-STOICHIOMETRIC COMBUSTION (OFA)
 BOOS: BURNERS OUT OF SERVICE
 FGR: FLUE GAS RECIRCULATION
 OFA: OVER FIRE AIR

	SYSTEM	YY	DISCIPLINE	M	PLANT/UNIT	MANATEE PLANT
	SCALE	N/A	CAD FILE NAME	MT002596	TITLE	EMISSION UNIT PROCESS FLOW DIAGRAM
	DRAWING SIZE	A (8.5X11)	FPL ARCHIVE NAME	MT002596		STEAM GENERATOR/BOILER
						ATTACHMENT NO. EU2
DRAWING NUMBER						
PMT1-M0105-YY						SHEET 1 OF 1 REV 0

Memorandum

Florida Department of
Environmental Protection

DARM-SS/CE-07

TO: John Ruddell, Director, Division of Waste Management
District Air Program Administrators
County Air Program Administrators
Bureau of Air Regulation Engineers

FROM: Howard L. Rhodes, Director *HLR*
Division of Air Resources Management

DATE: May 24, 1996

SUBJECT: Guidance on the Disposal of Non Hazardous Boiler Chemical
Cleaning Waste by Incineration and Evaporation

The Division of Waste Management has determined that boiler chemical cleaning waste that passes the Toxicity Characteristic Leaching Procedure (TCLP) analyses for toxicity characteristic metals is non-hazardous and as such, the waste can be disposed of by incineration and/or evaporation in the conventional manner, i.e., injection into an operating fossil fuel fired boiler. Several years ago, some of the air operating permits for fossil fuel fired boilers were amended to prohibit this practice except on a case by case basis with Department approval. This guidance memo will outline the scenarios where the disposal of non-hazardous boiler chemical cleaning waste may be disposed of by injection and subsequent incineration and/or evaporation in a fossil fuel fired boiler without case-by-case Department approval. Operating permits should be amended as soon as practical to reflect this change.

Boiler tubes (water side) are cleaned on a periodic, somewhat cyclical basis, usually every three (3) to five (5) years. Although efforts are underway to extend the cycle to as much as ten (10) to twelve (12) years, boiler chemical cleanings are still necessary.

Upon completion of the cleaning process and prior to waste disposal, representative sampling will be conducted pursuant to 40 CFR 261 Appendix I (COLIWASA) or other appropriate FDEP approved Comprehensive Quality Assurance Plan sampling technique. Analyses by the TCLP for toxicity characteristic metals will be performed to determine whether or not the accumulated waste is hazardous.

If the waste is determined to be hazardous, it will be managed in accordance with all applicable hazardous waste controls under 40 CFR 262.34, 40 CFR 265 subpart I and 40 CFR 268. If the waste is determined to be non-hazardous pursuant to such applicable controls, the waste may be incinerated and/or evaporated in a fossil fuel fired boiler.

John Ruddell, Director, Division of Waste Management
District Air Program Administrators
County Air Program Administrators
Bureau of Air Regulation Engineers
May 24, 1996
Page Two

Wastewater determined to be non-hazardous can be injected in small quantities, not to exceed 50 gallons per minute, into an operating fossil fuel fired boiler. The boiler operating temperature must be maintained and necessary steps that represent best operational practices to minimize excess emissions must be taken during the injection process.

HLR/jp/cd

AP-42 1.3-4 1/95:

UTILITY BOILER, NORMAL FIRING #4: 67 lb NO_x/10³ gal
do., TANGENTIAL FIRING #4: 42 do.

#2 OIL = 137,000 $\frac{\text{Btu}}{\text{gal}}$

$$\frac{67 \text{ lb NO}_x}{10^3 \text{ gal}} \times \frac{\text{gal}}{137,000 \text{ Btu}} = \frac{.49 \text{ lb NO}_x}{\text{MM Btu}}$$

$$\frac{42 \text{ lb NO}_x}{10^3 \text{ gal}} = \frac{.31 \text{ lb NO}_x}{\text{MM Btu}}$$

NO_x GREATER
W/ GAS FIRING

AP-42 1.4-4 1/95:

UTILITY BOILER

UNCONTROLLED

$$550 \text{ lb NO}_x / 10^6 \text{ ft}^3 = \frac{.550 \text{ lb}}{\text{MM Btu}}$$

CONTROLLED - LOW NO_x BURNER

81

.081

CONTROLLED - FLUE GAS RECIRC'N

53

.053

-JR 10/29/96



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

April 29, 1996

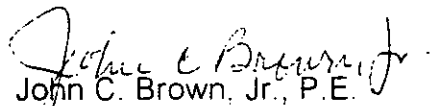
Peter C. Cunningham, Esquire
Hopping Green Sams & Smith
123 South Calhoun Street
Post Office Box 6526
Tallahassee, Florida 32314

Dear Mr. Cunningham:

This letter is in response to your April 12 letter regarding FP&L's Manatee Power Plant. I discussed the propriety of including FP&L's oil terminal as part of the Manatee Power Plant Title V source with Jerry Kissel, Southwest District and Pat Comer, OGC. All of us concur that the FP&L oil terminal at Port Manatee is not part of the power plant's Title V source.

Please contact me at the letterhead address or by calling (904)488-1433 if you have any further questions.

Sincerely,


John C. Brown, Jr., P.E.
Administrator, Title V Section
Bureau of Air Regulation

JCB/sk

cc: Clair Fancy ✓
Jerry Kissel, SWD
Robert Manning, Esquire
Bill Thomas, SWD

DEP ROUTING AND TRANSMITTAL SLIP		
TO: (NAME, OFFICE, LOCATION)		3. _____
1. <u>Chairman</u>	4. _____	5. _____
2. <u>John</u>		
<p>PLEASE PREPARE REPLY FOR:</p> <p><input type="checkbox"/> SECRETARY'S SIGNATURE</p> <p><input type="checkbox"/> DIV/DIST DIR SIGNATURE</p> <p><input type="checkbox"/> MY SIGNATURE</p> <p><input type="checkbox"/> YOUR SIGNATURE</p> <p><input type="checkbox"/> DUE DATE _____</p> <p>ACTION/DISPOSITION</p> <p><input type="checkbox"/> DISCUSS WITH ME</p> <p><input type="checkbox"/> COMMENTS/ADVISE</p> <p><input type="checkbox"/> REVIEW AND RETURN</p> <p><input type="checkbox"/> SET UP MEETING</p> <p><input checked="" type="checkbox"/> FOR YOUR INFORMATION</p> <p><input type="checkbox"/> HANDLE APPROPRIATELY</p> <p><input type="checkbox"/> INITIAL AND FORWARD</p> <p><input type="checkbox"/> SHARE WITH STAFF</p> <p><input type="checkbox"/> FOR YOUR FILES</p>	<p>COMMENTS:</p> <p style="font-size: 1.2em; margin-top: 20px;">I certainly agree.</p> <p style="text-align: right; margin-top: 10px;"><u>Clan</u></p> <p style="margin-top: 40px; transform: rotate(-15deg);">File with Postmaster Manager Records</p>	
<p>FROM: <u>John Brown</u> DATE: <u>4-29-96</u> PHONE: <u>488-1344</u></p>		



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

December 16, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

The Honorable Joe McClash
Commissioner, Manatee County Board of
County Commissioners
P. O. Box 1000
Bradenton, Florida 34206

Dear Mr. McClash:

RE: Request for Notification of Any Proposed Title V Air Operation Permitting Action

Thank you for your letter of November 6, which requested notification of any proposed agency action regarding the initial Title V operation permits for the facilities located in Manatee County. We have already placed your name on the "to be copied" list for the Florida Power & Light's Manatee Plant, which is the only Title V source initial permit application that the Tallahassee Title V Section will be processing that is located in Manatee County. Therefore, the Department's intent package of the DRAFT Title V operation permit will be mailed to you at the same time as the applicant and others.

We do not have a mechanism to maintain a blanket request for agency actions (i.e., air permitting actions) in a geographical area. However, if you are aware of any other air permit request being processed by the Department in which you might have an interest, please contact the air permitting authority and inform them of your interests. The permitting authorities that could process an air permit request for a source located in Manatee County are:

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Telephone: 904/488-1344
Fax: 904/922-6979

Contacts: C. H. Fancy, Bureau Chief
A. A. Linero, P.E. Administrator, New Source Review Section
Major source construction permitting (not Title V processing)

The Honorable Joe McClash
Letter: December 16, 1996
Page 2 of 2

Department of Environmental Protection
Southwest District
Air Resources Management
3804 Coconut Palm Drive
Tampa, Florida 33619-821

Telephone: 813/744-6100
Fax: 813/744-6084

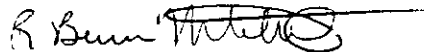
Contacts: - W. C. Thomas, District Air Program Administrator
G. J. Kissel, P.E. III, Air Permitting Section
Title V and non-Title V permitting

The Tallahassee Title V Section has no information about any other permit processing other than the one that is mentioned above.

You are correct that the Manatee County Environmental Management Department-Air Quality Division does get a copy of all air permitting actions in Manatee County. Therefore, you could be kept aware of all air permitting actions there by the public notices placed in the newspaper and by requesting that your county's Air Quality Division notify you upon receipt of any proposed agency actions, air or otherwise. Also, if you have access to the DEP world wide web site, then you will be able to review all of Florida's Title V permits (i.e., DRAFT, PROPOSED and FINAL) @ <http://www.dep.state.fl.us/air> and selecting EPA Review from the menu. The Department has already begun placing Title V permits on the site.

I hope that your requests have been answered by this letter. If not, please give me a call at 904/488-1344 or write to me at the above letterhead address.

Sincerely,



R. Bruce Mitchell
Environmental Administrator
Title V Section-Bureau of Air Regulation

RBM/m

Enclosure

cc: C. H. Fancy, BAR
Patricia Comer, Esq., DEP
W. C. Thomas, SWD
G. J. Kissel, SWD
Karen Collins, MCEMD

12/17/96 John Brown / Tom Cascio / Scott Sheplek
Peggy Maloney
Reading File

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
The Honorable Joe McClash
Commissioner, Manatee County
Board of County Commissioners
P. O. Box 1000
Bradenton, Florida 34206

4a. Article Number
Z 311 902 877

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
DEC 1996

5. Signature (Addressee)
W. Ball

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 *U.S. GPO: 1993-352-714 DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

Z 311 902 877

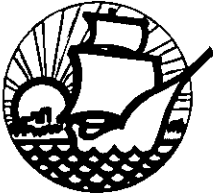


Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form 3800, March 1993

Sent to	Honorable Joe McClash
Street and No.	P. O. Box 1000
P.O., State and ZIP Code	Bradenton, Florida 34206
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	December 17, 1996



MANATEE COUNTY
BOARD OF COUNTY COMMISSIONERS

November 6, 1996

RECEIVED

NOV 14 1996

BUREAU OF
AIR REGULATION


Mr. Scott Sheplak
Department of Environmental Regulation
Twin Towers
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Sheplak:

It is my understanding when the Title 5 permits are mailed to you and you determine they are completed, a draft of the permit is forwarded to several agencies, i.e. Manatee County Environmental Management Department, the District office of DEP and the Federal EPA. I would like to be added to that list to receive a copy of any draft Title 5 permit submitted from Manatee County. I would also like to be copied if any modification is requested in a Title 5 permit.

Thanking you in advance for your cooperation in this matter, I remain

Sincerely yours,


Joe McClash
County Commissioner
District 7

st

I N T E R O F F I C E M E M O R A N D U M

Date: 17-Oct-1995 07:45am EST
From: Hamilton Buck Oven TAL
OVEN_H
Dept: Office of Secretary
Tel No: 904/487-0472
SUNCOM: Room 953-A

TO: Tom Cascio TAL

(CASCIO_T)

Subject: RE: FILE COPIES

The Manatee Plant is in the middle of a site certification proceeding. It is not certified yet. It has a current Air Operating Permit that will be superseded when the certification process is completed in April 96. See Martin Costello for the draft PSD Permit.

BARB

*INFO
pls FILE*

THX

107

I N T E R O F F I C E M E M O R A N D U M

Date: 16-Oct-1995 10:46am EST
From: Tom Cascio TAL
CASCIO_T
Dept: Air Resources Managemen
Tel No: 904/488-1344
SUNCOM: 278-1344

TO: Hamilton Buck Oven TAL

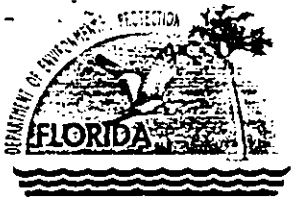
(OVEN_H)

Subject: FILE COPIES

Buck:

Many thanks for your help this morning. But we could not find the Manatee Power Plant in the binder. Please advise.

Tom



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

September 8, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

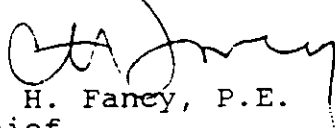
Mr. Wayne C. Ondler
Manager, Environmental Affairs
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

Dear Mr. Ondler:

Attached is a copy of the Technical Evaluation and Preliminary Determination, proposed BACT determination, and proposed permit to modify the existing Florida Power & Light Manatee Power Plant to accommodate the firing of Orimulsion fuel and high sulfur oil.

Please submit any written comments you wish to have considered concerning the Department's proposed action to me at the Bureau of Air Regulation. If you have any questions regarding this matter, please call Cindy Phillips at (904) 488-1344.

Sincerely,


C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/CP/a

Attachment

cc: Bill Thomas, SWD
Hamilton S. Oven, Siting Coordination
Peter Cunningham, HGS&S
Jewell Harper, EPA
John Bunyak, NPS
Kennard F. Kosky, P.E., KBN
Greg Johnson, Manatee County EAC
John Schatmeyer, Pinellas Co. DEM
Jerry Campbell, Hillsborough Co. EPC

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

DEP File No. PSD-FL-219
Manatee County

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

INTENT TO ISSUE

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue a construction permit (copy attached) for the proposed project, as detailed in the application specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Florida Power & Light Company, applied on September 30, 1994, for an air construction permit to modify two existing 800 MW fossil fuel-fired steam generators in order to accommodate the firing of Orimulsion fuel and high sulfur fuel oil. Pollution control equipment will be installed, including electrostatic precipitators (ESP), flue gas desulfurization (FGD) systems, and low NOx burners. In addition, handling and storage facilities will be constructed for the limestone/limerock, flyash, and gypsum.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed action.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of

provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt

of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on Sept. 8, 1995 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


Clerk

9/8/95
Date

Copies furnished to:

cc: Bill Thomas, SWD
Hamilton S. Oven, Siting Coordination
Peter Cunningham, HGS&S
Jewell Harper, EPA
John Bunyak, NPS
Kennard F. Kosky, P.E., KBN
Greg Johnson, Manatee County EAC
John Schatmeyer, Pinellas Co. DEM
Jerry Campbell, Hillsborough Co. EPC

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT

PSD-FL-219

The Department of Environmental Protection (Department) gives notice of its intent to issue a construction permit, PSD-FL-219 (PA 94-35), to Florida Power and Light Company (FP&L) Manatee Power Plant in Manatee County for the modification of two existing 800 MW oil fired steam generators to allow, in addition to the currently permitted low (1.0% or less) sulfur fuel oil, the firing of Orimulsion fuel, a naturally-occurring bitumen emulsified in water. When Orimulsion fuel is not available, high (3.0% maximum) sulfur No. 6 fuel oil may be fired as the backup fuel. In addition equipment and buildings will be constructed to produce gypsum and to handle and store limestone/limerock, gypsum, and flyash. Pollution control equipment, including flue gas desulfurization, electrostatic precipitators, and low NOx burners will be installed to reduce emissions of sulfur dioxide, particulate matter, and nitrogen oxides. The maximum predicted PSD Class II nitrogen dioxide increment to be consumed by the proposed project, along with all of the other increment-consuming sources in the vicinity, is 4.2 ug/m³, annual average or 17% of the available annual increment of 25 ug/m³. The maximum predicted PSD Class I nitrogen dioxide increment to be consumed by the proposed project, along with all of the other increment-consuming sources in the vicinity of the Chassahowitka National Wilderness Area, is 0.85 ug/m³ or 34% of the available annual increment of 2.5 ug/m³. A Determination of Best Available Control Technology was required.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action

or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, 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 decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Southwest District
8407 Laurel Fair Circle
Tampa, Florida 33619

Manatee County Environmental Action Commission
202 Sixth Avenue, East
Bradenton, Florida 34208

Any person may send written comments on the proposed action to Mr. C. H. Fancy at the Department of Environmental Protection, Bureau of Air Regulation, Mail Station 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person(s). Such request must be submitted within 30 days of this notice.

