



Department of Environmental Protection

Jeb Bush
Governor

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Colleen M. Castille
Secretary

August 30, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Rufus Jackson
Authorized Representative
Florida Power Corporation dba
Progress Energy Florida
1601 Weedon Island Drive
St. Petersburg, Florida 33711

Re: DEP File Nos. PSD-FL-381 and 1030011-010-AC
P.L. Bartow Power Plant Repowering Project
Request for Additional Information

Dear Mr. Jackson:

On July 31, 2006 the Department received your application for an air construction permit for the natural gas combined cycle repowering of the steam turbine-electrical generators (STGs) associated with existing fossil-fuel fired Units 1, 2, and 3 at the Progress Energy P.L. Bartow Power Plant in Pinellas County.

The three furnaces/boilers presently firing residual fuel oil and providing steam to the three STGs will be replaced by four natural gas and distillate fuel oil-fired Siemens STG6-PAC-5000F combustion turbine-electrical generators (CTs) and four duct-fired heat recovery steam generators (HRSGs). The project also included a separate CT for use in simple cycle mode.

According to the application, there will be emission reductions of certain pollutants such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), sulfuric acid mist and nitrogen oxides (NO_x). An Air Construction Permit pursuant to the Rules for the Prevention of Significant Air Quality (AC/PSD Permit) is required for increased emissions of carbon monoxide (CO) and volatile organic compounds (VOC).

The application is incomplete. In order to continue processing your application, the Department will need the additional information below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Rufus Jackson
 Authorized Representative
 Florida Power Corporation dba
 Progress Energy Florida
 1601 Weedon Island Drive
 St. Petersburg, Florida 33711

2. Article Number
 (Transfer from service label)

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PS Form 3811, February 2004

Domestic Return Receipt

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Mr. Rufus Jackson
 Authorized Representative
 Florida Power Corporation dba
 Progress Energy Florida
 1601 Weedon Island Drive
 St. Petersburg, Florida 33711

PS Form 3800, May 2000

See Reverse for Instructions

1. Please provide Siemens brochures and information for the CTs. Include heat rate, heat input curves, etc.
2. Please provide the manufacturer's curves showing expected NO_x, CO, VOC and formaldehyde concentrations with respect to CT load as percent of full load.
3. Earlier versions of the Siemens CTs that will be installed at the Bartow Plant have been operating for several years at the Hines Energy Complex in Polk County. The Hines CTs are the previously designated Westinghouse or Siemens-Westinghouse 501F Series. Provide the results of CO and VOC acceptance and compliance tests and any tests conducted at partial loads. Include as well any tests conducted while firing fuel oil.
4. Provide the project estimates for 24-hour CO emission values when operating in: normal gas-fired mode; using the duct burners; power augmentation or peaking if practiced; and fuel oil firing. What kind of 12-month rolling average can be achieved considering all the modes of operation combined? Any CEMS CO information from units at Hines would be useful in this regard although the Siemens CT's might have been improved since construction of the previous versions.
5. Please update the costs of oxidation catalyst. The Department obtained lower capital cost estimates from suppliers than submitted by applicants during permitting of several recent projects. We can discuss the details to properly frame the assumptions for potential suppliers. Following are some points to consider in the update:
 - Typically costs are acknowledged for additional fuel use to account loss of any capacity when using catalyst but not the value of lost electric sales. These aspects of the oxidation catalyst cost-effectiveness estimate should be updated.
 - Check to make sure that credit is taken for returning spent catalyst to the supplier.
 - Oxidation catalyst typically lasts much longer than three years. A more realistic lifetime should be assumed rather than just assuming that the catalyst requires replacement after three years.
 - It would be easy enough to inquire from Seminole Electric how often they have added or changed catalyst on their Siemens-Westinghouse 501F combined cycle units at their Payne Creek Plant.
6. Some recognition needs to be given in the oxidation catalyst evaluation for the benefits of VOC and formaldehyde reduction potential.
7. Refer to the Interim Project Configuration (Section 2.3, Page 8 of the Application PSD report). Up to two simple cycle CTs will start up prior to the shut down of the three furnaces/boilers. To avoid PSD applicability during the simple cycle phase, creditable emission reductions must be federally enforceable as a practical matter at and after the time that actual construction on the project(s) begins. Also the actual reductions must take place before the date that the emissions increase from any of the new units occurs.

