



Florida Department of Environmental Protection

Memorandum

To: Brian Accardo, Division of Air Resource Management 
From: Jeff Koerner, Office of Air Permitting and Compliance 
Date: October 5, 2011
Subject: Draft Air Construction Permit, Revised Package
Project No. 0010001-011-AC/PSD-FL-181B
Progress Energy Florida, Inc.
University of Florida Cogeneration Plant
Facility Permit Revisions

Attached for your review is a draft minor air construction permit package for the University of Florida Cogeneration Plant, which is located in Alachua County at Mowery Road, Building 82 in Gainesville, Florida. Briefly, the draft permit revises, corrects, and simplifies the original air construction permit for this facility. The air construction permit package issued on July 8, 2011 is rescinded and replaced with this revised air construction permit package. The attached Technical Evaluation and Preliminary Determination provides a detailed description of the project and the rationale for permit issuance. I recommend your approval of the attached draft permit package.

Attachments



Florida Department of Environmental Protection

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

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

October 5, 2011

Mr. Wilson B. Hicks, Jr.
Plant Manager, University of Florida Cogeneration Plant
Mowery Road, Building 82
Gainesville, FL 32611-2295

Re: Project No. 0010001-011-AC/PSD-FL-181B
Progress Energy Florida, Inc., University of Florida Cogeneration Plant
Revised Draft Air Construction Permit Package
Facility Permit Revisions

Dear Mr. Hicks:

On September 13, 2010, you submitted an application requesting a revision of the original PSD permit (as amended). In addition, several clarifications and simplifications have been made. The air construction permit package issued on July 8, 2011 is rescinded and replaced with this revised air construction permit package.

This facility is located in Alachua County at Mowery Road, Building 82 in Gainesville, Florida. Enclosed are the following documents: the Technical Evaluation and Preliminary Determination; the Draft Permit and Appendices; the Written Notice of Intent to Issue Air Permit; and the Public Notice of Intent to Issue Air Permit. The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project. If you have any questions, please contact me at 850/717-9083.

Sincerely,

Jeffery F. Koerner, Program Administrator
Office of Air Permitting and Compliance
Division of Air Resource Management

Enclosures

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

*In the Matter of an
Application for Air Permit by:*

Progress Energy Florida, Inc.
Plant Manager, University of Florida Cogeneration Plant
Mowery Road, Building 82
Gainesville, FL 32611-2295

Project No. 0010001-011-AC
PSD-FL-181B
Alachua County, Florida
University of Florida Cogeneration Plant
Facility Permit Revisions

Authorized Representative:
Wilson B. Hicks, Jr., Plant Manager

Facility Location: Progress Energy Florida, Inc. operates the existing University of Florida Cogeneration Plant, which is located in Alachua County at Mowery Road, Building 82 in Gainesville, Florida.

Project: The applicant requests several revisions to the original air construction permit. Although this project does result in any emissions increases and does not trigger preconstruction review under Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality; however, it is a revision of the original PSD permit (as amended). Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination. The air construction permit package issued on July 8, 2011 is rescinded and replaced with this revised air construction permit package.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Air Permitting and Compliance Section is the Permitting Authority responsible for making a permit determination for this project. The Air Permitting and Compliance Section's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Air Permitting and Compliance Section's phone number is 850/717-9000.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

Notice of Intent to Issue Permit: This revised air draft construction permit package replaces the previously issued air construction permit package. The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting 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 with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241). Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall 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 (in a proceeding initiated by another party) 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.

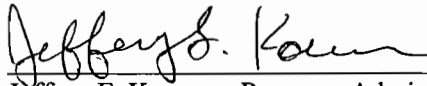
A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; 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 when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the 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 Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. 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.

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.



Jeffery F. Koerner, Program Administrator
Office of Air Permitting and Compliance
Division of Air Resource Management

CERTIFICATE OF SERVICE

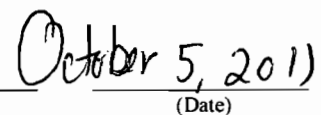
The undersigned duly designated deputy agency clerk hereby certifies that this Written Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, the Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination and the Draft Permit) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on 10-5-11 to the persons listed below.

Mr. Wilson Hicks, Progress Energy Florida, Inc. (wilson.hicks@pgnmail.com)
Mr. Chris Bradley, Progress Energy Florida, Inc. (chris.bradley@pgnmail.com)
Mr. Scott Osbourn, Golder Associates (scott_osbourn@golder.com)
Mr. Christopher Kirts, Northeast District Office (christopher.kirts@dep.state.fl.us)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Ms. Lynn Scarce, DEP APC Reading File (lynn.scarce@dep.state.fl.us)

Clerk Stamp

FILED AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.


(Clerk)


(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management
Revised Air Construction Permit
Project No. 0010001-011-AC/PSD-FL-181B
Progress Energy Florida, Inc., University of Florida Cogeneration Plant
Alachua County, Florida

Applicant: The applicant for this project is Progress Energy Florida, Inc. The applicant's authorized representative and mailing address is: Wilson Hicks, Plant Manager, Progress Energy Florida, Inc., University of Florida Cogeneration Plant, Mowery Road, Building 82, Gainesville, FL and 32611-2295.

Facility Location: Progress Energy Florida, Inc. operates the existing University of Florida Cogeneration Plant, which is located in Alachua County at Mowery Road, Building 82 in Gainesville, Florida.

Project: The applicant requests a return to the original carbon monoxide (CO) limit established as Best Available Control Technology (BACT) for the existing combustion turbine and clarification and simplification of the permitting requirements in accordance with the applicable regulations. Since a BACT determination was required for CO emissions, the CO emissions caps were removed accordingly. Testing CO emissions will be conducted with the duct burner on or off as dictated by steam demands due to safety considerations at the plant. The annual nitrogen oxides (NOx) limit on the combustion turbine was replaced with a requirement to report annual NOx emissions for 2011, which will provide ten years of data to demonstrate that the previous combustion turbine upgrade did not result in a significant emissions increase. Since oil firing equipment was never installed, fuel oil is removed as an authorized fuel for the combustion turbine. The facility-wide annual NOx emissions cap was reduced slightly to reflect some previous errors and account for the removal of oil firing. For purposes of demonstrating compliance with the annual NOx emissions cap, NOx emissions from the backup steam boilers may be reported based on fuel consumption and either data from the initial stack test or a more recent stack test (at the option of the plant). This project does not result in any emissions increases and does not trigger preconstruction review under Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality; however, it is a revision of the original PSD permit (as amended).

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210 and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Air Permitting and Compliance Section is the Permitting Authority responsible for making a permit determination for this project. The Air Permitting and Compliance Section's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Air Permitting and Compliance Section's phone number is 850/717-9000.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the physical address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application and information submitted by the applicant (exclusive of confidential records under Section 403.111, F.S.). Interested persons may contact the Permitting Authority's project engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: <http://www.dep.state.fl.us/air/emission/apds/default.asp>.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air construction permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or

(Public Notice to be Published in the Newspaper)

unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

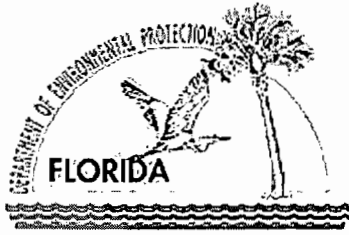
Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of this Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting 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 with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall 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 (in a proceeding initiated by another party) 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 Permitting Authority'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 rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the 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 Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. 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.

Mediation: Mediation is not available for this proceeding.



**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

APPLICANT

Progress Energy Florida, Inc.
Mowery Road, Building 82
Gainesville, FL 32611-2295

University of Florida Cogeneration Plant
Facility ID No. 0010001

PROJECT

Project No. 0010001-011-AC
Application for Minor Source Air Construction Permit
Facility Permit Revisions

COUNTY

Alachua County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Air Permitting and Compliance Section
2600 Blair Stone Road, MS #5505
Tallahassee, FL 32399-2400

October 5, 2011

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.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

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 kilometers East, and 3279.3 kilometers 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 has 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 62-213, 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

In 1994, the applicant was issued air construction Permit No. PSD-FL-181, which authorized the installation of a 43 MW combined cycle system consisting of a General Electric LM6000 PA combustion turbine and heat recovery steam generator (HRSG) with duct burner system. Three existing boilers were permanently shutdown, which allowed the combined cycle unit to net out of PSD preconstruction review for nitrogen oxides (NO_x). Two existing boilers remained as backup steam generators in case the combined cycle unit went down. A determination of the Best Available Control Technology was required only for carbon monoxide (CO). The permit also established annual CO and NO_x emission caps on the combustion turbine and duct burner as well as a NO_x emission cap for the remaining two backup boilers. Other than a visible emissions standard, no unit-specific emissions standards were established for the boilers.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

In 2000, the applicant was issued air construction Permit No. 0010001-003-AC to upgrade the existing LM6000 PA combustion turbine with a newer GE model 48 MW LM6000 PC combustion turbine with SPRINT (spray inter-cooling). For this project, the CO BACT standard was reduced, annual CO and NO_x emission caps were placed on the new combustion turbine, and a combined limit on natural gas consumption was specified for the combustion turbine plus duct burner system. During this project the permittee had the option to install equipment for the firing of fuel oil in the combustion turbine; however, the oil firing equipment was never installed.

The permittee believed the combined limit on natural gas consumption was too restrictive. Prior to incorporating the conditions of air construction Permit No. 0010001-003-AC into the Title V air operation permit, the applicant requested “operational flexibility” by removing the combined limit on natural gas consumption in lieu of a reduced short-term CO limit for the combustion turbine as well as removing the restriction on hours of operation (i.e., 8760 hours/year). This request was recognized under air construction Permit No. 0010001-004-AC and Permit No. 0010001-006-AC, which modified Permit No. 0010001-004-AC. Permit Nos. 0010001-006-AC and 0010001-003-AC were incorporated into Title V Permit No. 0010001-005-AV.

For this current project under review, the permittee requested resetting the CO limit for the combustion turbine back to the last BACT limit specified under air construction Permit No. 0010001-003-AC. The applicant also requested that the CO testing requirements for the duct burner be removed from the permit due to safety concerns while testing at high capacity. In addition, the applicant has requested revisions to other permit language which will be addressed in this document.

Processing Schedule

September 13, 2010	Received the application for a minor source air pollution construction permit.
October 13, 2010	Requested additional information.
April 20, 2011	Received additional information; application complete.
July 8, 2011	Draft permit package issued; however, the applicant requested substantial changes and did not publish the Public Notice.

