

Florida Department of Environmental Protection

Bob Martinez Center 2600 Blair Stone Road Tallahassee, Florida 32399-2400 Charlie Crist Governor

Jeff Kottkamp Lt. Governor

Michael W. Sole Secretary

August 20, 2010

Electronically Sent - Received Receipt Requested

Mr. Dave K. Meyer, Senior Environmental Specialist Florida Power Corporation dba Progress Energy Florida, Inc. (PEF) 299 First Avenue North, PEF 903 St. Petersburg, FL 33733

Re: Project No. 0010001-010-AC

Progress Energy Florida, Inc., University of Florida Cogeneration Power Plant

Backup Boiler Nos. 4 and 5 (Emissions Units 002 and 003)

Maintenance and Repair Project

Dear Mr. Meyer:

On July 6, 2010, Florida Power Corporation dba Progress Energy Florida, Inc. (PEF) submitted an application to the Department for maintenance and repair to the University of Florida Cogeneration Power Plant's Backup Boilers Nos. 4 and 5. The proposed project would replace boiler tubes, refractory, casing, insulation, steam drum internals and various miscellaneous items in the backup boilers. No impact on emissions is expected. The steam boilers, each having a separate exhaust stack, are used only as back-up sources. PEF states that this work is routine maintenance and repair for these units. The Department authorizes this work as routine maintenance and repair based on the nature, extent, purpose, frequency and cost. The Department will consider this action final unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, of the Florida Statutes (F.S.). Mediation under Section 120.573, F.S., will not be available for this proposed action.

A person whose substantial interests are affected by the proposed decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, MS #35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this notice. Petitions filed by any other person must be filed within 14 days of receipt of this proposed action. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the

Letter of Authorization

petitioner to relief; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the permitting authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the permitting authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Any party to this order has the right to seek judicial review of it under Section 120.68, F.S., by the filing of a Notice of Appeal, under Rule 9.110 of the Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000; and, by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within thirty days from the date this notice is filed with the Clerk of the permitting authority.

Executed in Tallahassee, Florida.

COT

Trina L. Vielhauer, Chief Bureau of Air Regulation

TLV/jfk/scd

CERTIFICATE OF SERVICE

Mr. Dave K. Meyer, PEF (dave.meyer@pgnmail.com)

Mr. Scott H. Osbourn, Golder Associates, Inc. (sosbourn@golder.com)

Mr. Chris Kirts, DEP NED (christopher.kirts@dep.state.fl.us)

Ms. Vickie Gibson, DEP BAR Reading File (victoria.gibson@dep.state.fl.us)

Clerk Stamp

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



TECHNICAL EVALUATION & PRELIMINARY DETERMINATION

APPLICANT

Florida Power Corporation dba Progress Energy Florida, Inc. (PEF) P.O. Box 14042, GV-44 St. Petersburg, FL 33733-4042

University of Florida Cogeneration Plant Facility ID No. 0010001

PROJECT

Project No. 0010001-010-AC
Application for Minor Source Air Construction Permit
Backup Boiler Nos. 4 and 5, Emissions Units 002 and 003

COUNTY

Alachua County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
New Source Review Section
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

August 16, 2010

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Facility Description and Location

University of Florida Cogeneration Plant is an existing power plant, which is categorized under Standard Industrial Classification Code No. 4911. The existing University of Florida Cogeneration Plant is located in Alachua County on Mowery Road at Building 82, University of Florida in Gainesville, Florida. The UTM coordinates of the existing facility are Zone 17, 369.4 kilometer East, and 3279.3 kilometer North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

Progress Energy Florida, Inc. (PEF) operates the University of Florida Cogeneration Power Plant in Gainesville, Florida. This facility consists of one Combustion Turbine, one Duct Burner with a Heat Recovery Steam Generator, two Steam Boilers (Nos. 4 and 5) and miscellaneous unregulated/insignificant emissions units and/or activities. Emissions from the combustion turbine and duct burner are vented through a common stack. The steam boilers, each having a separate exhaust stack, are used only as back-up sources.

The maximum heat input rate for Boiler No. 4 is 69.6 MMBtu/hr. The maximum heat input is based on permitted firing limits of 68,000 cubic feet of natural gas per hour and 444 gallons per hour of Boiler No. 2 fuel oil. The maximum heat input rate for Boiler No. 5 is 168 MMBtu/hr. The maximum heat input is based on permit firing limits of 164,000 cubic feet of natural gas per hour and 1,067 gallons per hour of No. 2 fuel oil. The emission units began commercial service in 1976. The boilers may be operated as necessary for backup to the combustion turbine and duct burner as long as the total nitrogen oxide emissions from this facility do not exceed 194.3 tons per year.

