

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Florida Power and Light Company
FP&L Manatee Power Plant

1150-Megawatt Combined Cycle Power Project

Manatee County

DEP File No. 0810010-006-AC (PSD-FL-328)

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

July 24, 2002

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Florida Power and Light Company, Manatee Plant
19050 State Road 62
Parrish, Florida 34219

Authorized Representative: *Paul Plotkin, General Manager*

1.2 Reviewing and Process Schedule

02-22-02: Date of Receipt of Application

06-10-02: Application Complete

07-23-02: Distributed Intent to Issue

2. FACILITY INFORMATION

2.1 Facility Location

Refer to Figures 1 and 2 below. The FP&L Manatee Power Plant is located in Manatee County. The location is approximately 115 km to the south of the Chassahowitzka National Wilderness Area (CNWA). The proposed site is at 19050 State Road 62 in Parrish, Manatee County. The UTM coordinates for this facility are Zone 17; 367.25 km East; 3,054.15 km North.



Figure 1 – Proposed Project Site

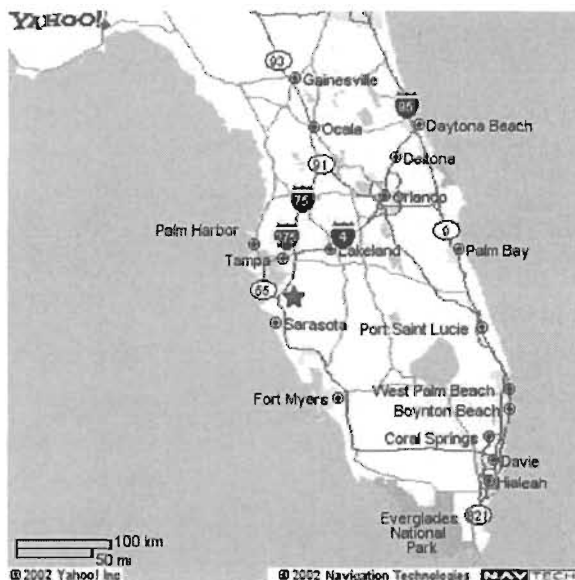


Figure 2 – Regional Location

2.2 Standard Industrial Classification Codes (SIC)

Industry Group No.	49	Electric, Gas, and Sanitary Services
Industry No.	4911	Electric Services

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2.3 Facility Category

This existing facility consists of two 800-megawatt fossil fuel steam generators that primarily burn 1 percent sulfur residual fuel oil. Each unit discharges through a separate 499-foot stack. Unit 1 began commercial operation in 1976 and Unit 2 began commercial operation in 1977. The units may use No. 6 and No. 2 fuel oil, propane, and used oil from FPL operations. The Department recently issued an Intent to permit the use of natural gas in Units 1 and 2. This facility also includes the following unregulated/insignificant sources: the emergency diesel generator; miscellaneous mobile equipment and internal combustion engines; painting of plant equipment; and non-halogenated solvent cleaning operations.

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 TPY. This facility is also a Major Facility on the basis of inclusion in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. and emissions greater than 100 TPY for several criteria pollutants. The existing facility is classified as a Major Source of hazardous air pollutants (HAP) because emissions of hydrogen chloride exceed 10 tons per year.

The proposed project (Unit 3) will generate 1,150 megawatts (nominal MW) of electrical power. Because the proposed emissions from the new unit are greater than 40 TPY for at least one criteria pollutant, the project is considered a major facility modification with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), and a Best Available Control Technology (BACT) determination is required. Given that emissions of at least one single criteria pollutant already exceed 100 TPY at the facility, PSD Review and a BACT determination are required for each pollutant emitted in excess of the Significant Emission Rates listed in Table 62-212.400-2, F.A.C. These values are: 40 TPY for NO_x, SO₂, and VOC; 25/15 TPY of PM/PM₁₀; 7 TPY of Sulfuric Acid Mist (SAM); and 100 TPY of CO. Projected emissions of HAPs from the proposed project (Unit 3) will be below the thresholds that require a case-by-case Maximum Achievable Control Technology (MACT) determination.

3. PROJECT DESCRIPTION

This permit addresses the following emissions units:

ID	Emission Unit Description
005	Combined Cycle Unit No. CC-3A consists of a natural gas-fueled General Electric Model PG7241FA (GE 7FA) combustion turbine-electrical generator with a nominal capacity of 170 MW, a 495 MMBTU/hr (LHV) natural gas fired heat recovery steam generator (HRSG), a single 470 MW steam turbine with associated electric generator (all four units connected), a 120-foot stack and an 80-foot bypass stack. This unit will also operate in simple cycle and high power modes.
006	Combined Cycle Unit No. CC-3B consists of a natural gas-fueled General Electric Model PG7241FA (GE 7FA) combustion turbine-electrical generator with a nominal capacity of 170 MW, a 495 MMBTU/hr (LHV) natural gas fired heat recovery steam generator (HRSG), a single 470 MW steam turbine with associated electric generator (all four units connected), a 120-foot stack and an 80-foot bypass stack. This unit will also operate in simple cycle and high power modes.

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007	Combined Cycle Unit No. CC-3C consists of a natural gas-fueled General Electric Model PG7241FA (GE 7FA) combustion turbine-electrical generator with a nominal capacity of 170 MW, a 495 MMBTU/hr (LHV) natural gas fired heat recovery steam generator (HRSG), a single 470 MW steam turbine with associated electric generator (all four units connected), a 120-foot stack and an 80-foot bypass stack. This unit will also operate on simple cycle and high power modes.
008	Combined Cycle Unit No. CC-3B consists of a natural gas-fueled General Electric Model PG7241FA (GE 7FA) combustion turbine-electrical generator with a nominal capacity of 170 MW, a 495 MMBTU/hr (LHV) natural gas fired heat recovery steam generator (HRSG), a single 470 MW steam turbine with associated electric generator (all four units connected), a 120-foot stack and an 80-foot bypass stack. This unit will also operate in simple cycle and high power modes.
009	Combined Cycle Unit No. CC-3D consists of a natural gas-fueled General Electric Model PG7241FA (GE 7FA) combustion turbine-electrical generator with a nominal capacity of 170 MW, a 495 MMBTU/hr (LHV) natural gas fired heat recovery steam generator (HRSG), a single 470 MW steam turbine with associated electric generator (all four units connected), a 120-foot stack and an 80-foot bypass stack. This unit will also operate in simple cycle and high power modes.
010	Other Emissions Units including four gas heaters and an aqueous ammonia storage tank.

Significant emission rate increases per Table 212.400-2, F.A.C. will occur for CO, VOC, SO₂, Sulfuric Acid Mist (SAM), PM/PM₁₀ and NO_x. A BACT determination is required for each of these pollutants. An air quality impact review is also required for CO, VOC, PM/PM₁₀, NO_x, Sulfuric Acid Mist (SAM) and SO₂.

Each turbine will be equipped with Dry Low NO_x (DLN-2.6) combustors and evaporative inlet cooling systems. NO_x emissions from the combined cycle unit will be further controlled by selective catalytic reduction (SCR). Each will have a maximum heat input rating of approximately 1,600 mmBtu per hour at 59 degrees Fahrenheit (°F) while operating at 100% load.

Each gas turbine will initially be constructed and operated in simple cycle mode and intermittent duty for 3390 hrs/yr during the first year of operation (while construction continues on the steam cycle). Thereafter, each gas turbine will continuously operate in the combined cycle mode, but may operate in simple cycle mode for no more than an average fuel equivalent of 1000 hrs during any 12-month period. Each turbine may also operate 400 hrs/year in power (steam) augmentation mode, 60 hrs/year in peaking mode and 2280 hrs/yr in supplemental gas firing (duct burning) mode.

The key components of the GE MS 7001FA (a predecessor of the PG 7241FA) are identified in Figure 3. An exterior view is also shown. The project includes highly automated controls, described as the GE Mark VI Gas Turbine Control System to fulfill all of the gas turbine control requirements.

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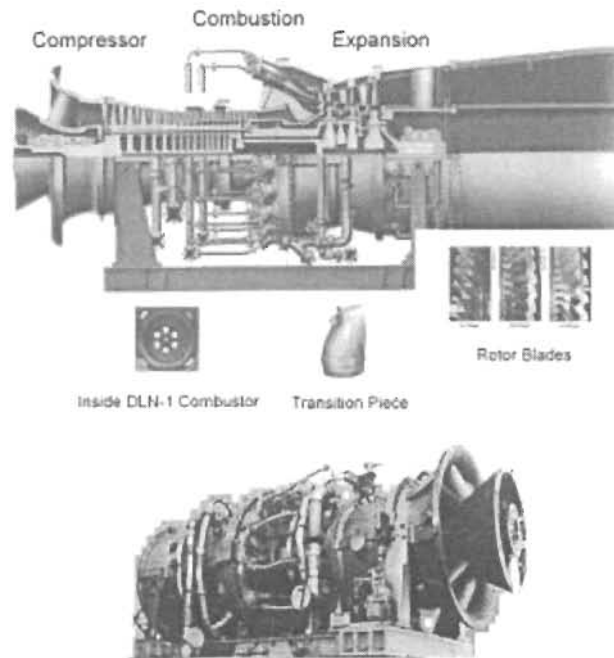


Figure 3 - Internal and External Views of Early GE 7FA

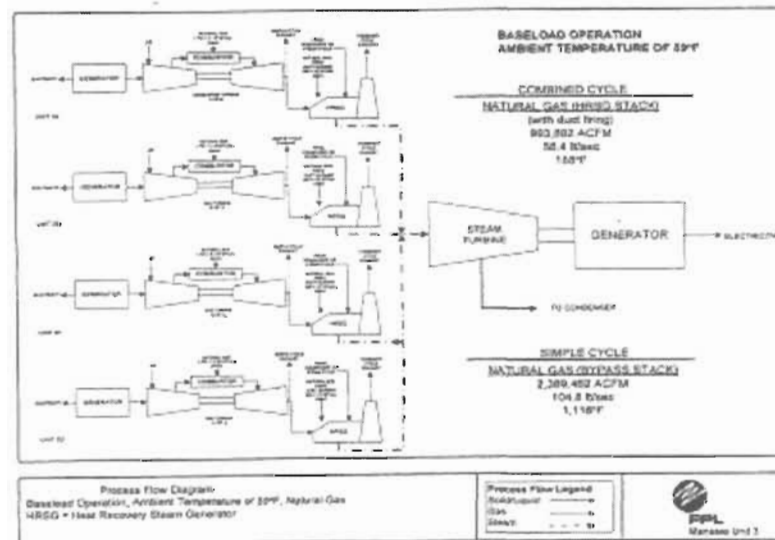


Figure 4 – Process Flow Diagram

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4. PROCESS DESCRIPTION

A gas turbine is an internal combustion engine that operates with rotary rather than reciprocating motion. Ambient air is drawn into the 18-stage compressor of the GE 7FA where it is compressed by a pressure ratio of about 15 times atmospheric pressure. The compressed air is then directed to the combustor section, where fuel is introduced, ignited, and burned. The combustion section consists of 14 separate can-annular combustors.