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:

- 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 (includes fossil fuel boilers, or combinations thereof, totaling more than 250 million British thermal units per hour (MMBtu/hour) of heat input). Note that the original boilers at the facility triggered this amount.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions increases are compared to the “significant emission rates” defined in Rule 62-210.200, F.A.C. for the following pollutants: CO; 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);

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

hydrogen sulfide (H₂S); total reduced sulfur (TRS), including H₂S; reduced sulfur compounds; 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 µg/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.

PSD Applicability for Project

This site has only been subject to PSD review for CO emissions. As described below in Permit History, subsequent projects have not triggered PSD review. The applicant's request to return the CO emission limit to the previous BACT standard corrects a previous error and is not subject to PSD preconstruction review. Also, the NO_x emission caps will be clarified to provide operational flexibility while ensuring that the previous projects did not trigger PSD review.

3. PERMIT HISTORY

The permittee currently operates a General Electric LM6000-PC-ESPRINT combustion turbine system including a HRSG with duct burner as well as two backup steam boilers. The permittee proposes to: return the CO standard from 31.6 ppmvd corrected to 15% oxygen back to the previous BACT standard of 36 ppmvd corrected to 15% oxygen, remove all unnecessary emissions caps and operational restrictions, remove testing requirements for the duct burner due to safety and operational issues, and make other related minor clarification and corrections. The following briefly summarizes the important requirements of the previous air construction permits.

Original Permit No. PSD-FL-181 (Project No. AC01-204652)

The original project was only subject to PSD preconstruction review for CO emissions. The following table from the Department's original BACT determination clearly shows the emissions increases related to the combustion turbine.

	<u>Gas Turbine</u>		<u>Duct Burner</u>	<u>Total</u>	<u>Offsets</u>	<u>Increase</u>	<u>PSD</u>
	<u>NG</u>	<u>Oil</u>	<u>NG</u>				
NO _x	142.7	7.3	24.6	174.6	134.9	39.7	40.0
SO ₂	4.3	21.6	0.7	26.6	36.1	-9.5	40.0
PM/PM ₁₀	10.2	1.1	2.5	13.8	3.4	10.4	25/15
CO	158.0	7.7	36.9	202.6	20.4	182.2	100.0
VOC	6.5	0.4	10.6	17.5	1.1	16.4	40.0
H ₂ SO ₄	0.3	2.0	0.1	2.4	0.8	1.6	7.0

Note that the above table only reflects annual emissions from the combustion turbine and does not include the scenario of operating Boilers 4 and 5, which were authorized in the final permit to operate as backup steam generators and included in the NO_x cap. The permit established the following emissions standards for firing natural gas.

Combustion Turbine

- CO ≤ 42 ppmvd (uncorrected) and 38.8 lb/hour as determined by EPA Method 10 stack test. This was a BACT limit.
- NO_x ≤ 35.0 lb/hour based on an emission factor of 25 ppmvd @ 15% oxygen established by the manufacturer

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

as determined by CEMS. This limit allowed the project to avoid PSD review.

- Visible Emissions \leq 10% opacity, except for no more than one 6-minute period per hour of not more than 27% opacity as determined by EPA Method 9 observations. *{Note: This was probably in error and the exceptional period of 27% was likely intended for the duct burner and/or backup steam boilers.}*

HRSG Duct Burner

- CO \leq 0.15 lb/MMBtu and 28.1 lb/hour as determined by EPA Method 10 stack test. This was a BACT limit.
- NO_x \leq 0.10 lb/MMBtu and 18.7 lb/hour as determined by CEMS. This NSPS Subpart Db limit allowed the project to avoid PSD review.
- Visible Emissions \leq 10% opacity, as determined by EPA Method 9 observations.

Backup Steam Boilers

- SO₂: The maximum sulfur content of fuel oil shall not exceed 0.5% sulfur by weight. This represented “small boiler BACT” for SO₂ and PM emissions in accordance with Rule 62-296.406, F.A.C.
- Visible Emissions \leq 10% opacity, except for no more than one 6-minute period per hour of not more than 27% opacity as determined by EPA Method 9 observations.

Facility-Wide Emissions Cap

Facility-wide NO_x emissions were limited to no more than 194.3 tons/year, which includes the existing backup steam boilers. There were several other operational restrictions aimed at keeping the project minor with respect to PSD; however, this goal was achieved with the specific limit on the combustion turbine and the facility-wide cap as determined by CEMS.

Permit No. AC01-270823

Based on the limited available data, this action appears to have been an extension of the original air construction permit (AC01-204652/PSD-FL-181).

Amended Permit No. 0010001-002-AC/PSD-FL-181A

This project increased the maximum heat input rate (fuel consumption) by approximately 14% and adjusted the NO_x mass emissions rate accordingly (from 35.0 to 39.6 lb/hour).

Permit No. 0010001-003-AC

This project upgraded the existing 43 MW combustion turbine (GE LM6000-PA) with to a 48 MW Model No. GE LM6000-PC-ESPRINT with spray inter-cooling. The combustion turbine remained subject to PSD review only for CO emissions and the CO BACT limit was decreased.

Combustion Turbine

- CO \leq 36 ppmvd @ 15% oxygen and 35.8 lb/hour as determined by EPA Method 10 stack test. This was a reduction of the previous BACT limit (42 ppmvd) based on the vendor data for the new model. Annual CO emissions from the combustion turbine were reduced from 158.0 to 127.5 tons per year.
- NO_x \leq 25 ppmvd @ 15% oxygen and 39.6 lb/hour. The permit specifies a 30-day rolling CEMS average for the concentration-based NO_x standard (25 ppmvd @ 15% oxygen). This suggests that the mass emission standard was demonstrated by stack test.
- To avoid PSD review for the upgrade project, an additional NO_x cap of 141.0 tons/year was added just for the combustion turbine.
- A combined natural gas consumption limit was added for the combustion turbine and duct burner.
- Visible Emissions \leq 10% opacity. This removed the exceptional period of 27% opacity.

HRSG Duct Burner

There were no changes for the HRSG duct burner.

Backup Steam Boilers

There were no changes for the backup steam boilers.

Facility-Wide NOx Emissions Cap

The facility-wide NOx emissions cap remained at 194.3 tons/year, which includes the backup steam boilers. Several other operational restrictions remained, which aimed at keeping the project minor with respect to PSD; however, this goal was achieved with the facility-wide cap and a CEMS on the combustion turbine.

Other Limitations

This permit established a fuel sulfur limit of 1 grain/100 scf for natural gas. Compliance with this standard also demonstrates compliance with the NSPS Subpart GG (40 CFR 60.333) fuel sulfur requirement of 0.8% by weight.

Permit No. 0010001-004-AC

This project removed the specified maximum heat input rate to the combustion turbine and recognized that it was a function of the compressor inlet temperature and power generation based on manufacturer performance curves. This action also removed the combined limit on natural gas consumption (combustion turbine plus duct burner) and clarified that the NOx cap of 141 tons/year and limit on duct burner firing kept the project minor for PSD review.

Permit No. 0010001-006-AC

This project was a concurrent revision along with Permit No. 0010001-005-AV. It reduced the CO BACT limit from 36 to 31.6 ppmvd @ 15% oxygen in order to correct a supposed error in Permit No. 0010001-004-AC. This was unnecessary since the combustion turbine was already subjected to PSD review for CO emissions and had an adjusted BACT determination from the upgrade project.

Permit No. 0010001-010-AC

Letter of authorization for routine repair, replacement and maintenance of backups boilers.

4. DEPARTMENT'S REVIEW

CO BACT Determination

The original project (Permit No. PSD-FL-181) was subject to PSD review only for CO emissions. The original CO BACT standard was 42 ppmvd corrected to 15% oxygen. Permit No. 0010001-003-AC authorized replacement of the combustion turbine with a newer, more efficient model. The CO BACT standard was revised from 42 to 36 ppmvd corrected to 15% oxygen for the upgrade based on the manufacturer's specifications. The project should have been a revision of the original PSD permit, but appears to have been considered a separate minor air construction permitting action. When Permit No. 0010001-004-AC removed the operational limitation on combined natural gas use for the combustion turbine and HRSG duct burner, the CO emissions standard was reduced from 36 to 31.6 ppmvd corrected to 15% oxygen to get the annual potential emissions to work out. Since the annual potential CO emissions were recognized as 127.5 tons per year, it does not seem possible that the upgrade project could result in a 100 ton/year increase in CO emissions. The revised CO standard was not necessary since the upgrade project was already subject to a BACT determination. Therefore, the permit will be revised to reflect the most recent CO BACT limit of 36.0 ppmvd corrected to 15% oxygen. This also means that no annual CO emission cap is needed.

The BACT determination from the duct burner system has always remained as 0.15 lb/MMBtu (28.1 lb/hour) as determined by EPA Method 10.

NOx Emissions Standard, Combustion Turbine

The combustion turbine has never been subject to PSD preconstruction review for NOx emissions. The original PSD permit (PSD-FL-181A) specified a NOx emissions standard of 35.0 lb/hour based on a vendor specification of 25 ppmvd @ 15% oxygen, which was revised to 39.6 lb/hour with the upgrade project. Duct burner operation would add 18.7 lb/hour bring the maximum NOx emission standard to 58.3 lb/hour. A later amendment clarified that the averaging period for the NOx emissions standard was a 30-day rolling average. In addition to the annual NOx emission cap previously mentioned, the revised permit specifies these NOx emission limits and the NSPS Subpart GG NOx standard of 123 ppmvd @ 15% oxygen based on the heat rate of the unit (8.8 kilojoules per watt-hour).

NOx Emissions Caps

The permitting history for this facility is confusing for several reasons:

- The permit included multiple emissions limitations and operational performance restrictions. There were annual NOx emission caps for the combustion turbine (gas and oil) and duct burner as well as a facility-wide NOx emission cap.
- The permit authorized oil firing in the combustion turbine, but the equipment needed to fire distillate oil was never added. This option will be removed from the revised air construction permit. Since oil firing is being removed, the maximum sulfur content of natural gas will be increased from 1 to 2 grains per 100 scf of natural gas as an annual average to provide operational flexibility while ensuring that the previous projects remain minor with respect to PSD for SO₂ emissions (approximately 12.65 tons/year combined from the combustion turbine plus duct burner).
- Permit No. 0010001-003-AC authorized replacement of the combustion turbine with a newer, more efficient model. The project should have been a revision of the original PSD permit, but appears to have been considered a separate minor air construction permitting action. This led to additional limitations including an individual NOx cap of 141 tons/year for the combustion turbine and a combined natural gas restriction (combustion turbine plus duct burner). Note that the combustion turbine, HRSG duct burner system, and backup steam boilers have interrelated and dependent operations. The following table shows the NOx emissions based on data provided in the Annual Operating Reports and natural gas usage.

