Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

January 16, 2004

Ms. Brenda Brickhouse
Bartow Plant Manager
Progress Energy Florida
1601 Weedon Island Drive
St. Petersburg, Florida 33702

Re: Title V Air Operation Permit Revision
PROPOSED Permit Project No.: 1030011-008-AV
Revision to Title V Air Operation Permit No.: 1030011-002-AV
P. L. Bartow Plant

Dear Ms. Brickhouse:

One copy of the "PROPOSED Determination" for the Title V Air Operation Permit Revision for the P. L. Bartow Plant located at 1601 Weedon Island Drive, St. Petersburg, Pinellas County, is enclosed. This letter is only a courtesy to inform you that the DRAFT Permit has become a PROPOSED Permit.

An electronic version of this determination has been posted on the Division of Air Resources Management's world wide web site for the United States Environmental Protection Agency (USEPA) Region 4 office's review. The web site address is:

"http://www.dep.state.fl.us/air/permitting/airpermits/AirSearch_ltd.asp"

Pursuant to Section 403.0872(6), Florida Statutes, if no objection to the PROPOSED Permit is made by the USEPA within 45 days, the PROPOSED Permit will become a FINAL Permit no later than 55 days after the date on which the PROPOSED Permit was mailed (posted) to USEPA. If USEPA has an objection to the PROPOSED Permit, the FINAL Permit will not be issued until the permitting authority receives written notice that the objection is resolved or withdrawn.

If you should have any questions, please contact Edward J. Svec at 850/921-8985.

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer, Chief
Bureau of Air Regulation

TV/es

Enclosures

copy furnished to:
Gerald Kissel, P.E., FDEP SWD
Peter Hessling, PCDEM AQD
USEPA, Region 4 (INTERNET E-mail Memorandum)

PROPOSED Determination

Title V Air Operation Permit Revision
PROPOSED Permit Project No.: 1030011-008-AV
Revision to Title V Air Operation Permit No.: 1030011-002-AV

I. Public Notice.

An "INTENT TO ISSUE TITLE V AIR OPERATION PERMIT REVISION" to Progress Energy Florida for the P. L. Bartow Plant located at 1601 Weedon Island Drive, St. Petersburg, Pinellas County was clerked on November 13, 2003. The "PUBLIC NOTICE OF INTENT TO ISSUE TITLE V AIR OPERATION PERMIT REVISION" was published in the St. Petersburg Times on November 26, 2003. The DRAFT Permit was available for public inspection at the Department's Southwest District office in Tampa and the permitting authority's office in Tallahassee. Proof of publication of the "PUBLIC NOTICE OF INTENT TO ISSUE TITLE V AIR OPERATION PERMIT REVISION" was received on December 3, 2003.

II. Public Comment(s).

Comments were received and the DRAFT Permit was changed. The comments were not considered significant enough to reissue the DRAFT Permit and require another Public Notice. Comments were received from one respondent during the 30 (thirty) day public comment period. The comment(s) will not be restated.

A. Electronic mail from Mr. Gary Robbins, Pinellas County Department of Environmental Management, dated November 25, 2003, and received on November 25, 2003.

1. Response: The Department agrees with the comment and will make the following changed to the description of Emissions Unit I.D. -001:

From: Unit No. 1 is a front-fired, fossil fuel steam generator which produces 120 megawatts, electric power. The maximum heat input rate is 1,220 million Btu per hour and the unit fires No. 2 through No. 6 fuel oil, and on-specification used oil. Particulate matter emissions are controlled by a General Electric Services, Inc. Model 1-BAB1.2X37(9)36.0-434-4.3P electrostatic precipitator consisting of five fields in depth. The permit application indicates this ESP was designed to operate when utilizing a coal/oil mixture which is no longer burned by Progress Energy Florida. The permittee was authorized to redesign the existing electrostatic precipitator (ESP) from three mechanical fields to two mechanical fields. The original design was based on a primary fuel mixture of 50% coal and 50% fuel oil. As coal is no longer an authorized fuel, the new design will be based on No. 6 fuel oil. The preliminary ESP inlet design conditions include:

Gas Flow Rate: 488,000 acfm (308,830 dscfm)
Gas Temperature: 250° F to 320° F
Gas Pressure: -2 to – 4 inches w.c.
Gas moisture content: 6% to 8% by volume