Flame temperatures in a typical combustor section can reach 3600 °F. Units such as the 7FA operate at lower flame temperatures, which minimize NO_x formation. The hot combustion gases are then diluted with additional cool air and directed to the turbine section at temperatures of approximately 2400 °F. Energy is recovered in the turbine section in the form of shaft horsepower, of which typically more than 50 percent is required to drive the internal compressor section. The balance of recovered shaft energy is available to drive the external load unit such as an electrical generator.

Figure 4 is a simplified process flow diagram of the proposed FPL project. The units will operate in the simple cycle mode during the first year and during limited periods of time thereafter. Cycle efficiency (defined as a percentage of useful shaft energy output to fuel energy input) is approximately 35 percent for F-Class combustion turbines in the simple cycle mode. In addition to shaft energy output, 1 to 2 percent of fuel input energy can be attributed to mechanical losses. The balance is exhausted from the turbine in the form of heat.

All units will ultimately operate in combined cycle mode in which the combustion turbine drives an electric generator while the exhausted gases are used to raise additional steam in a heat recovery steam generator. The steam, in-turn, drives a separate steam turbine-electrical generator producing additional electrical power. In combined cycle mode, the thermal efficiency of the 7FA can exceed 56 percent.

At high ambient temperature, the units cannot generate as much power because of lower compressor inlet air density. To compensate for the loss of output (which can be on the order of 20 MW compared to referenced temperatures), an inlet air cooler (fogger or chiller) can be installed ahead of the combustion turbine inlet. At an ambient temperature of 95 °F, roughly 15 MW of power can be regained per simple cycle unit by using a chiller to cool the inlet air to 50 °F.

Each unit will include an evaporative cooling system (fogger) ahead of the compressor and a 495 MMBtu/hr (LHV) gas-fired duct burner between the combustion turbine and the HRSG. *Power augmentation* is accomplished by injecting some steam from the HRSG into the rotor (power) section of the combustion turbine. *Peaking* is simply running the unit at greater than design fuel input for short periods of time. The additional process information related to the combustor design, and control measures to minimize pollutant emissions are given in the attached draft BACT determination.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-17, 62-204, 62-210, 62-212, 62-214, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and 40CFR52.21.

This project will be located in Manatee County; an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C. The proposed project is subject to PSD review under Rule 62-212.400, F.A.C. for the reasons given in Section 2.3, Facility Category, above.

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This PSD review consists of an evaluation of resulting ambient air pollutant concentrations and increases with respect to the National Ambient Air Quality Standards and PSD Increments as well as a determination of Best Available Control Technology (BACT) for PM/PM₁₀, CO, VOC, SO₂, SAM and NO_x. An analysis of the air quality impact from proposed project upon soils, vegetation and visibility is required along with air quality impacts resulting from associated commercial, residential, and industrial growth

The emission units affected by this air construction permit shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules related to air:

5.1 State Regulations

Chapter 62-4	Permits.
Chapter 62-17	Electrical Power Plant Siting
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-214	Requirements For Sources Subject To The Federal Acid Rain Program
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.520	EPA Continuous Monitor Performance Specifications

5.2 Federal Rules

40 CFR 52.21	Prevention of Significant Deterioration of Air Quality
40 CFR 60	Applicable sections of Subpart A, General Requirements, Subparts Da, Dc, and GG
40 CFR 72	Acid Rain Permits (applicable sections)
40 CFR 73	Allowances (applicable sections)
40 CFR 75	Monitoring (applicable sections including applicable appendices)
40 CFR 77	Acid Rain Program-Excess Emissions (future applicable requirements)

5.2 Manatee County Code of Ordinances

Chapter 1-32	Air Pollution Control
Section 1-32-3	Adoption of State Rules
Section 1-32.5(d)	Prohibitions (fuel sulfur limit)
Section 1-32.6	Permits Required
Section 1-32.7	Prevention of Significant Deterioration

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6. SOURCE IMPACT ANALYSIS

6.1 Emission Limitations

The proposed project will emit the following PSD pollutants (Table 212.400-2, F.A.C.): PM/PM₁₀, SO₂, NO_x, CO, VOC and SAM, and negligible quantities of fluorides (F), mercury (Hg) and lead (Pb). The applicant's proposed annual emissions are summarized in the Table below and form the basis of the source impact review. The Department's proposed permitted allowable emissions are summarized in the Draft BACT document and the Specific Condition Nos. 11, Section III of Draft Permit PSD-FL-328.

6.2 Emission Summary

Maximum annual emissions increases for all PSD pollutants due to the project are presented below:

PROJECT EMISSIONS (TPY) AND PSD APPLICABILITY

Pollutant	Emissions ¹	Emissions ²	PSD Significance	PSD Review?
PM/PM ₁₀ (filterable)	61	224	25	Yes
SO ₂	66	189	40	Yes
NO _x	403	411	40	Yes
CO	189	749	100	Yes
Ozone (VOC)	19	99	40	Yes
Sulfuric Acid Mist	7	21	7	Yes
Total Fluorides	NEG	NEG	3	No
Mercury	0	0	0.1	No
Lead	0	0	0.6	No
HAPs	4	13	NA	NA

1. First year of operation maximum emissions are based on 3,330 hours of simple cycle operation at 100 percent load and 60 hours of simple cycle operation at high power modes (power augmentation or peaking). Hours of operation are average per combustion turbine.
2. After first year of operation maximum emissions are sum of emissions from:
4,480 hours of combined cycle operation at 100 percent load; 2,880 hours of combined cycle operation at 100 percent load with duct burners;
400 hours – of combined cycle operation at 100 percent load with duct burners and high power modes (power augmentation, peak mode); and
1000 hours - of Simple Cycle operation at 100 percent load, natural gas. Hours of operation are average per combustion turbine.

6.3 Control Technology

The PSD regulations require new major stationary sources to undergo a control technology review for each pollutant that may be potentially emitted above significant amounts. The control technology review requirements of the PSD regulations are applicable to emissions of NO_x, SO₂, CO, VOC, SAM, and PM/PM₁₀. Emissions control will be accomplished primarily by good combustion of clean natural gas. The combustors will operate in lean pre-mixed mode to minimize the flame temperature and nitrogen oxides formation potential. A selective catalytic reduction (SCR) system will be installed within the heat recovery steam generator of the single combined cycle unit to effect additional NO_x control during combined cycle operation. A full discussion is given in the separate Draft Best Available Control Technology (BACT) Determination that is incorporated into this document by reference.

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6.4 Existing Air Quality in the Vicinity of the project

6.4.1 Description of Vicinity

Refer to Figures 1 and 2 above. The project will be located on State Road 62 in Parrish, Manatee County. The site is several miles east of I-75 in Manatee County.

The Department recently approved two other power plant projects in Manatee County. These include a nominal 250-megawatt power plant (CPV Manatee) and a 600-megawatt power plant (El Paso Manatee). Both of the proposed facilities will be located near Piney Point, (U.S. 41, South of the Hillsborough/Manatee County line).

Refer to Figure 5. The immediate area is sparsely populated. The county seat is Bradenton, located about 14 miles southwest of Parrish. St. Petersburg in Pinellas County is about 20 miles northwest of Parrish across Tampa Bay. TECO Big Bend is by Apollo Beach approximately 14 miles North of the FPL Manatee site.

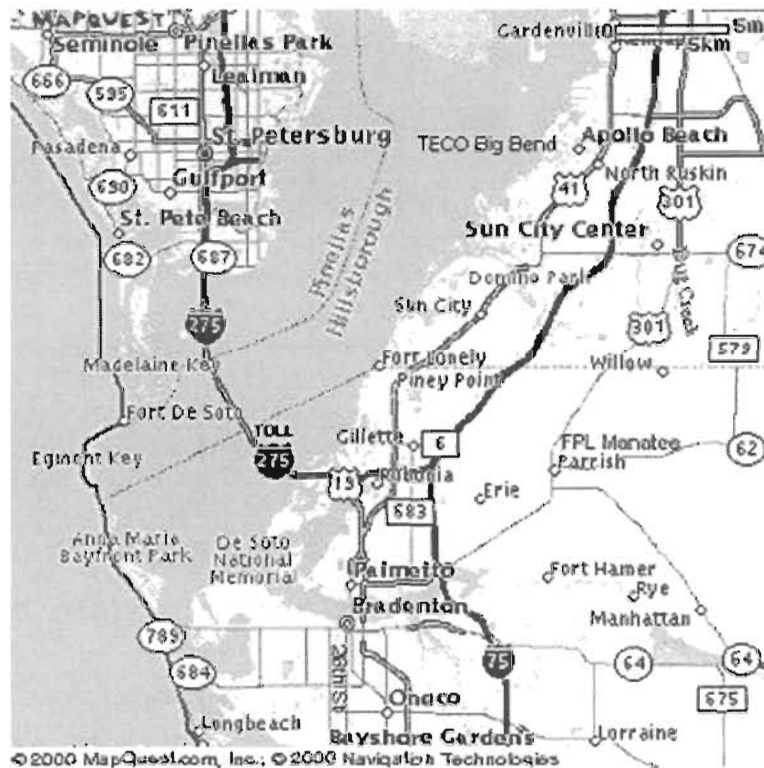


Figure 5 – Location of Project, Nearby Cities and Power Plants

The most immediate surrounding area (within 3 to 5 miles from the Manatee Plant) is rural but with various housing developments nearby. Farms and ranches border the plant site. Figure 6 is a photograph taken from the entrance to FPL Manatee, South of the plant. The photograph shows the two existing units. Figure 7 shows the entrance to the FPL Manatee facility. The site for the proposed unit, Figure 8, is to the west of the two existing units. The photograph shows some cows on the property. Figure 9 shows the rural surroundings. Figure 8 was also taken from the existing units in the direction of the proposed site. Figure 9 is a photograph taken from State Road 62 near the facility.

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Figure 6 – FPL Manatee Power Plant



Figure 7 – Entrance to Manatee Power Plant



Figure 8 – Site for Proposed New Unit



Figure 9 – Area surrounding FPL Manatee

6.4.2 Climate

The average annual temperature for Manatee County is 72 degrees. Winds are predominately out of the East.