Year	NOx Emissions, Tons/Year			Gas Usage, MMCF/Year	
	Combustion Turbine	Duct Burner	Total	Combustion Turbine	Duct Burner
<i>Original Combustion Turbine</i>					
1994	106.14	NA	106.14	1618.65	NA
1995	124.76	NA	124.76	2455.49	NA
1996	126.85	NA	126.85	2824.46	NA
1997	106.84	NA	106.84	2902.33	NA
1998	42.89	NA	42.89	1199.82	NA
1999	96.74	NA	96.74	2717.92	NA
2000	103.47	18.86	122.33	3010.19	113.67
2001	106.32	0.34	106.66	3132.78	98.59
2002	88.95	0.55	89.50	3404.44	159.16
<i>Upgraded SPRINT Combustion Turbine</i>					
2003	103.09	0.62	103.71	3124.5	178.87
2004	115.99	0.30	116.29	3137.76	87.14
2005	139.10	0.16	139.26	3435.99	45.14

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Year	NOx Emissions, Tons/Year			Gas Usage, MMCF/Year	
	Combustion Turbine	Duct Burner	Total	Combustion Turbine	Duct Burner
2006	101.90	0.16	102.06	3179.15	45.38
2007	110.50	0	110.50	3163.00	45.38
2008	105.80	0	105.80	3119.00	44.25
2009	101.90	0	101.90	2995.00	39.9
2010	115.00	3.29	118.29	3132.17	92.41

The highest two-year average NOx emissions for the combustion turbine are the 2000/2001 period with an average of 104.90 tons/year, resulting in a PSD applicability trigger threshold of 144.90 tons/year ($104.9 + 40 = 144.9$, which is slightly higher than the permit cap of 141.0 tons per year). Based on this information, if post-project actual annual emissions did not equal or exceed 144.90, the upgrade project did not trigger PSD preconstruction review. For the nine years post-upgrade, NOx emissions were below this level as were the combined emissions from the combustion turbine plus duct burner system. The highest year was 2005 (139.10 tons/year), which also shows the highest gas usage. It is possible that even some of the NOx emissions could be deducted due to demand growth.

Pursuant to Rule 62-212.300(1)(e), F.A.C., the Department has adopted the New Source Review Reform regulations, which now allows a comparison of actual emissions to baseline emissions for determining whether a project results in a significant emissions increase subject to PSD preconstruction review. For projects that increase the capacity of the unit (e.g., heat input rate for the upgrade project), this rule requires reporting for 10 years following the project. Given that nine years of available data show that the upgrade project did not trigger PSD preconstruction review, the Department will revise the permit to remove the NOx emissions cap in place of a requirement to report annual NOx emissions for 2011 (10th year) and compare to the baseline emission rate. However, NOx emissions are reported by CEMS and there is no clear method to apportion NOx contributions directly from the combustion turbine as opposed to those from the duct burner system. Therefore, the baseline NOx emissions will be the sum of emissions from the combustion turbine and duct burner system in 2000/2001, which is a two-year average of 114.50 tons/year, resulting in a PSD applicability trigger threshold of 154.50 tons/year ($114.50 + 40 = 154.50$ TPY). Note that recent duct burner usage has been minimal. If the comparison shows no significant increase, then the reporting requirement ends and only the facility-wide NOx cap remains in place.

With regard to the facility-wide NOx cap, Permit No. 0010001-003-AC reduced the combustion turbine NOx cap from 142.7 to 141.0 tons/year; however, the facility-wide NOx emissions cap was not correspondingly reduced by 1.7 tons per year. In addition, oil firing will be removed from the revised air construction permit and accounts for 7.3 tons/year towards the facility-wide NOx emissions cap. Making both of these adjustments reduces the facility-wide NOx emissions cap to 185.3 tons/year ($194.3 - 1.7 - 7.3 = 185.3$ TPY). This facility-wide NOx cap remains in place to ensure that the original combustion turbine project did not trigger PSD review for NOx emissions.

Duct Burner

The permittee currently operates a HRSG duct burner rated at 188 MMBtu/hour (EU 005) in association with the combined cycle combustion turbine. The unit was installed along with the original combustion turbine EU 001 under PSD-FL-181 and currently operates in conjunction with the existing combustion turbine EU 007. Established under PSD-FL-181, the HRSG duct burner has a CO BACT emission limit of 0.15 lb/MMBtu and a natural gas consumption limit of 519.5 million cubic feet of natural gas per year.

The applicant expressed serious safety concerns related to stack testing the duct burner at capacity. The last significant test performed on the duct burner was in September 2001. During the test, the duct burner reached a capacity of 119.7 MMBtu/hour. The applicant has indicated the duct burner has not operated at this heat input

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

level since the 2001 test. Below is a description of the testing and venting conditions for the test as provided by the applicant.

As an integral part of the refurbishment project on Boiler Nos. 4 and 5, a vent was added for boiler performance testing to ensure performance at capacity after refurbishment. As you recall, Boiler Nos. 4 and 5 were refurbished for backup after the cogen facility was built. A temporary steam vent system was installed on the cogen during the start-up period for the purposes of conducting steam blows; however, after commercial operation of the cogen unit, it was dismantled. As for the cogen's heat recovery steam generator (HRSG), there has never been a steam vent system for the specific purpose of testing. In addition, the current steam vent is inadequate to accommodate the steam generated while operating the duct burner without sufficient steam demand. The Heat Plant (i.e., Boiler Nos. 4 and 5) vent was intended to be temporary as part of that project. When it was determined that testing was required while firing the duct burner, the Heat Plant vent system was used; however, this steam vent system was never intended or designed to handle the steam generated when there is insufficient steam demand and the duct burner is fully fired. As a result, the duct burner was tested at the maximum duct burner heat input rate that the vent system could safely accommodate. Recently, a safety evaluation was performed on the steam vent system and, in addition to not meeting code, the system was deemed unsafe; as a result it has been dismantled.

Additionally, the applicant provided the following information indicating the operational range for the duct burner is well below its actual rating.

Firing at the full capacity of the duct burner is not possible with the current arrangement. Duct fired testing can be consistently performed at 30 MMBtu/hour in the summer or 70 MMBtu/hour in the winter. Lower firing level performance will be representative of higher firing levels with the operating arrangement of the duct burners.

The units have also operated within the heat input limits and natural gas consumption limits. The table below illustrates the heat input levels the duct burner has operated for the calendar years 2007 through 2009.

Ranges of Hourly Heat Input	Percent Operating Hours 2007 through 2009
0 MMBtu/hr	73.24%
0.1-20.0 MMBtu/hr	0.02%
20.1-30.0 MMBtu/hr	20.08%
30.1-40.0 MMBtu/hr	2.58%
40.1-60.0 MMBtu/hr	3.02%
60.1-80.0 MMBtu/hr	0.92%
80.1-100.0 MMBtu/hr	0.14%
Total Percentage of Hours	100%

As shown, the duct burner only operates about 25% of the time and rarely operates at a heat input rate of more than 30 MMBtu/hour. Combined with the low use and safety concerns, it is reasonable to report emissions based on the natural gas consumption rate (annual rate limited to 519.5 million cubic feet per year), the CO BACT emissions limit of 0.15 MMBtu/hour, and the lower heating value of natural gas (950 Btu/cubic foot). No periodic tests for CO emissions while duct firing will be required. The CEMS accounts for NO_x emissions from the HRSG duct burner.

Boilers 4 and 5

The permittee currently operates two boilers rated at 69.6 and 168 MMBtu/hour as backup steam generating units to the combustion turbine. The boilers have the capacity to fire natural gas and No. 2 fuel oil. Currently, the

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

boilers operate at very low heat input levels to be ready for steam production in case of the combustion turbine going down. This standby mode is necessary for a quick response to any operational issues with the combustion turbine. Both units report annual emissions based upon heat input, hours of operation, and an emission factor for NO_x. This emission factor was established in September 2000. Since these units are only used as backups and are being operated in standby mode at low heat input levels, it is unreasonable to require annual tests.

Additional Revisions

The applicant also requested minor revisions to permit conditions through the air construction permit process.

- The applicant requested the fuel consumption rates monthly report be submitted to the Compliance Authority on the fifteenth day of each month instead of the current requirement to report on the fifth day of each month. This change was made.
- Language in the permit will clarify that the permittee will have the option to use an approved laboratory to determine sulfur content of its natural gas.
- The period in which excess emissions are allowed is clarified to be consistent with the NO_x continuous emissions monitoring system (CEMS) reporting for the combustion turbine.
- Particulate matter did not trigger PSD review; however, the backup boilers were subject to Rule 62-296.406, F.A.C. for small boiler BACT, which resulted in the fuel sulfur specifications. This rule also establishes a visible emissions standard of 20% opacity except for no more than one 6-minute period per hour not to exceed 27% opacity. The opacity standard will be corrected accordingly.

5. 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. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Air Permitting and Compliance Section, 2600 Blair Stone Road, MS #5505, Tallahassee, FL, 32399-2400. The Air Permitting and Compliance Section's phone number is 850/717-9000.

REVISED DRAFT PERMIT

PERMITTEE

Progress Energy Florida, Inc.
University of Florida Cogeneration Plant
Mowery Road, Building 82
Gainesville, FL 32611-2295

Authorized Representative:

Wilson B. Hicks, Jr., Plant Manager

Air Permit No. 0010001-011-AC
PSD-FL-181B
University of Florida Cogeneration Plant
Facility ID No. 0010001
Revised Cogeneration Plant Permit

PROJECT

This is the final air construction permit, which modifies the original air construction Permit No. PSD-FL-181, as amended. ***There is no expiration date since no new construction is authorized by the permit.*** The existing cogeneration plant is categorized under Standard Industrial Classification No. 4911 and is located in Alachua County at Mowery Road, Building 82 in Gainesville, Florida. The UTM coordinates are Zone 17, 369.4 kilometers East, and 3279.3 kilometers North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, 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 must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

(DRAFT)

Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

(Date)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on _____(DRAFT)_____ to the persons listed below.

