

Technical Evaluation
and
Preliminary Determination

Florida Power Corporation
Pinellas County, Florida

Bartow Units 2 and 3 Coal Conversion
and
Coal and Fly Ash Handling Systems

Permit Numbers

State: AC 52-54946
AC 52-54947
AC 52-54948

Federal: PSD-FL-095

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

February 25, 1983

NOTICE OF PROPOSED AGENCY ACTION

The Department of Environmental Regulation gives notice of its intent to issue permits to Florida Power Corporation (FPC) to modify an air pollutant emitting facility. These permits will allow the burning of coal in Units 2 and 3 at the FPC Bartow plant and the installation of coal and fly ash handling systems at the plant site. This plant is located on Weedon Island near St. Petersburg in Pinellas County, Florida. A best available control technology (BACT) determination was required for emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), mercury (Hg), beryllium (Be), fluorides (F), and arsenic (As). A prevention of significant deterioration (PSD) increment analysis was required for emissions of SO₂ and PM. By authority of the U.S. Environmental Protection Agency, the Department has also reviewed the proposed modification under federal prevention of significant deterioration regulations (40 CFR 52.21) and has made a preliminary determination that the modification can be approved provided certain conditions are met.

Emissions of pollutants from the plant will increase by the following quantities in tons per year:

<u>Pollutant</u>	<u>Emissions Increase</u>
SO ₂	499
NO _x	6,182
PM ^x	997
Hg	0.028 to 0.234
Be	-0.056 to 0.125
F	149 to 150
As	-0.670 to 0.267

Emissions from the modified facility will consume PSD increment but will not violate any state or federal ambient air quality standards. The maximum percent of allowable PSD increment consumed will be as follows:

<u>Class II Increment</u>	<u>Percent Consumed</u>
SO ₂	
Three-hour	0
24-hour	0
Annual	0
PM	
24-hour	70
Annual	17

Copies of the applications for permits submitted by Florida Power Corporation and a summary of the basis of the Department's proposed action are available for public review in the following locations:

Department of Environmental Regulation
Southwest District
7601 Highway 301 North
Tampa, Florida 33610

Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Pinellas County Department of Environmental Management
Air and Water Quality Division
St. Pete-Clearwater Airport
Clearwater, Florida 33520

Any person may send written comments on the proposed action to Mr. Clair Fancy at the Department's Tallahassee address. All comments mailed within 30 days of publication of this notice will be considered in the Department's final determination.

Any person who is substantially affected by the Department's proposed permitting decision may request a hearing in accordance with Section 120.57, Florida Statutes, and Florida Administrative Code Rules 17-1 and 28-5. The request for hearing must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

- (1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.
- (2) All petitions filed under these rules should contain:
 - (a) The name and address of each agency affected and each agency's file or identification number, if known;
 - (b) The name and address of the petitioner or petitioners;
 - (c) All disputed issues of material fact. If there are none, the petition must so indicate;
 - (d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;
 - (e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;
 - (f) A demand for the relief to which the petitioner deems himself entitled; and
 - (g) Such other information which the petitioner contends is material.

TECHNICAL EVALUATION
and
PRELIMINARY DETERMINATION

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Appended: Best Available Control Technology (BACT)
Determination

I. APPLICANT AND SOURCE LOCATION

A. Applicant

Florida Power Corporation (FPC)
P. O. Box 14042
St. Petersburg, Florida 33733

B. Location

The proposed modification will occur at Florida Power Corporation's Bartow plant in Pinellas County. The plant is located north of St. Petersburg on Weedon Island in Tampa Bay, just south of Rt. 92. The UTM coordinates of the plant are: Zone 17, 342.4 km East and 3082.7 km North.

II. PROJECT DESCRIPTION

The FPC Bartow plant has three fossil steam units with a net generating capacity of 437 megawatts (MW): Unit 1 with a net generating capacity of 109 MW, Unit 2 with a capacity of 119 MW, and Unit 3 with a capacity of 209 MW. Currently, Unit 1 burns a mixture of coal and oil. Units 2 and 3 have burned heavy oil and natural gas since their in service dates of August 1961 and July 1963, respectively. A total of four gas turbine peaking units, with a net winter capacity of 204 MW, are also located at the Bartow facility.

FPC plans to convert Units 2 and 3 to coal and to add all the necessary supporting facilities for coal handling and firing. The steam generators for Units 2 and 3 were originally designed to accommodate the use of coal; therefore, major boiler modifications will not be necessary. To burn coal in these units, FPC must install coal handling, sizing, and storage facilities; fly ash handling and storage facilities; and air pollution control

equipment for the boilers and the coal and fly ash handling systems. FPC must also make certain minor modifications to the boilers for the firing of pulverized coal.

Coal hauled in by barges or ships will be unloaded at the site using a clamshell bucket. The coal will be transferred on covered belt conveyors to the storage area. The active stockout pile will be formed using a radial stacker having a telescopic chute to minimize free fall. Coal under 2 1/2 inch maximum size will be transferred from the active pile to the crusher building, where the coal will be reduced to 1 1/2 inch maximum size and stored in eight silos, three for Unit 2 and five for Unit 3, which will provide each boiler with a minimum of eight hours coal supply at maximum load. The coal is then pulverized to the fineness required (200 mesh) and delivered to the furnace for combustion.

Finely divided particles of ash (fly ash) removed from the flue gas streams by the air pollution control equipment (electrostatic precipitators) will be pneumatically conveyed to a common storage silo. The fly ash silo will have two telescopic discharge chutes and one rotary unloader. The fly ash will be loaded into covered trucks for removal from the site to purchasers or placed in a temporary onsite storage area for future sale. A windbreak enclosure will be erected to prevent fugitive dust emissions during truck loading. Baghouses will be used to control particulate emissions generated by the various operations.

III. EMISSIONS AND CONTROLS

As proposed by FPC, the coal conversion project would result in an increase in emissions of the criteria air pollutants sulfur dioxide, nitrogen oxides, and particulate matter from the boilers and in fugitive dust emissions from the coal and fly ash handling systems that will be installed at the Bartow plant site. FPC has proposed to fire medium (1.58%) sulfur coal for Units 2 and 3, without flue gas desulfurization systems, to control SO₂ emissions to less than 2.75 lb/10⁶ Btu. For particulate emission control, FPC has proposed to install electrostatic precipitators (ESP's) on both units to limit emissions to less than 0.1 lb/10⁶ Btu. Two-stage combustion was proposed for reducing nitrogen oxides emissions to below 0.6 lb/10⁶ Btu. To reduce the dust emissions from the new coal and fly ash handling systems, FPC has proposed to use high efficiency baghouses, underground reclaim hoppers, and telescopic chutes.

IV. RULE APPLICABILITY

A. State Rule

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Rule 17-2, Florida Administrative Code, because it constitutes a modification to a facility as defined in Rule 17-2.100 (102). Specifically, the project is subject to review under the provisions of Rule 17-2.500, "Prevention of Significant Deterioration (PSD)," because:

- (1) The Bartow plant is a major facility as defined in Rule 17-2.100(95) and Table 500-1;

- (2) It is located in an area designated attainment for all criteria pollutants except ozone;
- (3) The proposed project will result in a significant net emissions increase of one or more regulated pollutants other than volatile organic compounds; and
- (4) The facility as whole was not capable of accomodating coal as a fuel before January 6, 1975, since no coal handling equipment has ever been installed at the plant (even though the Unit 2 and 3 boilers were originally designed to be capable of burning coal).

PSD review consists of a determination of best available control technology (BACT) and an air quality impact analysis for each regulated pollutant for which emissions would increase by a significant net amount. At the emission levels proposed by the applicant, the project would result in a significant emissions increase of seven regulated pollutants: sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), mercury (Hg), beryllium (Be), fluorides (F), and arsenic (As). At the emission levels determined as BACT and discussed elsewhere in this document, the project alone will result in a decrease in SO₂ emissions from Units 2 and 3; however, this decrease is more than offset by a contemporaneous increase in SO₂ emissions resulting from the 1981 conversion of Unit 1 at the facility from oil to coal-oil mixture (COM). The net emission increases resulting from the conversion of Units 2 and 3 from oil to coal, the

installation of coal handling equipment, and the contemporaneous conversion of Unit 1 to COM are given in Table 1, along with the significance levels for PSD review.