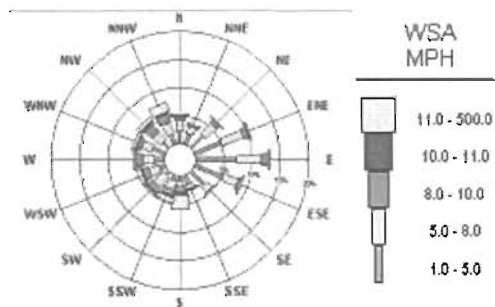


Figure 10 – Manatee County Wind Rose – January 1998 to December 1998

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6.4.2 Major Stationary Sources in Manatee County

The current largest sources of air pollutants (stack emissions) in Manatee County are listed below:

MAJOR SOURCES OF SO₂ IN MANATEE COUNTY (2000)

Owner/Company	Site Name	Tons per year
Florida Power and Light	Manatee Power Plant (Existing boilers)	26,351
Piney Point Phosphates (inactive)	Piney Point Phosphates	1,320*
Tropicana Products, Inc	Tropicana Products, Inc	256
Florida Power and Light	Manatee Power Plant (Proposed turbines)	189*
CPV Gulfcoast, Ltd (permitted)	CPV Gulfcoast, Ltd	76*
El Paso (permitted)	Manatee Energy Center	69*

* Potential emissions

MAJOR SOURCES OF NO_x IN MANATEE COUNTY (2000)

Owner/Company	Site Name	Tons per year
Florida Power and Light	Manatee Power Plant	8,134
Tropicana Products, Inc	Tropicana Products	653
Florida Power and Light	Manatee Power Plant (Proposed turbines)	411*
El Paso (permitted)	Manatee Energy Center	365*
Piney Point Phosphates (inactive)	Piney Point Phosphates	169*
CPV Gulfcoast, Ltd (permitted)	CPV Gulfcoast, Ltd	126*

* Potential emissions

MAJOR SOURCES OF VOC IN MANATEE COUNTY (2000)

Owner/Company	Site Name	Tons per year
Tropicana Products, Inc	Tropicana Products, Inc	1,883
Manatee County Utility Dept	Lena Road Landfill	876
Florida Power and Light	Manatee Power Plant (Existing boilers)	132
Florida Power and Light	Manatee Power Plant (Proposed turbines)	99*
American Marine Holdings, Inc	Donzi Marine	79
Flowers Baking Company	Flowers Baking Company	60
Chris Craft Boats	Chris Craft Boats	70
El Paso (permitted)	Manatee Energy Center	29*

* Potential emissions based on application. Revised downward based on Department's draft BACT Determination.

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MAJOR SOURCES OF PM IN MANATEE COUNTY (2000)

Owner/Company	Site Name	Tons per year
Florida Power and Light	Manatee Power Plant (Existing boilers)	2,099
Florida Power and Light	Manatee Power Plant (Proposed turbines)	224*
El Paso (permitted)	Manatee Energy Center	181*
Tropicana Products, Inc	Tropicana Products, Inc	153
CPV Gulfcoast, Ltd (permitted)	CPV Gulfcoast, Ltd	57*
Flowers Baking Company	Flowers Baking Company	3

* Potential emissions

MAJOR SOURCES OF CO IN MANATEE COUNTY (2000)

Owner/Company	Site Name	Tons per year
Florida Power and Light	Manatee Power Plant (Existing boilers)	16,720
Tropicana Products, Inc	Tropicana Products, Inc	1,975
Florida Power and Light	Manatee Power Plant (Proposed turbines)	749*
El Paso (permitted)	Manatee Energy Center	349
CPV Gulfcoast, Ltd (permitted)	CPV Gulfcoast, Ltd	222
Apac Florida, Inc	Apac Florida	22

* Potential emissions

6.4.3 Air Quality Monitoring in Manatee County

Manatee County has 7 monitors at 4 sites measuring PM, ozone, SO₂ and NO₂. The 2001 Manatee County monitoring network is shown in Figure 11.

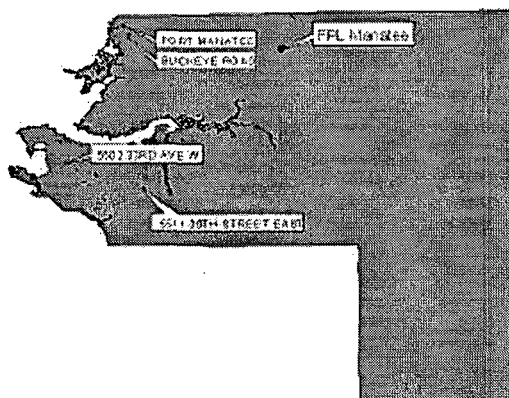


Figure 11 – Manatee County Monitoring Network

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6.4.4 Ambient Air Quality in Manatee County

Measured ambient air quality is given in the following table. The highest measured values are all less than the respective National Ambient Air Quality Standards. The average measurements are all less than the respective standards.

1999 AMBIENT AIR QUALITY NEAR PROJECT SITE

Pollutant	Site Location			Averaging	Ambient Concentration				
	City	Site no.	UTM	Period	1st High	2nd High	Mean	Standard	Units
PM ₁₀	Buckeye Road	081-0008	17-3056.200N-	24-hour	48	42		150 ^c	ug/m ³
			348.100E	Annual			24	50 ^b	ug/m ³
SO ₂	Port Manatee	081-3002	17-3057.318N-	3-hour	60	56		500 ^a	ppb
			347.461E	24-hour	21	17		100 ^a	ppb
				Annual			4	20 ^b	ppb
NO ₂	GT Bray	081-4012	17-3040.318N-	Annual			7	53 ^b	ppb
CO	Tampa	057-1070	17-3096.500N-	1-hour	6	6		35 ^a	ppm
			357.000E	8-hour	4	3		9 ^a	ppm
Ozone	Port Manatee	081-3002	17-3057.318N-	1-hour	0.112	0.111	0.051	0.12 ^c	ppm
a - Not to be exceeded more than once per year. b - Arithmetic mean. c - Not to be exceeded on more than an average of one day per year over a three-year period. d - Mean ozone value reflects the average daily 1-hour maximum reading Jan.-Sept.99.									

6.5 Air Quality Impact Analysis

6.5.1 Introduction

The proposed project will increase emissions of six pollutants at levels in excess of PSD significant amounts: PM/PM₁₀, CO, NO_x, SO₂, VOC and SAM. PM₁₀, SO₂ and NO_x are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, significant impact levels and de minimis monitoring levels defined for them. CO is a criteria pollutant and has only AAQS, significant impact levels and de minimis monitoring levels defined for it. There are no applicable PSD increments, AAQS, significant impact or de minimis monitoring levels for SAM and VOC. However, VOC is a precursor to a criteria pollutant, ozone; and any net increase of 100 tons per year of VOC requires an ambient impact analysis including the gathering of preconstruction ambient air quality data.

6.5.2 Significant Impact Analysis

For PM/PM₁₀, CO, NO_x and SO₂, which have significant impact levels defined for them, a significant impact analysis is performed. In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The models used in this analysis and any required subsequent modeling analyses are described in 6.5.4. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are compared to the appropriate significant impact levels for the Class I and Class II Areas.

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If this modeling at worst load conditions shows significant impacts, additional modeling, which includes the emissions from surrounding facilities, or multi-source modeling is required to determine the project's impacts on any applicable AAQS or PSD increments. If no significant impacts are shown, the applicant is exempted from doing any further modeling.

The applicant's initial PM/PM₁₀, CO, NO_x, and SO₂ air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants (except PM₁₀) are less than the applicable "significant impact levels." These values are tabulated below and compared with existing ambient air quality measurements from the local ambient monitoring network.

MAXIMUM PROJECT AIR QUALITY IMPACTS FROM THE FPL PROJECT FOR COMPARISON TO THE PSD CLASS II SIGNIFICANT IMPACT LEVELS

Pollutant	Averaging Time	Max Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Baseline Concentrations (ug/m ³)	Ambient Air Standards (ug/m ³)	Significant Impact?
SO ₂	Annual	0.3	1	~ 10	60	NO
	24-Hour	4	5	~ 55	260	NO
	3-Hour	18	25	~ 155	1300	NO
PM ₁₀	Annual	0.5	1	~ 25	50	NO
	24-Hour	7	5	~ 50	150	YES
CO	8-Hour	60	500	~ 4500	10,000	NO
	1-Hour	140	2000	~ 7,000	40,000	NO
NO ₂	Annual	0.8	1	~ 15	100	NO

It is obvious that maximum predicted impacts from the project are much less than the respective ambient air quality standards and the baseline concentrations in the area. They are also less than the respective significant impact levels (except for PM₁₀) that would otherwise require more detailed modeling efforts. In the case of PM₁₀, additional modeling was required and is detailed in Section 6.5.5 below.

The nearest PSD Class I area is the Chassahowitzka National Wilderness Area (CNWA) located about 115 km to the north. The applicant's initial PM/PM₁₀, NO_x, and SO₂ air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable "significant impact levels" for the Class I area. These values are tabulated below. Note that the values are miniscule if compared with the ambient air quality standards given in the previous table. Since these impacts are less than the respective significant impact levels, no further detailed modeling efforts are required in this Class I area.

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MAXIMUM PROJECT AIR QUALITY IMPACTS FROM THE FPL PROJECT COMPARED WITH PSD CLASS I SIGNIFICANT IMPACT LEVELS (CHASSAHOWITZKA)

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m ³)	Class I Significant Impact Level (ug/m ³)	Significant Impact?
PM ₁₀	Annual	0.002	0.2	NO
	24-hour	0.04	0.3	NO
NO ₂	Annual	0.002	0.1	NO
SO ₂	Annual	0.001	0.1	NO
	24-hour	0.02	0.2	NO
	3-hour	0.1	1	NO

6.5.3 Preconstruction Ambient Monitoring Requirements

A preconstruction monitoring analysis is done for those pollutants with listed de minimis impact levels. These are levels which, if exceeded, would require pre-construction ambient monitoring. For this analysis, as was done for the significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. As shown in the table below, the maximum predicted impacts for all pollutants with listed de minimis impact levels were less than these levels. Therefore no pre-construction monitoring is required for those pollutants.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE DE MINIMIS AMBIENT IMPACT LEVELS

Pollutant	Averaging Time	Max Predicted Impact (ug/m ³)	De Minimis Level (ug/m ³)	Baseline Concentrations (ug/m ³)	Impact Greater Than De Minimis?
PM ₁₀	24-hour	7	10	~ 50	NO
NO ₂	Annual	1	14	~ 15	NO
SO ₂	24-hour	4	13	~ 55	NO
CO	8-hour	60	575	~ 4500	NO

There are no ambient standards or *de minimis* air quality levels associated with VOC. However, the pollutant associated with VOC is actually ozone. Projects exhibiting VOC emissions greater than 100 tons per year, such as the present project are required to perform an ambient impact analysis for ozone including the gathering of preconstruction ambient air quality data.