This is a preliminary determination in accordance with the Prevention of Significant Determination (PSD) rules and is subject to change based upon comments received by the USEPA, other governmental agencies and commissions, citizens, environmental groups, the applicant's representatives, and from comments received during the hearing scheduled to start on November 28, 1995.

Technical Evaluation
and
Preliminary Determination

Florida Power & Light Company
Manatee County, Florida

Manatee Power Plant Modification
Orimulsion Conversion Project

Department File No.: PSD-FL-219
(PA 94-35)

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

September 8, 1995

SYNOPSIS OF APPLICATION

I. GENERAL INFORMATION

A. Name and Address of Applicant

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

B. Reviewing and Process Schedule

Date of Receipt of Application: September 30, 1994.

Completeness Review: Department letters dated December 5, 1994; February 21, 1995; and, May 3, 1994.

Response to Incompleteness Letters: Company letters received on January 17, 1995; April 3, 1995; and May 4, 1995.

Application Completeness Date: May 11, 1994.

C. Facility Location

This facility is located in Manatee County approximately 5 miles east of Parrish and 2 miles south of the Hillsborough County border. The UTM coordinates are Zone 17, 367.3 km East and 3054.1 km North.

Facility Identification Code (SIC)

Major Group No. 49 - Electric, Gas and Sanitary Services.

Industry Group No. 491 - Combination Electric, Gas and Other Utility Services.

Industry Group No. 4911 - Electric and Other Services Combined.

Facility APIS/ARMS I.D. No.: 40MAN410010

D. Project Description

The Florida Power & Light Company (FP&L) Manatee Power Plant in Manatee County is classified as a major emitting facility. The proposed project consists of the modification of two existing 800 MW class (with the capability of generating up to 900 MW gross) Foster Wheeler oil fired steam generators to allow, in addition to the currently permitted low (1.0% or less) sulfur fuel oil, the firing of Orimulsion fuel, a naturally-occurring bitumen emulsified in water. When Orimulsion fuel is not available, high (3.0% maximum) sulfur No. 6 fuel oil may be fired as the backup fuel. In

addition equipment and buildings will be constructed to produce gypsum and to handle and store limestone/limerock, gypsum, and flyash. Pollution control equipment will be installed to reduce emissions of sulfur dioxide, particulate matter, and nitrogen oxides.

E. Project Emissions

The proposed project will produce potential pollutant emissions of 15,742 tons per year (TPY) of nitrogen oxides (NO_x) based upon an emission limit of 0.27 lb NO_x/MMBtu; 13,643 TPY of sulfur dioxide (SO₂); 18,948 TPY of carbon monoxide (CO); 1707 TPY of particulate matter (PM/PM₁₀); 122 TPY of volatile organic compounds (VOC); 0.0005 TPY of beryllium (Be); 0.17 TPY of lead (Pb); 0.008 TPY of mercury (Hg); and, 374 TPY of sulfuric acid (H₂SO₄) mist.

II. RULE APPLICABILITY

The proposed project, modification of two fossil fuel-fired steam generators and the construction of materials handling and gypsum production equipment at the power plant in Manatee County, is subject to the State Power Plant Siting Act (PPSA) and preconstruction review under the provisions of Chapter 403, Florida Statutes, Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60 (July 1, 1994 version).

This facility is located in an area designated attainment for all criteria pollutants in accordance with Rule 62-275.400, F.A.C.

The proposed project was reviewed under Rule 62-212.400(5), F.A.C., New Source Review (NSR) for Prevention of Significant Deterioration (PSD), because it will be a major modification to a major facility. This review consisted of a determination of Best Available Control Technology (BACT) and, unless otherwise exempted, an analysis of the air quality impact of the increased emissions. The review also includes an analysis of the project's impacts on soils, vegetation and visibility, along with air quality impacts resulting from associated commercial, residential and industrial growth.

The proposed facility shall be in compliance with all applicable provisions of Chapters 62-212 and 62-4, F.A.C., and the 40 CFR 60 (July 1, 1994 version). The proposed facility shall be in compliance with all applicable provisions of Rules 62-210.650, F.A.C.: Circumvention; Rule 62-210.700, F.A.C.: Excess Emissions; Rule 62-296.800, F.A.C.: Standards of Performance for New Stationary Sources (NSPS); Chapter 62-296, F.A.C.: Stationary Sources - Emissions Monitoring; and, Rule 62-4.130, F.A.C.: Plant Operation-Problems.

III. TECHNICAL EVALUATION

The applicant proposes to modify two existing 800 MW fossil fuel-fired steam generators in order to accommodate the firing of Orimulsion fuel and high sulfur fuel oil. Pollution control equipment will be installed, including electrostatic precipitators (ESP) and flue gas desulfurization (FGD) systems. In addition, handling and storage facilities will be constructed for the limestone/limerock, flyash, and gypsum. If necessary, an onsite backup byproduct disposal area will also be developed. New construction will occur in the area of the site referred to as the project area, comprising about 470 acres of the approximately 9,500-acre Manatee Plant site.

The primary fuel will be Orimulsion with a maximum sulfur content of 2.9%, by weight. In the event Orimulsion becomes unavailable, high (3.0% maximum, by weight) sulfur fuel oil (HSFO) will be used. The plant will also maintain its existing capability to fire low (1.0% or less) sulfur fuel oil (LSFO).

FP&L did not use the Power Plant Siting Act (PPSA) certification process for its original construction, but is requesting that this modification be processed using the PPSA certification process.

The facility is subject to PSD new source review (NSR) and BACT for nitrogen oxides (NO_x) emissions because the proposed increase in annual NO_x emissions exceeds the significant emission rate of 40 tons per year. Compliance with the NO_x emission standards will be determined by continuous emission monitors (CEMs).

Particulate matter (PM/PM_{10}) emissions from the two steam generators will be reduced by electrostatic precipitators. PM/PM_{10} emissions from the materials handling and storage equipment will be controlled by dust collectors/bag filters and by taking reasonable precautions. The facility is not subject to PSD NSR and BACT for PM/PM_{10} emissions because there will be no increase in annual PM/PM_{10} emissions, based upon proposed future actual representative annual emissions. FP&L must submit to the Department, on an annual basis for a period of 5 years from the date the facility resumes regular operation, information demonstrating that the physical and operational changes did not result in an emissions increase of PM/PM_{10} . The gypsum and limestone materials handling operations are subject to 40 CFR Part 60 Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants. Compliance will be determined by periodic stack tests and visible emissions tests.

Sulfur dioxide (SO_2) and sulfuric acid (H_2SO_4) mist emissions will be reduced by the use of flue gas desulfurization systems. The facility is not subject to PSD NSR or BACT for SO_2 and H_2SO_4 mist emissions because there will be a reduction in annual SO_2 emissions and no significant increase in annual H_2SO_4 mist emissions as limited by permit conditions. Compliance with SO_2

emission standards will be demonstrated by use of continuous emission monitors (CEM). Compliance with H₂SO₄ mist emission standards will be determined by periodic stack tests.

Carbon monoxide (CO) emissions will be minimized by combustion control to assure proper fuel mixing and complete fuel combustion. The facility is subject to PSD NSR or BACT for CO emissions because the proposed increase in annual CO emissions exceeds the significant emission rates. Compliance with the emission standards will be determined by periodic stack tests.

Volatile Organic Compound (VOC) emissions will be minimized by combustion control while firing Orimulsion. The facility is not subject to PSD NSR and BACT for VOC emissions because there will be no increase in annual VOC emissions, based upon proposed future actual representative annual emissions. FP&L must submit to the Department, on an annual basis for a period of 5 years from the date the facility resumes regular operation, information demonstrating that the physical and operational changes did not result in an emissions increase of VOC. Compliance with the emission standards will be determined by periodic stack tests.

The facility is not subject to PSD NSR or BACT for fluoride, beryllium, lead or mercury emissions.

IV. AIR QUALITY REPORT

A. Introduction

The proposed project is located in an attainment area for all regulated pollutants, but will emit two pollutants at levels in excess of PSD significant amounts as shown in Table 1. These pollutants are NO_x and CO.

The air quality impact analyses required by the PSD regulations for these pollutants include:

- * An analysis of existing air quality;
- * A PSD increment analysis (NO₂);
- * An Ambient Air Quality Standards (AAQS) analysis;
- * An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts; and,
- * A "Good Engineering Practice" (GEP) stack height determination.

As shown in Table 1, the proposed project will result in a net reduction of SO₂ emissions of nearly 11,000 TPY (based on 87% capacity factor for Orimulsion). The applicant proposes an NO_x emissions increase of nearly 9,000 TPY (87% capacity factor and low NO_x burners). This proposed NO_x emission increase results in NO₂ impacts which are predicted to be less than the AAQS and the PSD increments, which are long-term, annual concentrations. Potential local environmental impacts associated with the proposed increase in NO_x emissions include: 1) increased annual deposition of nitrates on

the surrounding watershed and Tampa Bay, and 2) short-term impacts on the nearby Tampa Bay ozone nonattainment area. Rough estimates of between 0.3 and 0.8 percent increase in nitrogen deposition from this project have been given by the applicant. However, at the present time no deposition standards exist to judge what the effects of increased annual deposition might be on the Tampa Bay area. Effects of NO_x emissions on ozone formation are basically a short-term phenomena. There are no approved regulatory techniques available for evaluating NO_x emissions from power plants on ozone formation. However, the applicant has attempted to address this issue by providing some air dispersion modeling information through the use of the non-regulatory Reactive Plume Model-IV (RPM-IV). Results of this model show no significant change in ozone concentrations due to the project.

Even though there will be a net decrease in SO₂ and PM₁₀ emissions due to this proposed project, AAQS analyses were performed for these pollutants as required by Chapter 62-212.300, F.A.C., to ensure that this project together with other sources in the area would not interfere with compliance and maintenance of AAQS for these pollutants.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The PSD increment and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the modeling procedure and required analyses follows.

B. Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration.

Even if preconstruction ambient monitoring is exempted, determination of background concentrations may be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

Table 2 shows that NO₂ and CO impacts from the project are predicted to be less than the de minimus levels. Therefore, preconstruction ambient air quality monitoring is not required for these two pollutants.

However, since AAQS analyses are required for NO₂, SO₂ and PM₁₀ emissions, previously existing representative monitoring data from NO₂, SO₂ and PM₁₀ monitors located in the vicinity of the project were used to establish background concentrations. The background concentration values used in the AAQS analyses are given in Table 6.

C. Modeling Procedure

The EPA-approved Industrial Source Complex Short-Term (ISCST2) dispersion model was used to evaluate the pollutant emissions from the proposed project, the Manatee plant and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST2 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered.

Initially, the applicant conducted preliminary modeling for the purpose of determining the worst case operating load for the proposed project while firing orimulsion. Modeling was performed for three operating loads: 100, 75, and 50 percent. The receptor grid used in this modeling consisted of receptors located at plant property and at distances of 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.5, 10.0, 15.0 and 20.0 km along 36 radials, with each radial spaced at 10-degree increments. This grid was centered on the midpoint between locations of the existing steam unit stacks. The results of this preliminary modeling show that maximum potential pollutant impacts associated with the use of orimulsion are produced at 100 percent operating load.

These worst case conditions were used as input in the significant impact analyses and all subsequent AAQS and PSD increment analyses required for this project. Both screening and refined receptor grids were used in these modeling analyses. For determination of the proposed project's significant impact area for the PSD-significant pollutants, NO₂ and CO, the screening receptor grid consisted of 396 receptors located at distances from the stacks of 1.0, 2.0, 3.0, 5.0, 7.5, 10.0, 12.5, 15.0, 20.0 and 25.0 km along 36 radials with each radial spaced at 10-degree intervals. For the AAQS and PSD Class II analyses, screening receptor grids were based on the size of the significant impact area for each pollutant, if any. As shown in Table 3, NO₂ maximum predicted impacts were greater than the significant impact level while CO impacts were not. The radius of significant impact for NO₂ is 10 km. Therefore, the screening receptors for the NO₂ AAQS and PSD Class II analyses were located at the plant property and at distances from the stacks of 0.4, 0.7, 1.0, 1.5, 2.0, 3.0, 5.0, 7.5 and 10.0 km along 36 radials with each radial spaced at 10-degree intervals. After the screening modeling was completed, refined modeling was conducted using a finer spaced receptor grid centered on the receptors with the highest annual and highest short-term concentrations in the screening analysis.

Additionally, for the SO₂ and PM₁₀ AAQS analyses, concentrations were predicted with the same screening receptor grid used for the NO₂ AAQS and PSD Class II analyses. However, this receptor grid also included additional receptors located at 12.5 and 15.0 km along each radial. Refined modeling was also done.

The Chassahowitzka National Wilderness Area (CWNA) is a PSD Class I area that is located 120 km from the project site at its closest point. In the PSD Class I analysis, CWNA is represented by 13 Department-approved standard discrete receptors.

Meteorological data used in the ISCST2 model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport and Ruskin. The 5-year period of meteorological data was from 1982 through 1986. The NWS stations at Tampa and Ruskin, located approximately 45 km and 20 km, respectively, from the northwest corner of the project area, are the closest primary weather stations to plant site and are most representative of the plant site. The surface observations included wind direction, wind speed, temperature, cloud cover and cloud ceiling.

Since five years of data were used, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate ambient air quality standards or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the significant impact area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to the significant impact levels.

D. Significant Impact Analysis

As stated in the section above, the maximum air quality impacts due to NO₂ emissions from the proposed project are greater than the significant impact level (Table 3) while impacts from CO emissions are not. The radius of significant impact for NO₂ is 10 km.

E. PSD Increment Analysis

1. Class II Area

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. Atmospheric dispersion modeling, as previously described, was performed to quantify the amount of PSD increment consumed. The results for NO₂ emissions, given in Table 4, show that the maximum NO₂ increment consumption will not exceed the allowable Class II PSD increment. Since SO₂ and PM₁₀ emissions from the project are less than PSD-significant, and also since there will be a net decrease in these emissions while firing orimulsion, no increment analyses are required for these pollutants.

2. Class I Area

A proposed source subject to PSD review must conduct a dispersion modeling analysis of its impacts on any PSD Class I area located near the source. The closest receptor point in the Class I CWNA is approximately 120 km from the Manatee project site. Maximum predicted NO₂ impacts from all sources in the vicinity of this Class I area are given in Table 5 and show that maximum NO₂ increment consumption will not exceed the allowable Class I PSD increment. No SO₂ and PM₁₀ Class I increment analyses are required for this project for since there will be a net decrease in emissions of these pollutants.

F. AAQS Analysis

For the pollutants subject to an AAQS review, the total impact on ambient air is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analyses for NO₂, SO₂ and PM₁₀ when firing orimulsion are summarized in Table 6. Emissions from the proposed facility are not expected to cause or contribute to a violation of an AAQS.