- Mr. Wilson Hicks, Progress Energy Florida, Inc. (wilson.hicks@pgnmail.com)
- Mr. Chris Bradley, Progress Energy Florida, Inc. (chris.bradley@pgnmail.com)
- Mr. Scott Osbourn, Golder Associates (scott_osbourn@golder.com)
- Mr. Christopher Kirts, Northeast District Office (christopher.kirts@dep.state.fl.us)
- Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
- Ms. Lynn Scarce, DEP APC Reading File (lynn.scarce@dep.state.fl.us)

Clerk Stamp

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

(DRAFT)

(Clerk)

(Date)

FACILITY AND PROJECT DESCRIPTION

Existing Facility

This facility consists of one nominal 48 megawatt (MW) combined cycle system and two backup steam boilers. The combined cycle system consists of a General Electric Model No. LM6000-PC-ESPRINT combustion turbine and a heat recovery steam generator with duct burner. The combustion turbine uses spray inter-cooling to maximize power generation and reduce the need for supplemental firing in the duct burner to meet steam and power requirements. Emissions are vented through the heat recovery steam generator stack. Emissions of nitrogen oxides (NO_x) are controlled with steam injection and compliance is demonstrated by data collected from a continuous emissions monitoring system (CEMS). Each backup steam boiler has a separate exhaust stack and is used only as a backup source of steam when the combined cycle system is not available.

Facility ID No. 0010001	
ID No.	Emission Unit Description
002	No. 4 Steam Boiler
003	No. 5 Steam Boiler
005	Heat Recovery Steam Generator with Duct Burner System
007	Combustion Turbine, General Electric Model No. LM6000-PC-ESPRINT

Permitting History

- AC01-204652/PSD-FL-181: Air construction permit authorizing initial construction of the combined cycle unit and limited operation of two backup boilers.
- AC01-270823: Based on the limited available data, this action appears to have been an extension of the original air construction permit (AC01-204652/PSD-FL-181).
- 0010001-002-AC/PSD-FL-181A: Minor revision to adjust the maximum heat input rate and NO_x emission rate based on the installed equipment.
- 0010001-003-AC: Replacement of existing 43 MW combustion turbine (GE LM6000-PA) with new 48 MW unit (GE LM6000-PC-ESPRINT) with spray inter-cooling.
- 0010001-004-AC: Replaced maximum hourly heat input rate with heat input versus power output curve. Removed the maximum heat input restriction for the combustion turbine plus duct burner.
- 0010001-006-AC: Revised CO emissions limits/caps, removed the natural gas limit on the combustion turbine and duct burner combined, and clarified individual NO_x limit on the combustion turbine.
- 0010001-010-AC: Letter of authorization for routine repair, replacement and maintenance of backups boilers.

Proposed Project

The permit revises the original PSD air construction permit to bring all of the miscellaneous amendments and revisions up to date and clarify the permit conditions. This includes, but is not limited to: resetting the CO BACT emission limit; removing distillate oil as an authorized fuel for the combustion turbine because the system was never installed; changes to the testing and reporting requirements; clarifying the emissions caps. This permit supersedes all other air construction permits for these units.

FACILITY REGULATORY CLASSIFICATION

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

SECTION 2. ADMINISTRATIVE REQUIREMENTS (REVISED DRAFT)

1. Permitting Authority: The permitting authority for this project is the Air Permitting and Compliance Section, Division of Air Resource Management, Florida Department of Environmental Protection (Department) at: 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. All documents related to applications for permits to operate an emissions unit shall be submitted to the Air Resource Section of the Northeast District (as applicable) at: 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Northeast District (as applicable) at: 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590.
3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); Appendix D (Common Testing Requirements); Appendix E (Final BACT Determinations); and Appendix F (Heat Input Rate vs. Compressor Inlet Temperature).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Source Obligation:
 - (a) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification. [Rule 62-212.400(12)(b), F.A.C.]
 - (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification. [Rule 62-212.400(12)(c), F.A.C.]
8. Title V Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit within 180 days of issuance of this final air construction permit revision. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to each Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION 2. ADMINISTRATIVE REQUIREMENTS (REVISED DRAFT)

9. **Actual Emissions Reporting:** This permit is based on an analysis that compared baseline actual emissions with projected actual emissions and avoided the PSD preconstruction review requirements of Rule 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.
- a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 10 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of this permit.
 - b. The permittee shall report to the Department *within 60 days after the end of each calendar year* during the 10-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:
 - 1) The name, address and telephone number of the owner or operator of the major stationary source;
 - 2) The annual emissions calculations pursuant to the provisions of 62-210.370, F.A.C., which are provided in Appendix C of this permit;
 - 3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and
 - 4) Any other information that the owner or operator wishes to include in the report.
 - c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.

For this project, the permit requires the annual reporting of actual 2011 NO_x emissions from the combustion turbine and duct burner system. *{Permitting Note: The baseline NO_x emissions are 114.50 tons/year for the combustion turbine and duct burner combined, resulting in a PSD applicability trigger threshold of 154.50 tons/year (114.50+40=154.50). The two calendar years used to establish the 114.50 tons/year baseline were 2000 and 2001. The permittee has already report nine years of this data.}*

[Rules 62-212.300(1)(e) and 62-210.370, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (REVISED REVISED DRAFT)

A. Cogeneration Plant

This section of the permit addresses the following emissions units.

ID No.	Emission Unit Description
002	No. 4 Steam Boiler
003	No. 5 Steam Boiler
005	Heat Recovery Steam Generator with Duct Burner System
007	Combustion Turbine, General Electric Model No. LM6000-PC-ESPRINT

The steam boilers (EU-002 and 003) are used only as back-up sources of steam. Each boiler has its own exhaust stack. The maximum design heat input rate for the No. 4 steam boiler is 69.6 million British thermal units per hour (MMBtu/hour) based on firing 68,000 cubic feet of natural gas per hour and 444 gallons per hour of No. 2 fuel oil. The maximum design heat input rate for the No. 5 steam boiler is 168 MMBtu/hour based on firing 164,000 cubic feet of natural gas per hour and 1067 gallons per hour of No. 2 fuel oil. The No. 4 steam boiler has a stack height of 82 feet, exit diameter of 5 feet, exit temperature of 350°F and an actual volumetric flow rate of 13,500 actual cubic feet per minute (acfm). The No. 5 steam boiler has a stack height of 82 feet, exit diameter of 6 feet, exit temperature of 400°F and actual volumetric flow rate of 56,250 acfm. The backup steam boilers are regulated under this permit and Rule 62-296.406, F.A.C., Fossil Fuel Steam Generators with Less than 250 MMBtu per Hour Heat Input. The steam boilers began commercial service in January 1976.

The combined cycle system (EU-005 and 007) consists of a nominal 48 MW combustion turbine and a heat recovery steam generator with duct burner. The combustion turbine is fired with natural gas and utilizes spray inter-cooling to maximize power output, which reduces the need for supplemental firing in the duct burner to meet steam and power requirements. Steam injection is used to control NO_x emissions from the combustion turbine. The duct burner is equipped with low-NO_x burners to control NO_x emissions while firing natural gas. Exhaust gas from the combined cycle system exits the heat recovery steam generator stack at a height of 93 feet, exit diameter of 9.8 feet, exit temperature of 257°F and actual volumetric flow rate of 365,700 acfm (based on the combustion turbine only at a compressor inlet temperature of 59 °F, 60% relative humidity at inlet, maximum dry standard flow rate of 216,956 dscfm and exit velocity of 80.8 feet per second. Originally, a 43 MW combustion turbine (GE LM6000-PA) began commercial service on January 31, 1994. It was replaced with new 48 MW unit (GE LM6000-PC-ESPRINT) with spray inter-cooling, which began commercial service on September 24, 2002.

{Permitting Note: This facility was permitted originally in 1992 to provide electrical power and steam for the University of Florida. The original project (PSD-FL-181) authorized the construction of the cogeneration facility and required the permanent shutdown of Boilers Nos. 1, 2 and 3. In accordance with Rule 62-212.400(PSD), F.A.C., the above emission units are subject to Best Available Control Technology (BACT) determinations for carbon monoxide (CO). The final BACT determinations are presented in Appendix E of this permit.}

OTHER PERMITS

1. **New Permit:** This permit supersedes all previous air construction permits for the specified emissions units at the cogeneration plant. The conditions of the new permit are based upon Application No. 0010001-011-AC as well as previous applications for the original Permit No. PSD-FL-181 as well as subsequent modifications and amendments. [Rule 62-4.070(3), F.A.C]

SHUTDOWN UNITS

2. **Shutdown Units:** Boilers 1, 2 and 3 shall be permanently shut down as a part of this PSD project. *{Permitting Note: This requirement of the original permit has been previously satisfied.}* [Rule 62-212.400(12), F.A.C.]

A. Cogeneration Plant

EQUIPMENT

3. Combined Cycle Combustion Turbine System: The permittee is authorized to construct, operate and maintain as combined cycle combustion turbine system consisting of a nominal 48 MW combustion turbine (GE LM6000-PC-ESPRINT) and a heat recovery steam generator with duct burner. The combustion turbine system generally consists of the following components: gas generator, accessory drive system, air inlet and filtration system, fuel delivery system, cooling system, lubrication system, control system, starting system and exhaust system with stack. This aero-derivative gas turbine is designed with modular components to facilitate quick repairs. Common “wear items” include compressor vanes, turbine nozzles, compressor blades, turbine blades, fuel nozzles, combustion chambers, seals, and shaft packing. The concept of modular design extends to the complete replacement of major components of the gas turbine. Replacements are authorized provided the following requirements are met.
- The “hot section” components (e.g., combustors and high-speed turbines including blades, nozzles and other components) shall be replaced with equivalent “like-kind” equipment. Replacement components shall not increase the maximum heat input rate, capacity or emissions from the combustion turbine. Replacement components shall be designed to achieve and shall achieve the emissions standards specified in this permit or better.
 - Within 90 days of replacing a gas turbine, the permittee shall conduct emissions stack tests to demonstrate compliance with the emission standards for CO and visible emissions. The permittee shall comply with the requirements for notification, test methods, test procedures, and reporting required by this permit.
 - To up-rate the gas turbine or increase the maximum heat input rate or capacity, the permittee shall submit an application for an air construction permit.