8. The scenario presented in Table 2-2 includes separate 6-month periods. The first 6 months represents operation of the existing boilers. The second 6-months represent combined cycle operation only. However, no emissions scenario is presented when the existing units will be operating concurrently with the one or two simple cycle turbines as described elsewhere in the application. If existing units are operating at the same time with new units, please submit proposed operating emissions scenarios and calculations. Refer to Rule 62-210.200(179)(f) "Net Emissions Increase".
9. The project addresses contemporaneous emission increases/decreases related to the three fossil fuel fired steam generators. Pursuant to Rule 62-210.400(2) F.A.C, please assess and if necessary resubmit the emissions netting calculation considering the five year contemporaneous period for this modification and include any other increases or decreases from any other emission unit or project at the facility.
10. If any of the pollutants exceed the PSD significant threshold level due to the new calculations, please submit the appropriate BACT analysis for that pollutant. Please refer to Rule 62-212.400 (2)3. Hybrid Test for Multiple Types of Emissions Units and to the Rule 62-210.200 (34) "Baseline Actual Emissions" and "Baseline Actual Emissions for PAL"; Rule 62-210.200 (179) "Net Emissions Increase".
11. Submit a milestone chart showing: when each existing boiler is destined to be shut down in 2009; when any CTs will commence operation in simple cycle mode; and when each CT will commence operation in combined cycle mode.
12. Will the hourly potential emissions increase beyond their present potential during any time in 2006? For how long and for which pollutants?
13. Submit tables, timelines or charts showing how each of the requirements of the definition of "Net Emissions Increase" at Section 62-210.200(179) will be met.
14. What is the ammonia slip proposed for this project (ppm)?
15. The application only lists the 5CTs, 4HRSGs, one auxiliary boiler and 5 heaters. Would this plant include Cooling Tower, an Emergency Generator and Diesel Fired Pump, or any other ancillary equipment? If so, please provide information about these units.
16. Is there another future phase for this facility's repowering project?
17. Section 6-5 of the application states that the "FDEP considers this station (Tampa) to have surface meteorological data representative of the project site." The FDEP can not determine if the Tampa International Airport surface data is representative without further information regarding the surface land use data at the facility. Please provide information to support the conclusion that the Tampa International surface data is most representative for this project.
18. Although PM, NO_x and SO₂ are not subject to PSD, the applicant provided a Significant Impact Analysis for these pollutants to conclude compliance with the respective Class II Increment. The results of the modeling concluded that the impacts were above the Class II Significant Impact Levels. Therefore, since the impacts are "Significant" and the future stacks will be much lower, the Department requests more detailed modeling to ensure that the increment and the Ambient Air Quality Standards are not exceeded due to this modification. Please provide a full Increment and AAQS analysis.

19. Please provide further information regarding the short term emission rates used in the modeling analysis. For CO, Table 2-1, states that simple cycle operation will emit 154.5 TPY. In Tables 2-3 and 2-5, the CO lb/hr short term emission rate for simple cycle operation at 59 degrees F is 20.3 lb/hr and 151.3 lb/hr for gas and oil, respectively. Twenty pounds per hour for 7760 hours on gas and 151.3 lb/hr for 1000 hours on oil equates to 154.5 TPY, which is a long term emission rate. For modeling purposes, the worst-case scenario should be used. Please use short-term emission rates for all pollutants with short-term averaging times.

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Please note that per Rule 62-4.055(1): "The applicant shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department..... Failure of an applicant to provide the timely requested information by the applicable date shall result in denial of the application."

We will forward any comments from EPA Region IV and the National Park Service as soon as they are received. If you have any questions regarding this matter, please contact Teresa Heron (review engineer) at 850/921-9529 or Debbie Nelson (meteorologist) at 850/921-8986.

Sincerely,



A.A. Linero, Program Administrator
Permitting South Section

AAL/th

Cc: Rufus Jackson, PEF*
Scott Osbourn, P.E., Golder (via e-mail)
Ann Quillian, P.E., PEF (via e-mail)
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