In addition, supplemental air quality analyses were performed for the Manatee plant firing alternative fuels of HSFO and LSFO. The maximum total NO₂ impact predicted when firing HSFO and LSFO is slightly higher (18 ug/m³, annual average) than the NO₂ value shown in Table 6 for the orimulsion firing case. The maximum total SO₂ impacts predicted when the Manatee plant is firing HSFO or LSFO are also the same or similar to those predicted when the plant is firing

orimulsion (the 3-hour SO₂ impact of 778 ug/m³ is slightly higher). These results generally indicate that background sources are major contributors to maximum total SO₂ impacts. Maximum total PM₁₀ impacts when the Manatee plant is firing alternative fuels are the same as for the orimulsion case. These maximum total PM₁₀ impacts are primarily due to materials handling operations at the plant.

G. Air Toxics Analysis

The maximum impacts of regulated and non-regulated toxic air pollutants that will be emitted by the project are presented in Table 7. Each pollutant's maximum 8-hour, 24-hour, and annual impact is compared to the Department's draft Acceptable Ambient Concentrations (AAC).

V. ADDITIONAL IMPACTS ANALYSIS

A. Impacts on Soils, Vegetation, and Wildlife

The maximum ground-level concentrations predicted to occur for SO₂, PM₁₀, CO, and NO_x as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

B. Impact on Visibility

Visual Impact Screening and Analysis (VISCREEN), the EPA-approved Level I visibility computer model, was used to estimate the impact of the proposed project's stack emissions on visibility in the CWNA. The results indicate that the maximum visibility impacts do not exceed the screening criteria inside or outside the Everglades National Park Class I area. As a result, there is no significant impact on visibility predicted for the Class I area.

C. Growth-Related Air Quality Impacts

There will be approximately 350 construction workers during construction and approximately 18 new permanent workers after the project is completed. However, there will be no significant impacts on air quality caused by associated population growth.

D. GEP Stack Height Determination

Good Engineering Practice (GEP) stack height means the greater of: (1) 65 m (213 ft) or (2) the maximum nearby building height plus 1.5 times the building height or width, whichever is less. The stacks for this project will be 505 ft, an increase of 6 ft from the existing stacks. These stacks are higher than the GEP stack height.

Based on the GEP stack height regulations, creditable stack height for both units is 475 ft. This height was used in all of the air quality impacts modeling.

VI. CONCLUSION

Based on the information presented by the applicant in the above analysis, the Department has been provided reasonable assurances that the proposed project to modify two 800 MW fossil fuel-fired steam generators and construct materials handling equipment and storage facilities, as described in the application and subject to the conditions of approval proposed herein, will not cause or contribute to any violation of any PSD increment, ambient air quality standard, or any other technical provision of Chapters 62-212 and 62-4 of the Florida Administrative Code.

This preliminary determination has been made in accordance with the Prevention of Significant Deterioration (PSD) rules and is subject to change based upon comments received by the USEPA, other governmental agencies and commissions, citizens, environmental groups, and the applicant's representatives, and from comments received during the public hearing scheduled to start on November 29, 1995.

**Manatee Orimulsion Conversion Project
(PSD-FL-219 and PA 94-35)**

**Table 1: Significant and Net Emission Rates (Tons per Year)
(Firing Orimulsion)**

Pollutant	Actual Emissions	Orimulsion Maximum Emissions	Proposed Net Emissions Increase	Significant Emission Rate	Applicable Pollutant (Yes/No)
PM	1,707	1,707	0	25	No
PM ₁₀	1,707	1,707	0	15	No
SO ₂	24,492	13,643	-10,849	40	No
NO _x	6,827	15,742	8,915	40	Yes
CO	15,463	18,948	3,485	100	Yes
VOC	122	122	0	40	No
Lead	0.68	0.17	-0.51	0.6	No
Mercury	0.078	0.008	-0.07	0.1	No
Beryllium	0.1024	0.0005	-0.1019	0.0004	No
Fluorides	0.15	0.04	-0.11	3	No
Sulfuric Acid Mist	1,122	374	-748	7	No

**Table 2. Maximum Air Quality Impacts for Comparison
to the De Minimus Ambient Levels.**

Pollutant	Avg. Time	Predicted Impact (ug/m ³)	De Minimus Level (ug/m ³)
NO ₂	Annual	3.1	14
CO	8-hour	110	575

Manatee Orimulsion Conversion Project
(PSD-FL-219 and PA 94-35)

Table 3. Maximum Air Quality Impacts for Comparison to the Significant Impact Levels.

Pollutant	Avg. Time	Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)
NO ₂	Annual	3.1	1
CO	1-hour	518	2000
	8-hour	118	500

Table 4. PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Allowable Increment (ug/m ³)
NO ₂	Annual	4.2	25

Table 5. PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Allowable Increment (ug/m ³)
NO ₂	Annual	0.85	2.5

Manatee Orimulsion Conversion Project
(PSD-FL-219 and PA 94-35)

Table 6. Ambient Air Quality Impact

Pollutant	Averaging Time	Major Sources Impact (ug/m ³)	Background Conc. (ug/m ³)	Total Impact (ug/m ³)	Florida AAQS (ug/m ³)
NO ₂	Annual	7	9	16	100
SO ₂	Annual	23.3	13	36.3	60
	24-hour	180	13	193	260
	3-hour	753	13	766	1,300
PM ₁₀	Annual	14.7	21	35.7	50
	24-hour	83.4	47	130.4	150

Table 7: Air Toxics Analysis

Pollutant	8- hour		24- hour		Annual	
	Impact (ug/m ³)	ARC (ug/m ³)	Impact (ug/m ³)	ARC (ug/m ³)	Impact (ug/m ³)	ARC (ug/m ³)
Antimony	6.15e-04	5	2.40e-04	1.2	1.26e-05	0.3
Arsenic	4.43e-04	2	1.73e-04	0.48	1.18e-05	0.00023
Barium	4.22e-04	5	1.65e-04	1.2	4.02e-06	5
Beryllium	2.54e-06	0.02	9.91e-07	0.0048	5.92e-08	0.00042
Cadmium	2.15e-04	0.05	8.38e-05	0.01	5.48e-06	0.00056
Chromium+6	7.53e-04	0.5	2.93e-04	0.12	3.24e-06	8.3e-05
Copper	4.94e-04	10	1.92e-04	2.4	-	-
Fluoride	2.13e-04	25	8.31e-05	6	-	-
Manganese	7.32e-04	50	2.85e-04	12	1.94e-05	0.05
Mercury	4.18e-05	0.5	1.63e-05	0.12	1.01e-06	0.3
Nickel	0.133	10	0.052	2.4	0.00352	0.0042
Selenium	0.00527	2	0.00205	0.48	-	-
Vanadium	0.0584	0.5	0.0227	0.12	0.00166	20
Zinc	0.00136	50	5.28e-04	12	-	-

Note: ARC = Ambient Reference Concentration



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

Permit Number: PA 94-35
PSD-FL-219
Expiration Date: December 31, 1998
County: Manatee
Location: Hwy 62, 5 miles NE of Parrish, FL
UTM: 17-367.3 km E 3054.1 km N
Project: Manatee Power Plant Modification
Orimulsion Conversion Project

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-200 through 297 & Chapter 62-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the department and made a part hereof and specifically described as follows:

For modification of existing emission units

- 01 Unit #1 - Fossil fuel-fired steam generating unit
- 02 Unit #2 - Fossil fuel-fired steam generating unit

including adding additional sootblowers and increasing heat surface area of the boilers to accommodate the firing of Orimulsion fuel, and High (maximum 3.0% by weight) Sulfur Fuel Oil (HSFO) when Orimulsion is unavailable, in addition to the Low (1.0% or less) Sulfur Fuel Oil (LSFO) currently fired in the units. Air pollution control equipment, including a Pure Air flue gas desulfurization (FGD) system with a minimum sulfur dioxide removal efficiency of 95%, Pure Air electrostatic precipitators (ESP) with a minimum particulate removal efficiency of 90%, and low-NOx burners, will be installed to reduce emissions of sulfur dioxide, particulate matter, and nitrogen oxides; and

For construction of new emission units for handling and storage of limerock/limestone, flyash, and gypsum as listed below:

- 03 Limerock/Limestone Truck Unloading - fugitive emissions
- 04 Limerock Rail Unloading - fugitive emissions
- 05 Limestone Storage Pile - fugitive emissions
- 06 Limerock Storage Pile - fugitive emissions
- 07 Limerock/Limestone Receiving Hoppers - fugitive emissions
- 08 Limestone Blending Silo with dust collector/bag filter vent

PERMITTEE:
Florida Power & Light Company

Permit Number: PA 94-35

- 09 Covered Limerock/Limestone Conveyors - fugitive emissions
- 10 Limerock/Limestone Day Silo #1 with bag filter vent
- 11 Limerock/Limestone Day Silo #2 with bag filter vent
- 12 Limerock/Limestone Day Silo #3 with bag filter vent
- 13 Limerock Day Silo #1 Covered Recycle Conveyor - fugitive emissions
- 14 Limerock Day Silo #2 Covered Recycle Conveyor - fugitive emissions
- 15 Limerock Day Silo #3 Covered Recycle Conveyor - fugitive emissions
- 16 Limerock/Limestone Precrusher #1 with bag filter vent
- 17 Limerock/Limestone Precrusher #2 with bag filter vent
- 18 Limestone Ball Mill #1 Tower Feed with bag filter vent
- 19 Limestone Ball Mill #2 Tower Feed with bag filter vent
- 20 Unit #1 Fly Ash Silo w/cyclone separator with bag filter vent
- 21 Unit #2 Fly Ash Silo w/cyclone separator with bag filter vent
- 22 Fly Ash Silo #1 Unloading/Truck Loading - fugitive emissions
- 23 Fly Ash Silo #2 Unloading/Truck Loading - fugitive emissions
- 24 Fly Ash Stabilization (Lime; Cement; Limestone)
- 25 Stabilized Fly Ash Loading/Transport to Byproduct Storage in Fly Ash Barn - fugitive emissions
- 26 Unloading Stabilized Fly Ash to Backup Byproduct Disposal Area - fugitive emissions
- 27 Fly Ash Product Silo #1 with bag filter vent
- 28 Fly Ash Product Silo #2 with bag filter vent
- 29 Fly Ash Product Silo #3 with bag filter vent
- 30 Fly Ash Agglomeration with bag filter vent
- 31 Fly Ash Curing with bag filter vent
- 32 Fly Ash Product Storage Barn - fugitive emissions
- 33 Fly Ash Product Truck Loading - fugitive emissions
- 34 Fly Ash Product Rail Loading - fugitive emissions
- 35 Fly Ash Processing Building Chipped Gypsum Storage with bag filter vent
- 36 Fly Ash Processing Building Chip Mill #1 (no burner) with bag filter
- 37 Fly Ash Processing Building Chip Mill #2 (no burner) with bag filter
- 38 Fly Ash Processing Building Chip Mill Curing Tunnels
- 39 Fly Ash Processing Building Chip Storage - fugitive emissions
- 40 Fly Ash Processing Building Chip Truck Loading
- 41 Fly Ash Processing Building Chip Rail Loading
- 42 Gypsum Processing Building Chip Mill #3 (no burner) with bag filter
- 43 Gypsum Processing Building Chip Mill #4 (no burner) with bag filter
- 44 Gypsum Processing Building Chip Mill #5 (no burner) with bag filter
- 45 Gypsum Processing Building Chip Mill #6 (no burner) with bag filter
- 46 Gypsum Processing Building Chip Mill #7 (no burner) with bag filter
- 47 Gypsum Processing Building Chip Mill Curing Tunnel
- 48 Gypsum Processing Building Chip Storage - fugitive emissions
- 49 Gypsum Processing Building Chip Truck Loading - fugitive emissions
- 50 Gypsum Processing Building Chip Rail Loading - fugitive emissions
- 51 Powdered Gypsum Storage - fugitive emissions
- 52 Powdered Gypsum Conveyor - fugitive emissions
- 53 Powdered Gypsum Storage Barn Truck Loading - fugitive emissions
- 54 Powdered Gypsum Storage Barn Rail Loading - fugitive emissions
- 55 Powdered Gypsum Truck Transport/Unloading - fugitive emissions
- 56 Powdered Gypsum Backup Byproduct Storage - fugitive emissions
- 57 Wastewater Lime Silo #1 with bag filter vent
- 58 Wastewater Lime Silo #2 with bag filter vent
- 59 Wastewater Lime Conveyor System - fugitive emissions
- 60 Emergency Quench Pumps - combustion emissions

Specific Conditions:

Fossil fuel-fired steam generating units #1 and #2:

1. The following fuels are permitted to be fired in each unit: residual low sulfur fuel oil (LSFO) with a sulfur content no greater than 1.0% by weight; Orimulsion fuel with a sulfur content no greater than 2.9% by weight, a nonylphenol ethloxyate content no greater than 0.17% by weight, and a total additive content no greater than 1.0% by weight; and, only when Orimulsion is not available, residual high sulfur fuel oil (HSFO) with a sulfur content no greater than 3.0% by weight. Used oil shall not be fired. FPL shall not dispose of spent boiler cleaning chemicals by injecting them into either unit.
2. The maximum hourly heat input for each unit shall be 8650 MMBtu/hr while firing LSFO or HSFO; and 8100 MMBtu/hr while firing high Orimulsion. The maximum annual heat input for the facility while firing Orimulsion shall be 116,604,360 MMBtu/year.
3. While firing Orimulsion fuel, the sulfur dioxide (SO₂) emissions from each unit shall not exceed 0.234 lb/MMBtu heat input, based upon a 30-day rolling average, and the annual facility emissions shall not exceed 13,643 tons per year, based upon actual annual MMBtu heat input. While firing LSFO or HSFO the sulfur dioxide emissions from each unit shall not exceed 1.1 lb/MMBtu heat input, based upon a 30-day rolling average. Continuous emission monitors meeting the requirements of 40 CFR Part 75 shall be used to demonstrate compliance.
4. While firing Orimulsion fuel, the particulate matter (PM/PM₁₀) emissions from each unit shall not exceed 0.03 lb/MMBtu heat input. While firing LSFO or HSFO at steady-state, the particulate matter emissions from each unit shall not exceed 0.1 lb/MMBtu. While firing LSFO or HSFO during sootblowing and load changing, the particulate matter emissions from each unit shall not exceed 0.3 lb/MMBtu (for a maximum of 3 hours in a 24-hour period). Because there was no PSD review performed for particulate matter, the total annual facility particulate matter emissions, including emissions from materials handling and storage operations, shall not exceed 1707 tons per year (the current actual annual particulate matter emissions). Compliance for Units 1 and 2 shall be demonstrated based upon quarterly compliance testing using EPA Method 5 or 17.
5. While firing Orimulsion, emissions of nitrogen oxides (NO_x) from each unit shall not exceed 0.270 lb/MMBtu heat input, based upon a 30-day rolling average, and annual facility NO_x emissions shall not exceed 15,742 tons per year based upon actual annual MMBtu heat input. While firing LSFO or HSFO, the emissions of nitrogen oxides from each unit shall not exceed 0.30 lb/MMBtu heat input, based upon a 30-day rolling average. Continuous emission monitors meeting the certification and quality assurance requirements of 40 CFR Part 75 shall be used to demonstrate compliance. Rolling averages shall be calculated and recorded each day based on the previous 30 boiler operation days. Recordkeeping, calculation of emissions, and reporting of emissions shall be performed in the same manner as required in 40 CFR 60 Subpart Da.

Specific Conditions:

6.a. The permittee shall install low-NOx burners in both units. The permittee shall make every practicable effort to achieve the lowest possible NOx emissions rate, but in any event, the NOx emissions rate for each unit shall not exceed 0.270 lb/MMBtu heat input when firing Orimulsion.