[Application and Design]

4. Combustion Turbine – Steam Injection: A steam injection system shall be installed to reduce NO_x emissions from the combustion turbine exhaust. In accordance with 40 CFR 60.334, the permittee shall install and operate a continuous monitoring system to monitor and record the ratio of steam to fuel being fired in the combustion turbine. The permittee shall establish the steam-to-fuel ratio that demonstrates compliance with the emissions standards of this permit by correlating with data collected by the NO_x CEMS. When the NO_x CEMS is down, the permittee shall operate at a steam-to-fuel injection rate that demonstrates compliance. [Rule 62-4.070(3), F.A.C. and NSPS Subpart GG in 40 CFR 60]
5. Backup Steam Boilers: The permittee is authorized to operate and maintain backup steam boilers Nos. 4 and 5 to provide a source of steam in case the combustion turbine is unavailable. [Application and Design]

PERFORMANCE RESTRICTIONS

6. Permitted Capacities:
- Combustion Turbine*: The heat input to the combustion turbine shall not exceed the values defined by the manufacturer’s performance curve of heat input rate vs. compressor inlet temperature. The maximum heat input limits are based on the lower heating value (LHV) of natural gas, 100% load and ambient conditions of 60% relative humidity and 14.7 psia. The maximum heat input rates will vary depending upon ambient conditions, the combustion turbine characteristics and the demand. {Permitting Note: The maximum design heat input rate to the combustion turbine is 480 MMBtu/hour for a compressor inlet temperature of 59°F.}
 - Duct Burner*: The maximum design heat input to the duct burner system is 188 MMBtu/hour of natural gas. The duct burner shall not fire more than 519.5 million ft³/year of natural gas based on the lower

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (REVISED REVISED DRAFT)

A. Cogeneration Plant

heating value (LHV) of 950 Btu/ft³.

- c. *Backup Steam Boilers:* When either firing natural gas or No. 2 fuel oil, the maximum design heat input rate for the No. 4 steam boiler is 69.6 MMBtu/hour (equivalent to 68,000 cubic feet of natural gas per hour or 444 gallons per hour of No. 2 fuel oil). When either firing natural gas or No. 2 fuel oil, the maximum design heat input rate for the No. 5 steam boiler is 168 MMBtu/hour (equivalent to 164,000 cubic feet of natural gas per hour or 1067 gallons per hour of No. 2 fuel oil).

[Application, Design and Rule 62-210.200(PTE), F.A.C.]

- 7. Authorized Fuel: The combustion turbine, HRSG duct burners, and backup steam boilers are authorized to fire natural gas with a maximum sulfur content of 2 grains of sulfur per 100 scf of natural gas (annual average based on vendor data). The backup steam boilers are authorized to fire No. 2 fuel oil with a maximum sulfur content of 0.5% by weight. [Rules 62-210.200(PTE), 62-212.400(12), 62-296.406, F.A.C., and 40 CFR 60.333(b)]
- 8. Restricted Operation: The hours of operation for equipment authorized by this permit are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

9. Emissions Standards – Combined Cycle Combustion Turbine with Duct Burner:

a. *Carbon Monoxide (CO) Emissions:*

- (1) As determined by EPA Method 10, CO emissions from the combustion turbine shall not exceed 36.0 ppmvd corrected to 15% oxygen. *{Permitting Note: This is equivalent to 35.8 lb/hour at a compressor inlet temperature of 59°F.}*
- (2) As determined by EPA Method 10, CO emissions from the duct burner shall not exceed 0.15 lb/MMBtu and 28.1 lb/hour.

[Rule 62-212.400(BACT), F.A.C.]

b. *Nitrogen Oxides (NOx) Emissions:*

- (1) As determined by CEMS, NO_x emissions from the combustion turbine shall not exceed 39.6 lb/hour with the duct burner “off” and 58.3 lb/hour with the duct burner “on”, based on 30-day rolling averages. *{Permitting Note: The basis for the NOx limit on the combustion turbine is 25 ppmvd corrected to 15% oxygen as provided by the vendor.}* [PSD avoidance pursuant to Rule 62-212.400(12), F.A.C.]
- (2) As determined by CEMS, NO_x emissions from the combustion turbine shall not exceed the applicable NSPS emissions standard in 40 CFR 60.332:

$$(14.4)$$

$$\text{STD} = 75 \text{ ppmvd corrected to 15\% oxygen} \text{ -----} = 123 \text{ ppmvd corrected to 15\% oxygen}$$

$$(8.8)$$

where:

STD = allowable NO_x emissions standard corrected to ISO conditions based on a 4-hour rolling CEMS average [40 CFR 60.334]

Y = 8.8 kilojoules per watt hour (kJ/W-hr) based on 950 Btu/SCF (LHV) for natural gas, which is the manufacturer’s rated heat rate at manufacturer's rated load (kilojoules per watt-hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kJ/W-hr.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (REVISED REVISED DRAFT)

A. Cogeneration Plant

There is no NO_x emission allowance for fuel-bound nitrogen for natural gas.

[40 CFR 60.334]

- (3) As determined by CEMS data pursuant to 40 CFR 60.46b, NO_x emissions from the duct burner shall not exceed 0.1 lb/MMBtu and 18.7 lb/hour based on 30-day rolling average. [40 CFR 60.44b and original Permit No. PSD-FL-181]
 - c. *Sulfur Dioxide (SO₂) Emissions:* SO₂ emissions from the combustion turbine shall be controlled by firing natural gas with a maximum sulfur content of 2 grains of sulfur per 100 standard cubic feet of natural gas. This condition also ensures that the fuel contains less than 0.8% by weight pursuant to 40 CFR 60.333(b). [Rules 62-212.400(12) and 40 CFR 60.333]
 - d. *Visible Emissions:* As determined by EPA Method 9, visible emissions shall not exceed 10% opacity from the combustion turbine with or without the duct burner in operation. [Rule 62-4.070(3), F.A.C.]
10. Emissions Standards – Backup Steam Boilers: To control PM and SO₂ emissions, the backup steam boilers shall fire only natural gas or No. 2 fuel oil. As determined by EPA Method 9, visible emissions when firing any authorized fuel shall not exceed 20% opacity except for one, 6-minute block average per hour not to exceed 27% opacity. [Rule 62-296.406(BACT), F.A.C.]
 11. Facility-Wide Annual NO_x Emission Cap: NO_x emissions shall not exceed 185.3 tons per year for any calendar year for all emissions units regulated by this air construction permit (EU 002, 003, 005 and 007). The backup steam boilers may operate individually or in combination provided NO_x emissions from all emissions units regulated by this permit comply with this facility-wide NO_x emissions cap. [PSD avoidance pursuant to 62-212.400(12), F.A.C.]

EXCESS EMISSIONS

12. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction are prohibited. These emissions shall be included in the compliance averages for NO_x emissions. [Rule 62-210.700(4), F.A.C.]
13. Excess Emissions Allowed: Best operational practices shall be used to minimize hourly emissions that may occur during episodes of startup, shutdown and malfunction. Excess emissions resulting from startup, shutdown, and malfunction shall be permitted providing: (1) best operational practices to minimize emissions are adhered to, and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for longer duration. For the combined cycle combustion turbine with a 30-day NO_x averaging period, this requirement shall mean the following. The 24-hour period shall be defined as the 24-hour block based on data collected from the NO_x CEMS. If the NO_x CEMS reports emissions in excess of the 30-day rolling average, the permittee may exclude up to two hours of excess emissions data caused by each startup, shutdown and malfunction during the 30-day period to determine compliance. No NO_x emission data shall be excluded from the annual NO_x emission caps. This requirement is not intended to limit the duration of a startup – only the amount of data that may be excluded from the 30-day compliance averaging period. If the 30-day rolling NO_x emissions rate exceeds the standard, the permittee shall notify the Compliance Authority within one working day with a preliminary report of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. [Rule 62-210.700(1), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (REVISED REVISED DRAFT)

A. Cogeneration Plant

STACK TESTING REQUIREMENTS

14. **Test Requirements:** The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(7), F.A.C.]
15. **Initial Compliance Stack Tests:** The emissions units shall be tested to demonstrate initial compliance with the emissions standards within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit.
- a. *Combustion Turbine:* Initial compliance tests for CO and visible emissions shall be conducted at 90% to 100% of the maximum heat input rate for the actual compressor inlet temperature conditions during the test. Compliance with the NOx limits shall be demonstrated by data collected from the CEMS. *{Permitting Note: The requirements in the original permit to conduct initial compliance tests have previously been satisfied.}*
 - b. *Duct Burner:* Initial compliance tests for CO emissions shall be conducted at 90% to 100% of the maximum heat input rate. Compliance with the NOx limits shall be demonstrated by data collected from the CEMS. *{Permitting Note: The requirements in the original permit to conduct initial compliance tests have previously been satisfied. Safety considerations prevent subsequent periodic testing of the duct burner, which would likely require dumping excess steam during the test.}*
 - c. *Backup Steam Boilers:* Initial informational stack tests on the backup boilers shall be conducted to establish the NOx emissions rate for purposes of reporting the NOx emission rate and complying with the facility-wide NOx emission cap. *{Permitting Note: The requirements in the original permit to conduct initial compliance tests have previously been satisfied.}*

[Rules 62-4.070(3) and 62-297.310(7), F.A.C.]

16. **Annual Compliance Tests:** During each federal fiscal year (October 1st to September 30th), the combined cycle combustion turbine system shall be tested to demonstrate compliance with the CO and visible emissions standards. Due to safety considerations, stack testing while firing the duct burner when there is no demand for steam would require dumping excess steam, which presents a safety issue given the existing configuration. Therefore, subsequent periodic testing for CO emissions may be with the duct burner on or off, as dictated by the system demand. Visible emissions for each backup steam boiler shall be conducted only if No. 2 fuel oil is fired for more than 400 hours during the federal fiscal year. *{Permitting Note: A safety evaluation of the steam vent system indicated that it did not meet code and was deemed unsafe; therefore, it was dismantled.}* [Rules 62-4.070(3) and 62-297.310(7), F.A.C.]
17. **Special Compliance Tests:** When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rules 62-297.310(7), F.A.C.]
18. **Test Methods:** Any tests required by this permit shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Method for Determining Particulate Matter Emissions

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (REVISED REVISED DRAFT)

A. Cogeneration Plant

Method	Description of Method and Comments
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Note: The method shall be based on a continuous sampling train.}
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; and Appendix A of 40 CFR 60]

MONITORING REQUIREMENTS

- 19. Continuous Emission Monitoring System: The permittee shall install, calibrate, maintain and operate a CEMS in the stack to measure and record the emissions of NO_x from the combined cycle combustion turbine and duct burner system in a manner sufficient to demonstrate compliance with the NO_x emission limits and caps specified in this permit. The oxygen content or the carbon dioxide content of the flue gas shall also be monitored at the location where NO_x is monitored to correct the measured NO_x emissions rates to 15% oxygen and also reported as lb/hour. The NO_x CEMS shall be maintained in accordance with the monitoring equipment requirements in 40 CFR 75 for acid rain units. [Rule 62-4.070(3), F.A.C., NSPS Subpart GG in 40 CFR 60 and 40 CFR 75]
- 20. Fuel Flow Monitoring: The permittee shall install equipment to monitor the fuel flow rates of the combustion turbine, duct burner and steam boilers. [Rules 62-4.070(3) and 62-212.400(12), F.A.C. and NSPS Subpart GG in 40 CFR 60]

RECORDS AND REPORTS

- 21. Fuel Consumption Rates Monthly Monitoring: By the 15th calendar day of each month, the permittee shall record the monthly fuel consumption rates of the duct burner and backup steam boilers. The written log shall summarize the fuel consumption for the previous month of operation and the previous 12 months of operation. Information may be recorded and stored as an electronic file. Records shall be available for inspection and printing within at least three days of a request by the Department or Compliance Authority. [Rule 62-4.070(3), F.A.C.]
- 22. Annual Facility-wide NO_x Emissions Report: To demonstrate compliance with the facility-wide annual NO_x emissions cap, the permittee shall calculate and record annual emissions as follows:
 - a. Annual NO_x emissions from the combined cycle combustion turbine and duct burner system shall be determined by data collected from the NO_x CEMS.
 - b. **By April 1st of each year**, the permittee shall report the facility-wide annual NO_x emissions along with the Annual Operating Report. Annual NO_x emissions from the backup steam boilers shall be determined based on the annual fuel consumption rate and either the following NO_x emissions factors or more recent stack test data (at the option of the permittee).