On July 6, 2010, the Department received a letter proposing maintenance and repair to backup steam Boilers Nos. 4 and 5. The proposed project would replace boiler tubes, refractory, casing, insulation, steam drum internals and

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

various miscellaneous items in the backup boilers. The steam boilers, each having a separate exhaust stack, are used only as back-up sources. The applicant states that this work is routine maintenance and repair.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions from the proposed project itself will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 5 tons per year or more of lead;
- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO₂); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM₁₀); volatile organic compounds (VOC); lead (Pb); fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H₂S); total reduced sulfur (TRS), including H₂S; reduced sulfur compounds, including H₂S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO₂ and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 μ g/m³, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

The purpose of the project is to maintain the boilers in working order. These units only operate when the combined cycle combustion turbine is down. The project will not result in increased emissions and does not trigger PSD preconstruction review.

3. DEPARTMENT REVIEW

Criteria Applicability for Project

Rule 62-210.200, F.A.C. defines a "modification" as a physical change or change in the method of operation that does not include routine maintenance, repair, or replacement of component parts of an emissions unit. The Department evaluates "routine" maintenance, repair and replacement based on a 5-factor test to assess the nature of the project, the extent of the work, the purpose of the project, the frequency of this type of work and the cost of the project.

Nature

The proposed repair represents approximately 100% of the total surface heat transfer area for Boiler No. 4 and 76% for Boiler No. 5. The steam boilers, each having a separate exhaust stack, are used only as back-up sources. Replacement of the tubes and header at this time is more cost-effective than performing maintenance on them. The facility can operate with the backup boilers off line for repair. The replacement parts will be manufactured off site and purchased for on-site installation. This type of work is typically done throughout the life of the boilers.

Extent

Existing components of the boilers will be replaced including the sidewall tubes, furnace tubes, convection tubes, refractory, casing, insulation, steam drum internals and various miscellaneous items. The replacement will take approximately six to eight weeks for each boiler, or twelve weeks for both boilers.

Purpose

The boilers will operate after the repairs as before in backup mode. There will be no increase in steam generating capacity, operating rate, or utilization. The same fuels, natural gas and distillate fuel oil, will be used. There are no changes in emissions due to the repairs.

Frequency

Such repairs have been done in the past as replacement of boiler tubes is frequent and part of common maintenance. Repairs to refractory, the casing and insulation are often done along with tube replacements and other work. Although less frequent, steam drum internals may be replaced once or more during the normal life of a boiler.

Cost

Below are the past five years of annual outage maintenance costs for both boilers:

2009 = \$100,624 2008 = \$112,292 2007 = \$188,578 2006 = \$56,430 2005 = \$196,164

There are other major maintenance costs at the plant. An example would be the LM6000 combustion turbine that incurs annual inspection and maintenance costs of approximately \$60,000. The cost for a hot-section refurbishment at three years is \$2 million and at six years is \$5 million. McCain Engineering Company, Inc. performed major repairs to the Nebraska water-tube package boiler in 1988 at a cost of \$218,860. The total cost for the current maintenance project is \$1.5 million dollars, while the estimated cost to replace the boilers is \$9 million dollars.

Conclusion

The backup boilers fire only natural gas and distillate oil. The units are not subject to any NSPS. Each unit is

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

subject to a BACT opacity standard of 20% except for one six-minute period of no more than 27%. An annual compliance test is required for opacity. NO_X emissions from the backup boilers are included in a NO_X emissions cap for the combined cycle combustion turbine and backup boilers. Actual NO_X emissions from the backup boilers are determined based on an emission factor developed from the original stack test and actual unit operation (hours or fuel consumption). Data from the Annual Operating Reports shows that these units typically operate less than 60 days per year as backup units. In recent years, the boilers have relied on natural gas as the primary fuel.