6.b. After completion of initial compliance testing of Unit 1 firing Orimulsion, FPL shall conduct a six month test program to determine the lowest NOx emission rate that can be practicably achieved when burning Orimulsion with low NOx burners, overfire air and burners out-of-service, taking into account long-term performance expectations and assuming good operation and maintenance practices. Within nine months after completion of initial compliance testing of Unit 1, FPL shall prepare and submit for Department review an engineering report containing data and analysis regarding the lowest NOx emission rate which can be practicably and consistently achieved, with a reasonable operating margin, using low-NOx burners, overfire air and burners out-of-service, and taking into account long-term performance expectations and assuming good operation and maintenance practices.

6.c. After submittal of the engineering report by FPL, the Department will make a determination, based upon the engineering report, regarding establishment of any revised NOx limit for Unit 1. If the results of the testing program demonstrate that a NOx emission rate of less than 0.270 lb/MMBtu heat input is practicably and consistently achievable using low-NOx burners, overfire air and burners out-of-service, the NOx emissions limit applicable to Unit 1 may be adjusted accordingly.

7.a. FPL shall install reburn technology on Unit 2 prior to conducting initial compliance testing. After completion of initial compliance testing for Unit 2, FPL shall conduct a six-month test program to determine the lowest NOx emission rate that can practicably be achieved when burning Orimulsion with low-NOx burners and reburn technology, taking into account long-term performance expectations and assuming good operation and maintenance practices. During the six-month test period FPL shall include feed rates of reburning fuel in the range of 10 to 20 percent of the total heat input to the boiler. If the optimum feed rate of fuel reburning is outside of this range, FPL shall submit a professional engineer's analysis and a statement certifying that the reburn technology for Unit 2 is designed to maximize the reduction in NOx emissions practicably achievable with this technology at this facility. Within nine months after completion of initial compliance testing of Unit 2, FPL shall prepare and submit for Department review an engineering report containing data analysis regarding the lowest NOx emissions rate which can be practicably and consistently achieved, with a reasonable operating margin, using low-NOx burners and reburn technology and taking into account long-term performance expectations and assuming good operation and maintenance practices.

Specific Conditions:

7.b. After submittal of the engineering report by FPL, the Department will make a determination, based upon the engineering report, regarding establishment of any revised NOx limit for Unit 2. If the results of the test program demonstrate that a NOx emission rate of less than 0.270 lb/MMBtu heat input is practicably and consistently achievable using low-NOx burners and reburn technology, the NOx emission limit applicable to Unit 2 may be adjusted accordingly.

7.c. If the result of the test program required under specific condition 7.b. demonstrate a decrease in the NOx emission rate of at least 20 percent is practicably achievable using reburn technology (as compared to the NOx emission rate achievable with low-NOx burners, overfire air, and burners out-of-service without reburn technology), FPL shall install reburn technology on Unit 1 during the next outage scheduled (but no later than one year) following revision of the NOx emission limit for Unit 2. A revised NOx emission limit for Unit 1, equal to that established under specific condition 7.b. for Unit 2, shall apply to Unit 1 upon completion of a shakedown period of 180 days following installation of reburn technology. If the results of the test program required under specific condition 7.b. do not demonstrate that a decrease in the NOx emission rate of at least 20 percent is practicably achievable using reburn technology (as compared to the NOx emission rate achievable with low-NOx burners, overfire air, and burners out-of-service without reburn technology), any revised NOx emission limit established for Unit 1 under specific condition 6.c. shall also apply to Unit 2.

7.d. If the test program demonstrates a decrease in NOx emissions of less than 20 percent, then a calculation of the incremental cost effectiveness (CE) for installing reburn technology on Unit 1 shall be done using a total capital cost which is the documented actual costs for adding fuel reburning to Unit 2 (but not to exceed \$8,000,000) to install reburn technology on Unit 1, and a NOx reduction based on a comparison of the NOx emissions with and without reburn technology (to three significant figures in units of lb/MMBtu). If the incremental CE is less than \$4,000 per ton of NOx removed, then reburn technology shall be installed on Unit 1 as outline in specific condition 7.c.

7.e. At FPL's option, reburn technology may be installed on Unit 1 prior to initial compliance testing. If FPL elects this option, the requirements and provisions of specific conditions 7.a. and 7.b. shall govern with respect to Unit 1 in lieu of the requirements and provisions of specific conditions 6.b. and 6.c.

8. While firing Orimulsion fuel, emissions of carbon monoxide (CO) from each unit shall not exceed 0.325 lb/MMBtu while firing Orimulsion, based upon a 30-day rolling average using a continuous emission monitor (CEM) and the annual facility emissions shall not exceed 18,948 tons per year based upon actual annual MMBtu heat input. While firing LSFO and HSFO the CEM shall also be operated. The CEM shall meet the certification and quality assurance requirements of 40 CFR 75. Recordkeeping, calculation of emissions, and reporting of emissions shall be performed in the same manner as used for

Specific Conditions:

NOx emissions. Compliance shall be demonstrated annually for each unit by conducting one 3-run test using EPA Method 10 while firing Orimulsion.

9. While firing Orimulsion fuel, total annual emissions of volatile organic compounds (VOC) from the facility shall not exceed the current actual emissions of 122 tons per year. Compliance shall be demonstrated annually for each unit by conducting one 3-run test using EPA Method 25 while firing Orimulsion.

10. While firing Orimulsion fuel, emissions of sulfuric acid mist from each unit shall not exceed 49.1 lb/hr and annual facility emissions shall not exceed 374 tons/year. Compliance shall be demonstrated annually for each unit by conducting one 3-run test using EPA Method 8 while firing Orimulsion.

11. While firing Orimulsion fuel, emissions of fluoride from each unit shall not exceed 0.005 lb/hour and the annual facility emissions shall not exceed 0.04 ton/year. Each unit shall be monitored annually by conducting one 3-run test using EPA Method 13A or 13B while firing Orimulsion.

12. While firing Orimulsion fuel, the following metals emitted from each unit shall not exceed the limits listed as follows:

<u>Metal</u>	<u>lb/hr limit for each unit</u>	<u>ton/yr facility limit</u>
Antimony	0.0147	0.112
Arsenic	0.0106	0.0808
Barium	0.0101	0.0770
Beryllium	0.000061	0.0005
Cadmium	0.00515	0.0393
Chromium	0.0180	0.137
Copper	0.0118	0.0899
Lead	0.023	0.17
Manganese	0.0175	0.133
Mercury	0.001	0.008
Nickel	3.19	24.3
Phosphorous	0.0275	0.210
Selenium	0.126	0.960
Silver	0.00412	0.0314
Zinc	0.0324	0.247
Vanadium (as vanadium pentoxide)	1.39	10.59

Compliance for all listed metals, except vanadium pentoxide, shall be demonstrated by proposed EPA Test Method 29 within 12 months of DEP approval of Test Method 29 and every two years thereafter while firing Orimulsion fuel. Compliance with the vanadium pentoxide limits shall be demonstrated by using a Department-approved method.

Specific Conditions:

13. For each unit, opacity shall be limited to 20% except for one six-minute period per hour of not more than 27% opacity. Continuous emission monitors (CEMs) meeting the requirements of 40 CFR Parts 60 and 75 shall be used to demonstrate compliance.

14. The flue gas desulfurization, electrostatic precipitation, and NO_x pollution reduction equipment for each unit must be in operation while each unit is firing Orimulsion, high sulfur fuel oil, or low sulfur fuel oil.

15. Excess Emissions -

(a) Events - Rule 62-210.700, F.A.C.

Excess emissions resulting from start-up or shut-down are permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions is minimized.

Excess emissions resulting from malfunction are permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions is minimized but in no case exceeds two hours in any 24-hour period unless specifically authorized by the Department for longer duration.

Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction are prohibited.

(b) Notification - Rules 62-210.700(6) and 62-4.130, F.A.C.

In the event the permittee is temporarily unable to comply with any of the conditions of this permit, the permittee shall immediately notify the Department's Southwest District Office and provide the following information: a description of and cause of non-compliance; and the period of non-compliance, including dates and times, or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. In case of excess emissions resulting from malfunctions, a full written report on the malfunctions shall be submitted in a quarterly report to the Department.

(c) Quarterly Report Submittal -

In addition to the requirements of condition 15(b) above, a written quarterly report shall be submitted to the Department's Southwest District Office identifying all exceedances of the opacity limiting standard. The report shall state

Specific Conditions:

the cause, period of non-compliance, magnitude of excess emissions, steps taken for corrective action, and steps taken to prevent recurrence. The Department shall also be notified when there are no exceedances for a calendar quarter. This report does not relieve FPL of the legal liability for violations. All relevant records shall be maintained on file for a period of at least 5 years and made available to the Department upon request. The report shall be submitted within 30 days following the end of each calendar quarter.

Materials Handling and Storage:

16. The maximum lime/limestone received at the facility shall be limited to 550,000 tons per year.

17. Unless the emission unit is enclosed in a building, as specified in condition No.19, the emissions from the dust collector/bag filter vent of each of the following emission units shall not exceed 0.020 grains/dscf, as determined annually by EPA Method 5 or 17, and shall not exceed 7% opacity, as determined annually by EPA Method 9:

- 08 Limestone Blending Silo
- 10 Limerock/Limestone Day Silo #1
- 11 Limerock/Limestone Day Silo #2
- 12 Limerock/Limestone Day Silo #3
- 16 Limerock/Limestone Precrusher #1
- 17 Limerock/Limestone Precrusher #2
- 18 Limestone Ball Mill #1 Tower Feed
- 19 Limestone Ball Mill #2 Tower Feed
- 35 Fly Ash Processing Building Chipped Gypsum Storage
- 36 Fly Ash Processing Building Chip Mill #1 (no burner)
- 37 Fly Ash Processing Building Chip Mill #2 (no burner)
- 42 Gypsum Processing Building Chip Mill #3 (no burner)
- 43 Gypsum Processing Building Chip Mill #4 (no burner)
- 44 Gypsum Processing Building Chip Mill #5 (no burner)
- 45 Gypsum Processing Building Chip Mill #6 (no burner)
- 46 Gypsum Processing Building Chip Mill #7 (no burner)
- 57 Wastewater Lime Silo #1
- 58 Wastewater Lime Silo #2.

18. Unless the emission unit is enclosed in a building, as specified in condition No.19, the fugitive emissions from each of the following emission units shall not exceed 10% opacity, as determined annually by EPA Method 9:

- 09 Covered Limerock/Limestone Conveyors
- 13 Limerock Day Silo #1
- 14 Limerock Day Silo #2
- 15 Limerock Day Silo #3

Specific Conditions:

- 38 Fly Ash Processing Building Chip Mill Curing Tunnels
- 39 Fly Ash Processing Building Chip Storage
- 40 Fly Ash Processing Building Chip Truck Loading
- 41 Fly Ash Processing Building Chip Rail Loading
- 47 Gypsum Processing Building Chip Mill Curing Tunnel
- 48 Gypsum Processing Building Chip Storage
- 49 Gypsum Processing Building Chip Truck Loading
- 50 Gypsum Processing Building Chip Rail Loading
- 51 Powdered Gypsum Storage
- 52 Powdered Gypsum Conveyor
- 53 Powdered Gypsum Storage Barn Truck Loading
- 54 Powdered Gypsum Storage Barn Rail Loading
- 59 Wastewater Lime Conveyor System.

19. If any emission unit listed in condition No. 17 or condition No. 18 is enclosed in a building it must comply with the emission limits in condition No. 17 or condition No. 18 respectively, or the building enclosing the emission unit must comply with the following:

(a) There shall be no visible emissions from the building except emissions from a vent where there is a mechanically-induced air flow for the purpose of exhausting from the building air carrying particulate matter emissions from one or more emission unit.

EPA Method 22 shall be used annually to determine whether or not there are no visible emissions. The compliance test shall be performed while all emission units in the building are in operation, and shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes.

(b) The emissions from the vent shall not exceed 0.020 grains/dscf nor 7% opacity. EPA Method 5 or Method 17 shall be used to determine annual compliance with the particulate matter standard, and EPA Method 9 shall be used to determine annual compliance with the opacity standard. [40 CFR 60.672-675]

20. The fugitive emissions from each of the following emission units shall not exceed 20% opacity as determined annually by EPA Method 9:

- 03 Limerock/Limestone Truck Unloading
- 04 Limerock Rail Unloading
- 05 Limestone Storage Pile
- 06 Limerock Storage Pile
- 07 Limerock/Limestone Receiving Hopper
- 22 Fly Ash Silo #1 Unloading/Truck Loading
- 23 Fly Ash Silo #2 Unloading/Truck Loading
- 24 Fly Ash Stabilization (Lime; Cement; Limestone)
- 25 Stabilized Fly Ash Loading/Transport Byproduct Storage in Fly Ash Barn
- 26 Unloading Stabilized Fly Ash to Backup Byproduct Disposal Area
- 32 Fly Ash Product Storage Barn
- 33 Fly Ash Product Truck Loading

Specific Conditions:

- 34 Fly Ash Product Rail Loading
- 55 Powdered Gypsum Truck Transport/Unloading
- 56 Powdered Gypsum Backup Byproduct Storage
- 60 Emergency Quench Pumps - combustion emissions.

Additional Requirements:

21. The initial compliance test for each unit must be performed within 180 days of startup of the emission unit. The reports of the required compliance tests shall be filed with the Air Compliance Section of the Department's Southwest District Office as soon as practical but no later than 45 days after the last sampling run of each test is completed. A compliance test report shall provide sufficient detail on the source tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly calculated. As a minimum, the test report shall provide the applicable information listed in Rule 62-297.570(3), F.A.C.
22. The continuous emissions monitoring (CEM) equipment shall be installed, operated, and maintained in accordance with the manufacturer's instructions. The permittee shall maintain a complete file of all measurements, including CEM system, monitoring device, and performance testing measurements; all CEM system performance evaluations; all CEM system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required, recorded in a permanent legible form suitable for inspection. The file shall be retained at the facility for at least two years following the date of such measurements, maintenance, reports and records.
23. Daily operations and maintenance logs shall be maintained for the most recent five-year period and made available to the Department upon request.
24. No later than 180 days after commencing operation, the permittee shall submit an application to obtain, or to modify any existing, Title V permit for this facility to include the emissions units permitted above.
25. A part of this permit is the attached 15 General Conditions. [Rule 62-4.160, F.A.C.]