The redesign leaves the first mechanical field vacant to provide uniform gas flow to the second and third mechanical fields. A new perforated plate will be added to the inlet to the

second mechanical field. The gas passage width will be increased to allow for more durable rigid discharge electrodes that will replace current wire electrodes. New transformer rectifiers will be installed to provide the increased voltage required for the new rigid electrodes. The preliminary design is based on the following critical operating parameters:

Total Collecting Plate Area: 92,711 square feet (based on actual 11 inch gas passage width)
Treatment length: 21 feet
Aspect Ratio: 0.57
Specific Collecting Area (SCA): 190 square feet per 1000 acfm (based on 11 inch gas passage width)
Gas Velocity: 4.0 feet per second
Treatment Time: 5.2 seconds

The redesigned ESP is expected to provide emission rates equal to or better than the original design and lower than reported in recent stack tests. Reliability and availability of the ESP should also improve after it is rebuilt. The project is not expected to result in any operational or capacity increases. Because Unit 1 is oil fired and this unit is capable of meeting the applicable particulate matter and opacity limits in Conditions A.5., A.6., A.7., and A.8. without the use of the ESP, the provisions of 40 CFR 64 do not apply [40 CFR 64.2(b)(ii)]. A Durag Model 281 Continuous Emissions Monitor for opacity with a recorder is used for continual observation of stack opacity. Unit 1 began commercial service in 1958.

To: Unit No. 1 is a front-fired, fossil fuel steam generator which produces 120 megawatts, electric power. The maximum heat input rate is 1,220 million Btu per hour and the unit fires No. 2 through No. 6 fuel oil, and on-specification used oil. Particulate matter emissions are controlled by a General Electric Services, Inc. Model 1-BAB1.2X37(9)36.0-434-4.3P electrostatic precipitator consisting of five fields in depth. The permit application indicates this ESP was designed to operate when utilizing a coal/oil mixture which is no longer burned by Progress Energy Florida. The permittee was authorized to redesign the existing electrostatic precipitator (ESP) from three mechanical fields to two mechanical fields. The original design was based on a primary fuel mixture of 50% coal and 50% fuel oil. As coal is no longer an authorized fuel, the new design will be based on No. 6 fuel oil. The ESP inlet design conditions include:

Gas Flow Rate: 488,000 acfm (308,830 dscfm)
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The redesign leaves the first mechanical field vacant to provide uniform gas flow to the second and third mechanical fields. A new perforated plate will be added to the inlet to the second mechanical field. The gas passage width was increased to allow for more durable rigid discharge electrodes that replaced current wire electrodes. New transformer rectifiers were installed to provide the increased voltage required for the new rigid electrodes. The design is based on the following critical operating parameters:

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Treatment length: 21 feet
Aspect Ratio: 0.57
Specific Collecting Area (SCA): 190 square feet per 1000 acfm (based on 11 inch gas passage width)
Gas Velocity: 4.0 feet per second
Treatment Time: 5.2 seconds

The redesigned ESP is expected to provide emission rates equal to or better than the original design and lower than reported in recent stack tests. Because Unit 1 is oil fired and this unit is capable of meeting the applicable particulate matter and opacity limits in Conditions A.5., A.6., A.7., and A.8. without the use of the ESP, the provisions of 40 CFR 64 do not apply [40 CFR 64.2(b)(ii)]. A Durag Model 281 Continuous Emissions Monitor for opacity with a recorder is used for continual observation of stack opacity. Unit 1 began commercial service in 1958.

2. Response: The fuel sulfur limit and sulfur dioxide limit apply to the specified fuels, only. The other fuels allowed are not limited by either sulfur content or sulfur dioxide emissions.

3. Response: Since the revision did not change any of the emissions reporting requirements, the reporting requirements established by the initial Title V permit will remain.

4. Response: The Operation and Maintenance Plan dated August 2003 meets all of the current rule requirements. If Pinellas County wishes additional items included in the plan, the plan would need to be revised and resubmitted to the Department by the permittee for approval.

5. Response: As mentioned in the comment, the use of Method 19 is allowed by the rule. This test method must remain, as long as it is allowed by the rule.