Ozone is not directly emitted from stationary sources. Impacts of VOC emissions on ozone are usually not seen locally, but contribute to regional formation of ozone. The three regional ozone monitors in the area suffice for any background ozone pre-construction monitoring requirements.

Based on the preceding discussions, the only additional detailed air quality analyses (inclusive of all sources in the area) required by the PSD regulations for this project are the following:

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

- A multi-source Ambient Air Quality Standards (AAQS) and PSD increment analysis for 24-hour PM₁₀ in the Class II area in the vicinity of the project;
- An analysis of impacts on ground level ozone; and
- An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

6.5.4 Models and Meteorological Data Used in the Air Quality Analysis

PSD Class II Area

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 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. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the Tampa International Airport and Ruskin respectively (surface and upper air data). The 5-year period of meteorological data was from 1991 through 1995. This airport station was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

In reviewing this permit application, 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 more detailed discussion of the required analyses follows.

PSD Class I Area

The California Puff (CALPUFF) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class I CNWA. Meteorological data used in this model was 1990 ISCST3 data, which was enhanced for CALPUFF. Meteorological surface data used were from Gainesville, Tampa, Daytona Beach, Vero Beach, Fort Myers and Orlando. Meteorological upper air data used were from Ruskin, Apalachicola and West Palm Beach. Hourly precipitation data were obtained from 27 stations around the central part of the state.

CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources.

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CALPUFF is also suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanism.

6.5.5 Multi-source AAQS PM₁₀ Analysis

For pollutants subject to a multi-source AAQS review, the total impact on ambient air quality 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 analysis are summarized in the table below. As shown in this table, emissions from the proposed facility are not expected to cause or contribute to a violation of an AAQS.

AMBIENT AIR QUALITY IMPACTS

Pollutant	Averaging Time	Major Sources Impact (ug/m ³)	Background Conc. (ug/m ³)	Total Impact (ug/m ³)	Total Impact Greater Than AAQS?	Florida AAQS ₃ (ug/m ³)
PM ₁₀	24-hour	16	50	66	NO	150

6.5.6 Multi-source PSD Class Increment Analysis for PM₁₀

The multi-source PSD increment represents the amount that all new sources in an area may increase ambient ground level concentrations of a pollutant from a baseline concentration, which was established in 1977 for PM₁₀ (the baseline year was 1975 for existing major sources of PM₁₀). The maximum predicted 24-hour PM₁₀ PSD Class II area impacts from this project and all other increment-consuming sources in the vicinity of FPL Manatee are shown in the following table. The table shows that the maximum predicted impacts are less than the allowable Class II PM₁₀ increments.

PSD CLASS II INCREMENT ANALYSIS

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m ³)
PM ₁₀	24-hr	14	NO	30

6.5.7 Ozone Impact Assessment

FP&L provided additional information on July 19 to provide assurances that their emissions of VOC from Unit 3 will be less than 100 tons per year. Therefore modeling of impacts on ozone due to VOC emissions is not required. The main impact on ozone from stationary sources in the area is due to nitrogen oxides emissions (NO_x) rather than VOC. Furthermore, ozone formation occurs on a regional basis and includes the contributions of emissions from traffic, power plants throughout the region, VOC sources throughout the region, etc.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

In contrast to SO₂ and PM₁₀ modeling, the NO_x and VOC emitted from a specific source cannot be modeled to predict a nearby impact on ozone and this was not attempted in this review. The emissions from the project were not used as inputs in conjunction with a regional air quality model such as the Urban Airshed Model (UAM). It is very expensive to run such a model and the model results would not be sensitive to the relatively small inputs from the proposed project (411 TPY of NO_x and less than 100 TPY of VOC).

For comparison, a large reduction in regional NO_x emissions is expected (required) from certain power plants in the Tampa Bay Area on the order of 60,000 TPY of NO_x that will overwhelm any increase expected from the FP&L Manatee Unit 3 project. VOC emission decreases from mobile sources are also expected that will be more than an order of magnitude greater than the minimal emissions expected from the new unit. These decreases would make a much greater difference when considered in a model such as UAM, whereas impacts on ozone caused by emissions from Manatee Unit 3 would not be easy to discern.

Recently the Department issued a draft permit to FP&L to add natural gas capability at Manatee Units 1 and 2. These units together emitted roughly 9,300 TPY of NO_x in 2001 at the present 40 (plus) percent capacity factor. By comparison the two virtually identical units at FP&L's Martin Power Plant emitted approximately 6,300 tons of NO_x in 2001 with a fairly similar capacity factor.

The expectation is that the use of gas at the Manatee Power Plant Units 1 and 2 will result in a decrease in NO_x emissions to nearly the levels of the "sister" plant in Martin County. Due to construction of Unit 3 and the completion of numerous combined cycle projects under construction throughout the state, the capacity factor of FPL Manatee Units 1 and 2 will likely decline to approximately 25 percent by 2005-2006. Such a decline in capacity factor coupled with use of natural gas will result in greater NO_x reductions from Units 1 and 2 than increases from Unit 3.

The overall conclusions regarding ozone impacts are:

- The low emissions of VOC and highly controlled emissions of NO_x using selective catalytic reduction will minimize impacts on ground level ozone
- Favorable impacts from NO_x reductions at some large regional power plants will be much greater than any impacts from Manatee Unit 3.
- On-site reductions of NO_x due to gas use on Units 1 and 2 and greater competition from "clean units" such as Unit 3 will reduce NO_x emissions from the plant
- The proposed project will not hinder the overall trend in the region towards less NO_x emissions and lower impacts on ozone due to power plant construction and operation.

6.5.8 Additional Impacts Analysis

Impact on Soils, Vegetation, And Wildlife

Very low emissions are expected from these natural gas-fueled combustion turbines in comparison with conventional power plants generating equal power. Emissions of acid rain and ozone precursors will be very low. The maximum ground-level concentrations of PM₁₀, CO, NO_x, and SO₂ caused by the proposed project are less than the respective significant impact levels except for PM₁₀. The impacts on PM₁₀ (including those of sources built since 1977, in turn, are less than the allowable PSD increments.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The concentrations of key pollutants are substantially less than values known to cause damage to vegetation. For example, sensitive vascular plants, such as legumes, blackberry, southern pine, red oak and ragweeds, are known to be sensitive to short term SO₂ exposure. Injury has been documented at exposures of 790 ug/m³ according to the application.

Because natural gas contains such little sulfur, the average long-term and maximum short-term SO₂ concentrations caused by the proposed project in the vicinity of the facility are much lower (0.3 – 18 ug/m³) than the mentioned value. It is also noted that, at the site of the only SO₂ station in the county, the 3-hour average and 24-hour concentrations of SO₂ are 156 and 55 ug/m³ respectively. Therefore, the contribution from the proposed project would be minimal. In the PSD Class I CNWA, the average long-term and maximum SO₂ short-term predicted concentrations are even less (0.001 to 0.1 ug/m³) by at least two orders of magnitude.

The total maximum concentrations predicted to occur for NO_x from the FPL Manatee Unit 3 would be about 5 % of the existing NO_x concentrations in Manatee County, which is much less than the AAQS.

The impacts on ozone formation caused by NO_x and VOC emissions were discussed above. The project will not meaningfully contribute to ozone formation in the localized area. Any contribution to regional ozone formation will be more than compensated by the major reductions occurring at plants in Hillsborough County and the expected emission reductions from Manatee Units 1 and 2.

These low impacts from the mentioned pollutants are not expected to have any meaningful effect on the soils, vegetation and wildlife in the area. At the same time, improvements due to planned addition of natural gas to the fuel slate at Units 1 and 2 (at the same location) will tend to have a more than compensatory ameliorative effect on soils, vegetation, and wildlife.

Similar analyses apply to the other pollutants and their impacts on soil, vegetation and wildlife. The Department's conclusion is that the effects of the project on soils, vegetation, and wildlife will be minimal or insignificant locally, regionally, and at the Chassahowitzka National Wildlife Area.

Impact On Visibility and Regional Haze

Natural gas is a clean fuel and produces little ash. This will minimize smoke formation. The low NO_x and SO₂ emissions will also minimize plume visibility (typically zero percent opacity). The contribution to smog in the area will be minimal. The applicant submitted a regional haze analysis for the CNWA. It was reviewed by the Air Quality Branch at the U.S. Fish and Wildlife Service. Their conclusion regarding the modeling was that "the maximum impacts are well below the significant impacts levels for all increments" and "the maximum predicted impact in visibility, expressed as change in light extinction, was 0.64 percent, well below the recommended threshold of 5 percent." Therefore, the project will not have an adverse impact on the existing regional haze in the CNWA.

Clean and efficient gas-fueled combined cycle projects, such as this one, compete with existing conventional plants that emit much more sulfate and nitrate precursors that cause regional haze. Besides contributing little to regional haze, gas-fueled combined cycle projects also tend to help reduce regional haze by providing "cleaner" electricity than would otherwise be provided by the older conventional units.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Growth-Related Air Quality Impacts

According to the applicant, the existing commercial and industrial infrastructure should be adequate to provide any support services that the project might require. Construction will occur over a 24-month period requiring an average of 250 workers during that time. It is anticipated that many of these construction workers will commute to the site. There is an ample supply of skilled and semi-skilled workers in the general area that will likely provide much of the work force.

Major highways such as I-75, I-275, U.S. 41, and U.S. 301 can easily accommodate any additional regional traffic associated with the project. Locally, there will be short-term additional construction traffic on S.R. 62.

At build-out the plant will employ a total of 12 operational workers for Unit 3. This is an insignificant number of workers.

There are no adequate procedures under the PSD rules to fully assess all of the growth-related impacts. The project is also under simultaneous review through the Power Plant Siting process. The staff report is not yet complete, but it will likely address some of these topics in greater detail.

The proposed project is being constructed to meet current and future statewide electric demands. Obviously any increase in electric power capacity promotes or accommodates further statewide growth. However, the type of project proposed has the smallest overall physical "footprint," the least water requirements, the lowest capital costs, fewest labor requirements, and the lowest air emissions per unit of electric energy produced.

Hazardous Air Pollutants

The project is not a major source of hazardous air pollutants (HAPs) and is not subject to any specific industry or HAP control requirements pursuant to Section 112 of the Clean Air Act.