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION**

Virginia B. Wetherell, Secretary

PERMITTEE:
Florida Power & Light

PERMIT NUMBER: PA 94-35
(PSD-FL-219)

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or

PERMITTEE:
Florida Power & Light

PERMIT NUMBER: PA 94-35
(PSD-FL-219)

auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,
- c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- a. A description of and cause of non-compliance; and,
- b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

PERMITTEE:
Florida Power & Light

PERMIT NUMBER: PA 94-35
(PSD-FL-219)

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F. S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)

14. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
- c. Records of monitoring information shall include:
 - The date, exact place, and time of sampling or measurements;
 - The person responsible for performing the sampling or measurements;
 - The dates analyses were performed;
 - The person responsible for performing the analyses;
 - The analytical techniques or methods used; and,

PERMITTEE:
Florida Power & Light

PERMIT NUMBER: PA 94-35
(PSD-FL-219)

- The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Table 4-8c. Direct and Indirect Capital Cost for Selective Catalytic Reduction (SCR) Associated with FPL Manatee Orimulsion Conversion Project

Cost Component	Costs (\$)	Basis for Cost Estimate
Direct Capital Costs		
SCR Associated Equipment	8,283,400	Developed from manufacturer budget quotations. (Source: KBN)
Ammonia Storage Tank	492,400	Developed from manufacturer budget quotations. (Source: KBN)
SCR Installation	3,531,400	Developed from manufacturer budget quotations. (Source: KBN)
Air Heater/Booster Fans/Switchgear and Transformers	18,565,000	Developed from manufacturer budget quotations. (Source: FPL) See Note 1.
Combustor Duct Sections/Flue Gas Ducts/Stack Liner	6,300,000	Engineering Estimate. (Source: FPL) See Note 2.
ESP/FGD Arrangement Changes	8,000,000	Engineering Estimate. (Source: FPL)
Indirect Capital Costs		
Engineering, Erection Supervision, Start-up & Testing, and O&M Training	5,519,300	10% SCR equipment and catalyst, NH3 storage tank, installation and air heater/booster fans switchgear and transformers (Source: OAQPS Cost Control Manual, 1992)
Administration & Site Work	2,759,600	5% SCR equipment and catalyst, NH3 storage tank, installation and air heater/booster fans switchgear and transformers and engineering costs (Source: OAQPS Cost Control Manual, 1992)
Ammonia Emergency Preparedness Program	51,800	Engineering estimate.
Liability Insurance	276,000	5% SCR equipment and catalyst, NH3 storage tank, air heater (etc.) and engineering costs.
Interest During Construction	9,569,900	7.5%/year for 2 years of all direct and indirect capital costs including catalyst cost.
Contingency	9,051,400	15% of all capital costs excluding catalyst costs. (Source: Vatavuk, 1990)
Total Capital Costs	72,400,200	Sum of all capital costs.
Annualized Capital Costs	8,504,100	Capital recovery of 10% over 20 years, 11.74% per year. (Source: OAQPS Cost Control Manual, 1992)
Recurring Capital Costs		
SCR Catalyst (Materials & Labor)	10,020,400	Developed from manufacturer budget quotations. (Source: KBN)
Contingency	1,503,100	15% of recurring capital costs. (Source: Vatavuk, 1990)
Total Recurring Capital Costs	11,523,400	Sum of recurring capital costs.
Annualized Recurring Capital Costs	3,039,900	Capital recovery of 10% over 5 years, 26.38% per year. (Source: OAQPS Cost Control Manual, 1992)
Total Capital/Recurring Costs	83,923,600	
Total Annualized Costs	11,544,000	

Note 1: Cost includes rotary regenerative air heater (\$12,000,000), booster fans (\$5,565,000) and switchgear/transformers (\$1,000,000).

Note 2: Cost includes combustor duct sections (\$3,750,000), flue gas ducts (\$2,300,000) and stack liner (\$250,000).

Note: All calculations rounded off to the nearest \$100.

Table 4-9c. Annualized Cost for Selective Catalytic Reduction (SCR) Associated with One Manatee Unit Firing Orimulsion.

Cost Component	Costs (\$)	Basis for Cost Estimate
Direct Annual Costs		
Operating Personnel	72,800	56 hours/week @ \$25/hour.
Ammonia	501,100	\$300/ton; NH ₃ :NO _x = 1:1 volume.
Accident/Emergency Response Plan	8,600	Consultant estimate, 80 hours/year @ \$80/hour plus expenses @ 35% labor.
Inventory Cost	392,300	Capital recovery (11.74%/year) for 1/3 of catalyst cost. (Source: OAQPS Cost Control Manual, 1992)
Catalyst Disposal Cost	106,400	Engineering estimate.
Contingency	162,200	15% of O & M costs excluding insurance costs.
Energy Costs		
Electrical	3,414,400	152,164 MWh; 5" fans pressure drop, ammonia vaporization; booster fans & air preheater; 2.245 cents/kWh.
Capacity Costs	0	Replacement capacity cost for electrical energy (20 MW); \$300/kW annualized @10% for 20 years.
Reheat Flue Gas	8,496,400	Reheat Fuel Costs; 260.55 mmBtu/hr; \$4.2788/mmBtu fuel costs. (Source: FPL & KBN, 1995)
Catalyst Changeout	0	720 MW lost for 4 days every 3 years; 2.247 cents/kWh
Contingency	1,786,600	15% of energy costs.
Total Direct Annual and Energy Costs	14,940,800	Sum of all direct annual costs.
Indirect Annual Costs		
Overhead	361,800	60% of ammonia and 115% of O&M labor plus 15% of O&M labor (OAQPS Cost Control Manual, 1992).
Property Taxes and Insurance	251,800	0.03% of total capital costs. (Source: OAQPS Cost Control Manual, 1992)
Annualized Capital Costs	8,504,100	Capital recovery of 10% over 20 years, 11.74% per year. (Source: OAQPS Cost Control Manual, 1992)
Recurring Capital Costs	3,039,900	Capital recovery of 10% over 5 years, 26.38% per year. (Source: OAQPS Cost Control Manual, 1992)
Total Indirect Annual Costs	12,157,600	Sum of all indirect annual costs.
Total Annual Costs	27,098,400	Total annualized cost.
NO _x REMOVED (0.27 to 0.17 lb/mmBtu)	2,915	See Note 1.
Cost Effectiveness (\$/ton NO _x Removed)		
EPA Traditional Method	9,296	Total annual costs divided by NO _x reduction.
Investment Basis Method	44,266	See Note 2.
Existing Source Method	17,931	See Note 2.
Secondary Emissions Method	17,361	See Note 2.
Capacity Increase Method	67,216	See Note 2.

Note 1: NO_x emission reduction for one Manatee Unit operated at 87% capacity factor and meeting 0.17 lb/mmBtu.

Note 2: Discussion of this method of calculation is presented in Section 4.8.3.2 of Air Permit Application.

Note: All calculations rounded off to the nearest \$100.

Best Available Control Technology (BACT) Determination
Florida Power & Light Company
Manatee County

Florida Power and Light (FPL) has applied for a permit to fire Orimulsion and high sulfur fuel oil (as a backup fuel) in Manatee Units 1 and 2. Orimulsion is a mixture of water and a heavy hydrocarbon known as bitumen. Small quantities of an emulsifying agent and a water-soluble magnesium complex are added during the Orimulsion preparation process. Each unit at the Manatee facility has a nameplate rating of 863 megawatts (MW). FPL currently fires low sulfur (1%) No. 6 fuel oil in both units. This project will result in increased use of the existing boilers as the capacity factor will increase from 30 percent to 87 percent. The plant is located in North Manatee County, 5 miles east of Parrish, Florida.

This BACT analysis represents the Department's analysis. Emission changes are shown on Table 1 (attached) as a result of the proposed project based on current actual emissions from low sulfur fuel oil at 30 percent capacity factor verses the plant firing Orimulsion at 87 percent capacity factor. More than significant increases in annual emissions are projected for NO_x and CO while firing Orimulsion. High sulfur fuel oil will only be fired in the event Orimulsion is unavailable.

Date Receipt of a BACT Application

September 30, 1994

BACT Determination Procedure

In accordance with F.A.C., Chapter 62-212, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, Rule 62-212.410(1), F.A.C., states that in making the BACT determination the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.

- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

Florida Administrative Code, Rule 62-212, requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in Table 1 (attached). The BACT requirements are intended to ensure that a proposed facility will incorporate air pollution control systems that reflect the latest techniques (including fuel cleaning or treatment or innovative fuel combustion) used in the particular industry. An evaluation of the air pollution control techniques and systems is required including a consideration for energy requirements, environmental and economic impact.

a. BACT Determination Requested by the Applicant

The applicant has suggested that BACT for firing Orimulsion is the following emission limitations and method of controls:

I. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) FOR NO_x EMISSIONS

A. FPL shall install low NO_x burners in both Manatee Plant units. FPL shall make every practicable effort to achieve the lowest possible NO_x emissions rate, but in any event, the NO_x emissions rate for each unit shall not exceed 0.270 pounds per million Btu heat input when firing Orimulsion.

B. After completion of initial compliance testing of Unit 1 firing Orimulsion, FPL shall conduct a six-month test program to determine the lowest NO_x emissions rate that can be practicably achieved when burning Orimulsion with low NO_x burners, steam atomization, overfire air, and burners out-of-service, taking into account long-term performance expectations and assuming good operation and maintenance practices. Within nine months after completion of initial compliance testing of Unit 1, FPL shall prepare and submit for Department review an engineering report containing data and analysis regarding the lowest NO_x emissions rate which can be practicably and consistently achieved, with a

reasonable operating margin, using low NO_x burners, steam atomization, overfire air, and burners out-of-service, and taking into account long-term performance expectations and assuming good operation and maintenance practices.

C. After submittal of the engineering report by FPL, the Department will make a determination, based upon the engineering report, regarding establishment of any revised NO_x limit for Unit 1. If the results of the testing program demonstrate that a NO_x emissions rate of less than 0.270 pounds per million Btu heat input is practicably and consistently achievable using low NO_x burners, steam atomization, overfire air, and burners out-of-service, the NO_x emission limit applicable to Unit 1 may be adjusted accordingly.

II. ADDITIONAL NO_x MINIMIZATION PROGRAM

A. FPL shall install reburn technology on Unit 2 prior to conducting initial compliance testing. After completion of initial compliance testing for Unit 2, FPL shall conduct a six-month test program to determine the lowest NO_x emission rate that can practicably be achieved when burning Orimulsion with low NO_x burners and reburn technology, taking into account long-term performance expectations and assuming good operation and maintenance practices. Within nine months after completion of initial compliance testing of Unit 2, FPL shall prepare and submit for Department review an engineering report containing data and analysis regarding the lowest NO_x emissions rate which can be practicably and consistently achieved, with a reasonable operating margin, using low NO_x burners and reburn technology and taking into account long-term performance expectations and assuming good operation and maintenance practices.

B. After submittal of the engineering report by FPL, the Department will make a determination, based upon the engineering report, regarding establishment of any revised NO_x limit for Unit 2. If the results of the test program demonstrate that a NO_x emission rate of less than 0.270 pounds per million Btu heat input is practicably and consistently achievable using low NO_x burners and reburn technology, the NO_x emission limit applicable to Unit 2 may be adjusted accordingly.

C. If the results of the test program required under paragraph II.B. demonstrate a decrease in the NO_x emission rate of at least 20 percent is practicably achievable using reburn technology (as compared to the NO_x emission rate achievable with low NO_x burners, steam atomization, overfire

air, and burners out-of-service without reburn technology), FPL shall install reburn technology on Unit 1 during the next outage scheduled following revision of the NO_x emission limit for Unit 2. A revised NO_x emission limit for Unit 1, equal to that established under paragraph II.B. for Unit 2, shall apply to Unit 1 upon completion of a shakedown period of 180 days following installation of reburn technology. If the results of the test program required under paragraph II.B. do not demonstrate that a decrease in the NO_x emission rate of at least 20 percent is practicably achievable using reburn technology (as compared to the NO_x emission rate achievable with low NO_x burners, steam atomization, overfire air, and burners out-of-service without reburn technology), any revised NO_x emission limit established for Unit 1 under paragraph I.C. shall also apply to Unit 2.

D. If the test program demonstrates a decrease in NO_x emissions of less than 20 percent, then a calculation of the incremental cost effectiveness (CE) for installing reburn technology on Unit 1 shall be done using a total capital cost which is the documented actual costs for adding fuel reburning to Unit 2 (but not to exceed \$8,000,000) to install reburn technology on Unit 1, and a NO_x reduction based on a comparison of the NO_x emissions with and without reburn technology (to three significant figures in units of lb/mmBtu). If the incremental CE is less than \$4,000 per ton of NO_x removed then reburn technology shall be installed on Unit 1 as outlined in II.C.

E. At FPL's option, reburn technology may be installed on Unit 1 prior to initial compliance testing. If FPL elects this option, the requirements and provisions of paragraphs II.A. and B. shall govern with respect to Unit 1 in lieu of the requirements and provisions of paragraphs I.B. and C.

III. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) FOR CO EMISSIONS

Carbon monoxide (CO) emissions will be limited to 0.325 lb/mmBtu through the use of combustion controls.

b. BACT Procedure

The air pollutant emissions from fossil fuel-fired power plants can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these facilities. Using this approach, the emissions can be classified as follows:

Combustion Products (e.g., Particulates) -- Controlled generally by good combustion of clean fuels and baghouse filters or electrostatic precipitators (ESP).

Products of Incomplete Combustion (e.g., CO and VOC) -- Controlled generally by proper combustion techniques.

Acid Gases (e.g., NO_x and SO₂) -- Controlled generally by gaseous control devices.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "nonregulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., particulates, sulfur dioxide, fluorides, sulfuric acid mist, etc.), if a reduction in "nonregulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

c. BACT Analysis

Combustion Products

Due to the higher levels of fuel bound sulfur, nitrogen, ash and vanadium compared with fuel oil, air pollution controls are needed when firing Orimulsion in the Manatee units to meet current emission standards. FPL will install an electrostatic precipitator (ESP) manufactured by Mitsubishi to control particulate matter (PM). The projected emission changes of particulate matter and particulate matter smaller than 10 micrometers in size (PM₁₀) from the firing of Orimulsion and fuel oil will be limited by a permit condition (TPY cap) to avoid exceeding the significant emission rates given in Florida Administrative Code, Rule 62-212, Table 400-2. Larger capacity ESPs than originally designed may be required to collect PM associated with sulfur trioxide (SO₃) emissions when fuel reburning for NO_x control is employed.

Products of Incomplete Combustion

Increases in Volatile Organic Compounds (VOC) emissions while firing Orimulsion were projected be below the PSD significant emission rate of 40 TPY. The increase in emissions of carbon monoxide (CO) will exceed the PSD significant emission rate of 100 TPY.

Carbon Monoxide (CO) emissions are directly related to combustion conditions in the furnace. CO emissions are the result of incomplete combustion. The New Source Performance Standards (NSPS) for utility boilers does not specify emission standards for CO. Options for reducing CO emissions include combustion controls

and post combustion controls. Combustion controls which promote more complete combustion, such as higher levels of excess air, will have an adverse impact on NO_x emission controls. Catalytic conversion of CO to CO₂ has not been demonstrated on utility boilers of this type. FPL has proposed a CO limit of 0.335 lb/mmBtu. This is about 50 percent lower than the current emission rate (lb/mmBtu) on fuel oil. FPL has stated that the NO_x/CO emission rates will be optimized to ensure that the NO_x emission limit is achieved while minimizing CO emissions.

Acid Gases

The emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x), hydrogen fluoride (HF), and sulfuric acid mist (H₂SO₄), as well as other acid gases which are not regulated under the PSD Rule, represent significant potential air pollutant emissions which must be subject to appropriate control. Uncontrolled sulfur dioxide emissions are directly related to the sulfur content of the fuel.

SO₂ and Acid Gases

BACT is not required for sulfur dioxide, sulfuric acid, or hydrogen fluoride since annual emissions are projected to decrease as a result of the proposed project. The sulfur dioxide and sulfuric acid emissions and proposed controls are described as follows:

Sulfur compounds are formed when fuel bound sulfur is oxidized, forming primarily SO₂ and smaller quantities of sulfur trioxide (SO₃). Vanadium emissions from firing Orimulsion can, over time, plate out onto the boiler tubes in the furnace. This vanadium can then catalyze the formation of additional SO₃ emissions. SO₃ can further react with water present in the flue gas to form sulfuric acid (H₂SO₄). The control of SO₂ and acid gas emissions is accomplished primarily by removing these pollutants from the flue gas by wet or dry scrubbing. Wet scrubbing using a flue gas desulfurization system (FGD) is accomplished by passing the flue gas through a scrubbing liquid in a water saturated environment. Particulates and other gases, such as ammonia, can also be collected in the wet scrubber. These pollutants become a part of the liquid slurry and are treated in a wastewater treatment and disposal system.