No. 4 Steam Boiler: 0.0745 lb NO_x/MMBtu (gas) and 0.0815 lb NO_x/MMBtu (oil), and

No. 5 Steam Boiler: 0.110 lb NO_x/MMBtu (gas) and 0.1070 lb NO_x/MMBtu (oil).

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (REVISED REVISED DRAFT)

A. Cogeneration Plant

If the facility-wide annual NO_x emissions exceed the NO_x emissions cap, the permittee shall notify the Compliance Authority within three working days of discovery.

- c. **Before March 1st** of 2012, the permittee shall submit a report to the Compliance Authority comparing the 2011 annual NO_x emissions from the combustion turbine and duct burner to the estimated baseline actual emissions of 114.5 tons/year and the PSD applicability trigger threshold of 154.50 tons/year (114.5 + 40.0 = 154.50 tons/year). This condition becomes obsolete after this reporting requirement is met.

[Rules 62-4.070(3) and PSD avoidance pursuant to 62-212.400(12), F.A.C.]

23. **Fuel Sulfur Records:** The permittee shall maintain records of the fuel sulfur content of natural gas and No. 2 fuel oil fired. Such information may be provided by the natural gas pipeline vendor or the fuel oil vendor. The following methods shall be used to determine the sulfur content of natural gas: ASTM methods D4084-82, D3246-81, D5504, more recent versions of these methods, methods prescribed in Appendix D of 40 CFR 75, or other methods approved by the Department. The following methods shall be used to determine the sulfur content of fuel oil: ASTM D1552, ASTM D5453, ASTM D129-91, D2622-94 or D4294-90, more recent versions of these methods, methods prescribed in NSPS Subpart GG of 40 CFR 60 or other methods approved by the Department. The permittee may also have a sample of fuel analyzed to determine the actual sulfur content. [NSPS Subparts Db and GG in 40 CFR 60, 40 CFR 75 and Rule 62-4.070(3), F.A.C.]
24. **Stack Test Reports:** The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the heat input rate of the emissions unit. [Rule 62-297.310(8), F.A.C.]
25. **Semi-Annual NSPS Excess Emissions Reports:** The permittee shall submit semi-annual excess emission reports in accordance with 40 CFR 60.7(d) to the Compliance Authority. [40 CFR 60.7]

NSPS PROVISIONS

26. **NSPS Requirements:** The combustion turbine shall comply with the applicable provisions of NSPS Subpart GG in 40 CFR 60, Standards of Performance for Stationary Gas Turbines, adopted by reference in Rule 62-204.800, F.A.C. The duct burner shall comply with the applicable provisions of NSPS Subpart Db in 40 CFR 60, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, adopted by reference in Rule 62-204.800, F.A.C. The emissions units shall also comply with the applicable requirements of 40 CFR 60, Subpart A, General Provisions, including:

- 40CFR60.7 Notification and Record Keeping
- 40CFR60.8 Performance Tests
- 40CFR60.11 Compliance with Standards and Maintenance Requirements
- 40CFR60.12 Circumvention
- 40CFR60.13 Monitoring Requirements
- 40CFR60.19 General Notification and Reporting requirements

[40 CFR 60, NSPS Subparts A, Db and GG]

SECTION 4. APPENDICES (DRAFT)

Contents

- Appendix A. Citation Formats and Glossary of Common Terms
- Appendix B. General Conditions
- Appendix C. Common Conditions
- Appendix D. Common Testing Requirements
- Appendix E. BACT Determinations
- Appendix F. Heat Input Rate vs. Compressor Inlet Temperature

SECTION 4. APPENDIX A (DRAFT)
Citation Formats and Glossary of Common Terms

CITATION FORMATS

The following illustrate the formats used in the permit to identify applicable requirements from permits and regulations.

Old Permit Numbers

Example: Permit No. AC50-123456 or Permit No. AO50-123456

Where: “AC” identifies the permit as an Air Construction Permit
“AO” identifies the permit as an Air Operation Permit
“123456” identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: “099” represents the specific county ID number in which the project is located
“2222” represents the specific facility ID number for that county
“001” identifies the specific permit project number
“AC” identifies the permit as an air construction permit
“AF” identifies the permit as a minor source federally enforceable state operation permit
“AO” identifies the permit as a minor source air operation permit
“AV” identifies the permit as a major Title V air operation permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: “PSD” means issued pursuant to the preconstruction review requirements of the Prevention of Significant Deterioration of Air Quality
“FL” means that the permit was issued by the State of Florida
“317” identifies the specific permit project number

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7]

Means: Title 40, Part 60, Section 7

GLOSSARY OF COMMON TERMS

° F: degrees Fahrenheit

AAQS: Ambient Air Quality Standard

acf: actual cubic feet

acfm: actual cubic feet per minute

ARMS: Air Resource Management System (DEP database)

BACT: best available control technology

bhp: brake horsepower

Btu: British thermal units

CAM: compliance assurance monitoring

CEMS: continuous emissions monitoring system

cfm: cubic feet per minute

CFR: Code of Federal Regulations

CAA: Clean Air Act

CMS: continuous monitoring system

CO: carbon monoxide

CO₂: carbon dioxide

SECTION 4. APPENDIX A (DRAFT)
Citation Formats and Glossary of Common Terms

COMS: continuous opacity monitoring system	NSPS: New Source Performance Standards
DARM: Division of Air Resource Management	O&M: operation and maintenance
DEP: Department of Environmental Protection	O₂: oxygen
Department: Department of Environmental Protection	Pb: lead
dscf: dry standard cubic feet	PM: particulate matter
dscfm: dry standard cubic feet per minute	PM₁₀: particulate matter with a mean aerodynamic diameter of 10 microns or less
EPA: Environmental Protection Agency	ppm: parts per million
ESP: electrostatic precipitator (control system for reducing particulate matter)	ppmv: parts per million by volume
EU: emissions unit	ppmvd: parts per million by volume, dry basis
F.A.C.: Florida Administrative Code	QA: quality assurance
F.A.W.: Florida Administrative Weekly	QC: quality control
F.D.: forced draft	PSD: prevention of significant deterioration
F.S.: Florida Statutes	psi: pounds per square inch
FGD: flue gas desulfurization	PTE: potential to emit
FGR: flue gas recirculation	RACT: reasonably available control technology
Fl: fluoride	RATA: relative accuracy test audit
ft²: square feet	RBLC: EPA's RACT/BACT/LAER Clearinghouse
ft³: cubic feet	SAM: sulfuric acid mist
gpm: gallons per minute	scf: standard cubic feet
gr: grains	scfm: standard cubic feet per minute
HAP: hazardous air pollutant	SIC: standard industrial classification code
Hg: mercury	SIP: State Implementation Plan
I.D.: induced draft	SNCR: selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)
ID: identification	SO₂: sulfur dioxide
kPa: kilopascals	TPD: tons/day
lb: pound	TPH: tons per hour
MACT: maximum achievable technology	TPY: tons per year
MMBtu: million British thermal units	TRS: total reduced sulfur
MSDS: material safety data sheets	UTM: Universal Transverse Mercator coordinate system
MW: megawatt	VE: visible emissions
NESHAP: National Emissions Standards for Hazardous Air Pollutants	VOC: volatile organic compounds
NO_x: nitrogen oxides	

SECTION 4. APPENDIX B (DRAFT)

General Conditions

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are “permit conditions” and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
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 403.987(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither 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 is not 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 this permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; 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.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and 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 and at reasonable times, access to the premises where the permitted activity is located or conducted to:
 - a. Have access to and copy any records that must be kept under conditions of the permit;
 - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
 - c. Sample or monitor 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 provide the Department with the following information:
 - a. A description of and cause of noncompliance; and
 - b. The period of noncompliance, including 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. 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 for 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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
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

SECTION 4. APPENDIX B (DRAFT)

General Conditions

Department rules. A reasonable time for compliance with a new or amended surface water quality standard, other than those standards addressed in Rule 62-302.500, F.A.C., shall include a reasonable time to obtain or be denied a mixing zone for the new or amended standard.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, F.A.C., 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 or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
 - a. Determination of Best Available Control Technology (resets previous CO BACT);
 - b. Determination of Prevention of Significant Deterioration (not applicable to project, but revises PSD permit); and
 - c. Compliance with New Source Performance Standards (NSPS Subparts A, Db and GG).
14. The permittee shall comply with the following:
 - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained 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:
 - (a) The date, exact place, and time of sampling or measurements;
 - (b) The person responsible for performing the sampling or measurements;
 - (c) The dates analyses were performed;
 - (d) The person responsible for performing the analyses;
 - (e) The analytical techniques or methods used;
 - (f) 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 the 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 corrected promptly.

SECTION 4. APPENDIX C (DRAFT)

Common Conditions

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.

EMISSIONS AND CONTROLS

1. **Plant Operation - Problems:** If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. **Circumvention:** The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. **Excess Emissions Allowed:** Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period unless specifically authorized by the Department for longer duration. Pursuant to Rule 62-210.700(5), F.A.C., the permit subsection may specify more or less stringent requirements for periods of excess emissions. Rule 62-210-700(Excess Emissions), F.A.C., cannot vary or supersede any federal NSPS or NESHAP provision. [Rule 62-210.700(1), F.A.C.]
4. **Excess Emissions Prohibited:** Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. **Excess Emissions - Notification:** In case of excess emissions resulting from malfunctions, the permittee shall notify the Compliance Authority in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. **VOC or OS Emissions:** No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. **Objectionable Odor Prohibited:** No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. **General Visible Emissions:** No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. **Unconfined Particulate Emissions:** During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

RECORDS AND REPORTS

10. **Records Retention:** All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
11. **Emissions Computation and Reporting:**
 - a. **Applicability.** This rule sets forth required methodologies to be used by the owner or operator of a facility for computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for computing emissions for purposes of the reporting requirements of subsection 62-210.370(3) and paragraph 62-212.300(1)(e), F.A.C., or of any permit condition that requires emissions be computed in accordance with this rule. This rule is not intended to establish methodologies for determining compliance with the emission

SECTION 4. APPENDIX C (DRAFT)

Common Conditions

limitations of any air permit. [Rule 62-210.370(1), F.A.C.]