The Bartow plant is located in an ozone nonattainment area (Pinellas County) and within the areas of influence of both the Pinellas County SO₂ nonattainment area and the Hillsborough County particulate nonattainment area. The project is exempt from all nonattainment area new source review requirements under Rule 17-2.510, however, because:

- (1) The net emissions increase of volatile organic compounds will be less than the significance level of 40 tons per year;
- (2) The applicant has demonstrated that the net emissions increase of SO₂ will not have a significant impact on the SO₂ nonattainment area; and
- (3) The unconfined PM emissions resulting from the project will occur more than five kilometers outside the boundary of the particulate nonattainment area, and the applicant has demonstrated that the remaining net emissions increase of PM will not have a significant impact on the nonattainment area.

Finally, the project is also exempt from all federal new source performance standards (NSPS) for fossil-fuel steam generators adopted by reference under Rule 17-2.660. Specifically, the conversion from oil to coal of the Unit 2 and 3 boilers is not

considered a modification of either boiler under 40 CFR 60.14, since each was designed to accommodate coal under construction specifications dated November 18, 1957 (Unit 2), and February 4, 1960 (Unit 3).

Federal Rule

The proposed project is subject to federal PSD review pursuant to 40 CFR 52.21(i) for the same reasons that it is subject to state PSD review under Rule 17-2.500. The PSD review requirements under both the federal and the state regulations are identical with the exception that under the federal regulations there is no requirement that emissions limitations for Units 2 and 3 be established through a BACT determination. To the extent that emissions from these units would increase, however, the department has the responsibility under 40 CFR 52.21(d) to ensure that no PSD increment or national ambient air quality standard will be violated.

V. CONTROL TECHNOLOGY REVIEW

Based on an analysis of the economic, environmental, and energy impacts of the proposed coal conversion project, the Department has made a preliminary BACT determination for the entire project, a copy of which is appended to this document. The emission limits from the BACT determination are as follows:

BACT Determined by DER:

<u>Pollutant</u>	<u>Emission Limit</u>
Particulates (Units 2 and 3)	0.10 pound per million Btu heat input, averaging time per 17-2.700
Sulfur Dioxide (Units 2 and 3)	1.2 pounds per million Btu heat input, daily average based on 3-hour composite fuel samples
Nitrogen Oxides (Units 2 and 3)	0.55 pound per million Btu heat input, averaging time per 17-2.700
Visible Emissions (VE) (Units 2 and 3)	Not greater than 20 percent opacity, six-minute average, except for one six-minute period per hour of not more than 27 per- cent opacity.
Visible Emissions (VE) (Fugitive emissions)	Not greater than 10 percent opacity, six-minute average
Visible Emissions (VE) (Baghouses)	Not greater than 5 percent opacity, six-minute average

The baghouses referred to in the BACT determination will be installed at various locations as listed below.

BAGHOUSE INVENTORY

FIG. 1

<u>ITEM NO.</u>	<u>Location</u>	<u>Estimated Particulate Emissions</u>	
		<u>lb/hr</u>	<u>TPY</u>
2	Clamshell (coal)	1.08	0.45
4	Transfer Point 1 (coal)	0.14	.06
6	Transfer Point 2 (coal)	0.26	.22
11	Reclaim Area (coal)	0.09	.12
15	Crusher Building (coal)	0.23	.31
17	Transfer Point 3 (coal)	0.37	.52
19	Transfer Point 4 (coal)	0.37	.22
23	Transfer Point 5 (coal)	0.54	.45
21	Unit 2 Coal Silos (3)	0.26	.15
31	Unit 3 Coal Silos (3)	0.26	.13
24	Unit 3 Coal Silos (2)	0.17	.06
	Fly Ash Transfer	0.11	.17
	Fly Ash Transfer	0.11	.17
	Fly Ash Transfer (Stand-by)	0.11	.00
29	Fly Ash Silo	0.43	.18

The elements mercury, beryllium, and arsenic are present in flue gas emissions when burning bituminous coal. These trace elements are emitted as part of the particulate matter and removed from the flue gas stream by the ESP's. Beryllium is the only element of the three listed that is considered to be of environmental significance. EPA project summary 600/52-80-042C indicates the controlled emission factor for beryllium to be 4.2×10^{-5} lb/ton coal. The emissions of beryllium from the proposed conversion should be equal to or less than this value. Considering the control efficiencies of the ESP's and the small predicted impacts on air quality, no further control of these pollutants is warranted.

Fluorides are emitted from coal combustion primarily in the gaseous phase. Therefore, post-combustion control of these

pollutants would require the costly addition of wet scrubbers to the units. Such scrubbers could achieve 80 percent or greater removal efficiency. However, considering the small predicted air quality impacts and small increases in emissions for these pollutants, additional controls are considered unnecessary.

The principle difference between the BACT determination made by the Department and that proposed by FPC is in the SO₂ emission limit--1.2 lb/10⁶ Btu compared to 2.75 lb/10⁶ Btu as proposed by FPC. The FPC proposal would increase annual SO₂ emissions from 1976-1979 levels of about 18,000 tons/year for Units 2 and 3 to about 30,000 tons/year, assuming a future .785 annual capacity factor. The net savings to FPC of this proposal would be about \$22,400,000 per year. Using the same projected capacity factor the Department's BACT determination would decrease SO₂ emissions from the two units to about 13,000 tons/year, while still saving FPC about \$19,000,000 per year. Details of the Department's BACT determination are appended to this document.

VI. AIR QUALITY IMPACT ANALYSIS

An air quality impact analysis is required for each pollutant for which there will be a significant net emissions increase. For the proposed project, a significant increase will occur for PM, SO₂, NO_x, and fluorides. Ranges of emission of Hg, Be, and As have been estimated from the literature. At the upper end of each range all three of these substances would also have a significant emissions increase. These pollutants have thus been included in the air quality analysis. Components of the air quality analysis are as follows:

- An analysis of existing air quality;
- A PSD increment analysis (for PM and SO₂ only);
- A Florida Ambient Air Quality Standards (FAAQS) analysis;
- An analysis of impacts on soils, vegetation, and visibility and growth-related air quality impacts; and
- A "Good Engineering Practice (GEP)" stack height analysis

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

Based on these required analyses, the Department has reasonable assurance that the proposed oil-to-coal conversion for FPC Bartow Units 2 and 3, as described in this permit and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A discussion of the modeling methodology and required analyses follows.

A. Modeling Methodology

Two EPA- and FDER-approved dispersion models were used in the air quality impact analysis. These were the Industrial Source Complex Short-Term (ISCST) and Long-Term (ISCLT) models. The ISCST and ISCLT are multivariant Gaussian dispersion models used to simulate effluent diffusion at downwind distances from sources or groups of sources. ISCST uses a sequential hour-by-hour meteorological record to estimate maximum short-term (e.g. 3-hour and 24-hour) concentrations. ISCLT uses statistical

wind summaries to calculate annual ground-level concentrations. The ISC models have a number of options that may be used as appropriate such as: area, volume, or point sources; polar or cartesian coordinate systems; deposition or concentration calculations; wake effects; stack tip downwash; source separation; terrain effects; and exponential decay.

Receptors were placed at one kilometer range intervals and ten degree azimuth intervals for short-term calculations and one kilometer square grid intervals for annual calculations. Receptors were also located at the boundaries of the Chassahowitzka Class I area and the PM and SO₂ nonattainment areas.

The surface meteorological data used in the models were National Weather Service data collected at the Tampa International Airport during the period 1970-1974. Upper air meteorological data used in the models were collected at the National Weather Service office in Ruskin, Florida during the same time period.

Stack parameters and emission rates used in evaluating the proposed coal conversion are contained in Table 2.

B. Analysis of Existing Air Quality

Preconstruction ambient air quality monitoring has not been performed by the applicant for any of the seven pollutants subject to PSD review. Exemption from this requirement for a particular pollutant may be obtained if the increase in ground-level concentration due to the proposed project is less than a certain de minimus value or the ambient concentration of

the pollutant is less than the appropriate de minimus value, (Rule 17-2.500(3)(e)). Table 2 lists the increases in ground-level concentration for each pollutant for the appropriate averaging time to compare with the de minimus values.