7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations.

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 significantly contribute to a violation of any AAQS or PSD increment.

In making this preliminary determination, the Department also drafted a determination of Best Available Control Technology that may be modified based on comments from the applicant, agencies, and the public.

Teresa Heron, Permit Engineer
Debbie Galbraith, Meteorologist
A. A. Linero, P.E. Administrator

AGREEMENT
FOR THE PURPOSE OF
ENSURING COMPLIANCE WITH
AMBIENT AIR QUALITY STANDARDS FOR OZONE

This Agreement is entered into between the Florida Department of Environmental Protection ("FDEP") and Florida Power & Light Company ("FPL") to reduce emissions of nitrogen oxides from an existing electrical generating facility for the exclusive purpose of ensuring compliance with the ambient air quality standards for ozone, as provided for by Section 366.8255(1)(d)7, Florida Statutes (2002).

WHEREAS:

I. The Florida Legislature enacted Chapter 2002-276, Laws of Florida, to allow agreements between electric utilities and FDEP for the purpose of ensuring compliance with ozone ambient air quality standards, and further to provide for the recovery of costs and expenses prudently incurred by an electric utility pursuant to such an agreement entered into prior to October 1, 2002;

II. FDEP has the statutory duty and authority, pursuant to Chapter 403, Florida Statutes, and rules adopted under Chapter 62, Florida Administrative Code, to protect and maintain Florida's air quality, including ensuring compliance with ambient air quality standards for ozone;

III. The U.S. Environmental Protection Agency ("U.S. EPA") has promulgated a new ambient air quality standard for ozone that establishes a permissible limit on the level of ozone during any 8-hour period;

IV. Manatee County is located in the vicinity of the Tampa Bay Airshed, which has experienced recent episodes of elevated ozone levels higher than the U.S. EPA's new ambient air quality standard for ozone on at least 15 separate days in the past four years;

V. Nitrogen oxides emissions from electrical generating facilities owned by electric utilities can contribute to the formation of ozone in the vicinity of an electrical generating facility;

VI. Based upon the best available information, including ambient air quality monitoring data, it is not clear whether the Tampa Bay Airshed will be in compliance with the 8-hour ozone standard in 2004/2005.

VII. FPL is an electric utility that owns and operates an electrical generating facility known as the Manatee Plant, located in unincorporated Manatee County, Florida, comprised of two 800 megawatt class fossil fuel-fired generating units known as Manatee Units 1 and 2 or jointly as "the facility";

VIII. FPL is regulated by the Florida Public Service Commission, and the Manatee Plant provides electric power to consumers in FPL's service area;

IX. Manatee Units 1 and 2 emit nitrogen oxides, a precursor to regional ozone formation, into the atmosphere of Manatee County and surrounding areas, including the Tampa Bay Airshed;

X. The Manatee Plant, together with other regional power plants, commercial and industrial activities, and transportation, are the main sources of nitrogen oxides affecting regional ozone formation in the Tampa Bay Airshed;

XI. FPL has identified a nitrogen oxides emissions control technology known as "reburn" that is a "pollution prevention" system, which can reduce nitrogen oxides emissions from Manatee Units 1 and 2 without the use of reagents, catalysts, pollution collection or removal equipment;

XII. Use of the proposed reburn emissions control technology in Manatee Units 1 and 2 will require FPL to incur certain costs and expenses to install, operate and maintain that control technology; and,

XIII. Installation of reburn technology in FPL's Manatee Units 1 and 2 and the

achievement of an emissions rate of no greater than 0.25 pounds per million BTU on a 30-day rolling average basis will help to ensure that the Tampa Bay Airshed will comply with the ozone ambient air quality standards established by U.S. EPA and by FDEP.

NOW THEREFORE, in consideration of the premises and mutual agreements contained herein, and intending to be legally bound, FDEP and FPL hereby agree as follows:

1. This Agreement is entered into by FDEP and FPL for the exclusive purpose of ensuring compliance with ozone ambient air quality standards.

2. This Agreement is in full force and effect upon the signature of both parties unless the Florida Public Service Commission (FPSC) does not issue a final order authorizing FPL to recover the costs incurred pursuant to this Agreement through the Environmental Cost Recovery Clause within 120 days of the execution of the Agreement at which time the parties may mutually agree, in writing, to extend the Agreement. In the event the FPSC does not issue a final order within 120 days of the execution of the Agreement and the parties do not mutually agree to extend the Agreement, the Agreement becomes null and void. A final order is one that is no longer subject to review or appeal by a court of competent jurisdiction. FPL will exercise good faith in seeking approval of such cost recovery from the FPSC in a timely manner. FDEP agrees to support FPL's request for such approval by the FPSC. FDEP and FPL agree that installation of reburn technology in Manatee Units 1 and 2, in conjunction with the achievement of an emissions rate of no greater than 0.25 pounds per million BTU on a 30-day rolling average, will reduce nitrogen oxides emissions from the facility in a potential ozone nonattainment area.

3. FPL shall commence installation of reburn technology in one of the existing Manatee Units (either Unit 1 or Unit 2) no later than 18 months after receiving all required state, federal or local environmental permits. FPL shall commence installation of reburn technology on the other unit no later than 12 months after installation has commenced on the first Unit. Installation of reburn technology in each Unit shall be completed no later than 12 months after commencement of installation in that Unit. The reburn technology will consist of a combustion

modification process that utilizes fuel (either oil or natural gas) and air staging within the boilers to reduce nitrogen oxides emissions. In addition, overfire air (OFA) may be injected above the reburn zone within the boilers of Manatee Units 1 and 2 to reduce overall nitrogen oxides emissions.

4. The reburn technology installed in Manatee Units 1 and 2 shall be designed to achieve a nitrogen oxides emissions goal of 0.20 pounds per million BTU heat input on a 30-day rolling average. It is anticipated that achievement of this emissions goal will be achieved by utilizing the reburn when operating the Unit at greater than or equal to 350 megawatts.

5. Upon completion of installation of the reburn technology in each Unit, FPL shall optimize the operation of that Unit with reburn technology. After this optimization period has been completed for a Unit, or after a six month period, whichever occurs first, the reburn technology shall be utilized to minimize nitrogen oxides emissions when that Unit is in operation.

6. After completion of the optimization period for each Unit described in Paragraph 5, a nitrogen oxides emissions limit of 0.25 pounds per million BTU (30-day rolling average) shall apply to that Unit. This nitrogen oxides emissions limit shall apply during the data collection, testing and evaluation program described in Paragraph 7 and shall be incorporated into the Manatee Plant's Title V permit at the time of the next renewal.

7. Beginning upon completion of the optimization period for the first of the Manatee Units in which reburn technology is installed, FPL shall conduct an 18 month program designed to evaluate nitrogen oxides emissions rates, boiler performance and Unit operation with the goal of identifying and implementing the lowest emissions rate possible for Manatee Units 1 and 2. This program shall include collection and analysis of data on nitrogen oxides emissions, boiler operating parameters, Unit performance characteristics and emissions of other pollutants, as well as projections of emissions rates assuming alternative, non-tested operating parameters and scenarios, including variations in fuels fired, Unit load and load-changing conditions, boiler and burner performance and any other factors relevant in evaluating possible changes to the nitrogen

oxides emissions limit for Manatee Units 1 and 2. At the end of the 18 month period, FPL shall submit a report to FDEP summarizing the results of the program and addressing whether any further change in the applicable nitrogen oxides emissions limit is possible under tested and other alternative operating scenarios. Following receipt of the report, FDEP and FPL shall meet to discuss whether any further change in the applicable nitrogen oxides emissions limit for Manatee Units 1 and 2 is possible. If FDEP and FPL mutually agree on a change in the nitrogen oxides emissions limit for Manatee Units 1 and 2, FPL shall submit a Title V application for the Manatee Plant's Title V permit to incorporate the new, agreed-upon limit. If FDEP and FPL do not agree on any new nitrogen oxides emissions limit for Manatee Units 1 and 2, the limit established in Paragraph 6 shall remain applicable.

8. In the event state or federal law changes to require a change in nitrogen oxides emissions or the Tampa Bay Airshed is declared non-attainment for ozone, any reduction requirements would be in accordance with all applicable state and federal requirements. FDEP concurs that the changes contemplated by this Agreement will not constitute "modifications" that trigger New Source Review. In addition, although Florida currently has no state statute providing for nitrogen oxides trading or credits, FPL shall be entitled to retain all nitrogen oxides reduction credits and trading rights that may be authorized by Florida law in the future.

9. FDEP concurs that the steps and changes described in paragraphs 3 through 7, above, are prudent for purposes of (a) ensuring that FPL's Manatee Plant located within the Tampa Bay Airshed supports the area's compliance with the 8-hour ozone ambient air quality standard and (b) authorizing related cost recovery pursuant to Section 366.8255(1)(d), Florida Statutes, as amended by the Florida Legislature in its 2002 session and signed into law by the Governor of the State of Florida.

10. FDEP shall process in a timely manner any permit applications or requests for approvals necessary to implement this Agreement.

11. This Agreement is not and shall not be construed to be a permit issued or required pursuant to any federal, state or local law, rule or regulation including those of FDEP and Manatee County.

12. FPL shall be entitled to relief from the time requirements of this Agreement in the event of a *force majeure*, which includes, but is not limited to, delays in regulatory approvals, construction, labor, material, or equipment delays, fuel supply delays, acts of God or other similar events that are beyond the control of FPL and do not result from its own actions, for the length of time necessarily imposed by any such delay.

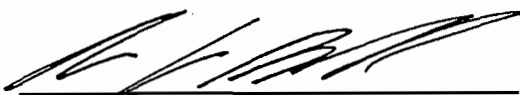
13. There shall be no modifications or amendments of this Agreement without the written agreement of all parties to this Agreement.

14. This Agreement shall apply to and be binding upon FDEP and FPL and their successors and assigns. Each person signing this Agreement certifies that he or she is authorized to execute this Agreement and to legally bind the party on whose behalf he or she signs this Agreement.

By their signatures affixed below, the parties agree to be bound by the terms and conditions of this Agreement.