- b. *Computation of Emissions.* For any of the purposes set forth in subsection 62-210.370(1), F.A.C., the owner or operator of a facility shall compute emissions in accordance with the requirements set forth in this subsection:
- (1) **Basic Approach.** The owner or operator shall employ, on a pollutant-specific basis, the most accurate of the approaches set forth below to compute the emissions of a pollutant from an emissions unit; provided, however, that nothing in this rule shall be construed to require installation and operation of any continuous emissions monitoring system (CEMS), continuous parameter monitoring system (CPMS), or predictive emissions monitoring system (PEMS) not otherwise required by rule or permit, nor shall anything in this rule be construed to require performance of any stack testing not otherwise required by rule or permit.
 - (a) If the emissions unit is equipped with a CEMS meeting the requirements of paragraph 62-210.370(2)(b), F.A.C., the owner or operator shall use such CEMS to compute the emissions of the pollutant, unless the owner or operator demonstrates to the department that an alternative approach is more accurate because the CEMS represents still-emerging technology.
 - (b) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C., but emissions of the pollutant can be computed pursuant to the mass balance methodology of paragraph 62-210.370(2)(c), F.A.C., the owner or operator shall use such methodology, unless the owner or operator demonstrates to the department that an alternative approach is more accurate.
 - (c) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C., and emissions cannot be computed pursuant to the mass balance methodology, the owner or operator shall use an emission factor meeting the requirements of paragraph 62-210.370(2)(d), F.A.C., unless the owner or operator demonstrates to the department that an alternative approach is more accurate.
 - (2) **Continuous Emissions Monitoring System (CEMS).**
 - (a) An owner or operator may use a CEMS to compute emissions of a pollutant for purposes of this rule provided:
 - 1) The CEMS complies with the applicable certification and quality assurance requirements of 40 CFR Part 60, Appendices B and F, or, for an acid rain unit, the certification and quality assurance requirements of 40 CFR Part 75, all adopted by reference at Rule 62-204.800, F.A.C.; or
 - 2) The owner or operator demonstrates that the CEMS otherwise represents the most accurate means of computing emissions for purposes of this rule.
 - (b) Stack gas volumetric flow rates used with the CEMS to compute emissions shall be obtained by the most accurate of the following methods as demonstrated by the owner or operator:
 - 1) A calibrated flow meter that records data on a continuous basis, if available; or
 - 2) The average flow rate of all valid stack tests conducted during a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.
 - (c) The owner or operator may use CEMS data in combination with an appropriate f-factor, heat input data, and any other necessary parameters to compute emissions if such method is demonstrated by the owner or operator to be more accurate than using a stack gas volumetric flow rate as set forth at subparagraph 62-210.370(2)(b)2., F.A.C., above.
 - (3) **Mass Balance Calculations.**
 - (a) An owner or operator may use mass balance calculations to compute emissions of a pollutant for purposes of this rule provided the owner or operator:
 - 1) Demonstrates a means of validating the content of the pollutant that is contained in or created by all materials or fuels used in or at the emissions unit; and
 - 2) Assumes that the emissions unit emits all of the pollutant that is contained in or created by any material or fuel used in or at the emissions unit if it cannot otherwise be accounted for in the

SECTION 4. APPENDIX C (DRAFT)

Common Conditions

process or in the capture and destruction of the pollutant by the unit's air pollution control equipment.

- (b) Where the vendor of a raw material or fuel which is used in or at the emissions unit publishes a range of pollutant content from such material or fuel, the owner or operator shall use the highest value of the range to compute the emissions, unless the owner or operator demonstrates using site-specific data that another content within the range is more accurate.
 - (c) In the case of an emissions unit using coatings or solvents, the owner or operator shall document, through purchase receipts, records and sales receipts, the beginning and ending VOC inventories, the amount of VOC purchased during the computational period, and the amount of VOC disposed of in the liquid phase during such period.
- (4) Emission Factors.
- a. An owner or operator may use an emission factor to compute emissions of a pollutant for purposes of this rule provided the emission factor is based on site-specific data such as stack test data, where available, unless the owner or operator demonstrates to the department that an alternative emission factor is more accurate. An owner or operator using site-specific data to derive an emission factor, or set of factors, shall meet the following requirements.
 - 1) If stack test data are used, the emission factor shall be based on the average emissions per unit of input, output, or gas volume, whichever is appropriate, of all valid stack tests conducted during at least a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.
 - 2) Multiple emission factors shall be used as necessary to account for variations in emission rate associated with variations in the emissions unit's operating rate or operating conditions during the period over which emissions are computed.
 - 3) The owner or operator shall compute emissions by multiplying the appropriate emission factor by the appropriate input, output or gas volume value for the period over which the emissions are computed. The owner or operator shall not compute emissions by converting an emission factor to pounds per hour and then multiplying by hours of operation, unless the owner or operator demonstrates that such computation is the most accurate method available.
 - b. If site-specific data are not available to derive an emission factor, the owner or operator may use a published emission factor directly applicable to the process for which emissions are computed. If no directly-applicable emission factor is available, the owner or operator may use a factor based on a similar, but different, process.
- (5) Accounting for Emissions During Periods of Missing Data from CEMS, PEMS, or CPMS. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of missing data from CEMS, PEMS, or CPMS using other site-specific data to generate a reasonable estimate of such emissions.
- (6) Accounting for Emissions During Periods of Startup and Shutdown. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of startup and shutdown of the emissions unit.
- (7) Fugitive Emissions. In computing the emissions of a pollutant from a facility or emissions unit, the owner or operator shall account for the fugitive emissions of the pollutant, to the extent quantifiable, associated with such facility or emissions unit.
- (8) Recordkeeping. The owner or operator shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the department for any regulatory purpose.

[Rule 62-210.370(2), F.A.C.]

Common Conditions

c. *Annual Operating Report for Air Pollutant Emitting Facility*

- (1) The Annual Operating Report for Air Pollutant Emitting Facility (DEP Form No. 62-210.900(5)) shall be completed each year for the following facilities:
 - a. All Title V sources.
 - b. All synthetic non-Title V sources.
 - c. All facilities with the potential to emit ten (10) tons per year or more of volatile organic compounds or twenty-five (25) tons per year or more of nitrogen oxides and located in an ozone nonattainment area or ozone air quality maintenance area.
 - d. All facilities for which an annual operating report is required by rule or permit.
- (2) Notwithstanding paragraph 62-210.370(3)(a), F.A.C., no annual operating report shall be required for any facility operating under an air general permit.
- (3) The annual operating report shall be submitted to the appropriate Department of Environmental Protection (DEP) division, district or DEP-approved local air pollution control program office by April 1 of the following year, except that the annual operating report for year 2008 shall be submitted by May 1, 2009. If the report is submitted using the Department's electronic annual operating report software, there is no requirement to submit a copy to any DEP or local air program office.
- (4) Emissions shall be computed in accordance with the provisions of subsection 62-210.370(2), F.A.C., for purposes of the annual operating report.
- (5) Facility Relocation. Unless otherwise provided by rule or more stringent permit condition, the owner or operator of a relocatable facility must submit a Facility Relocation Notification Form (DEP Form No. 62-210.900(6)) to the Department at least 30 days prior to the relocation. A separate form shall be submitted for each facility in the case of the relocation of multiple facilities which are jointly owned or operated.

[Rule 62-210.370(3), F.A.C.]

SECTION 4. APPENDIX D (DRAFT)

Common Testing Requirements

Unless otherwise specified in the permit, the following testing requirements apply to all emissions units at the facility.

COMPLIANCE TESTING REQUIREMENTS

1. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]
2. Applicable Test Procedures - Opacity Compliance Tests: When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
 - a. For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.
 - b. The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
 - c. The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

[Rule 62-297.310(4), F.A.C.]

3. Determination of Process Variables:
 - a. *Required Equipment*. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
 - b. *Accuracy of Equipment*. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

4. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.
 - a. *General Compliance Testing*.
 1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.
 2. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department

SECTION 4. APPENDIX D (DRAFT)

Common Testing Requirements

shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

- (a) Did not operate; or
 - (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
3. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for visible emissions, if there is an applicable standard.
 4. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
- b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

[Rule 62-297.310(7), F.A.C.]

RECORDS AND REPORTS

5. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report shall provide the following information.
 - a. The type, location, and designation of the emissions unit tested.
 - b. The facility at which the emissions unit is located.
 - c. The owner or operator of the emissions unit.
 - d. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
 - e. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
 - f. The date, starting time and end time of the observation.
 - g. The test procedures used.
 - h. The names of individuals who furnished the process variable data, conducted the test, and prepared the report.
 - i. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
 - j. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

SECTION 4. APPENDIX E (DRAFT)

Final BACT Determination

PROJECT DESCRIPTION

Progress Energy Florida, Inc. operates the existing University of Florida Cogeneration Plant, which is located Alachua County at Mowery Road, Building 82 in Gainesville, Florida. This facility consists of one nominal 48 megawatt (MW) combined cycle system and two backup steam boilers. The combined cycle system consists of a General Electric Model No. LM6000-PC-ESPRINT combustion turbine and a heat recovery steam generator with duct burner. The combustion turbine uses spray inter-cooling to maximize power generation and reduce the need for supplemental firing in the duct burner to meet steam and power requirements. Emissions are vented through the heat recovery steam generator stack. Emissions of nitrogen oxides (NO_x) are controlled with steam injection and compliance is demonstrated by data collected from a continuous emissions monitoring system (CEMS). Each backup steam boiler has a separate exhaust stack and is used only as a backup source of steam when the combined cycle system is not available.

Originally constructed in accordance with Permit No. PSD-FL-181, and was based on a PSD netting analysis. With the permanent shutdown of existing Boilers 1, 2 and 3, the project netted out of PSD preconstruction review for all pollutants except carbon monoxide (CO).