The applicant will install a wet limestone spray tower developed by Mitsubishi, to reduce SO₂ and other acid gas emissions. This will result in a decrease in both short term emissions (lb/hr) and annual emissions of SO₂ by more than 10,000 TPY when firing Orimulsion. SO₃ formation in the furnace may be increased as a result of fuel reburning to control NO_x emissions. Sulfuric acid emissions (including SO₃ emissions as measured by EPA Method 8) when firing Orimulsion will be limited to below current

actual emission rates in the permit.

Nitrogen Oxides (NO_x)

Nitrogen oxides are formed from high temperature reactions between oxygen (from the combustion air) and fuel bound nitrogen and/or molecular nitrogen (in the combustion air). Fuel bound nitrogen levels for Orimulsion are in the range of 0.4 to 0.8 percent nitrogen. Nitrogen oxides (NO_x) are precursors of acid rain and ground level ozone. Both SO₂ and NO_x are considered acid gases but their formation and control are fundamentally different.

Mitigation of acid rain and ground level ozone is the major emphasis of the 1990 Clean Air Act Amendments (CAAA). Title IV of the CAAA requires the establishment of nitrogen oxide emission limits for coal fired boilers to reduce nationwide emissions by two million tons per year.

The FPL Manatee project is the first proposal to burn Orimulsion in the United States and there are no previous BACT determinations to use as a reference. Current options for reducing NO_x emissions consist of combustion controls and post combustion controls. Combustion controls such as Low NO_x Burners (LNB), Over Fire Air (OFA), and Exhaust Gas Recirculation (EGR) are engineered to avoid forming nitrogen oxides in the flame zone. These are pollution prevention techniques that tend to be the least expensive and least energy intensive to employ while achieving significant emission reductions. Fuel reburning is a type of combustion control which uses a reducing agent (such as natural gas) to reduce the oxides of nitrogen prior to leaving the combustion zone. Post-combustion NO_x controls include selective catalytic (SCR) and selective noncatalytic reduction (SNCR).

Combustion Controls for NO_x

FPL provided data from testing of combustion controls, including Low NO_x Burners (LNB), when firing Orimulsion. Single burner testing was conducted at the Babcock Energy Limited's Large Scale Burner Test Facility in Renfrew, Scotland in July, 1994. Full scale testing was conducted at the FPL Sanford plant (400 MW) in 1990. Test data revealed that water in the Orimulsion reduced peak flame temperatures and suppressed thermal NO_x formation. Also, Orimulsion can be combusted at lower levels of excess oxygen (0.6 percent oxygen) which tends to reduce NO_x. Uncontrolled NO_x emissions from Orimulsion at the Sanford plant showed 30 percent lower emissions than for No. 6 fuel oil firing. Emissions from Orimulsion at the Sanford plant averaged 0.51 lb/mmBtu. These tests represent uncontrolled emissions since neither LNB nor steam atomization is employed on the Sanford boiler.

As detailed in a report prepared by Todd Combustion Inc. and FPL, NO_x emission reductions of approximately 30 percent were achieved with LNB technology. NO_x reductions showed a strong dependence on the level of excess oxygen with higher NO_x emissions observed at higher excess oxygen concentrations in the boiler exhaust gases. Exhaust gas recirculation (EGR) was found not to have a significant impact on NO_x emissions when burning Orimulsion. Based on the Scotland test data and corrected to the higher furnace heat release rates at the Manatee Plant, FPL estimates of NO_x emissions are 0.395 lb/mmBtu when Orimulsion is fired and only steam atomized burners are employed to control NO_x. When employing Burners Out of Service (BOOS), Overfire Air (OFA), steam atomization, and Low NO_x Burners (LNB), controlled NO_x emissions at the Manatee Plant were initially projected to be 0.295 lb/mmBtu at 0.6 percent excess oxygen. FPL has indicated that they can achieve less than 0.27 lb/mmBtu NO_x with combustion controls (LNB).

Fuel Reburning

Fuel reburning technology has recently been demonstrated on coal fired boilers using natural gas or coal as the reburning fuel. Most of the experience in the United States has been with natural gas as the reburning fuel. Typically the reburning fuel is used at a rate of 10 to 20 percent of the total heat input to the boiler. Fuel reburning applied to Orimulsion combustion has not been demonstrated in the United States and NO_x reductions are uncertain. In order to minimize annual NO_x emissions FPL will install fuel reburning with Orimulsion as the reburning fuel in Unit 2. If additional NO_x reductions of 20% or more are achieved, then the emission standard for both units will be lowered to the level which has been demonstrated on Unit 2.

SNCR

Selective noncatalytic reduction (SNCR) systems do not employ a catalyst and, therefore, operate at higher temperatures than SCR systems. The two commercially available SNCR processes are NO_xOUT by EPRI and DeNO_x by Exxon Corporation. These systems use either ammonia or urea as reagents to inject into the flue gas. FPL provided information that showed SNCR is not technically feasible as a retrofit to the Manatee boilers. SNCR would not be feasible as a retrofit to the Manatee boilers since the exhaust gas residence times, at temperatures of 1,500°F to 2,200°F, are too short and the flow is split in the backpass section of the boiler. Also, since no catalyst is used in an SNCR system, greater than stoichiometric quantities of ammonia or urea are required, thus increasing the formation of ammonium and sulfur compounds (salts) and potential air preheater plugging. Ammonia slip is typically higher for SNCR than for SCR systems.

SCR Front-Side System

The major technical concerns in the past for SCR application to coal fired utility boilers have included ammonia slip, potential conversion of SO_2 to SO_3 by the catalysts and the resultant formation of ammonia salts, and the poisoning of the catalyst by trace constituents of United States coals such as arsenic. Although there is limited experience with SCR applications to existing coal fired boilers in the United States, current SCR systems applied to new coal fired boilers have been designed to minimize these problems. Currently there are two new coal fired utility boilers under construction in Florida which employ SCR: O.U.C. Stanton in Orlando, and Indiantown Cogeneration in Martin County. Indiantown Cogeneration is currently undergoing initial start-up and preliminary performance testing. Other SCR systems have been employed within the past five years to coal fired units in New Jersey, New Hampshire and Maine. These SCR applications typically have permitted NO_x limits of 0.17 lb/mmBtu with ammonia slip limited to 5 ppm.

Ammonia slip is controlled in current SCR designs to no more than 5 ppm by continuous monitoring of NO_x emissions prior to and after the catalyst. This limits the amount of excess ammonia available for reaction with SO_3 to form ammonium sulfate and ammonium bisulfate particulates. Also, current sulfur resistant catalyst designs have limited the SO_2 to SO_3 conversion when firing coal to less than 1 percent.

FPL has cited the following reasons that a front side (prior to the air heaters) SCR system is technically infeasible: 1) SO_3 formation; forced outage of both units; 2) high vanadium/sulfur environment (corrosion problems in air heater and ducts prior to the FGD scrubber due to sulfuric acid formation), 3) contamination of ash with ammonia (FGD sludge would not be saleable as gypsum and fly ash would not be saleable for cement). Also, FPL commented that space difficulties would cause increased costs for this retrofit since there is currently insufficient space between the air heater and boiler.

World-wide use of Orimulsion includes the Kansai Electric Power Unit 4 (156 MW) which employs reburning and a front side SCR system. This SCR retrofit by Mitsubishi was completed in December of 1994. Unit 4 is a peaking unit which is used most frequently in the summer. To control SO_3 emissions, ammonia is also injected upstream of the ESP to form sulfate particulates which are collected in the ESP. Due to the increased load of sulfate particulates, the ESP capacity on Unit 4 was increased. Experience with this SCR application is limited and not considered demonstrated technology in the United States. Mitsubishi has installed reburn systems on two industrial boilers in Japan which fire Orimulsion. One of these industrial boilers, the Kashima-Kita

Unit #2 was retrofitted with reburning controls in 1991.

Back-Side SCR System

FPL evaluated a SCR system located downstream of the ESP and FGD scrubber to eliminate the problems associated with SO₃ formation and ammonia contamination of the sludge and ash. This solution comes at large energy and economic costs. There would also be modest increases in several pollutants other than NO_x from the combustion of fuel oil used to reheat the exhaust gases prior to the SCR catalyst. An engineering evaluation submitted by FPL indicated that additional equipment would be needed in addition to the ammonia injection system/catalyst to implement the back-side SCR system (see attached FPL Cost Analysis). Due to the high volumes of exhaust gases, two trains of duct work would be needed for each boiler. Following the FGD system, each train would include a gas heater (steam to exhaust gas) followed by a rotary regenerative air heater (hot side), a duct burner firing No. 2 fuel oil at a rate of 260 mmBtu/hr (approximately 14 million gallons/yr of No. 2 fuel oil), followed by the ammonia injection system, the catalyst, the cold side of the rotary regenerative air heater, a booster fan and then exit to the stack. The electrical demand from this equipment will require an additional 20 MW.

The back-side SCR system is expensive to implement at the FPL Manatee Plant due to several factors: 1) low emission rates from the proposed combustion controls (LNB) means relatively small reductions when SCR is added and therefore high values of \$/ton removed, 2) the back-side SCR system is energy intensive which results in high operating costs, and it is capital intensive since additional fans, duct burners, and rotary regenerative air heaters are required, and 3) retrofits with space limitations are inherently more expensive projects than new designs.

The cost effectiveness (CE) of LNB is less than \$1000 per ton NO_x removed. The incremental cost effectiveness for the Back-side SCR system (with emissions of 0.17 lb/mmBtu) were made compared to LNBs with NO_x emissions of 0.27 lb/mmBtu. The incremental CE was calculated at \$8,867 per ton NO_x removed. This is significantly higher than front-side SCR applications for new coal fired boilers which are in the range of \$3,000-\$4,000 per ton. The capital cost for the back-side SCR system was supplied by FPL at \$83,923,600 per unit (\$105 per KW). The total annual cost, including O&M costs, annual overhead, property taxes and insurance, replacement catalyst costs (five year life) and capital recovery costs (10% interest over 20 years) is \$27,098,400 per year per unit. FPL's Cost Analysis for a back-side SCR system on one of the boilers is attached.

Environmental Factors

The conversion to Orimulsion will result in increased utilization of the Manatee plant. Even with the increased utilization, emissions of SO₂ will decrease from current levels. Emissions of particulates will not increase above current actual emission levels due to the additional pollution control equipment and a permit limit on annual particulate emissions. Short term emissions of NO_x (lb/hr) will be lower with Orimulsion but annual emissions would increase by approximately 9,000 TPY (from 6,827 TPY to 15,742 TPY) using Low NO_x Burners (with an allowable emission limit of 0.27 lb/mmBtu, and 7,650 mmBtu/hr heat input) as the capacity factor will increase from 30 percent to approximately 87 percent. Using Selective Catalytic Reduction (SCR) (with an allowable emission limit of 0.17 lb/mmBtu) the annual emissions would still increase (approximately 3,000 TPY -- from 6,827 TPY to 9,912 TPY). Fuel reburning is likely to result in a NO_x emissions increase between 3,000 and 9,000 TPY.

Local environmental impacts associated with increased annual emissions of NO_x include: 1) increased annual deposition of nitrates on the surrounding watershed and Tampa Bay, and 2) the impacts on the Tampa Bay ozone nonattainment area. The Tampa Bay National Estuary Program (NEP) has identified air deposition of nitrogen as a significant source affecting the water quality of Tampa Bay. Rough estimates of between 0.3 and 0.8 percent increase in nitrogen deposition from this project have been given by FPL. Although impacts on ozone production on the Tampa Bay Ozone area have not been quantified, computer modeling has shown that the proposed projects impacts will not exceed either the ambient air quality standard nor the PSD increment for NO_x.

The inventory of NO_x emissions in the Tampa Bay area include contributions from the stationary sources and the mobile sources. The inventory of total annual NO_x emissions was approximately 526 TPD or roughly 192,000 TPY, with mobile sources contributing roughly 37 percent of the total (based on 1990 inventory of Hillsborough, Pinellas, Pasco, and Hernando counties).

The use of an ESP to control particulate emissions from the boiler does not appear to have any negative environmental impacts. However, the energy impact is considered significant since about 1,500 KW of energy is required to operate the ESP.

The use of a wet scrubber for SO₂/acid gas control can result in a high consumption of water and problems disposing of the slurry. These problems can be reduced by reusing the water and recycling the slurry into building products. Also, since Orimulsion has a high water content (30%), evaporative losses in the wet scrubber will be lower than when other fuels are fired, i.e. less make-up water is needed.

DEP BACT Determination

Post combustion controls are the only demonstrated technology capable of achieving NO_x levels as low as 0.17 lb/mmBtu for the Manatee boilers. The combination of high vanadium and high SO₂ fuel (Orimulsion and high sulfur No. 6 fuel oil), along with the SCR catalyst and injected ammonia promote the formation of ammonium salts. These particulates can build up on equipment in the exhaust ducts and cause flow restrictions. For a baseloaded unit firing Orimulsion, a front-side SCR system designed to achieve NO_x levels of 0.17 lb/mmBtu is not considered demonstrated technology in the United States. A SCR system located downstream of the FGD and ESP avoids the formation of ammonium salts, the poisoning of the catalyst by heavy metals, the plugging of the catalyst by particulate matter, and system corrosion as a result of SO₃ formation. This "back-side system" costs approximately \$8,867 per ton of NO_x removed compared to combustion controls (LNB) and would not normally be considered cost effective in comparison to other BACT determinations.

The Department accepts the BACT requested by the applicant for NO_x and CO with the following additional requirements: The feed rate for the reburning fuel shall be varied to find the optimum rate for NO_x control. During the six month test period FPL shall include feed rates of reburning fuel in the range of 10 to 20 percent of the total heat input to the boiler. If the optimum feed rate of fuel for reburning is outside of this range, FPL shall submit a professional engineer's analysis and a statement certifying that the reburn technology for Unit 2 is designed to maximize the reduction in NO_x emissions practicably achievable with this technology in this application. The NO_x emission limit, once established, shall be based on a 30 day rolling average. Thirty day rolling average emission rates shall be calculated in accordance with the requirements in New Source Performance Standards (NSPS) Subpart Da. As specified in Subpart Da, compliance shall be demonstrated on a continuous basis using a continuous emission monitoring system (CEMS) for NO_x. NO_x emission rates (lb/mmBtu) shall be calculated based on a calculated carbon based factor (F_C) pursuant to 40 CFR 75 Appendix F equation F-7b. Data collection and quality assurance with this monitoring system are required pursuant to 40 CFR Part 75 (Acid Rain program). Quarterly emission reports for NO_x, as required in 40 CFR 60.49a, shall be submitted the Department.

It is anticipated that reburn technology will result in an increase in SO₃ emissions over a period of time. FPL shall employ emission control designs which minimize SO₃ formation or control SO₃ emissions which have been generated. This may require ammonia injection upstream of the ESP and increased capacity of the ESP to collect the additional particulate matter associated with SO₃

BACT: Florida Power & Light Company
Manatee County
Page 13

controls. Alternately, an SO₃ control system which is designed to convert SO₃ to SO₂ may be used.