DEPARTMENT OF ENVIRONMENTAL
PROTECTION

9-19-02
Date

BY: 
Allan Bedwell, Deputy Secretary

FLORIDA POWER & LIGHT COMPANY

9-19-02
Date

BY: 
Randall LaBauve, Vice President
Environmental Services

**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

PROJECT

Manatee Power Plant Units 1 and 2
ARMS Emissions Unit Nos. 001 and 002
Draft Air Construction Permit No. 0810010-007-AC
Construction of Natural Gas Facilities
Draft Title V Operation Permit Revision No. 0810010-008-AV
Addition of Natural Gas as an Authorized Fuel

COUNTY

Manatee County

APPLICANT

Florida Power and Light
Manatee Power Plant
ARMS Facility ID No. 0810010

**PERMITTING
AUTHORITY**

Florida Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation
New Source Review Section



July 3, 2002

1. APPLICATION INFORMATION

Applicant Name and Address

Florida Power and Light
19050 State Road 62
Parrish, FL 34219

Authorized Representative: Mr. Paul Plotkin, Plant General Manager

Processing Schedule

05/10/02: Received permit application Nos. 0810010-007-AC and 0810010-008-AV; complete.

06/27/02: Letter received from applicant.

Existing Facility Description

Florida Power and Light owns and operates the Manatee Plant, which is a steam-electrical power plant located at 19050 State Road 62 in Parrish (Manatee County), Florida. The UTM coordinates are: Zone 17, 367.25 km East, and 3054.15 km North (Latitude: 27° 36' 21" and Longitude: 82° 20' 44"). The plant consists of two oil-fired steam-electrical generating units and miscellaneous support equipment.

Regulatory Categories

Title III: The facility is a major source of hazardous air pollutants (HAP).

Title IV: The facility operates emissions units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is Title V major source of air pollution.

PSD: The facility is a major source of air pollution with respect to the requirements of the Prevention of Significant Deterioration (PSD) of Air Quality Program, Rule 62-212.400, F.A.C.

2. PROJECT DESCRIPTION

Florida Power and Light (FPL) operates the existing Manatee Power Plant, which is a steam-electrical generating plant located in Manatee County, Florida. The plant primarily consists of two oil-fired steam-electrical generators, each of which are designed to produce a nominal 800 MW of electricity. Unit 1 began commercial operation in 1976 and Unit 2 began commercial operation in 1977. Each unit is currently permitted to fire a variable combination of No. 6 fuel oil, No. 2 fuel oil, propane, and used oil fuel from FPL operations. Units 1 and 2 are considered "electric utility steam generating units" as defined in Rule 62-210.200(97), F.A.C. and with regard to Rule 62-210.200(11), F.A.C.

The new Gulfstream Natural Gas Pipeline began commercial operation in June of 2002. See Figure 1 on the following page. The project brings natural gas that is compressed near Mobile Alabama and conveyed through an underwater pipeline on the continental shelf to markets in Florida. The new pipeline instantly increases the total natural gas transportation capacity into Florida from approximately 1.5 to 2.5 billion standard cubic feet, excluding Florida Gas Transmission Company's Phases V and VI projects. The pipeline enters Florida in Manatee County at a location that is particularly convenient to the FPL Manatee Plant.

As a direct result of the new pipeline, FPL proposes to add natural gas as an authorized fuel for existing Units 1 and 2. (FPL also proposes a mostly gas-fired combined cycle project at the Manatee Plant, which is presently under separate review by the Department.) The existing burners for each unit are CSL Twin Register Low NOx burners manufactured by ABB Combustion Services, Ltd. (formerly International Combustion Limited), which are similar in configuration to the burners used for Units 1 and 2 at the FPL Martin Power Plant. The low-NOx burner design incorporates air and fuel staging to reduce emissions of nitrogen oxides when firing either fuel oil or natural gas. Mechanical atomization is used to reduce droplet size for efficient combustion when firing fuel

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

oil. Due to temperature limitations of existing boiler components, FPL will physically restrict the maximum heat input rate when firing natural gas to 5670 MMBtu per hour, which is less than the current maximum for oil firing (8650 MMBtu per hour). At this rate, the unit will produce approximately 575 MW. The units will co-fire natural gas with fuel oil.



Figure 1. Ultimate Development Scenario for Gulfstream Pipeline

The applicant provided the following supporting information indicating that the short-term emission rates will not increase with the firing of natural gas.

Table 1. Emission Rates in Application

Pollutant	Emission Factors			
	Fuel Oil ^a		Natural Gas ^b	
	lb/MMBtu	lb/hour	lb/MMBtu	lb/hour
Carbon Monoxide (CO)	0.63	5450	0.46	2608
Nitrogen Oxides (NOx)	0.29	2545	0.20	1152
Particulate Matter (PM)	0.08	719	0.002	10
Sulfur Dioxide (SO ₂)	1.06	9183	0.0006	3
Volatile Organic Compounds (VOC)	0.005	44	0.003	17

Notes:

- Oil Firing:** The CO emission factor is based on actual test data. The NOx and SO₂ emission factors are from the EPA Acid Rain Scorecard values, which are based on actual CEMS data and heat input rates. The PM and VOC emission factors are based on EPA's AP-42 factors. The current maximum heat input to each unit is 8650 MMBtu per hour when firing only fuel oil.
- Gas Firing:** The CO and NOx emission factors are based on the burner manufacturer's predicted performance. The PM, SO₂, and VOC emission factors are based on EPA's AP-42 factors. Due to thermal

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

limitations of boiler components, FPL indicates that the maximum heat input rate to each boiler will be 5670 MMBtu per hour when firing only natural gas.

Pursuant to Rule 62-210.200(11)(d), F.A.C., the applicant also predicts that the project will not result in any net annual emissions increases that would require a PSD review in accordance with rule 62-212.400, F.A.C. The applicant does not believe this request requires a construction permit because the project is not a "modification" as specified in Rule 62-210.200(169), F.A.C., which defines a "modification" as a physical change or a change in the method of operation that would result in an increase in actual emissions. Therefore, the applicant requests a revision to the Title V air operation permit to allow the use of natural gas in Units 1 and 2. However, the applicant recognizes that the Department has determined that an air construction permit is required to make the necessary physical changes and instructs the Department to process the application as a construction permit with a concurrent revision to the Title V air operation permit, if necessary.

3. DEPARTMENT REVIEW

Application

The Department determines that an air construction permit is required to perform the necessary work that will enable the units to fire natural gas. Rule 62-210.200(76), F.A.C. defines construction as, *"the act of performing on-site fabrication, erection, installation or modification of an emissions unit or facility of a permanent nature, including installation of foundations or building supports; laying of underground pipe work or electrical conduit; and fabrication or installation of permanent storage structures, component parts of an emissions unit or facility, associated support equipment, or utility connections. Land clearing and other site preparation activities are not a part of the construction activities."* FPL proposes to erect permanent natural gas pipelines and the associated equipment necessary for firing natural gas in Units 1 and 2. Therefore, the Department will process the request as both a construction permit and a revision to the Title V air operation permit.

Burner History

Manatee Units 1 and 2 were originally equipped with mechanically atomizing burners (Forney Type "QPWRMA") to fire fuel oil. The Department was informed by FPL after the fact that the mechanical-atomizing burners were replaced with steam-atomizing burners in 1994/1995. FPL stated that the purpose of the 1994/1995 change was to provide more efficient combustion of the fuel oil. In 1999, FPL received Department approval to return to mechanically atomizing burners by installing modern low NO_x burners manufactured by ABB Combustion Services, Ltd. The new burners were expected to reduce opacity as well as emissions of carbon monoxide and nitrogen oxides. By this project, FPL is requesting authorization to construct natural gas facilities for Units 1 and 2 and to specify its use as an allowable fuel.

Annual Emissions Estimates

As part of the project review, the Department used several methods to estimate past actual annual emissions. Table 2 presents the results.

Table 2. Annual Emissions for Units 1 and 2 (Average for 2000/2001)

Pollutant	Application ^a	AORs ^b	Acid Rain ^c
CO	18,822	18,987	---
NO _x	8664	9237	8179
PM	2390	2384	---
SO ₂	31,668	29,924	31,753
VOC	149	149	---

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Notes:

- Emissions are based on the actual fuel consumption during 2000 and 2001.
- The figures represent the average annual emissions for Units 1 and 2 in “tons per year” for operation during calendar years 2000 and 2001. “AOR” means the Annual Operating reports submitted to the Department as certified by FPL.
- The NO_x and SO₂ “Acid Rain” emissions are based on the annual emissions reported to the EPA Acid Rain Program for the calendar years 2000 and 2001.

In addition, FPL operates Units 1 and 2 at the Martin Power Plant, which were constructed in the early 1980's. These units have boiler and burner configurations that are similar to the Manatee units. Based on the 2001 Annual Operating Reports (AOR), the Martin Units 1 and 2 averaged an annual capacity factor of 41% and a fuel mix of 55% fuel oil to 45% natural gas. Table 3 provides a comparison of the Manatee and Martin Units 1 and 2. As shown, the future firing of natural gas is likely to result in fewer emissions than firing fuel oil. The actual emissions for the Martin units suggest that CO, NO_x, and SO₂ emissions from the Manatee units may be even lower than anticipated when firing natural gas.

Table 3. Comparison of Annual Emissions – Manatee and Martin Units 1 and 2

Pollutant	FPL Manatee Plant ^a		FPL Martin Plant ^b
	41% Capacity All Oil/No Gas	41% Capacity 55% Oil/45% Gas	41% Capacity 55% Oil/45% Gas
CO	19,572	17,196	12,904
NO _x	9,320	7,922	6010
PM	2,485	1,395	1508
SO ₂	32,931	18,121	17,592
VOC	155	127	140

Notes:

- A 41% capacity factor for Manatee Units 1 and 2 was assumed to provide a common basis for comparison with the Martin Plant. Similarly, the average annual fuel mix (55% oil/45% gas) reflects that of Martin Units 1 and 2 for 2001. CO and NO_x emissions are based on the manufacturer's predicted emissions rates of 0.46 lb/MMBtu and 0.20 lb/MMBtu, respectively.
- Based on the 2001 AOR, Martin Units 1 and 2 averaged an annual capacity factor of 41% and an annual fuel mix of 55% fuel oil to 45% natural gas.

The Department also estimated the emissions of hazardous air pollutants from both oil firing and gas firing based on published EPA emission factors. The firing of natural gas or the co-firing of natural gas with fuel oil would result in overall lower emissions of hazardous air pollutant emissions. No further review is required because the applicant does not intend to “construct” or “reconstruct” a major source of for hazardous air pollutants as defined in Subpart B of 40 CFR 63.

PSD Applicability

The FPL Manatee Plant is classified as a “fossil fuel fired steam electric plant of more than 250 million Btu/hr heat input”, as defined in Table 62-212.400-1, F.A.C. Such facilities that emit more than 100 tons per year of any regulated pollutant are considered “major sources” in accordance with Rule 62-210.200(159), F.A.C. Modifications to major sources that result in net actual annual emissions increases greater than the PSD significant emission rates specified in Table 62-212.400-2, F.A.C. are subject to PSD major source

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preconstruction review in accordance with Rule 62-212.400, F.A.C.