FINAL BACT DETERMINATIONS

Combustion Turbine

In accordance with Rule 62-212.400, F.A.C., the Department previously determined the following Best Available Control Technology (BACT) standards for CO emissions:

- As determined by EPA Method 10, CO emissions from the combustion turbine (EU-007) shall not exceed 36.0 ppmvd corrected to 15% oxygen based on the combustion design and firing of natural gas. Compliance shall be demonstrated by initial and annual stack tests.
- As determined by EPA Method 10, CO emissions from the duct burner (EU-005) shall not exceed 0.15 lb/MMBtu and 28.1 lb/hour. Compliance shall be demonstrated initial stack tests only, which has been satisfied. *{Permitting Note: With the upgraded General Electric Model No. LM6000-PC-ESPRINT combustion turbine, the duct burner is used less and rarely at permitted capacity. This makes it difficult to schedule and conduct periodic stack tests since there may be no demand for steam. If the test is conducted when steam is not needed, it is necessary to dump steam to the atmosphere, which was determined to be unsafe and the steam vent system removed.}*

Backup Steam Boilers

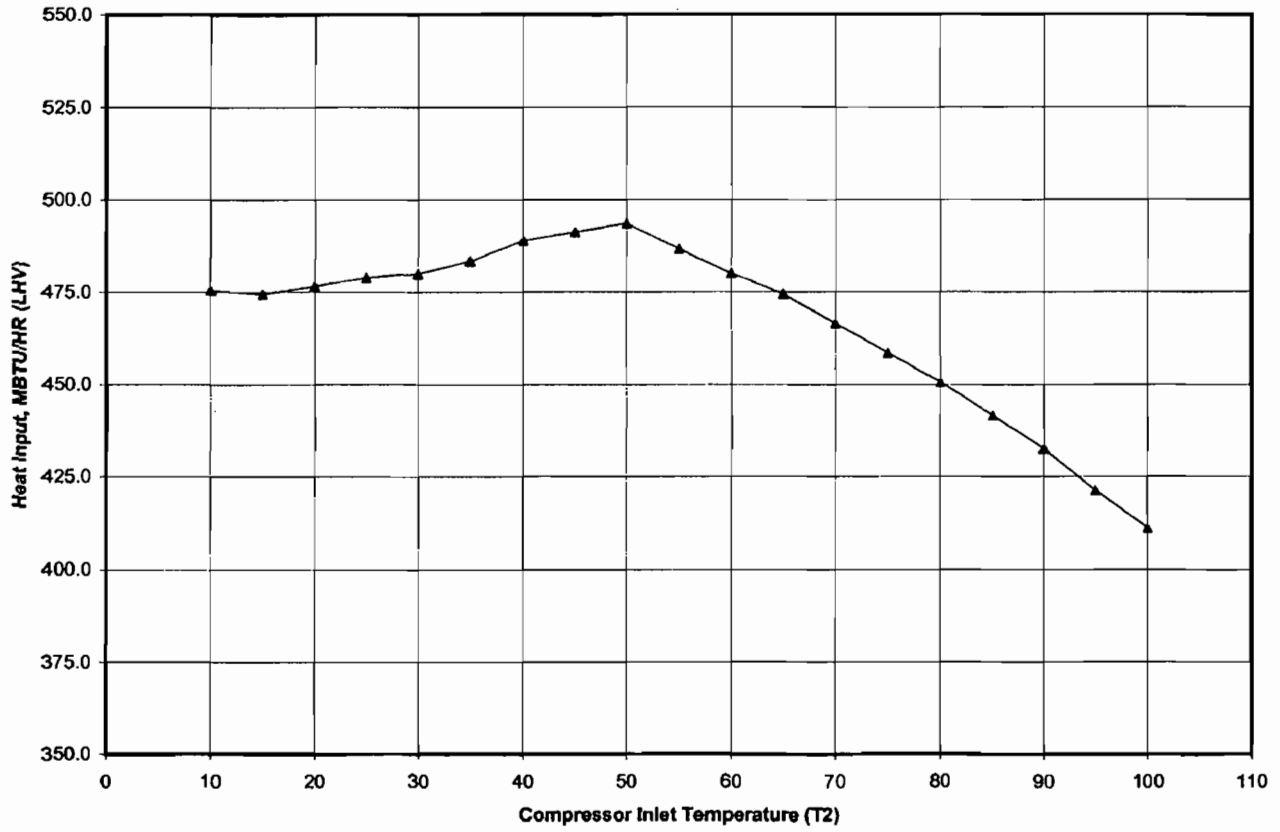
In accordance with Rule 62-296.406, F.A.C., the Department determined the following BACT work practice standards for controlling PM and SO₂ emissions from the backup steam boilers (EU-002 and 003):

- The backup boilers shall fire natural gas or, No. 2 fuel oil with a maximum sulfur content of 0.5% sulfur by weight.
- As determined by EPA Method 9, visible emissions shall not exceed 20% opacity except for no more than one, 6-minute period per hour that shall not exceed 27% opacity.

SECTION 4. APPENDIX F (DRAFT)

Heat Input Rate vs. Compressor Inlet Temperature

University of Florida
Heat Input Curve for the GE LM6000-PC-ESPRINT Combustion Turbine



Scearce, Lynn

From: Scearce, Lynn
Sent: Wednesday, October 05, 2011 12:58 PM
To: 'wilson.hicks@pgnmail.com'
Cc: 'chris.bradley@pgnmail.com'; Koerner, Jeff; 'scott_osbourn@golder.com'; 'Kirts, Christopher'; 'forney.kathleen@epa.gov'; Friday, Barbara; Scearce, Lynn
Subject: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit
Attachments: 0010001-011-AC-PSD-FL-181B, UF Congen Plant signature page.pdf

Tracking:	Recipient	Delivery
	'wilson.hicks@pgnmail.com'	
	'chris.bradley@pgnmail.com'	
	Koerner, Jeff	Delivered: 10/5/2011 12:58 PM
	'scott_osbourn@golder.com'	
	'Kirts, Christopher'	
	'forney.kathleen@epa.gov'	
	Friday, Barbara	Delivered: 10/5/2011 12:58 PM
	Scearce, Lynn	Delivered: 10/5/2011 12:58 PM
	Kirts, Christopher	Delivered: 10/5/2011 12:58 PM

Dear Mr. Hicks:

Attached is the official **Notice of the Revised Draft Permit** for the project 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).

Owner/Company Name: FLORIDA POWER CORPORATION D/B/A PROGRESS
Facility Name: U OF FL COGEN
Project Number: 0010001-011-AC-PSD-FL-181B
Permit Status: REV DRAFT
Permit Activity: CONSTRUCTION
Facility County: ALACHUA

Click on the following link to access the permit project documents:
http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0010001.011.AC.R_pdf.zip

The Office of Permitting and Compliance 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>.

Permit project documents 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, Office of Permitting and Compliance.

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>> .

Regards,

Lynn Searce

Office of Permitting and Compliance (OPC)

Division of Air Resources Management

850-717-9025

Scearce, Lynn

From: Bradley, Chris [Chris.Bradley@pgnmail.com]
Sent: Wednesday, October 05, 2011 1:08 PM
To: Scearce, Lynn
Cc: Hicks Jr, Wilson B; McDaniel, Kim
Subject: RE: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit

Thank you Lynn the Notice has been received.

Chris Bradley

From: Scearce, Lynn [mailto:Lynn.Scearce@dep.state.fl.us]
Sent: Wednesday, October 05, 2011 12:58 PM
To: Hicks Jr, Wilson B
Cc: Bradley, Chris; Koerner, Jeff; scott_osbourn@golder.com; Kirts, Christopher; forney.kathleen@epa.gov; Friday, Barbara; Scearce, Lynn
Subject: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit

Dear Mr. Hicks:

Attached is the official **Notice of the Revised Draft Permit** for the project 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).

Owner/Company Name: FLORIDA POWER CORPORATION D/B/A PROGRESS
Facility Name: U OF FL COGEN
Project Number: 0010001-011-AC-PSD-FL-181B
Permit Status: REV DRAFT
Permit Activity: CONSTRUCTION
Facility County: ALACHUA

Click on the following link to access the permit project documents:
http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0010001.011.AC.R_pdf.zip

The Office of Permitting and Compliance 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>.

Permit project documents 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, Office of Permitting and Compliance.

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>> .

Regards,
Lynn Scearce
Office of Permitting and Compliance (OPC)
Division of Air Resources Management
850-717-9025

Please take a few minutes to share your comments on the service you received from the department by clicking on this link [DEP Customer Survey](#).

Scearce, Lynn

From: Bradley, Chris [Chris.Bradley@pgnmail.com]
To: Scearce, Lynn
Sent: Wednesday, October 05, 2011 12:59 PM
Subject: Read: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit

Your message was read on Wednesday, October 05, 2011 12:59:13 PM (GMT-05:00) Eastern Time (US & Canada).

Scearce, Lynn

From: Microsoft Exchange
To: wilson.hicks@pgnmail.com; chris.bradley@pgnmail.com
Sent: Wednesday, October 05, 2011 12:58 PM
Subject: Relayed: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit

Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:

wilson.hicks@pgnmail.com

chris.bradley@pgnmail.com

Subject: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit

Sent by Microsoft Exchange Server 2007

Scearce, Lynn

From: Hicks Jr, Wilson B [Wilson.Hicks@pgnmail.com]
Sent: Wednesday, October 05, 2011 1:22 PM
To: Scearce, Lynn
Subject: RE: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit

From: Scearce, Lynn [mailto:Lynn.Scearce@dep.state.fl.us]
Sent: Wednesday, October 05, 2011 12:58 PM
To: Hicks Jr, Wilson B
Cc: Bradley, Chris; Koerner, Jeff; scott_osbourn@golder.com; Kirts, Christopher; forney.kathleen@epa.gov; Friday, Barbara; Scearce, Lynn
Subject: 0010001-011-AC-PSD-FL-181B, University of Florida Cogeneration Plant, Revised Draft Permit

Dear Mr. Hicks:

Attached is the official **Notice of the Revised Draft Permit** for the project 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).

Owner/Company Name: FLORIDA POWER CORPORATION D/B/A PROGRESS
Facility Name: U OF FL COGEN
Project Number: 0010001-011-AC-PSD-FL-181B
Permit Status: REV DRAFT
Permit Activity: CONSTRUCTION
Facility County: ALACHUA

Click on the following link to access the permit project documents:

http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0010001.011.AC.R_pdf.zip

The Office of Permitting and Compliance 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>.

Permit project documents 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, Office of Permitting and Compliance.

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>> .

Regards,

Lynn Scarce

Office of Permitting and Compliance (OPC)

Division of Air Resources Management

850-717-9025

Please take a few minutes to share your comments on the service you received from the department by clicking on this link [DEP Customer Survey](#).