All pollutants except fluorides are predicted to be below the de minimus concentration thresholds and have thus been exempted by the Department from the preconstruction monitoring requirement. Since no other sources of fluorides are nearby (within 15 km), it is likely that the ambient level of fluorides in the surrounding area of the facility is less than the de minimus value; therefore, preconstruction monitoring for fluorides has also not been required by the Department. Arsenic does not have a de minimus threshold level for comparison, and there is no acceptable method at this time for measurement of ambient levels; therefore, no monitoring has been required for this pollutant.

Background air quality levels for SO₂, PM, and NO₂ have been developed from the nearest monitors for these pollutants. The monitors for PM and SO₂ are located approximately 2.2 kilometers west of the plant. The NO₂ monitor is located 16 kilometers southwest of the plant. The applicant has proposed that the annual mean monitored value over the previous year be used as the annual background concentration for PM, SO₂, and NO₂. The applicant has also proposed that the highest monitored PM 24-hour average concentration be used as the 24-hour PM background value and that statistically derived background values for SO₂ 24 and 3-hour averaging periods equal to the

93rd and 99.4th percentile concentrations, respectively, be used.

For annual and short-term (24-hour and 3-hour) averaging periods, the Department has chosen to use the two-year (1980-81) mean and highest, second-highest measured concentrations for SO₂ and PM background values. The purpose of this change is to make consistent the way in which background concentrations are determined for both PM and SO₂ and to be consistent with EPA policy which generally requires that two years of data be used for air quality planning purposes. This choice is considered conservative, however, in that these recorded values include the impact of the facility under study.

Table 4 lists the monitored values of SO₂, PM, and NO₂ at the aforementioned sites for the period 1980-81.

C. PSD Increment Analysis

The FPC Bartow facility is located in an area where the Class II PSD increments apply. The nearest Class I area is the Chassahowitzka National Wilderness Area located 82 kilometers to the north.

The proposed maximum hourly emission rates for both PM and SO₂ from units 2 and 3 are equal to or less than the actual maximum hourly rates on the baseline date. Furthermore, the conversion from oil to coal fuel in Units 2 and 3 will result in a greater exit temperature and a greater exit velocity (or flow rate). Both of these changes will act to increase plume rise and therefore decrease ground-level concentrations. As such, no PSD increment will be consumed over any short-term averaging period

for either PM or SO₂ by Units 2 and 3. Unit 1, which has previously been converted to a coal-oil mix (COM) fuel, also has not changed its maximum hourly emission rate and will not consume increment. Thus, the only short-term increment consumption to be realized from the conversion to coal will be from the new coal and fly ash handling facilities and from the fugitive emissions.

The coal and fly ash handling emission points along with the fugitive emissions associated with the coal pile were modeled using the ISCST model. Receptors were located at the closest distances to which the public has access at the plant boundaries. Based upon this modeling, the highest, second-high 24-hour concentration predicted is 26 ug/m³. No other increment-consuming source has been identified in the area which could significantly increase this value.

In contrast to the short-term emissions, annual average emissions of PM and SO₂ from the Bartow plant will increase from the baseline date as a result of the proposed project and the previous conversion of Unit 1 to COM. In addition, there will be an increase in annual PM emissions associated with the coal and fly ash handling operations and coal pile. The applicant has developed an emission inventory of significant sources of PM and SO₂ in the surrounding area for both the baseline date and present conditions. These sources were modeled along with the FPC Bartow sources to predict the maximum annual increment consumption. The annual average concentrations associated with the coal and fly ash handling operations and the fugitive emissions from the coal pile were

modeled separately. The maximum annual concentration due to these sources at the plant boundary is predicted to be 3.3 ug/m³. This value is offset by a slight decrease (or increment expansion) realized from emission decreases of surrounding sources of PM in the Bartow area.

Table 5 shows the Class II increment consumed for all averaging times of PM and SO₂. No violation of any PSD increment is predicted as a result of the conversion from oil to coal of Units 2 and 3.

As shown in Table 6, all short-term SO₂ and PM impacts on the Chassahowitzka Class I area from the proposed conversion are negative or less than 1 ug/m³. Due to emission reductions at other sources, annual impacts on the Class I area are also less than 0 ug/m³ for SO₂ and much less than 1 ug/m³ for PM.

D. FAAQS Analysis

Given existing air quality in the area, the proposed coal conversion of FPC Bartow Units 2 and 3 is not expected to cause or contribute to a violation of any FAAQS. The results of the FAAQS analysis are summarized in Table 7.

The predicted short-term concentrations given are the highest, second-high values since five years of meteorological data were used in the modeling. For both PM and SO₂, the background concentrations are conservatively estimated as the highest second-highest monitored value over the previous two years for the 24-hour and 3-hour averaging periods. The annual background concentrations used are the two-year means. These background concentrations include the impacts of most of the

sources modeled and thus represent an over-estimation of the concentrations due to natural background and distant man-made sources.

The other pollutants having significant emissions increases (Hg, Be, As, and fluorides) have no ambient air quality standards with which comparisons can be made.

E. Analysis of Impacts on Soils, Vegetation, and Visibility and Growth-Related Air Quality Impacts

The maximum ground-level concentrations of PM, SO₂, and NO₂ predicted to occur as a result of emissions increases from the FPC Bartow plant in conjunction with emissions from other surrounding sources are below all applicable FAAQS. These standards are equal to the federal secondary standards designed to protect public welfare-related values such as vegetation. The coal conversion at the plant will result in a decrease in the maximum short-term ground-level SO₂ concentrations with only a minimal increase in the annual level. There will be a minimal increase also in the NO₂ level. PM will increase significantly near the plant site due to the coal and fly ash handling and fugitive emissions; however, maximum concentrations will remain below the FAAQS.

No impact on visibility at the nearest Class I area is expected as a result of the coal conversion. All impacts at this area located 82 kilometers to the north are predicted to be less than 1 ug/m³.

The significant emissions increases of Hg and Be result in predicted ground-level impacts less than the de minimus values.

Thus, these emissions will not cause a measurable increase in ambient concentrations. No de minimus impact level exists for arsenic at this time. The emissions increase of fluorides is predicted to only slightly increase ambient levels. Thus, the Department is reasonably assured that these increased emissions of non-criteria pollutants Hg, Be, As, and fluorides will not significantly impact soils and vegetation in the local region. In addition, no significant growth-related impacts are expected to occur as a result of this conversion.

F. GEP Stack Height Analysis

A Good Engineering Practice (GEP) stack height (H_s), as defined in 40 CFR 51.1, is calculated from the following formula for stack heights in existence prior to December 31, 1970: $H_s = 2.5H$, where H is the height of nearby structure(s) measured from ground-level elevation at the base of the stack. The building heights (H) for Units 1, 2, and 3 are 43.6, 43.6, and 52.4 meters, respectively. Therefore, the appropriate GEP stack heights are 109.0, 109.0, and 131.0 meters for Units 1, 2, and 3, respectively. Since the actual stack heights of 91.44 meters for each unit have been used in the air quality analysis, FPC has not taken credit for any stack heights in excess of the GEP values.

VII. CONCLUSIONS

Based on the foregoing technical evaluation of the applications and additional information submitted by FPC, the Department has made a preliminary determination that compliance

with all State and federal air pollution regulations will be achieved provided certain conditions are met. The general and specific conditions are listed in the attached draft State permits (AC 52-54946, AC 52-54947, and AC 52-54948) and federal permit (PSD-FL-095). The BACT determination proposed as Attachment 6 to permits AC 52-54946 and AC 52-54947 is appended hereto.