Details of the Analysis may be Obtained by Contacting:

Martin Costello, P.E.
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

Approved by:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

Date 1995

Date 1995

Table 1: Significant and Net Emission Rates (Tons per Year)

Pollutant	Low Sulfur Fuel Oil Actual Emissions _a	Projected Maximum Emissions _b	Proposed Net Emissions Increase	Significant Emission Rate	Applicable Pollutant (Yes/No)
PM **	1,707	1,707	0	25	No
PM ₁₀ **	1,707	1,707	0	15	No
SO ₂	24,492	13,643	-10,849	40	No
NO _x	6,827	15,742 *	8,915	40	Yes
CO	15,463	18,948	3,485	100	Yes
VOC	122	117 ***	-5	40	No
Lead	0.683	0.163 +	-0.520	0.6	No
Mercury	0.078	0.006 ***	-0.072	0.1	No
Beryllium	0.10240	0.00036 ***	-0.10205	0.0004	No
Fluorides	0.15	0.037 +	-0.117	3	No
Sulfuric Acid Mist	1,122	420 ***	-702	7	No

a--NO_x and particulate emission rates based on 1993 and 1994 fuel data, heat content of 152 mmBtu/kgal and average emissions from stack test reports. SO₂ emissions based on annual operating report (AOR). Emission rates for other pollutants based on emission factors.

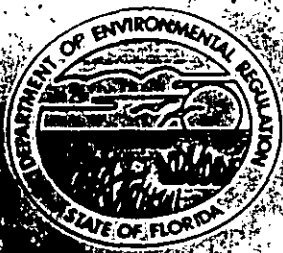
b--based on 87 percent capacity factor and a maximum continuous heat input rating of 7,650 mmBtu/hr firing Orimulsion.

* Based on NO_x emission limit of 0.27 lb/mmBtu as provided by FPL. Annual NO_x emissions with a limit of 0.17 lb/mmBtu would be 9,912 TPY.

** Annual PM/PM₁₀ emissions capped at previous actual emission level by permit condition.

*** Based on emission rates from tests on Orimulsion submitted by FPL.

+ Based on EPA emission factor and 90% control.



Florida Department of Environmental Regulation

Southwest District

4520 Oak Fair Boulevard

Tampa, Florida 33610-7347

Lawton Chiles, Governor

813-620-6100

Carol M. Browner, Secretary

Pertains to
11/4/92 Unit #1

PERMITTEE:

Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION

Permit No: AO41-204804
County: Manatee
Expiration Date: 01/14/97
Project: Manatee Power Plant
Unit No. 1

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the department and made a part hereof and specifically described as follows:

For operation of Unit No. 1 at Florida Power & Light Company's (FPL) Manatee Power Plant. Unit 1 is an 800 MW class (approximately 877 MW gross) Foster Wheeler oil fired steam generator. The maximum heat input rate while firing No. 6 fuel oil is 8,650 million (MM) Btu per hour.

Particulate matter emissions are controlled by two UOP Aerotec DES 104B-GHS mechanical dust collectors designed to handle approximately 2,160,000 ACFM at 305° F. Each of the two mechanical dust collectors contains 1,323 centrifugal precipitating tubes.

Sulfur dioxide emissions are controlled by limiting the sulfur content of the fuel.

Nitrogen oxides emissions are reduced by utilizing over-fire air ports, gas injection, and bias firing.

Location: Highway 62, 5 miles NE of Parrish, FL.

UTM: 17-367.3 E 3054.1 N NEDS NO: 0010 Point ID: 01

Replaces Permit No.: AO41-127329

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: AO41-204804
County: Manatee
Expiration Date: 01/14/97
Project: Manatee Power Plant
Unit No. 1

SPECIFIC CONDITIONS:

(1) A part of this permit is the attached 15 General Conditions.

(2) Heat Input Rate:

The heat input rate shall not exceed 8,650.0 MM Btu/hr while burning fuel oil. If this source is burning 100% natural gas, then the heat input rate shall not exceed 9,040.0 MM Btu/hr. [Requested in the permit application].

(3) Permitted Fuels:

The only fuels authorized to be burned in this source are, (a) No. 6 residual fuel oil, (b) No. 2 fuel oil, (c) natural gas, or (d) used oil from FPL operations. These fuels may be mixed or burned simultaneously. [Requested in the permit application].

(4) Source Emission Limiting Standards and Compliance Testing Requirements:

POLLUTANT	EMISSION ⁽¹⁾ LIMITING STDS.	TESTING FREQUENCY ⁽²⁾			TEST ⁽³⁾ METHOD
		ANNUAL	QUARTERLY	OTHER	
Particulate Matter					
- Steady-State	0.10 lb/MM Btu	X	---	---	EPA Method 5 or 17 ⁽⁴⁾
- Sootblowing and Load Changing	0.30 lb/MM Btu ⁽⁵⁾ (Max 3 hrs in 24 hrs)	X	---	---	EPA Method 5 or 17 ⁽⁴⁾
Sulfur Dioxide	1.10 lb/MM Btu	---	---	X	Fuel Analysis
Visible Emissions					
- Steady-State	40% Opacity	X ⁽⁶⁾	---	---	DER Method 9 ⁽⁷⁾
- Sootblowing and Load Changing	60% Opacity for ⁽⁵⁾ up to 3 hrs in 24 hrs, with up to four 6-minute periods of up to 100% if unit has an operational opacity CEM.	X	---	---	DER Method 9 ⁽⁷⁾
Nitrogen Oxides (expressed as NO ₂)	0.30 lb/MM Btu	X	---	---	EPA Method 7 or 7E

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: AO41-204804
County: Manatee
Expiration Date: 01/14/97
Project: Manatee Power Plant
Unit No. 1

SPECIFIC CONDITIONS:

Footnotes:

- (1) Rules 17-2.600(5)(a) and 17-2.250(3), F.A.C.
- (2) Rule 17-2.700(2), F.A.C.
- (3) Rule 17-2.700(1)(d), F.A.C.
- (4) EPA Method 17 may be used only if the stack gas exit temperature is less than 375°F.
- (5) Rule 17-2.250(3), F.A.C. Excess emissions are authorized only if (a) best operational practices to minimize emissions are adhered to, and (b) the duration of excess emissions is minimized.
- (6) This source has been authorized by Order of the Department's Secretary dated April 24, 1984 to test particulate matter emissions and visible emissions annually with a 40% opacity limit. If FPL fails to demonstrate compliance with an applicable particulate or visible emission standard, then the Order will terminate upon written notice by the Department.
- (7) Actual transmissometer data during steady state and sootblowing particulate matter emissions testing is acceptable in lieu of DER Method 9 testing.

(5) **Compliance Testing Related Requirements:**

(a) **Notification - Rule 17-2.700(2)(a)9., F.A.C.**

FPL shall notify the Southwest District Office of the Department of Environmental Regulation, and the Manatee County Environmental Action Commission, at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner. The Department may waive the 15 day notice requirement on a case by case basis.

(b) **Conditions - Rule 17-4.070(3), F.A.C.**

Compliance testing of particulate, nitrogen oxides, and visible emissions should be conducted while the source is firing No. 6 residual fuel oil at the maximum allowable rate of 8,650.0 MM Btu per hour. Particulate and visible emissions tests shall be conducted under both sootblowing and non-soot blowing conditions, and should be conducted while injecting MgO at the maximum requested rate of 105 pounds per hour.

Testing may be conducted with the source firing No. 6 residual fuel oil at less than 90 percent of the maximum allowable rate, or while injecting MgO at less than 90 percent of the maximum requested rate; however, if so, subsequent source operation is limited to the average No. 6 residual fuel oil firing rate during the test and the average injection rate of MgO during the test. Once the unit is so limited, then operation at higher No. 6 residual fuel oil firing rates or higher MgO injection rates is allowed for a cumulative total of no more than fifteen days for purposes of additional compliance testing to regain the higher rates, not to exceed 8,650.0 MM Btu per hour of No. 6 residual fuel oil nor 105 pounds per hour of MgO.

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: A041-204804
County: Manatee
Expiration Date: 01/14/97
Project: Manatee Power Plant
Unit No. 1

SPECIFIC CONDITIONS:

In order to provide the Department with reasonable assurance that this source can comply with both the particulate and nitrogen oxides standards simultaneously, the steady state particulate tests and the nitrogen oxides tests shall be conducted under substantially identical operating conditions. Fuel to air ratios and stack O₂ during testing shall be substantially identical.

Operating at conditions during testing which do not reflect normal operating conditions may invalidate a test.

(c) Test Schedule:

Stack tests shall be conducted at least on an annual basis, within 30 days of the date April 17.

(d) Stack Sampling Facility - Rule 17-2.700(4), F.A.C.

The stack sampling facility must comply with Rule 17-2.700(4), F.A.C.

(e) Report Submittal - Rules 17-2.700(7) and 17-4.070(3), F.A.C.

A copy of the test results shall be submitted to the Department's Southwest District Office and the Manatee County Environmental Action Commission within 45 days after the last test run is completed. The test report shall provide the actual heat input rate and at least all of the information listed in Rule 17-2.700(7)(c), F.A.C., including the MgO injection rate. A copy of the continuous opacity monitor strip chart recorded during each compliance test shall be submitted with the test reports. Each test report shall also include a fuel oil analysis from a representative sample of the fuel oil burned during the test and a calculation of the sulfur dioxide emission rate in pounds per MM Btu heat input and pounds per hour. Failure to submit any of the above information may invalidate the test.

(6) Recordkeeping to Document Compliance with the Sulfur Dioxide Emission Limit - Rule 17-4.070(3), F.A.C.

FPL shall maintain daily records in a permanent form suitable for inspection documenting the sulfur content of all fuel burned. The records shall contain, at a minimum, for each day, the sulfur content of all fuel burned, and a calculation of the daily average sulfur dioxide emissions in pounds per hour and pounds per MM Btu heat input. Compliance shall be based upon the daily average. The records shall contain sufficient detail to allow the Department to determine whether the emissions were properly computed. All recorded data shall be maintained on file for a period of at least 2 years. FPL shall submit a monthly summary of the daily averages for fuel sulfur content and sulfur dioxide emissions on a quarterly basis, within 30 days following each calendar quarter.

(7) Annual Operations Report (AOR):

On or before March 1 of each calendar year, a completed DER Form 17-1.202(6), Annual Operation Report Form for Air Emissions Sources, listing emissions of all air pollutants for the preceding calendar year, shall be submitted to the Department's Southwest District Office and the Manatee County Environmental Action Commission. The report shall provide sufficient detail to allow the Department to determine whether the emissions were properly computed.

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: A041-204804
County: Manatee
Expiration Date: 01/14/97
Project: Manatee Power Plant
Unit No. 1

SPECIFIC CONDITIONS:

(8) Excess Emissions

(a) Events - Rule 17-2.250, F.A.C.

Excess emissions resulting from start-up or shut-down are permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions is minimized.

Excess emissions resulting from malfunction are permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions is minimized but in no case exceeds two hours in any 24-hour period unless specifically authorized by the Department for longer duration.

Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction are prohibited.

(b) Notification - Rules 17-2.250(6) and 17-4.130, F.A.C.

In the event the permittee is temporarily unable to comply with any of the conditions of the permit, the permittee shall immediately notify the Department's Southwest District Office and the Manatee County Environmental Action Commission. Notification shall be conducted in accordance with General Condition (8) of this permit. In case of excess emissions resulting from malfunctions, a full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.

(c) Quarterly Report Submittal - Rules 17-2.710(1), 17-2.710(2), and 17-4.070(3), F.A.C.

FPL shall submit to the Department of Environmental Regulation and the Manatee County Environmental Action Commission a written report of emissions in excess of the emission limiting standards as set forth in Rule 17-2.600(5), F.A.C. for each calendar quarter. The nature and cause of the excessive emissions shall be explained. This report does not relieve FPL of the legal liability for violations. All recorded data shall be maintained on file for a period of at least 2 years. The information supplied in this report shall be consistent with the reporting requirements of 40 CFR 51 Appendix P. The report shall be submitted within 30 days following each calendar quarter.

(9) Used Oil Combustion:

(a) This source is permitted to burn on-specification used oil originated from FPL operations. FPL shall not burn off-specification used oil. Used oil which fails to comply with any of the following specification levels is off-specification used oil [Requested by applicant; 40 CFR 266 Subpart E]:

1. Arsenic shall not exceed 5.0 ppm.
2. Cadmium shall not exceed 2.0 ppm.
3. Chromium shall not exceed 10.0 ppm.
4. Lead shall not exceed 100.0 ppm.
5. ~~Total halogens shall not exceed 1,000.0 ppm.~~
6. Flash point shall not be less than 100.0 °F.

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: AO41-204804
County: Manatee
Expiration Date: 01/14/97
Project: Manatee Power Plant
Unit No. 1

SPECIFIC CONDITIONS:

- (b) Each batch of used oil to be burned shall be sampled and analyzed for: arsenic, cadmium, chromium, lead, total halogens, and flash point using EPA/DER or ASTM approved methods. Split samples of the used oil shall be retained for three (3) months after analysis for further testing if necessary.
- (c) Results of used oil sampling and analysis performed pursuant to Specific Condition 9(b) shall be retained by the permittee for at least three (3) years and made available for inspection by the Department upon request.
- (d) Monthly reports of the quantities of used oil burned and the results from the sample analyses performed pursuant to Specific Condition 9(b) shall be submitted to the Department's Southwest District Office and the Manatee County Environmental Action Commission. FPL shall submit these reports within 30 days from the end of every calendar month in which used oil was burned. Furthermore, the quantities of burned used oil and the associated sample analyses shall be included in the Annual Operation Report (AOR) for Air Emissions Sources.

(10) Continuous Emission Monitoring - Rule 17-2.710, F.A.C.

A continuous opacity monitoring system shall be calibrated, operated and maintained in accordance with Rule 17-2.710(1), F.A.C. This source is not exempted by Rule 17-2.710(1)(a)1.a., F.A.C. because a particulate emission control device is utilized (two UOP Aerotec DES 104B-GHS mechanical dust collectors with centrifugal precipitating tubes).

(11) Objectional Odors - Rule 17-2.620(2), F.A.C.

FPL shall not discharge air pollutants which cause or contribute to an objectionable odor.

(12) Hours of Operation:

The hours of operation are not restricted.

(13) Special Compliance Tests - Rule 17-2.700(2)(b), F.A.C.

If the Department of Environmental Regulation has reason to believe that any applicable emission standard is being violated, then the Department of Environmental Regulation may require FPL to conduct compliance tests which identify the nature and quantity of pollutant emissions and to provide a report on the results of said tests.

(14) Disposal of Spent Boiler Cleaning Chemicals - 40 CFR 60.14

If FPL chooses to dispose of spent boiler cleaning chemicals by injecting them into this source while operating, then FPL shall demonstrate to the Department that such disposal does not result in an increase in the actual rate of particulate matter emissions. The demonstration shall be conducted pursuant to the requirements of 40 CFR 60.14(b)(2) and 40 CFR 60 Appendix C. At least three valid test runs must be conducted before disposal of spent boiler cleaning chemicals, and at least three during disposal of spent boiler cleaning chemicals at the maximum disposal rate. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

PERMITTEE:

Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION

Permit No: AO41-204804
County: Manatee
Expiration Date: 01/14/97
Project: Manatee Power Plant
Unit No. 1

SPECIFIC CONDITIONS:

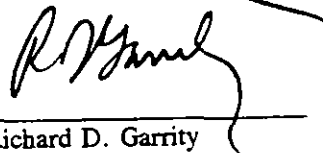
(15) Other Requirements - Rule 17-2.210, F.A.C.

Issuance of this permit does not relieve FPL from complying with applicable emission limiting standards or other requirements of Chapter 17-2, or any other requirements under federal, state, or local law. Future regulations may impact this facility at some future date. FPL shall comply with any applicable future regulations when they become effective.

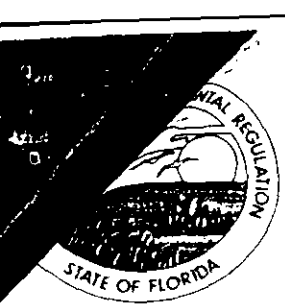
(16) Operation Permit Renewal - Rules 17-4.050(2) and 17-4.090(1), F.A.C.