Rule 62-210.200(11), F.A.C. generally defines "actual emissions" as the average rate of emissions (in tons per year) for a two year period preceding a proposed project and which is representative of the normal operation of the emissions unit. For most emissions units, the actual emissions after completion of a proposed project are equal the potential emissions. However, for electric utility steam generating units (other than a new unit or the replacement of an existing unit), actual emissions following a physical or operational change, "... shall equal the representative actual annual emissions of the unit following the physical or operational change." Rule 62-204.800, F.A.C. incorporates by reference the following definition of "representative actual annual emissions" found in 40 CFR 52.21(b)(33):

"Representative actual annual emissions means the average rate, in tons per year, at which the source is projected to emit a pollutant for the two-year period after a physical change or change in the method of operation of a unit, (or a different consecutive two-year period within 10 years after that change, where the Administrator determines that such period is more representative of normal source operations), considering the effect any such change will have on increasing or decreasing the hourly emissions rate and on projected capacity utilization. In projecting future emissions the Administrator shall:

- (i) Consider all relevant information, including but not limited to, historical operational data, the company's own representations, filings with the State or Federal regulatory authorities, and compliance plans under title IV of the Clean Air Act; and
- (ii) Exclude, in calculating any increase in emissions that results from the particular physical change or change in the method of operation at an electric utility steam generating unit, that portion of the unit's emissions following the change that could have been accommodated during the representative baseline period and is attributable to an increase in projected capacity utilization at the unit that is unrelated to the particular change, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole."

Operators of electric utility steam generating units must provide annual reports to the Department demonstrating that the physical or operational change did not result in an emissions increase.

FPL provided the Department with the emissions rates presented in Table 1, which show that the firing of natural gas is expected to result in decreased emissions for all criteria pollutants on a short-term basis. Since long-term emissions are based on actual operation of the emissions units, FPL also provided a projection of its System Planning Projected Load Forecast. According to this information, the annual capacity factor for Units 1 and 2 have increased over the last several years from approximately 25% in 1997 to about 40% in 2001. The primary reason was shrinking reserve margin throughout the State of Florida. The company projects that the capacity factor will decrease back to about 20% in 2006. By that date, quite a number of new projects already permitted or under review will be complete, thus reducing the competitiveness of Units 1 and 2. Among these projects are very substantial capacity increases through natural gas re-powering at the FPL Sanford and Fort Myers Plants, which were projects that resulted in considerable emissions reductions.

The Department acknowledges FPL's projections regarding Units 1 and 2 at the Manatee Power Plant. Operation at or below the current annual capacity factors while firing natural gas would likely result less annual emissions than the past actual annual emissions from oil firing. Based on FPL's capacity projections, the anticipated short-term emission rates for gas firing, and the estimated annual emissions, the Department agrees that the addition of natural gas is not likely to result in an emissions increase from these units. In accordance with Rule 62-210.200(11), F.A.C., the Department will require FPL to submit annual reports for five years verifying that the gas project was not subject to PSD preconstruction review.

NSPS Subpart D Applicability

Manatee Units 1 and 2 were constructed in the early 1970's and began commercial operation in 1976 and 1977. In a letter dated January 26, 1976, EPA Region 4 informed FPL that the Manatee units were not subject to

Subpart D of the New Source Performance Standards. EPA stated that FPL provided evidence of binding contracts for the purchase of the units prior to the effective date of the regulations. Recent conversations with EPA Region 4 indicate that the addition of natural gas would not change this status with regard to the New Source Performance Standards.

Permit Requirements

As a fossil fuel fired steam electric generator with a heat input rate greater than 250 MMBtu per hour, Units 1 and 2 are subject to Rule 62-296.405, F.A.C. The following summarizes the requirements of this rule and conditions specified in the draft air construction permit.

Heat Input Rate: The maximum heat input rate from 100% natural gas firing will be limited to 5670 MMBtu per hour as requested by FPL. The maximum heat input from firing a combination of fuel oil and natural gas will be specified as 8650 MMBtu per hour, which is consistent with the current maximum rate for firing fuel oil.

Particulate Matter: Each boiler must comply with the particulate matter emissions standard (0.10 lb/MMBtu heat input) and visible emissions standard (40% opacity) specified in Rule 62-296.405, F.A.C. Natural gas contains little ash or sulfur, so particulate matter emissions from gas firing should readily comply with these requirements. Performance tests for particulate matter and opacity will be required to verify compliance with the standards. The test results for particulate matter will also provide information for the reporting of annual emissions.

Sulfur Dioxide: The Title V air operation permit currently regulates emissions of sulfur dioxide when firing fuel oil. For firing natural gas, the Department will establish a fuel sulfur specification of 10 grains of sulfur per 100 standard cubic feet of natural gas. This is consistent with the maximum fuel sulfur level allowed by the Department of Energy's Federal Energy Regulatory Commission, which regulates the interstate transmission of natural gas. Monthly verification and records of the average natural gas sulfur content will be required. The existing CEMS will be required for the reporting of annual sulfur dioxide emissions.

Carbon Monoxide: No standards for carbon monoxide are currently specified for FPL Manatee Units 1 and 2. Rule 62-296.405, F.A.C. for large utility boilers does not regulate emissions of this pollutant. Based on the burner manufacturer's predicted performance, emissions of carbon monoxide are expected to decrease by slightly more than 25% when firing natural gas. Performance tests will be required to provide information for the reporting of annual emissions.

Volatile Organic Compounds: At the high furnace temperatures associated with large utility boilers, emissions of volatile organic compounds are relatively low. Annual emissions reported for 2000 and 2001 averaged 149 tons per year when firing fuel oil. The firing of natural gas is expected to result in even lower emissions of volatile organic compounds. Rule 62-296.405, F.A.C. for large utility boilers does not regulate emissions of this pollutant. Performance tests will be required to provide information for the reporting of annual emissions.

Nitrogen Oxides: In accordance with Rule 62-296.405, F.A.C., emissions of nitrogen oxides (NOx) are limited to 0.30 lb/MMBtu based on a 30-day rolling average. This standard applies to oil firing, gas firing, or a combination of authorized fuels. Based on the burner manufacturer's predicted performance, the NOx emission rate for firing natural gas is expected to be 0.20 lb/MMBtu; however, the actual emissions rate is uncertain. FPL states that the contract with the manufacturer provided a guaranteed NOx emission rate of 0.30 lb/MMBtu for oil firing with liquidated damages should the burners fail to meet this performance specification. According to FPL, no such guarantee was provided for gas firing because:

- There is no emissions data available for gas firing because rig testing was not conducted when the burners were being manufactured.
- There are no operational baselines upon which to establish a guaranteed NOx emission rate because natural gas has never been fired in the Manatee units.
- At that time, FPL had no immediate or definite plans to fire natural gas, which would have made it

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

impossible to verify the NOx emission rate as part of any warranty performance testing for acceptance of the burners.

FPL maintains that there is reasonable assurance that NOx emission rate will be much less than 0.30 lb/MMBtu based on the similar boiler/burner configuration for the Martin Plant's Units 1 and 2, the manufacturer's predicted performance, and FPL's extensive experience with low-NOx burners on dual fuel boilers. The Department notes that this emission rate has been achievable with the similar boiler and burner configurations of Units 1 and 2 at the FPL Martin Power Plant. In addition, EPA's AP-42 emission factor reference document identifies average NOx emission rates of 0.14 lb/MMBtu for large utility boilers with low NOx burners. The Department has reason to believe that NOx emissions will be considerably reduced as a result of firing natural gas. The permit will establish a NOx limit of 0.30 lb/MMBtu based on a 30-day rolling CEMS average, which is consistent with the current limit. The existing CEMS will be required for the reporting of annual nitrogen oxides emissions.

Annual PSD Applicability Report: Pursuant to Rule 62-210.200(11), F.A.C., the permit will include the requirement to report annual emissions and compare to the past actual emissions. In accordance with 40 CFR 52.21(b)(33), the permit will allow the exclusion of "... that portion of the unit's emissions following the change that could have been accommodated during the representative baseline period and is attributable to an increase in projected capacity utilization at the unit that is unrelated to the particular change, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole." Should the annual emission reporting indicate that the project resulted in PSD-significant emissions increases, the project will be subject to PSD preconstruction review in accordance with Rule and 62-212.400, F.A.C.

Concurrent Title V Revision

FPL requests a concurrent revision of the Title V operation permit to incorporate the above changes. The Department will provide a single public notice package for the air construction permit and the Title V operation permit revision. The public notice will allow 14 days for comment on the minor source air construction permit and 30 days for comment on the Title V operation permit revision. If no administrative hearing is requested and no comments are received that would result in substantial changes, air construction Permit No. 0810010-007-AC will be issued as a final permitting action and revised Title V operation Permit No. 0810010-008-AV will continue to the "Proposed Permit" phase of the Title V permitting process for final EPA review.

4. PRELIMINARY DETERMINATION

Based on the information provided by FPL, the Department determines that the addition of natural gas is not likely to cause an increase in actual annual emissions from the plant; therefore, the project is not subject to PSD preconstruction review. This procedure is available only to operators of electric utility steam generating units in accordance with the provisions of Rule 62-210.200(11)(d), F.A.C. and 40 CFR 52.21(b)(33). FPL must provide annual reports for five years verifying that PSD preconstruction review did not apply to the gas project. The Department strongly encourages FPL to actually use the newly available natural gas to help ameliorate the concerns regarding increasing emissions voiced by the residents of Manatee County during the course of this review. The Department specifically notes that this action does not create the possibility of future project exemptions from the rules for the Prevention of Significant Deterioration (Rule 62-212.400, F.A.C.) that are based on the concept that the units or the facility are capable of accommodating natural gas.

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the proposed draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the specific conditions of the draft permit. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

1631 PEACHTREE ST., N.E.
ATLANTA, GEORGIA 30309

January 26, 1976

RECEIVED

JAN 29 1976

ENV'L. PROTECT.

Mr. W. J. Barrow, Jr.
Florida Power and Light Company
Post Office Box 013100
Miami, Florida 33101

Re: Florida Power and Light Company
Willow Creek Site of Manatee County Station

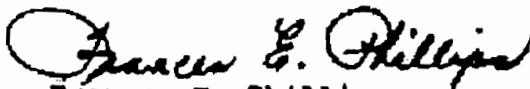
Dear Mr. Barrow:

This is in response to your letter dated January 20, 1976, requesting a determination as to whether Florida Power and Light's Manatee County Station qualifies as an "existing source" under Title 40 of the Code of Federal Regulations (CFR), Part 60, Subpart D.