Table I

Emissions of Regulated Pollutants - Bartow Plant Baseline and Projected Conditions

Criteria Pollutants	Baseline Conditions ⁽¹⁾	Emissions (tons/year)		Net Emissions Increase ⁽⁶⁾	Significant Emission Rate ⁽⁷⁾
		Projected Conditions ⁽²⁾			
		FPC Proposed Levels	DER Proposed Levels		
Sulfur Dioxide	7,899	9,600 ⁽³⁾	9,600		
Unit 1	17,947	38,229 ⁽⁴⁾	16,745 ⁽⁵⁾		
Units 2 & 3					
Total	25,846	47,829	26,345	499	40
Nitrogen Oxides					
Unit 1	791	3,206 ⁽³⁾	3,206		
Unit 2 & 3	3,908	8,375 ⁽⁴⁾	7,675 ⁽⁵⁾		
Total	4,699	11,581	10,881	6,182	40
Particulate Matter					
Unit 1	249	354 ⁽³⁾	354		
Unit 2 & 3	540	1,395 ⁽⁴⁾	1,395 ⁽⁵⁾		
Coal and Fly Ash Emission Points	0	26 ⁽⁴⁾	26 ⁽⁵⁾		
Coal and Fly Ash Fugitive Emissions	0	11 ⁽⁴⁾	11 ⁽⁵⁾		
Total	789	1,786	1,786	997	25
Noncriteria Pollutants (Units 1-3)		<u>FPC/DER Estimated Levels</u>			
Mercury	0.041-0.068	0.069-0.302		0.028 to 0.234	0.1
Beryllium	0.087-0.108	0.0308-0.233		-0.056 to +0.125	0.0004
Fluorides	0.122-0.125	149-150		149 to 150	3
Arsenic	0.813	0.143-1.08		-0.670 to 0.267	0
Lead	1.54-3.61	0.448-2.06		-1.09 to -1.55	0.6
Sulfuric Acid Mist	1.14	2.55		1.41	7
Volatile Organic Compounds	1.35-66.8	17.6-80		16.3 to 13.2	40
Carbon Monoxide	182	204		22	100
Radionuclides	0.722	0.144		-0.578	0

See next page for Footnotes.

Table I Footnotes

- (1) Average SO₂ and PM emission rates calculated from fuel burned from 1976 through 1979; average NO_x emission rates calculated from fuel burned from 1978 through 1979; other emission rates calculated using $4,442 \times 10^6$ Btu/hr total heat input rate for baseline conditions.
- (2) All SO₂, NO_x, and PM emission rates calculated based on 100% annual capacity factor; other emission rates calculated using $4,406 \times 10^6$ Btu/hr total heat input rate accounting for COM at Unit 1 (761×10^6 Btu/hr--oil, $3,645 \times 10^6$ Btu/hr--coal).
- (3) Change from baseline emission level due to 1981 conversion of Unit 1 to COM.
- (4) Based on applicant's proposed BACT emission levels (2.75 lb/10⁶ Btu--SO₂, 0.6 lb/10⁶ Btu--NO_x)
- (5) Based on DER BACT determination (1.2 lb/10⁶ Btu--SO₂, 0.55 lb/10⁶ Btu -- NO_x)
- (6) Based on DER proposed levels; note that SO₂ and NO_x emissions from Units 2 and 3 would decrease using DER levels, but significant net emissions increases of each of these pollutants are projected due to the contemporaneous conversion of Unit 1 to COM.
- (7) Rule 17-2.500, Table 500-2.

Table 2

Proposed FPC Bartow Stack Parameters and Emission Rates

Emissions Unit	Stack Height(m)	Stack Diameter(m)	Exit Velocity(m/s)	Exit Temp.(K)	Emission Rates (g/s)		
					PM(2)	SO ₂ (3)	NO _x (4)
Unit 1 (1)	91.44	2.74	36.27	428.	15.37	422.73	92.23
Unit 2	91.44	2.74	37.19	422.	15.12	180.17	83.16
Unit 3	91.44	3.35	40.84	419.	25.07	306.30	137.89

(1) This unit is not converting to coal but has recently been converted to a coal/oil mix fuel.

(2) Based on 0.1 lb PM per 10⁶ Btu

(3) Based on 1.2 lb SO₂ per 10⁶ Btu for Units 2 and 3 and 2.75 lb/10⁶ for Unit 1

(4) Based on 0.55 lb NO_x per 10⁶ Btu for Units 2 and 3 and 0.6 lb/10⁶ Btu for Unit 1

Table 2 (cont.)

Proposed FPC Bartow Coal and Fly Ash Handling Emission Rates

Emissions Unit	Stack Height(m)	Stack Diameter(m)	Exit Velocity(m/s)	Exit Temp.(K)	Emission Rate PM (g/s)
Clamshell Unloader	14.0	0.84	4.2	Ambient	1.08
Transfer Point 1	14.0	0.84	5.5	Ambient	0.14
Transfer Point 2	19.5	0.84	10.1	Ambient	0.26
Reclaim Structure	16.5	0.84	3.4	Ambient	0.09
Crusher Building	33.2	0.84	8.5	Ambient	0.22
Transfer Point 3	43.9	0.84	14.4	Ambient	0.37
Transfer Point 4	40.8	0.84	14.4	Ambient	0.37
Transfer Point 5	45.1	0.84	21.2	Ambient	0.54
Coal Silos(3) Unit 2	33.5	0.84	10.1	Ambient	0.26
Coal Silos(3) Unit 3	47.2	0.84	10.1	Ambient	0.26
Coal Silos(2) Unit 3	47.2	0.84	6.8	Ambient	0.17
Fly Ash Vacuum Pumps(2)	14.0	0.84	4.2	Ambient	0.11
Fly Ash Silo Vent	14.0	0.84	16.9	Ambient	0.43

Table 2 (cont.)

Proposed FPC Bartow Coal and Fly Ash Fugitive Emission Parameters

Area Source	Emission Height(m)	Vertical Dimension(m)	Horizontal Dimension(m)	Emission Rate PM g/m ² -s
Coal Pile	8.0	7.0	27.0	0.30
Fly Ash Silo Unloading	2.0	1.0	1.0	0.28
Radial Stacker	7.6	7.0	27.0	0.01

Table 3

Pollutant Concentration Increases For comparison to the Deminimus Levels

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Concentration Increase (ug/m³)</u>	<u>De Minimus Level (ug/m³)</u>
SO ₂	24-hour	<0	13
PM	24-hour	<0	10
NO ₂	Annual	0.7	14
Hg	24-hour	0.00063	0.25
Be	24-hour	0.00048	0.0005
F	24-hour	0.31	0.25
As	--	--	--

Table 4

Existing Air Quality Levels for 1980-1981

Pollutant	Averaging Time	Two-Year Mean (ug/m ³)	Highest Second-Highest Value (ug/m ³)
SO ₂	Annual	20	--
	24-hour	--	139
	3-hour	--	380
PM	Annual	44	
	24-hour	--	81
NO ₂	Annual	31	--

Table 5

Class II PSD Increment Consumption

Pollutant	Averaging Time	Bartow Facility (ug/m ³)	Total Predicted Increment Consumed (ug/m ³)	PSD Class II Increment (ug/m ³)
PM	Annual	3.3	2.8	19
	24-hour	26	25	37
SO ₂	Annual	<0	<0	20
	24-hour	<0	--	91
	3-hour	<0	--	512

Table 6

Class I PSD Increment Consumption

Pollutant	Averaging Time	Bartow Facility (ug/m ³)	Total Predicted Increment Consumed (ug/m ³)	PSD Class I Increment (ug/m ³)
PM	Annual	<1	<1	5
	24-hour	<1	<1	10
SO ₂	Annual	0.4	<0	2
	24-hour	<0	--	5
	3-hour	<0	--	25

Table 7
Comparison to FAAQS

Pollutant	Averaging Time	Bartow Plant (ug/m ³)	Bartow Plant plus Surrounding Sources (ug/m ³)	Total Impact (1) (ug/m ³)	FAAQS (ug/m ³)
PM	Annual	3.3	16.4	60	60
	24-hour	26		107	150
SO ₂	Annual	5.5	20.8	41	60
	24-hour	69		208	260
	3-hour	307		687	1300
NO ₂	Annual	2		33	100

(1) Includes a background concentration for each pollutant and averaging time.

(Proposed Attachment 6 to Permits AC 52-54946 and AC 52-54947)

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
Bartow Power Station, Weedon Island
Florida Power Corporation
Pinellas County

The applicant intends to install burners on two steam generators presently firing residual oil and natural gas to allow the firing of pulverized coal. The two steam generators to be modified are Bartow Unit 2 and Unit 3, both located at Weedon Island, St. Petersburg, Florida. The project also includes the construction of the following supporting facilities: 1) coal unloading, 2) coal storage, 3) coal transfer systems, 4) ash disposal system, 5) air pollutant control devices, and 6) fly ash disposal system.