The project will not increase the capacity, emissions, or utilization of the boilers, which will remain backup units. The boilers will continue to be dispatched only when the combined cycle turbine is down. The units can currently operate at permitted capacity and are regulated only for opacity. The Department concludes that the proposed work for these units is routine maintenance and repair. This determination is based on the nature, extent, purpose, frequency and cost for this specific project.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Christy DeVore is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Memorandum

Florida Department of Environmental Protection

To:

Trina Vielhauer, Bureau of Air Regulation

Through:

Jeff Koerner, New Source Review Section

From:

Christy DeVore, New Source Review Section

Date:

August 17, 2010

Subject:

Letter of Authorization

Project No. 0010001-010-AC

Progress Energy Florida, Inc., University of Florida Cogeneration Power Plant Backup Boiler Nos. 4 and 5 (Emissions Units 002 & 003) Repair & Maintenance

Attached for your review is a letter of authorization for the existing University of Florida Cogeneration Power Plant, which is located in Alachua County on Mowery Road at Building 82, University of Florida in Gainesville, Florida. Briefly, the letter of authorization authorizes maintenance and repair to the University of Florida Cogeneration Power Plant's Backup Boilers Nos. 4 and 5. The proposed project would replace boiler tubes, refractory, casing, insulation, steam drum internals and various miscellaneous items in the backup boilers. No impact on emissions is expected. The steam boilers, each having a separate exhaust stack, are used only as backup sources of steam when the combustion turbine is off line. The attached Technical Evaluation and Preliminary Determination provides a detailed description of the project and the rationale for permit issuance. The project is not considered a new source review reform project. Day 90 of the permitting time clock is October 4, 2010. I recommend your approval of the attached draft permit package.

Attachments

TLV/jfk/scd

Livingston, Sylvia

From:

Livingston, Sylvia

Sent:

Friday, August 20, 2010 1:12 PM

To:

'dave.meyer@pgnmail.com'

Cc:

'sosbourn@golder.com'; Kirts, Christopher; Gibson, Victoria; Koerner, Jeff; DeVore, Christy;

Walker, Elizabeth (AIR)

Subject:

Progress Energy - University of Florida Cogeneration Power Plant; 0010001-010-AC

Authorization

Attachments:

0010001-010-AC Signatures.pdf

Dear Sir/ Madam:

Attached is the official **Authorization** for the request referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).

Click on the following link to access the documents:

http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0010001.010.AC.F_pdf.zip

Owner/Company Name: FLORIDA POWER CORPORATION D/B/A PROGRESS

Facility Name: U OF FL COGEN Project Number: 0010001-010-AC

Permit Status: FINAL

Permit Activity: CONSTRUCTION

Facility County: ALACHUA Processor: Christy DeVore

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "Air Permit Documents Search" website at http://www.dep.state.fl.us/air/emission/apds/default.asp.

Project documents that are addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Bureau of Air Regulation at (850)488-0114.

Sylvia Livingston
Division of Air Resource Management (DARM)
Department of Environmental Protection
850/921-9561
sylvia.livingston@dep.state.fl.us

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

Livingston, Sylvia

From:

Meyer, Dave [Dave.Meyer@pgnmail.com]

Sent:

Monday, August 23, 2010 9:11 AM

To:

Livingston, Sylvia

Subject:

RE: Progress Energy - University of Florida Cogeneration Power Plant: 0010001-010-AC

Authorization

Hi Svlvia.

I have received your e-mail below... Thank you very much for all your help, Dave Meyer 727-820-5295

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]

Sent: Friday, August 20, 2010 1:12 PM

To: Meyer, Dave

Cc: sosbourn@golder.com; Kirts, Christopher; Gibson, Victoria; Koerner, Jeff; DeVore, Christy; Walker, Elizabeth (AIR)

Subject: Progress Energy - University of Florida Cogeneration Power Plant; 0010001-010-AC Authorization

Dear Sir/ Madam:

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Owner/Company Name: FLORIDA POWER CORPORATION D/B/A PROGRESS

Facility Name: U OF FL COGEN Project Number: 0010001-010-AC

Permit Status: FINAL

Permit Activity: CONSTRUCTION

Facility County: ALACHUA Processor: Christy DeVore

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Project documents that are addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Bureau of Air Regulation at (850)488-0114.

Livingston, Sylvia

From:

Osbourn, Scott [Scott_Osbourn@golder.com]

To:

Livingston, Sylvia

Sent:

Subject:

Friday, August 20, 2010 1:32 PM Read: Progress Energy - University of Florida Cogeneration Power Plant; 0010001-010-AC

Authorization

Your message was read on Friday, August 20, 2010 1:31:41 PM (GMT-05:00) Eastern Time (US & Canada).