6. Response: The permit does not require any additional continuous emission monitors beyond those required by the Acid Rain program. The Acid Rain program specifies the operating, maintenance and reporting requirements. This permit, in order to resolve an EPA objection filed on the initial issuance, requires that the Acid Rain continuous opacity monitor data be used for purposes of periodic monitoring.

III. Conclusion.

The permitting authority hereby issues the PROPOSED Permit, with any changes noted above.

STATEMENT OF BASIS

Progress Energy Florida
P. L. Bartow Plant
Facility ID No.: 1030011
Pinellas County

Title V Air Operation Permit Revision
PROPOSED Permit Project No.: 1030011-008-AV
Revision to Title V Air Operation Permit No.: 1030011-002-AV

The initial Title V Air Operation Permit, No. 1030011-002-AV, was effective on January 1, 2000. This Title V Air Operation Permit Revision is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-213, and 62-214. The above named permittee is hereby authorized to operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

The subject of this permit revision is to incorporate the terms and conditions of air construction permit, No. 1030011-007-AC, for an enhancement to the Unit 1 electrostatic precipitator and to incorporate revisions to Unit 1's Operation and Maintenance Plan.
The following changes are made:

a. **Section III. Subsection A. Description**

FROM:
Unit No. 1 is a front-fired, fossil fuel steam generator which produces 120 megawatts, electric power. The maximum heat input rate is 1,220 million Btu per hour and the unit fires No. 2 through No. 6 fuel oil, and on-specification used oil. Particulate matter emissions are controlled by a General Electric Services, Inc. Model 1-BAB1.2X37(9)36.0-434-4.3P electrostatic precipitator consisting of five fields in depth. The permit application indicates this ESP was designed to operate when utilizing a coal/oil mixture which is no longer burned by FPC. Because Unit 1 is oil fired and this unit is capable of meeting the applicable particulate matter and opacity limits in Conditions A.5., A.6., A.7., and A.8. without the use of the ESP, the provisions of 40 CFR 64 do not apply [40 CFR 64.2(b)(ii)]. A Durag Model 281 Continuous Emissions Monitor for opacity with a recorder is used for continual observation of stack opacity. Unit 1 began commercial service in 1958.

TO:
Unit No. 1 is a front-fired, fossil fuel steam generator which produces 120 megawatts, electric power. The maximum heat input rate is 1,220 million Btu per hour and the unit fires No. 2 through No. 6 fuel oil, and on-specification used oil. Particulate matter emissions are controlled by a General Electric Services, Inc. Model 1-BAB1.2X37(9)36.0-434-4.3P electrostatic precipitator consisting of five fields in depth. The permit application indicates this ESP was designed to operate when utilizing a coal/oil mixture which is no longer burned by Progress Energy Florida. The permittee was authorized to redesign the existing electrostatic precipitator (ESP) from three mechanical fields to two mechanical fields. The original design was based on a primary fuel mixture of 50% coal and 50% fuel oil. As coal is no longer an authorized fuel, the new design will be based on No. 6 fuel oil. The ESP inlet design conditions include:

Gas Flow Rate: 488,000 acfm (308,830 dscfm)
Gas Temperature: 250° F to 320° F
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Gas moisture content: 6% to 8% by volume

The redesign leaves the first mechanical field vacant to provide uniform gas flow to the second and third mechanical fields. A new perforated plate will be added to the inlet to the second mechanical field. The gas passage width was increased to allow for more durable rigid discharge electrodes that replaced current wire electrodes. New transformer rectifiers were installed to provide the increased voltage required for the new rigid electrodes. The design is based on the following critical operating parameters:

Total Collecting Plate Area: 92,711 square feet (based on actual 11 inch gas passage width)
Treatment length: 21 feet
Aspect Ratio: 0.57
Specific Collecting Area (SCA): 190 square feet per 1000 acfm (based on 11 inch gas passage width)
Gas Velocity: 4.0 feet per second
Treatment Time: 5.2 seconds

The redesigned ESP is expected to provide emission rates equal to or better than the original design and lower than reported in recent stack tests. Because Unit 1 is oil fired and this unit is capable of meeting the applicable particulate matter and opacity limits in Conditions A.5., A.6., A.7., and A.8. without the use of the ESP, the provisions of 40 CFR 64 do not apply [40 CFR 64.2(b)(ii)]. A Durag Model 281 Continuous Emissions Monitor for opacity with a recorder is used for continual observation of stack opacity. Unit 1 began commercial service in 1958.