The information you submitted on January 21, 1976, and the information attached to your letter of January 20, 1976, evidence binding contracts for the purchase of equipment (Boiler Unit #1 and Boiler Unit #2) prior to the effective date of EPA's Regulations on Standards of Performance for New Stationary Sources. Based on this information, it is our opinion that the Manatee County Station is not a "new source" within the meaning of § 111 (a) (2) of the Clean Air Act Amendments of 1970, and is therefore exempt from the federal requirements imposed under 40 CFR 60.

This exemption is limited to the above described and in no way relieves Florida Power and Light from compliance with other federal, state or local pollution abatement requirements.

Sincerely,


Frances E. Phillips
Regional Counsel

CC: Mr. Jay Landers
Dr. J. P. Subramani

RECEIVED

JUN 24 2002

BUREAU OF AIR REGULATION

AGREEMENT
FOR THE PURPOSE OF
ENSURING COMPLIANCE WITH
AMBIENT AIR QUALITY STANDARDS FOR OZONE

This Agreement is entered into between the Florida Department of Environmental Protection ("FDEP") and Florida Power & Light Company ("FPL") to reduce emissions of nitrogen oxides from an existing electrical generating facility for the exclusive purpose of ensuring compliance with the ambient air quality standards for ozone, as provided for by Section 366.8255(1)(d)7, Florida Statutes (2002).

WHEREAS:

I. The Florida Legislature enacted Chapter 2002-276, Laws of Florida, to allow agreements between electric utilities and FDEP for the purpose of ensuring compliance with ozone ambient air quality standards, and further to provide for the recovery of costs and expenses prudently incurred by an electric utility pursuant to such an agreement entered into prior to October 1, 2002;

II. FDEP has the statutory duty and authority, pursuant to Chapter 403, Florida Statutes, and rules adopted under Chapter 62, Florida Administrative Code, to protect and maintain Florida's air quality, including ensuring compliance with ambient air quality standards for ozone;

III. The U.S. Environmental Protection Agency ("U.S. EPA") has promulgated a new ambient air quality standard for ozone that establishes a permissible limit on the level of ozone during any 8-hour period;

IV. Manatee County is located in the vicinity of the Tampa Bay Airshed, which has experienced recent episodes of elevated ozone levels higher than the U.S. EPA's new ambient air quality standard for ozone on at least 15 separate days in the past four years;

V. Nitrogen oxides emissions from electrical generating facilities owned by electric utilities can contribute to the formation of ozone in the vicinity of an electrical generating facility;

VI. Based upon the best available information, including ambient air quality monitoring data, it is not clear whether the Tampa Bay Airshed will be in compliance with the 8-hour ozone standard in 2004/2005.

VII. FPL is an electric utility that owns and operates an electrical generating facility known as the Manatee Plant, located in unincorporated Manatee County, Florida, comprised of two 800 megawatt class fossil fuel-fired generating units known as Manatee Units 1 and 2 or jointly as "the facility";

VIII. FPL is regulated by the Florida Public Service Commission, and the Manatee Plant provides electric power to consumers in FPL's service area;

IX. Manatee Units 1 and 2 emit nitrogen oxides, a precursor to regional ozone formation, into the atmosphere of Manatee County and surrounding areas, including the Tampa Bay Airshed;

X. The Manatee Plant, together with other regional power plants, commercial and industrial activities, and transportation, are the main sources of nitrogen oxides affecting regional ozone formation in the Tampa Bay Airshed;

XI. FPL has identified a nitrogen oxides emissions control technology known as "reburn" that is a "pollution prevention" system, which can reduce nitrogen oxides emissions from Manatee Units 1 and 2 without the use of reagents, catalysts, pollution collection or removal equipment;

XII. Use of the proposed reburn emissions control technology in Manatee Units 1 and 2 will require FPL to incur certain costs and expenses to install, operate and maintain that control technology; and,

XIII. Installation of reburn technology in FPL's Manatee Units 1 and 2 and the

achievement of an emissions rate of no greater than 0.25 pounds per million BTU on a 30-day rolling average basis will help to ensure that the Tampa Bay Airshed will comply with the ozone ambient air quality standards established by U.S. EPA and by FDEP.

NOW THEREFORE, in consideration of the premises and mutual agreements contained herein, and intending to be legally bound, FDEP and FPL hereby agree as follows:

1. This Agreement is entered into by FDEP and FPL for the exclusive purpose of ensuring compliance with ozone ambient air quality standards.
2. This Agreement is in full force and effect upon the signature of both parties unless the Florida Public Service Commission (FPSC) does not issue a final order authorizing FPL to recover the costs incurred pursuant to this Agreement through the Environmental Cost Recovery Clause within 120 days of the execution of the Agreement at which time the parties may mutually agree, in writing, to extend the Agreement. In the event the FPSC does not issue a final order within 120 days of the execution of the Agreement and the parties do not mutually agree to extend the Agreement, the Agreement becomes null and void. A final order is one that is no longer subject to review or appeal by a court of competent jurisdiction. FPL will exercise good faith in seeking approval of such cost recovery from the FPSC in a timely manner. FDEP agrees to support FPL's request for such approval by the FPSC. FDEP and FPL agree that installation of reburn technology in Manatee Units 1 and 2, in conjunction with the achievement of an emissions rate of no greater than 0.25 pounds per million BTU on a 30-day rolling average, will reduce nitrogen oxides emissions from the facility in a potential ozone nonattainment area.
3. FPL shall commence installation of reburn technology in one of the existing Manatee Units (either Unit 1 or Unit 2) no later than 18 months after receiving all required state, federal or local environmental permits. FPL shall commence installation of reburn technology on the other unit no later than 12 months after installation has commenced on the first Unit. Installation of reburn technology in each Unit shall be completed no later than 12 months after commencement of installation in that Unit. The reburn technology will consist of a combustion

modification process that utilizes fuel (either oil or natural gas) and air staging within the boilers to reduce nitrogen oxides emissions. In addition, overfire air (OFA) may be injected above the reburn zone within the boilers of Manatee Units 1 and 2 to reduce overall nitrogen oxides emissions.

4. The reburn technology installed in Manatee Units 1 and 2 shall be designed to achieve a nitrogen oxides emissions goal of 0.20 pounds per million BTU heat input on a 30-day rolling average. It is anticipated that achievement of this emissions goal will be achieved by utilizing the reburn when operating the Unit at greater than or equal to 350 megawatts.

5. Upon completion of installation of the reburn technology in each Unit, FPL shall optimize the operation of that Unit with reburn technology. After this optimization period has been completed for a Unit, or after a six month period, whichever occurs first, the reburn technology shall be utilized to minimize nitrogen oxides emissions when that Unit is in operation.

6. After completion of the optimization period for each Unit described in Paragraph 5, a nitrogen oxides emissions limit of 0.25 pounds per million BTU (30-day rolling average) shall apply to that Unit. This nitrogen oxides emissions limit shall apply during the data collection, testing and evaluation program described in Paragraph 7 and shall be incorporated into the Manatee Plant's Title V permit at the time of the next renewal.

7. Beginning upon completion of the optimization period for the first of the Manatee Units in which reburn technology is installed, FPL shall conduct an 18 month program designed to evaluate nitrogen oxides emissions rates, boiler performance and Unit operation with the goal of identifying and implementing the lowest emissions rate possible for Manatee Units 1 and 2. This program shall include collection and analysis of data on nitrogen oxides emissions, boiler operating parameters, Unit performance characteristics and emissions of other pollutants, as well as projections of emissions rates assuming alternative, non-tested operating parameters and scenarios, including variations in fuels fired, Unit load and load-changing conditions, boiler and burner performance and any other factors relevant in evaluating possible changes to the nitrogen

oxides emissions limit for Manatee Units 1 and 2. At the end of the 18 month period, FPL shall submit a report to FDEP summarizing the results of the program and addressing whether any further change in the applicable nitrogen oxides emissions limit is possible under tested and other alternative operating scenarios. Following receipt of the report, FDEP and FPL shall meet to discuss whether any further change in the applicable nitrogen oxides emissions limit for Manatee Units 1 and 2 is possible. If FDEP and FPL mutually agree on a change in the nitrogen oxides emissions limit for Manatee Units 1 and 2, FPL shall submit a Title V application for the Manatee Plant's Title V permit to incorporate the new, agreed-upon limit. If FDEP and FPL do not agree on any new nitrogen oxides emissions limit for Manatee Units 1 and 2, the limit established in Paragraph 6 shall remain applicable.

8. In the event state or federal law changes to require a change in nitrogen oxides emissions or the Tampa Bay Airshed is declared non-attainment for ozone, any reduction requirements would be in accordance with all applicable state and federal requirements. FDEP concurs that the changes contemplated by this Agreement will not constitute "modifications" that trigger New Source Review. In addition, although Florida currently has no state statute providing for nitrogen oxides trading or credits, FPL shall be entitled to retain all nitrogen oxides reduction credits and trading rights that may be authorized by Florida law in the future.

9. FDEP concurs that the steps and changes described in paragraphs 3 through 7, above, are prudent for purposes of (a) ensuring that FPL's Manatee Plant located within the Tampa Bay Airshed supports the area's compliance with the 8-hour ozone ambient air quality standard and (b) authorizing related cost recovery pursuant to Section 366.8255(1)(d), Florida Statutes, as amended by the Florida Legislature in its 2002 session and signed into law by the Governor of the State of Florida.

10. FDEP shall process in a timely manner any permit applications or requests for approvals necessary to implement this Agreement.

11. This Agreement is not and shall not be construed to be a permit issued or required pursuant to any federal, state or local law, rule or regulation including those of FDEP and Manatee County.

12. FPL shall be entitled to relief from the time requirements of this Agreement in the event of a *force majeure*, which includes, but is not limited to, delays in regulatory approvals, construction, labor, material, or equipment delays, fuel supply delays, acts of God or other similar events that are beyond the control of FPL and do not result from its own actions, for the length of time necessarily imposed by any such delay.

13. There shall be no modifications or amendments of this Agreement without the written agreement of all parties to this Agreement.

14. This Agreement shall apply to and be binding upon FDEP and FPL and their successors and assigns. Each person signing this Agreement certifies that he or she is authorized to execute this Agreement and to legally bind the party on whose behalf he or she signs this Agreement.

By their signatures affixed below, the parties agree to be bound by the terms and conditions of this Agreement.

DEPARTMENT OF ENVIRONMENTAL
PROTECTION

9-19-02
Date


BY:


Allan Bedwell, Deputy Secretary

FLORIDA POWER & LIGHT COMPANY

9-19-02
Date

BY:


Randall LaBauve, Vice President
Environmental Services