Bartow Unit 2 has a maximum rated heat input of 1196 million Btu per hour and at this rate would consume approximately 52 tons of coal per hour. Bartow Unit 3 has a maximum rated heat input of 1990 million Btu per hour and at this rate would consume approximately 87 tons of coal per hour. Twelve coal nozzles will be installed in Unit 2 and twenty in Unit 3 to fire pulverized coal. An electrostatic precipitator (ESP) will be installed on each boiler flue gas stream to control particulate emissions. Sulfur dioxide emissions will be controlled by limiting the sulfur content in the coal fired. The furnace will use two stage (off-stoichiometric) combustion to reduce nitric oxide emissions. This method is considered the most effective for reducing the flame temperature and therefore, the temperature dependent conversion of atmospheric nitrogen to NO_x will be lowered.

Coal hauled in by barges or ships will be unloaded at the site using a clamshell bucket. The coal will be transferred on covered belt conveyors to the storage area. The active stockout pile will be formed using a radial stacker having a telescopic chute to minimize free fall. Coal under 2 1/2 inch maximum size will be transferred from the active pile to the crusher building, where the coal will be reduced to 1 1/2 inch maximum size and stored in eight silos, three for Unit 2 and five for Unit 3, which will provide each boiler with a minimum of 8 hours coal supply at maximum load. The coal is then pulverized to the fineness required (200 mesh) and delivered to the furnace for combustion.

Finely divided particles of ash (fly ash) removed from the flue gas streams by the ESP units will be pneumatically conveyed to a common storage silo. The fly ash silo will have two telescopic discharge chutes and one rotary unloader. The fly ash will be loaded into covered trucks for removal from the site to purchasers or placed in a temporary onsite storage area for future sale. A windbreak enclosure will be erected to prevent fugitive dust emissions during truck loading. Baghouses will be

used to control particulate emissions generated by various operations. These are shown in Figure 1 and listed in Table 1, below.

Table 1

BAGHOUSE INVENTORY

FIG. 1

<u>ITEM NO.</u>	<u>Location</u>	<u>Estimated Particulate Emissions</u>	
		<u>lb/hr</u>	<u>TPY</u>
2	Clamshell (coal)	1.08	0.45
4	Transfer Point 1 (coal)	0.14	.06
6	Transfer Point 2 (coal)	0.26	.22
11	Reclaim Area (coal)	0.09	.12
15	Crusher Building (coal)	0.23	.31
17	Transfer Point 3 (coal)	0.37	.52
19	Transfer Point 4 (coal)	0.37	.22
23	Transfer Point 5 (coal)	0.54	.45
21	Unit 2 Coal Silos (3)	0.26	.15
31	Unit 3 Coal Silos (3)	0.26	.13
24	Unit 3 Coal Silos (2)	0.17	.06
	Fly Ash Transfer	0.11	.17
	Fly Ash Transfer	0.11	.17
	Fly Ash Transfer (Stand-by)	0.11	.00
29	Fly Ash Silo	0.43	.18

The two steam generators will be permitted to operate 8760 hours per year. Unit 2 steam output drives a turbine electric power generator that has a maximum rated capacity of 119 megawatts. Unit 3 drives a generator with a maximum rated capacity of 209 megawatts. The rate of firing each boiler will vary with the demand for electricity.

There are two New Source Performance Standards (NSPS) that set pollutant emission standards for sources such as Bartow Unit 2 and Unit 3. The NSPS 40 CFR 60.40, Subpart D, applicability date is August 17, 1971, and NSPS 40 CFR 60.40a, Subpart Da, applicability date is September 18, 1978. Both units were constructed prior to the applicability dates. The contract data sheet for each unit indicates that the original design included the possibility of firing pulverized coal. Therefore, the department finds that each unit was originally designed to accommodate the use of coal, and the proposed conversion therefore is not a modification that subjects either unit to the requirements of either NSPS. Although the two generating units were designed to accommodate coal, the Bartow facility as a whole is not capable of accommodating coal because it was not equipped with coal-handling facilities. Therefore, the project as a whole is subject to PSD review under Rule 17-2.500, FAC. Emissions of particulates, SO₂ and NO_x will increase above the Significant Emission Rates in Table 500-2, of Rule 17-2.500, FAC.

BEST AVAILABLE COPY

COAL CONVERSION FACILITIES LEGEND

FACILITY	REMARKS
OCEAN GOING BARGE	13,500 TONS
BARGE UNLOADER	
CONVEYOR 1	
TRANSFER PT 1	
CONVEYOR 2	
TRANSFER PT 2	
CONVEYOR 3	
RADIAL STACKER	
ACTIVE STOCKOUT PILE	
LOW SULFUR RESERVE STORAGE	51,000 TONS
HIGH SULFUR RESERVE STORAGE	22,000 TONS
RECLAIM HOPPER	
CONVEYOR 4	
CONVEYOR 5	
CONVEYOR 6	
CRUSHER BUILDING	
CONVEYOR 7	
TRANSFER PT 3	
CONVEYOR 8	
TRANSFER PT 4	
CONVEYOR 201	
CONVEYOR 202	
CONVEYOR 301	
TRANSFER POINT 5	
CONVEYOR 302	
CONVEYOR 303	
ASH WATER RECLAIM TANK	
UNIT 2 PRECIPITATOR	
UNIT 3 PRECIPITATOR	
FLY ASH SILO	
CRUSHER BUILDING CONTROL WING	HOUSES HVAC ELECTRICAL & CONTROL EQUIPMENT
CONVEYOR 304	
TRANSFORMER T-3	
TRANSFORMER T-2	
ASH WATER RECLAIM PUMP	
SUS TRANSFORMER	
ASH WATER RECLAIM PUMP SUS	
CRUSHER BUILDING MCC	
TRANSFORMER	
TRANSFER POINT 2 ELECTRICAL EQUIPMENT ROOM	
TRANSFER POINT 2 MCC	
TRANSFORMER	
UNIT 2 ID FANS	
ASH TRENCH	
UNIT 3 ID FANS	
CONDENSATE TANK	RELOCATED
OIL UNLOADING STATION	RELOCATED
ASH SLUICE LINES	ABOVE GROUND EXCEPT AS SHOWN
ASH WATER RETURN LINE	ABOVE GROUND EXCEPT AS SHOWN
ASH WATER RECLAIM PUMPS	
ASH POND	
RECYCLE BASIN	
ASH REMOVAL CONTROL BLDG	
PULVERIZER REJECTS & ECONOMIZER ASH HOLDING TANK	
FLY ASH STORAGE	90 DAY
COAL PILE RUNOFF & ASH WATER BLOWDOWN BASIN	
FUEL SERVICE & VEHICLE MAINTENANCE FACILITY	
WAREHOUSE ADDITION	