Three applications to renew this operating permit shall be submitted to the Department of Environmental Regulation, and one application shall be submitted to the Manatee County Environmental Action Commission, by November 15, 1996.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**



Dr. Richard D. Garrity
Director of District Management
3804 Coconut Palm Drive
Tampa, Florida 33619-8318
Phone (813) 744-6100



Florida Department of Environmental Regulation

Southwest District

4520 Oak Fair Boulevard

Tampa, Florida 33610-7347

Lawton Chiles, Governor

813-620-6100

Carol M. Browner, Secretary

Pertains to
Unit # 2

11/6/92

PERMITTEE:

Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION

Permit No: AO41-219341
County: Manatee
Expiration Date: 11/14/97
Project: Manatee Power Plant
Unit No. 2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the department and made a part hereof and specifically described as follows:

For operation of Unit No. 2 at Florida Power & Light Company's (FPL) Manatee Power Plant. Unit 2 is an 800 MW class (approximately 877 MW gross) Foster Wheeler oil fired steam generator. The maximum heat input rate while firing No. 6 fuel oil is 8,650 million (MM) Btu per hour.

Particulate matter emissions are controlled by two UOP Aerotec DES 104B-GHS mechanical dust collectors designed to handle approximately 2,160,000 ACFM at 305° F. Each of the two mechanical dust collectors contains 1,323 centrifugal precipitating tubes.

Sulfur dioxide emissions are controlled by limiting the sulfur content of the fuel.

Nitrogen oxides emissions are reduced by utilizing over-fire air ports, gas injection, and bias firing.

Location: Highway 62, 5 miles NE of Parrish, FL.

UTM: 17-367.3 E 3054.1 N NEDS NO: 0010 Point ID: 02

Replaces Permit No.: AO41-140480

APPLICANT:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: A041-219341
County: Manatee
Expiration Date: 11/14/97
Project: Manatee Power Plant
Unit No. 2

SPECIFIC CONDITIONS:

(1) A part of this permit is the attached 15 General Conditions.

(2) Heat Input Rate:

The heat input rate shall not exceed 8,650.0 MM Btu/hr while burning fuel oil. If this source is burning 100% natural gas, then the heat input rate shall not exceed 9,040.0 MM Btu/hr.
[Requested in the permit application].

(3) Permitted Fuels:

The only fuels authorized to be burned in this source are, (a) No. 6 residual fuel oil, (b) No. 2 fuel oil, (c) natural gas, or (d) used oil from FPL operations. These fuels may be mixed or burned simultaneously. [Requested in the permit application].

(4) Source Emission Limiting Standards and Compliance Testing Requirements:

POLLUTANT	EMISSION ⁽¹⁾ LIMITING STDS.	TESTING FREQUENCY ⁽²⁾			TEST ⁽³⁾ METHOD
		ANNUAL	QUARTERLY	OTHER	
Particulate Matter					
- Steady-State	0.10 lb/MM Btu	X	---	---	EPA Method 5 or 17 ⁽⁴⁾
- Sootblowing and Load Changing	0.30 lb/MM Btu ⁽⁵⁾ (Max 3 hrs in 24 hrs)	X	---	---	EPA Method 5 or 17 ⁽⁴⁾
Sulfur Dioxide	1.10 lb/MM Btu	---	---	X	Fuel Analysis
Visible Emissions					
- Steady-State	40% Opacity	X ⁽⁶⁾	---	---	DER Method 9 ⁽⁷⁾
- Sootblowing and Load Changing	60% Opacity for ⁽⁵⁾ up to 3 hrs in 24 hrs, with up to four 6-minute periods of up to 100% if unit has an operational opacity CEM.	X	---	---	DER Method 9 ⁽⁷⁾
Nitrogen Oxides (expressed as NO ₂)	0.30 lb/MM Btu	X	---	---	EPA Method 7 or 7E

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: AO41-219341
County: Manatee
Expiration Date: 11/14/97
Project: Manatee Power Plant
Unit No. 2

SPECIFIC CONDITIONS:

Footnotes:

- (1) Rules 17-2.600(5)(a) and 17-2.250(3), F.A.C.
- (2) Rule 17-2.700(2), F.A.C.
- (3) Rule 17-2.700(1)(d), F.A.C.
- (4) EPA Method 17 may be used only if the stack gas exit temperature is less than 375°F.
- (5) Rule 17-2.250(3), F.A.C. Excess emissions are authorized only if (a) best operational practices to minimize emissions are adhered to, and (b) the duration of excess emissions is minimized.
- (6) This source has been authorized by Order of the Department's Secretary dated April 24, 1984 to test particulate matter emissions and visible emissions annually with a 40% opacity limit. If FPL fails to demonstrate compliance with an applicable particulate or visible emission standard, then the Order will terminate upon written notice by the Department.
- (7) Actual transmissometer data during steady state and sootblowing particulate matter emissions testing is acceptable in lieu of DER Method 9 testing.

(5) Compliance Testing Related Requirements:

(a) Notification - Rule 17-2.700(2)(a)9., F.A.C.

FPL shall notify the Southwest District Office of the Department of Environmental Regulation, and the Manatee County Environmental Action Commission, at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner. The Department may waive the 15 day notice requirement on a case by case basis.

(b) Conditions - Rule 17-4.070(3), F.A.C.

Compliance testing of particulate, nitrogen oxides, and visible emissions should be conducted while the source is firing No. 6 residual fuel oil at the maximum allowable rate of 8,650.0 MM Btu per hour. Particulate and visible emissions tests shall be conducted under both sootblowing and non-soot blowing conditions, and should be conducted while injecting MgO at the maximum requested rate of 105 pounds per hour.

Testing may be conducted with the source firing No. 6 residual fuel oil at less than 90 percent of the maximum allowable rate, or while injecting MgO at less than 90 percent of the maximum requested rate; however, if so, subsequent source operation is limited to the average No. 6 residual fuel oil firing rate during the test and the average injection rate of MgO during the test. Once the unit is so limited, then operation at higher No. 6 residual fuel oil firing rates or higher MgO injection rates is allowed for a cumulative total of no more than fifteen days for purposes of additional compliance testing to regain the higher rates, not to exceed 8,650.0 MM Btu per hour of No. 6 residual fuel oil nor 105 pounds per hour of MgO.

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: AO41-219341
County: Manatee
Expiration Date: 11/14/97
Project: Manatee Power Plant
Unit No. 2

SPECIFIC CONDITIONS:

In order to provide the Department with reasonable assurance that this source can comply with both the particulate and NO_x standards simultaneously, the steady state particulate tests and the nitrogen oxides tests shall be conducted under substantially identical operating conditions. Fuel to air ratios and stack O₂ during testing shall be substantially identical.

Operating at conditions during testing which do not reflect normal operating conditions may invalidate a test.

(c) Test Schedule:

Stack tests shall be conducted at least on an annual basis, within 30 days of the date December 19.

(d) Stack Sampling Facility - Rule 17-2.700(4), F.A.C.

The stack sampling facility must comply with Rule 17-2.700(4), F.A.C.

(e) Report Submittal - Rules 17-2.700(7) and 17-4.070(3), F.A.C.

A copy of the test results shall be submitted to the Department's Southwest District Office and the Manatee County Environmental Action Commission within 45 days after the last test run is completed. The test report shall provide the actual heat input rate and at least all of the information listed in Rule 17-2.700(7)(c), F.A.C., including the MgO injection rate. A copy of the continuous opacity monitor strip chart recorded during each compliance test shall be submitted with the test reports. Each test report shall also include a fuel oil analysis from a representative sample of the fuel oil burned during the test and a calculation of the sulfur dioxide emission rate in pounds per MM Btu heat input and pounds per hour. Failure to submit any of the above information may invalidate the test.

(6) Recordkeeping to Document Compliance with the Sulfur Dioxide Emission Limit - Rule 17-4.070(3), F.A.C.

FPL shall maintain daily records in a permanent form suitable for inspection documenting the sulfur content of all fuel burned. The records shall contain, at a minimum, for each day, the sulfur content of all fuel burned, and a calculation of the daily average sulfur dioxide emissions in pounds per hour and pounds per MM Btu heat input. Compliance shall be based upon the daily average. The records shall contain sufficient detail to allow the Department to determine whether the emissions were properly computed. All recorded data shall be maintained on file for a period of at least 2 years. FPL shall submit a monthly summary of the daily averages for fuel sulfur content and sulfur dioxide emissions on a quarterly basis, within 30 days following each calendar quarter.

(7) Annual Operations Report (AOR):

On or before March 1 of each calendar year, a completed DER Form 17-1.202(6), Annual Operation Report Form for Air Emissions Sources, listing emissions of all air pollutants for the preceding calendar year, shall be submitted to the Department's Southwest District Office and the Manatee County Environmental Action Commission. The report shall provide sufficient detail to allow the Department to determine whether the emissions were properly computed.

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: A041-219341
County: Manatee
Expiration Date: 11/14/97
Project: Manatee Power Plant
Unit No. 2

SPECIFIC CONDITIONS:

(8) Excess Emissions

(a) Events - Rule 17-2.250, F.A.C.

Excess emissions resulting from start-up or shut-down are permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions is minimized.

Excess emissions resulting from malfunction are permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions is minimized but in no case exceeds two hours in any 24-hour period unless specifically authorized by the Department for longer duration.

Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction are prohibited.

(b) Notification - Rules 17-2.250(6) and 17-4.130, F.A.C.

In the event the permittee is temporarily unable to comply with any of the conditions of the permit, the permittee shall immediately notify the Department's Southwest District Office and the Manatee County Environmental Action Commission. Notification shall be conducted in accordance with General Condition (8) of this permit. In case of excess emissions resulting from malfunctions, a full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.

(c) Quarterly Report Submittal - Rules 17-2.710(1), 17-2.710(2), and 17-4.070(3), F.A.C.

FPL shall submit to the Department of Environmental Regulation and the Manatee County Environmental Action Commission a written report of emissions in excess of the emission limiting standards as set forth in Rule 17-2.600(5), F.A.C. for each calendar quarter. The nature and cause of the excessive emissions shall be explained. This report does not relieve FPL of the legal liability for violations. All recorded data shall be maintained on file for a period of at least 2 years. The information supplied in this report shall be consistent with the reporting requirements of 40 CFR 51 Appendix P. The report shall be submitted within 30 days following each calendar quarter.

(9) Used Oil Combustion:

- (a)** This source is permitted to burn on-specification used oil originated from FPL operations. FPL shall not burn off-specification used oil. Used oil which fails to comply with any of the following specification levels is off-specification used oil [Requested by applicant; 40 CFR 266 Subpart E]:

1. Arsenic shall not exceed 5.0 ppm.
2. Cadmium shall not exceed 2.0 ppm.
3. Chromium shall not exceed 10.0 ppm.
4. Lead shall not exceed 100.0 ppm.
5. Total halogens shall not exceed 1,000.0 ppm.
6. Flash point shall not be less than 100.0 °F.

PERMITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: AO41-219341
County: Manatee
Expiration Date: 11/14/97
Project: Manatee Power Plant
Unit No. 2

SPECIFIC CONDITIONS:

- (b) Each batch of used oil to be burned shall be sampled and analyzed for: arsenic, cadmium, chromium, lead, total halogens, and flash point using EPA/DER or ASTM approved methods. Split samples of the used oil shall be retained for three (3) months after analysis for further testing if necessary.
- (c) Results of used oil sampling and analysis performed pursuant to Specific Condition 9(b) shall be retained by the permittee for at least three (3) years and made available for inspection by the Department upon request.
- (d) Monthly reports of the quantities of used oil burned and the results from the sample analyses performed pursuant to Specific Condition 9(b) shall be submitted to the Department's Southwest District Office and the Manatee County Environmental Action Commission. FPL shall submit these reports within 30 days from the end of every calendar month in which used oil was burned. Furthermore, the quantities of burned used oil and the associated sample analyses shall be included in the Annual Operation Report (AOR) for Air Emissions Sources.

(10) Continuous Emission Monitoring - Rule 17-2.710, F.A.C.

A continuous opacity monitoring system shall be calibrated, operated and maintained in accordance with Rule 17-2.710(1), F.A.C. This source is not exempted by Rule 17-2.710(1)(a)1.a., F.A.C. because a particulate emission control device is utilized (two UOP Aerotec DES 104B-GHS mechanical dust collectors with centrifugal precipitating tubes).

(11) Objectional Odors - Rule 17-2.620(2), F.A.C.

FPL shall not discharge air pollutants which cause or contribute to an objectionable odor.

(12) Hours of Operation:

The hours of operation are not restricted.

(13) Special Compliance Tests - Rule 17-2.700(2)(b), F.A.C.

If the Department of Environmental Regulation has reason to believe that any applicable emission standard is being violated, then the Department of Environmental Regulation may require FPL to conduct compliance tests which identify the nature and quantity of pollutant emissions and to provide a report on the results of said tests.

(14) Disposal of Spent Boiler Cleaning Chemicals - 40 CFR 60.14

If FPL chooses to dispose of spent boiler cleaning chemicals by injecting them into this source while operating, then FPL shall demonstrate to the Department that such disposal does not result in an increase in the actual rate of particulate matter emissions. The demonstration shall be conducted pursuant to the requirements of 40 CFR 60.14(b)(2) and 40 CFR 60 Appendix C. At least three valid test runs must be conducted before disposal of spent boiler cleaning chemicals, and at least three during disposal of spent boiler cleaning chemicals at the maximum disposal rate. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

MITTEE:
Florida Power & Light Company
P.O. Box 088801
North Palm Beach, FL 33408-8801

PERMIT/CERTIFICATION
Permit No: AO41-219341
County: Manatee
Expiration Date: 11/14/97
Project: Manatee Power Plant
Unit No. 2

SPECIFIC CONDITIONS:

(15) Other Requirements - Rule 17-2.210, F.A.C.

Issuance of this permit does not relieve FPL from complying with applicable emission limiting standards or other requirements of Chapter 17-2, or any other requirements under federal, state, or local law. Future regulations may impact this facility at some future date. FPL shall comply with any applicable future regulations when they become effective.

(16) Operation Permit Renewal - Rules 17-4.050(2) and 17-4.090(1), F.A.C.

Three applications to renew this operating permit shall be submitted to the Department of Environmental Regulation, and one application shall be submitted to the Manatee County Environmental Action Commission, by October 14, 1997 (60 days prior to the expiration date of this permit).

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Dr. Richard D. Garrity
Director of District Management
3804 Coconut Palm Drive
Tampa, Florida 33619-8318
Phone (813) 744-6100

attachment

copy to: Rob Baum - Manatee County E.A.C.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were mailed by certified mail before the close of business on NOV 06 1992 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to Section 120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

P 079 942 802

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

MR C D HENDERSON
MGR AIR & WATER PROG
FLORIDA POWER & LIGHT
PO BOX 088801
NORTH PALM BEACH FL 33408

Marilyn Quispe
Clerk

NOV 06 1992
Date

SENDER: Complete items 1 and/or 2 for additional services. Complete items 3, and 4a & b. Print your name and address on the reverse of this form so that we can return this card to you. Attach this form to the front of the mailpiece, or on the back if space does not permit. Write "Return Receipt Requested" on the mailpiece below the article number. The Return Receipt Fee will provide you the signature of the person delivered and the date of delivery.		I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.	
3. Article Addressed to: <u>A041-219341 D2</u>		4a. Article Number <u>P 079 942 802</u>	
MR C D HENDERSON MGR AIR & WATER PROG FLORIDA POWER & LIGHT PO BOX 088801 NORTH PALM BEACH FL 33408		4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise	
Signature (Addressee)		7. Date of Delivery <u>11/10/92</u>	
Signature (Agent) <u>[Signature]</u>		8. Addressee's Address (Only if requested and fee is paid)	