b. No **A.40.**

FROM:

A.40. E.U. ID No. -001 Operation and Maintenance Plan. The General Electric Services, Inc. Model 1-BAB1.2X37(9)36.0-434-4.3P electrostatic precipitator shall be operated and maintained in accordance with the Operation and Maintenance (O&M) Plan, dated 10/04/93 and on file with the Department. The O&M Plan documentation logs shall be maintained for a minimum of five years and made available for inspection upon request. At a minimum, the O&M Plan shall include:

1. The operating parameters of the control device
2. A timetable of routine weekly, bi-weekly, or monthly observations of the pollution control device.
3. A list of the type and quantity of the required spare parts which are stored on the premises for the pollution control device.
4. A record log which shows at a minimum when maintenance was performed, what maintenance was performed, and by whom.

[Rule 62-296.700(6), F.A.C.; and Pinellas County Code, Section 58-128]

TO:

A.40. E.U. ID No. -001 Operation and Maintenance Plan. The rebuilt General Electric Services, Inc. Model 1-BAB1.2X37(9)36.0-434-4.3P electrostatic precipitator shall be operated and maintained in accordance with the PROGRESS ENERGY FLORIDA BARTOW PLANT UNIT #1 ELECTROSTATIC PRECIPITATOR OPERATION AND MAINTENANCE PLAN dated August 2003 and on file with the Department. The O&M Plan documentation logs shall be maintained for a minimum of five years and made available for inspection upon request. At a minimum, the O&M Plan shall include:

1. The operating parameters of the control device.
2. A timetable of routine weekly, bi-weekly, or monthly observations of the pollution control device.
3. A list of the type and quantity of the required spare parts which are stored on the premises for the pollution control device.
4. A record log which shows at a minimum when maintenance was performed, what maintenance was performed, and by whom.

[Rule 62-296.700(6), F.A.C.; and Pinellas County Code, Section 58-128]

c. **Placard Page Referenced attachments made a part of this permit:**
ADD:
PROGRESS ENERGY FLORIDA BARTOW PLANT UNIT #1 ELECTROSTATIC PRECIPITATOR OPERATION AND MAINTENANCE PLAN dated August 2003

d. No **A.41.**
ADD:
A.41. PSD Applicability Report: The permittee shall maintain information demonstrating that the project did not result in any significant net emissions increase of particulate matter, which is defined in Rule 62-212.400(2)(e), F.A.C., as follows:

Net Emissions Increase. A modification to a facility results in a net emissions increase when, for a pollutant regulated under the Act, the sum of all of the contemporaneous creditable increases and decreases in the actual emissions of the facility, including the increase in emissions of the modification itself and any increases and decreases in quantifiable fugitive emissions, is greater than zero.

Significant Net Emissions Increase. A significant net emissions increase of a pollutant regulated under the Act is a net emissions increase equal to or greater than the applicable significant emission rate listed in Table 212.400-2, Regulated Air Pollutants – Significant Emission Rates.

The permittee shall submit an annual report to the Department of such information for a period of 5 years representative of normal post-change operations of the unit (within the period not longer than 10 years following the change). For an existing electric utility steam-generating unit, actual emissions of the unit following a physical or operational change shall equal the representative actual annual emissions of the unit following the physical or operational change. The following definition of "representative actual annual emissions" found in 40 CFR 52.21(b)(33) is adopted and incorporated by reference in Rule 62-204.800, F.A.C.

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

(i) Consider all relevant information, including but not limited to, historical operational data, the company's own representations, filings with the State or Federal regulatory authorities, and compliance plans under title IV of the Clean Air Act; and

(ii) Exclude, in calculating any increase in emissions that results from the particular physical change or change in the method of operation at an electric utility steam generating unit, that portion of the unit's emissions following the change that could have been accommodated during the representative baseline period and is attributable to an increase in projected capacity utilization at the unit that is unrelated to the particular change, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole.

Each required annual report shall be submitted to the Department prior to March 1st and shall quantify operations for the previous calendar year(s).
[1030011-007-AC]

CAM does not apply.

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

Based on the initial Title V Air Operation Permit application received June 14, 1997, this facility is a major source of hazardous air pollutants (HAPs).