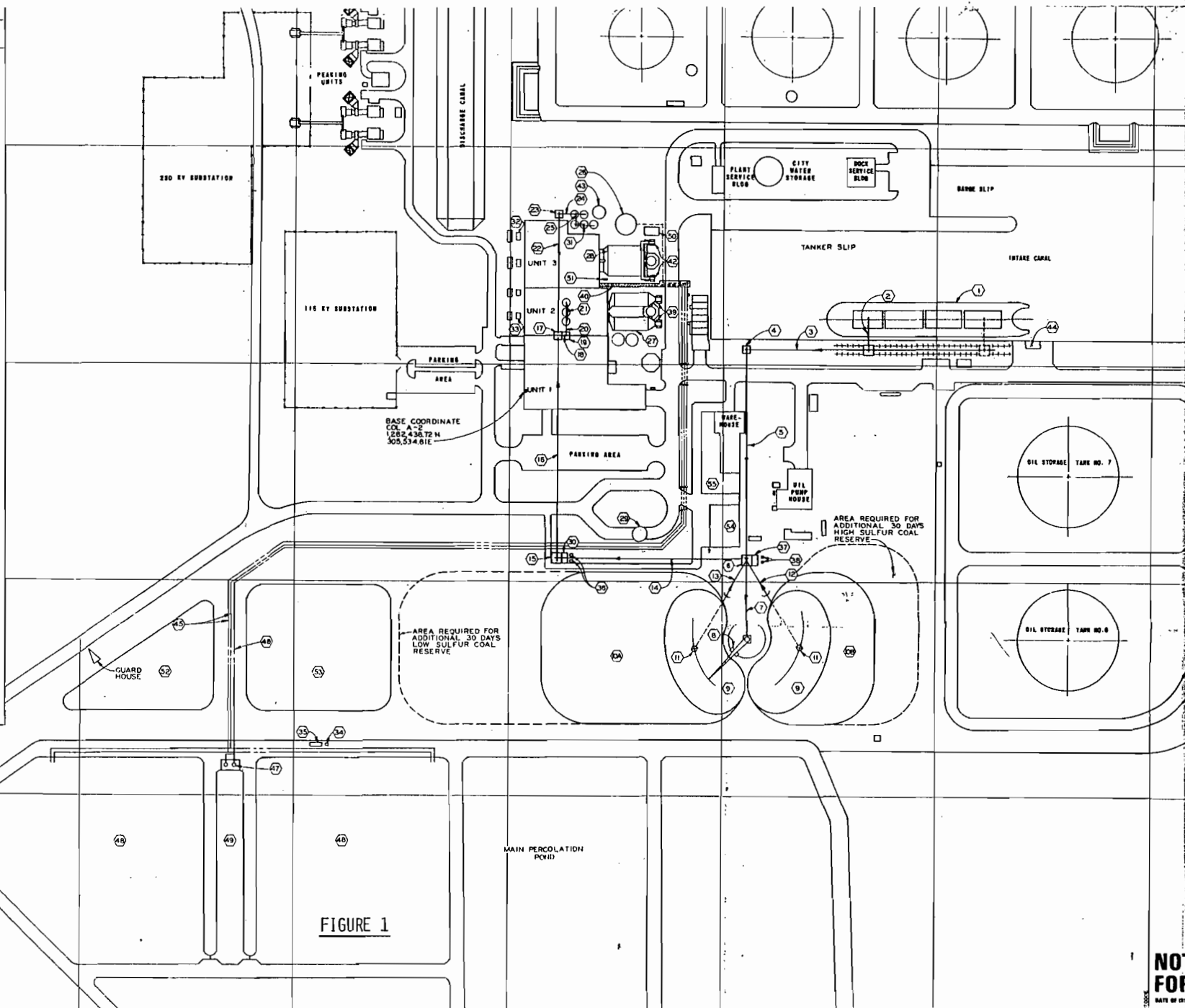


FIGURE 1

Consequently a BACT determination is required for each of these pollutants as set forth in Rule 17-2.500 (2)(f), FAC.

BACT Determination Requested by the Applicant:

An electrostatic precipitator (ESP) will be installed to limit particulate emissions to 0.1 pounds per million Btu. A sulfur dioxide emission limit of 2.75 pounds per million Btu will be achieved by firing a medium sulfur content coal. The burners will be redesigned to use overfire air to limit NO_x emissions to less than 0.6 pounds per million Btu.

Date of Receipt of a BACT Application:

January 4, 1983

Notice of Receipt in the Florida Administrative Weekly:

January 14, 1983

Review Group Members:

Clair Fancy - Central Air Permitting - BAQM
Bob King - New Source Review Section - BAQM
Tom Rogers - Air Modeling Section - BAQM
Dan Williams - DER Southwest District Office

BACT Determined by DER:

<u>Pollutant</u>	<u>Emission Limit</u>
Particulates (Units 2 and 3)	0.10 pound per million Btu heat input, averaging time per 17-2.700
Sulfur Dioxide (Units 2 and 3)	1.2 pounds per million Btu heat input, daily average based on 3-hour composite fuel samples
Nitrogen Oxides (Units 2 and 3)	0.55 pound per million Btu heat input, averaging time per 17-2.700
Visible Emissions (VE) (Units 2 and 3)	Not greater than 20 percent opacity, six-minute average, except for one six-minute period per hour of not more than 27 per- cent opacity.
Visible Emissions (VE) (Fugitive emissions)	Not greater than 10 percent opacity, six-minute average
Visible Emissions (VE) (Baghouses-Table 1)	Not greater than 5 percent opacity, six-minute average

Compliance with the mass emission rate limits for particulate, SO₂ and NO_x for the boilers will be in accordance with Rule 17-2.700, FAC. Continuous compliance with the SO₂ 24-hour limit will be demonstrated by composite 24-hour as-fired coal analysis using recognized ASTM methods.

Compliance with the opacity limits on Units 2 and 3, the baghouses listed in Table 1, and fugitive or unconfined particulate emissions will be in accordance with DER Method 9 (17-2.700(6)(a)9., FAC). The baghouse sources listed in Table 1 are exempt from mass emission rate compliance tests so long as the visible emission limits are met, unless the department has other reasons to believe the mass emission limits are being exceeded.

A continuous opacity monitoring system to measure the visible emissions from Unit 2 and Unit 3 will be installed, calibrated, maintained, and operated in accordance with the provisions of Rule 17-2.710, FAC, Continuous Monitoring Requirements.

BACT Determination Rationale:

This facility is exempt from the NSPS for electric generating stations promulgated June 11, 1979, per the applicability subsection

40 CFR 60.40a(d). The applicant proposes that particulate emissions be no greater than 0.1 pounds per million Btu, which is equal to the particulate standard stipulated in the NSPS for fossil-fuel-fired steam generators (Subpart D) promulgated December 23, 1971. DER agrees that this limit meets BACT for particulate emissions from Unit 2 and Unit 3. The collection efficiency required would be between 98 and 99 percent.

The applicant proposes that sulfur dioxide emissions be no greater than 2.75 pounds per million Btu. Compliance with the proposed SO₂ emission limit would be obtained by the burning of a medium sulfur content (1.5%) coal instead of a flue gas desulfurization (FGD) system. DER does not agree that this limit meets BACT for SO₂ emissions. DER has determined that BACT for this project is 1.2 pounds SO₂ per million Btu, which is equal to the emission limit stipulated in the aforementioned NSPS Subpart D. The maximum SO₂ emission rate from Unit 2 is 1435 lb/hr and 2388 lb/hr from Unit 3. The reasoning for this is that although the department agrees that a flue gas desulfurization system is generally not practical for retrofitting on an existing small electric generating station, we do not agree that the costs of burning low sulfur coal (0.7%S) are excessive as compared to buying medium sulfur coal (1.5%S). The assumptions in arriving at this determination are as follows:

- A. The cost of 2.5%S oil is \$3.84/mmBtu, based on \$24.00/bbl (Platt's Oilgram Price Report, Dec. 1982).
- B. The cost of 0.7%S coal is \$2.20/mmBtu, based on \$52.80/ton (Fuel Costs Reports from Gainesville Regional Utilities, Apr. 1982).
- C. The cost of 1.5%S coal is \$2.05/mmBtu, based on \$49.20/ton (FPC's application, Dec. 1982).
- D. The cost of 3.5%S coal is \$1.80/mmBtu, based on \$43.20/ton (DOE's report, 1981).
- E. After conversion, the plant will have a remaining useful life of 20 years.
- F. The cost of money will be approximately 12% (compound interest factor 0.1339).
- G. The capital cost of FGD systems for both units would be \$100,000,000 (FGD Symposium, May 1982. Economic Evaluation and Comparison of Alternative Limestone Scrubbing Options).
- H. The capital cost of the conversion of the boilers and auxiliary equipment would be \$70,000,000 (PedCo Environmental Report, Table 5-1, Nov. 1982).

- I. The cost of all air pollution equipment (except FGD systems) would be \$24,000,000 (FPC's original application, Apr. 1982).
- J. The cost of the larger coal mills for handling the low sulfur coal would be \$1,000,000 (FPC's application, Dec. 1982).
- K. Operation and maintenance costs for all air pollution control equipment (except FGD) would be \$4,200,000 annually (PedCo Environmental Report, Nov. 1982, Table 5-2).
- L. Operation and maintenance costs for both FGD systems would be \$10,000,000 annually. (FPC's application Dec. 1982).

Fuel savings would be calculated as follows:

$$\begin{aligned} \text{Low sulfur coal: } & (1196 + 1990) \times .785 \times \\ & (3.84 - 2.20) \times 24 \times 365 \\ & = \$35,900,000/\text{year} \end{aligned}$$

$$\begin{aligned} \text{Medium sulfur coal: } & (1196 + 1990) \times .785 \times \\ & (3.84 - 2.05) \times 24 \times 365 = \\ & \$39,200,000/\text{year} \end{aligned}$$

$$\begin{aligned} \text{High sulfur coal: } & (1196 + 1990) \times .785 \times \\ & (3.84 - 1.80) \times 24 \times 365 \\ & = \$44,700,000/\text{year} \end{aligned}$$

Annual Net Savings

Case I: ESP, low sulfur coal (0.7%)

$$\begin{aligned} S & = 35,900,000 - 4,200,000 - (70 + 24 + 1) \times \\ & 1,000,000 \times .1339 \\ & = \$19,000,000 \end{aligned}$$

Case II: ESP, medium sulfur coal (1.5%)

$$\begin{aligned} S & = 39,200,000 - 4,200,000 - (70 + 24) \times \\ & 1,000,000 \times .1339 \\ & = \$22,400,000 \end{aligned}$$

Case III: ESP, FGD, high sulfur coal (3.5%)

$$\begin{aligned} S & = 44,700,000 - 10,600,000 - 4,200,000 - \\ & (70 + 24 + 100) \times 1,000,000 \times .1339 \\ & = \$3,900,000 \end{aligned}$$

By converting to the use of low sulfur coal, sulfur dioxide emissions will be reduced from 18,000 tons/year to 13,000 tons per year for Units 2 and 3, even though the capacity factors will increase from .64 to .785; and the company will save \$19,000,000

per year. The use of medium sulfur coal would more than double annual SO₂ emissions from 13,000 tons/year to 30,000 tons/year and would save the company only an additional \$3,400,000, or 18%. The use of an FGD system would lower the BACT emissions from 13,000 tons/year to 6,600 tons/year but would eliminate 80% of the savings that the company could obtain from burning low sulfur coal.

The applicant proposes to use combustion controls to guarantee a maximum NO_x emission rate. DER has determined the NO_x emission rate to be 0.55 pounds per million Btu as BACT for Unit 2 and Unit 3. This rate is more stringent than the NSPS Subpart D rate proposed by the applicant.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended By:

C. H. Fancy, Deputy Bureau Chief

Date: _____

Approved:

Victoria J. Tschinkel, Secretary

Date: _____

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

Permit Number: AC 52-54946
Expiration Date: June 30, 1986
County: Pinellas
Latitude/Longitude: 27° 51' 40"N/
82° 36' 09"W
Project: Bartow Unit 2 Coal
Conversion with Electro-
static Precipitator

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

For coal conversion modification of Bartow Unit 2 (119 MW) with 1196
million Btu heat input capacity located at existing Bartow plant
site on Weedon Island near St. Petersburg, Florida.

Construction shall be in accordance with the attached permit
application and additional information except as otherwise noted on
pages 4 and 5, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Sources,
DER Form 17-1.122(16), received on April 20, 1982.
2. DER's incompleteness letter to FPC, dated May 20, 1982.
3. FPC's response to DER, received on June 14, 1982.
4. DER's incompleteness letters to FPC, dated July 14 and
September 14, 1982.
5. FPC's responses to DER, received on December 6 and 27, 1982.
6. BACT determination.
7. EPA Memo concerning soot blowing performance testing dated
March 6, 1979.
8. Fuel Sampling and Analysis Procedures.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54946
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54946
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

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

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg
Florida 33733

I. D. Number:
Permit Number: AC 52-54946
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
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I. D. Number:
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GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

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

SPECIFIC CONDITIONS:

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I.D. Number:
Permit Number: AC 52-54946
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

1. Except as required pursuant to DER's BACT determination, (attachment 6) the proposed boiler modification shall be carried out in accordance with the statements in the application and additional information supplied by the applicant.

2. The boiler's maximum emission rates shall not exceed the emission limits listed below:

Pollutant	lb/10 ⁶ Btu	Maximum Allowable Emissions	
		lb/hr	tons/year*
PM	0.10, averaging time per 17-2.700	120	524
SO ₂	1.20, 24-hour average based on 3-hour composite samples	1,435	6,286
NO _x	0.55, averaging time per 17-2.700	658	2,881

* Based on 100% load factor. The Company projects a load factor not to exceed 78.5%.

3. Visible emissions shall not be greater than 20 percent opacity, six-minute average, except for one six-minute period per hour of not more than 27 percent opacity, demonstrated in accordance with DER Method 9 (Rule 17-2.700(6)(a)9.,FAC).

4. Compliance with the mass emission rate limits for particulate, SO₂, and NO_x for the boiler shall be demonstrated in accordance with the applicable provisions of Rule 17-2.700, FAC. Continuous compliance with the SO₂ 24-hour limit shall be demonstrated by taking as-fired coal samples every three hours starting at midnight and performing a composite 24-hour coal analysis daily, using recognized ASTM methods, as summarized in Attachment 8. Reports shall be submitted quarterly to the DER Southwest District office and the Environmental Management Department of Pinellas County.

5. Instruments shall be installed, calibrated, and maintained to continuously measure the amount of coal used by the boiler. The records of fuel usage shall be kept by the company, available for regulatory agencies inspection, for a two-year period.

6. The electrostatic precipitator shall be operated during firing of the boiler on coal and no flue gas bypass of the precipitator shall be permitted.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54946
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

7. In accordance with Rule 17-2.700(4), FAC, the stack sampling configuration of the proposed boiler shall comply with the minimum of 2D downstream and 0.5 D upstream distances to the sampling ports required to use DER Method 2 (Rule 17-2.700(6)(a)3., FAC).

8. A continuous opacity monitoring system to measure the visible emissions from Unit 2 shall be installed, calibrated, maintained, and operated in accordance with the provisions of Rule 17-2.710, FAC, Continuous Monitoring Requirements.

9. Compliance with the particulate emission limit in Specific Condition No. 2, shall be demonstrated by EPA Methods 5 or 17. The PM performance test shall include the emissions from soot blowing. The method for calculating particulate emissions from soot blowing may be determined by the method described in the attached EPA memorandum dated March 6, 1979 (Attachment 7).

10. Compliance with the NO_x emission limit in Specific Condition No. 2 shall be demonstrated by EPA Method 7.

11. Compliance with the SO₂ emission limit in Specific Condition No. 2 shall be demonstrated by EPA Method 19.

12. The hours of operation shall not exceed 24 hours per day, 7 days per week, 52 weeks per year or 8,760 hours per year.

13. Reasonable precautions to prevent fugitive particulate emissions at the site, such as coating of roads and construction sites used by contractors and regrassing or watering areas of disturbed soils or coal, shall be taken by the permittee.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54946
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

14. Prior to 90 days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER Southwest District office. Full operation of the source may then be conducted in compliance with the terms of this permit until its expiration or until receipt of an operating permit.

**STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION**

VICTORIA J. TSCHINKEL, Secretary

___ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

Permit Number: AC 52-54947
Expiration Date: June 30, 1986
County: Pinellas
Latitude/Longitude: 27° 51' 40"N/
82° 36' 09"W
Project: Bartow Unit 3 Coal
Conversion with Electro-
static Precipitator

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

For coal conversion modification of Bartow Unit 3 (209 MW) with 1990
million Btu heat input capacity located at existing Bartow plant
site on Weedon Island near St. Petersburg, Florida.

Construction shall be in accordance with the attached permit
application and additional information except as otherwise noted on
pages 4 and 5, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Sources,
DER Form 17-1.122(16), received on April 20, 1982.
2. DER's incompleteness letter to FPC, dated May 20, 1982.
3. FPC's response to DER, received on June 14, 1982.
4. DER's incompleteness letters to FPC, dated July 14 and
September 14, 1982.
5. FPC's responses to DER, received on December 6 and 27, 1982.
6. BACT determination.
7. EPA Memo concerning soot blowing performance testing dated
March 6, 1979.
8. Fuel Sampling and Analysis Procedures.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54947
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54947
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

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

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg
Florida 33733

I. D. Number:
Permit Number: AC 52-54947
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54947
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

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

SPECIFIC CONDITIONS:

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I.D. Number:
Permit Number: AC 52-54947
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

1. Except as required pursuant to DER's BACT determination, (attachment 6) the proposed boiler modification shall be carried out in accordance with the statements in the application and additional information supplied by the applicant.

2. The boiler's maximum emission rates shall not exceed the emission limits listed below:

Pollutant	lb/10 ⁶ Btu	Maximum Allowable Emissions	
		lb/hr	tons/year*
PM	0.10, averaging time per 17-2.700	199	871
SO ₂	1.20, 24-hour average based on 3-hour composite samples	2,388	10,459
NO _x	0.55, averaging time per 17-2.700	1,095	4,794

* Based on 100% load factor. The Company projects a load factor not to exceed 78.5%.

3. Visible emissions shall not be greater than 20 percent opacity, six-minute average, except for one six-minute period per hour of not more than 27 percent opacity, demonstrated in accordance with DER Method 9 (Rule 17-2.700(6)(a)9., FAC).

4. Compliance with the mass emission rate limits for particulate, SO₂, and NO_x for the boiler shall be demonstrated in accordance with the applicable provisions of Rule 17-2.700, FAC. Continuous compliance with the SO₂ 24-hour limit shall be demonstrated by taking as-fired coal samples every three hours starting at midnight and performing a composite 24-hour coal analysis daily, using recognized ASTM methods, as summarized in Attachment 8. Reports shall be submitted quarterly to the DER Southwest District office and the Environmental Management Department of Pinellas County.

5. Instruments shall be installed, calibrated, and maintained to continuously measure the amount of coal used by the boiler. The records of fuel usage shall be kept by the company, available for regulatory agencies inspection, for a two-year period.

6. The electrostatic precipitator shall be operated during firing of the boiler on coal and no flue gas bypass of the precipitator shall be permitted.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54947
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

7. In accordance with Rule 17-2.700(4), FAC, the stack sampling configuration of the proposed boiler shall comply with the minimum of 2D downstream and 0.5 D upstream distances to the sampling ports required to use DER Method 2 (Rule 17-2.700(6)(a)3., FAC).

8. A continuous opacity monitoring system to measure the visible emissions from Unit 2 shall be installed, calibrated, maintained, and operated in accordance with the provisions of Rule 17-2.710, FAC, Continuous Monitoring Requirements.

9. Compliance with the particulate emission limit in Specific Condition No. 2, shall be demonstrated by EPA Methods 5 or 17. The PM performance test shall include the emissions from soot blowing. The method for calculating particulate emissions from soot blowing may be determined by the method described in the attached EPA memorandum dated March 6, 1979 (Attachment 7).

10. Compliance with the NO_x emission limit in Specific Condition No. 2 shall be demonstrated by EPA Method 7.

11. Compliance with the SO₂ emission limit in Specific Condition No. 2 shall be demonstrated by EPA Method 19.

12. The hours of operation shall not exceed 24 hours per day, 7 days per week, 52 weeks per year or 8,760 hours per year.

13. Reasonable precautions to prevent fugitive particulate emissions at the site, such as coating of roads and construction sites used by contractors and regrassing or watering areas of disturbed soils or coal, shall be taken by the permittee.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54947
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

14. Prior to 90 days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER Southwest District office. Full operation of the source may then be conducted in compliance with the terms of this permit until its expiration or until receipt of an operating permit.

**STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION**

VICTORIA J. TSCHINKEL, Secretary

___ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

Permit Number: AC 52-54948
Expiration Date: June 30, 1986
County: Pinellas
Latitude/Longitude: 27° 51' 40"N/
82° 36' 09"W
Project: Bartow Coal & Fly Ash
Handling Systems
Bagfilter Nos.1 through 15

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

The construction consists of installing coal unloading, handling, and storage facilities and fly ash conveying, handling and storage facilities for Bartow Units 2 and 3 located at existing Bartow plant site on Weedon Island near St. Petersburg, Florida.

A coal dust and fly ash control system will be installed to filter the dust-laden air collected at the various transfer and take off points. Construction shall be in accordance with the attached permit application and additional information except as otherwise noted on pages 4 and 5, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16), received on April 20, 1982.
2. DER's incompleteness letter to FPC, dated May 20, 1982.
3. FPC's response to DER, received on June 14, 1982.
4. DER's incompleteness letters to FPC, dated July 14 and September 14, 1982.
5. FPC's responses to DER, received on December 6 and 27, 1982.
6. BACT determination.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54948
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54948
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

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

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg
Florida 33733

I. D. Number:
Permit Number: AC 52-54948
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54948
Expiration Date: June 30, 1986

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

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

SPECIFIC CONDITIONS:

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I.D. Number:
Permit Number: AC 52-54948
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

1. The coal and fly ash handling systems shall be constructed in accordance with the statements in the application and additional information supplied by the applicant. In case of conflict, conditions specified herein shall take precedence.
2. Bag filters shall be installed to control emissions at the following 15 locations in accordance with the BACT determination.

<u>No.</u>	<u>Location</u>	<u>Estimated Particulate Emissions</u>	
		<u>lb/hr</u>	<u>TPY</u>
2	Clamshell (coal)	1.08	0.45
4	Transfer Point 1 (coal)	0.14	.06
6	Transfer Point 2 (coal)	0.26	.22
11	Reclaim Area (coal)	0.09	.12
15	Crusher Building (coal)	0.23	.31
17	Transfer Point 3 (coal)	0.37	.52
19	Transfer Point 4 (coal)	0.37	.22
23	Transfer Point 5 (coal)	0.54	.45
21	Unit 2 Coal Silos (3)	0.26	.15
31	Unit 3 Coal Silos (3)	0.26	.13
24	Unit 3 Coal Silos (2)	0.17	.06
	Fly Ash Transfer	0.11	.17
	Fly Ash Transfer	0.11	.17
	Fly Ash Transfer (Stand-by)	0.11	.00
29	Fly Ash Silo	0.43	.18

3. Visible emissions caused by fugitive or unconfined particulate from coal and fly ash handling systems and storage areas shall not be greater than 10 percent opacity, six-minute average, demonstrated in accordance with DER Method 9 (Rule (17-2.700(b)(a)9.,FAC).

4. Visible emissions from the bag filter exits shall not be greater than 5 percent opacity, six-minute average, demonstrated in accordance with DER Method 9. The baghouse sources listed in Specific Condition No. 2 shall be exempt from mass emission rate compliance tests so long as the 5 percent opacity limits are met, unless the department has other reasons to believe the mass emission limits are being exceeded.

PERMITTEE: Fla. Power Corp.
P. O. Box 14042
St. Petersburg,
Florida 33733

I. D. Number:
Permit Number: AC 52-54948
Expiration Date: June 30, 1986

SPECIFIC CONDITIONS:

5. The hours of operation shall not exceed 24 hours per day, 7 days per week, 52 weeks per year or 8,760 hours per year.

6. Reasonable precautions to prevent fugitive particulate emissions at the site, such as coating of roads and construction sites used by contractors and regrassing or watering areas of disturbed soils or coal, shall be taken by the permittee.

7. Prior to 90 days before the expiration of this permit, a complete application for an operating permit shall be submitted to DER Southwest District office. Full operation of the source may then be conducted in compliance with the terms of this permit until its expiration or until receipt of an operating permit. Issued this ___ day of _____, 1984

**STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION**

VICTORIA J. TSCHINKEL, Secretary

___ pages attached.

Proposed Federal Permit

PSD-FL-095

Upon authorization to construct by the U. S. Environmental Protection Agency, the applicant shall comply with the attached General Conditions and with the Specific Conditions of permit number AC 52-54948 issued by the State of Florida.

GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.
2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.
3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.
4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.
5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall immediately notify the State District Manager by telephone and provide the District Office and the permitting authority with the following information in writing within four (4) days of such conditions:
 - (a) description for noncomplying emission(s),
 - (b) cause of noncompliance,
 - (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,

(d) steps taken by the permittee to reduce and eliminate the noncomplying emission,

and

(e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.
7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.
8. The permittee shall allow representatives of the State environmental control agency or representatives of the Environmental Protection Agency, upon the presentation of credentials:
 - (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;
 - (b) to have access to any copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;
 - (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

(d) to sample at reasonable times any emission of pollutants;

and

(e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted to this permit to the permitting agency shall be mailed to:

Mr. James T. Wilburn
Chief, Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30365

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.