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

PERMITTEE

Gulf Power Company
One Energy Place, BIN No. 0328
Pensacola, FL 32520-0328

Authorized Representative:
Mr. James Vick, Environmental Affairs Director

Air Permit No. 0050014-019-AC
Permit Expires: March 1, 2013
Minor Air Construction Permit
Lansing Smith Plant
Unit 3 Combined Cycle System
OpFlex Peak Enhancement

PROJECT

This is the final air construction permit, which authorizes the permittee to upgrade the existing Unit 3 combined cycle system incorporate the General Electric OpFlex Peak enhancement package designed to expand the peak power production profile for the existing Unit 3 combined cycle combustion system (EU 004 and EU 005). The peak fire function provides the ability to safely operate at a higher firing temperature while maintaining optimal emissions levels when demand for more output capacity is at a premium. The proposed work will be conducted at the existing Lansing Smith Plant, which is a electrical generating plant categorized under Standard Industrial Classification No. 4911. The existing facility is located in Bay County at 4300 County Road 2300 in Southport, Florida. The UTM coordinates are Zone 16; 625.02 kilometers East; and 3349.24 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.

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.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to 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.

Executed in Tallahassee, Florida
For the Division of Air Resource Management

Jeffery F. Koerner — 7.25.11
(Signature) (Date)

Jeffery F. Koerner
(Printed Name of Above Designee)

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 7/25/11 to the persons listed below.

Mr. James Vick, Gulf Power Company (jovick@southernco.com)
Mr. Glenn Waters, Gulf Power Company (gdwaters@southernco.com)
Mr. Gregory Terry, P.E., Gulf Power Company (gnterry@southernco.com)
Mr. Rick Bradburn, Southwest District (rick.bradburn@dep.state.fl.us)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)
Ms. Ana M. Oquendo, EPA Region 4 (oquendo.ana@epa.gov)
Ms. Lynn Scearce, DEP PC Reading File (lynn,scearce@dep.state.fl.us)
Ms. Barbara. Friday, DEP PP Reading File (barbara.friday@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.

Lynn Scearce (Clerk) July 25, 2011 (Date)

FACILITY AND PROJECT DESCRIPTION

The Lansing Smith Plant is an existing electrical generating plant, which is located in Bay County at 4300 County Road 2300 in Southport, Florida. This facility consists of the following: two pulverized coal-fired boilers (EU 001 and EU 002); two simple cycle combustion turbines driving a single electrical generator (EU 003); and a 2-on-1 combined cycle combustion turbine system with duct-fired heat recovery steam generators and a single steam-electrical generator set (EU 004 and EU 005). Distillate fuel oil is used to fire the simple cycle combustion turbine and as a "backup" fuel for the boilers. Natural gas is the only fuel allowed to be fired in the combined cycle combustion turbines. The two combined-cycle combustion turbines are Acid Rain Units. The following units are affected by this air construction permit.

EU No.	Emission Unit Description
004	Combined Cycle combustion Turbine and Generator Set
005	Combined Cycle combustion Turbine and Generator Set

For this project, the permittee proposes to incorporate the General Electric OpFlex Peak enhancement package designed to expand the peak power production profile for the existing Unit 3 combined cycle combustion system (EU 004 and EU 005). The enhancement controls the fuel distribution, which will broaden the operating range of the combustion turbines to increase flexibility and profitability. The peak fire function provides the ability to safely operate at a higher firing temperature while maintaining optimal emissions levels when demand for more output capacity is at a premium. The peak fire capability requires the installation of a Continuous Dynamics Monitoring (CDM) system to ensure that the combustion system parameters are kept at optimal performance. CDM is part of the remote dry low-NOx (DLN) tuning service provided by General Electric.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Bureau of Air Regulation, Division of Air Resource Management, Florida Department of Environmental Protection (Department). The Bureau of Air Regulation's mailing address is 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 Departments Northwest District Office at 160 Governmental Center, Pensacola, Florida 32501-5794.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Departments Northwest District Office at 160 Governmental Center, Pensacola, Florida 32501-5794.

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); and Appendix D (Common Testing Requirements).

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, 62-213, 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: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be 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.

   (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), F.A.C.]

8. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. 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 the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

9. Actual Emissions Reporting: This permit is based on an analysis that compared baseline actual emissions with projected actual emissions and avoided the requirements of subsection 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 5 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 5-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 NOx emissions for the following units: EU 004 and EU 005 Combined Cycle Combustion Turbine and Generator Sets.

   [Application 0050014-019-AC; and Rules 62-212.300(1)(e) and 62-210.370, F.A.C.]

A. Unit 3 Combined Cycle Combustion Turbine System (EU-004 and EU-005)

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
004	Combined Cycle Combustion Turbine and Generator Set
005	Combined Cycle Combustion Turbine and Generator Set

{Permitting Note: The combustion turbines were originally constructed under Permit No. 0050014-002-AC, which required PSD preconstruction review for carbon monoxide (CO), Sulfur dioxide (SO_2)/sulfuric acid mist (SAM) and volatile organic compounds (VOC) emissions, avoided PSD preconstruction review for NOx.}

PREVIOUS APPLICABLE REQUIREMENTS

1. Other Permits: The conditions of this permit supplement all previously issued air construction and operation permits for these emissions units. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions and regulations. [Rule 62-4.070, F.A.C.]

EQUIPMENT

2. OpFlex Peak Enhancement: The permittee is authorized to install the General Electric OpFlex Peak enhancement package on the existing Unit 3 combined-cycle combustion turbines. This includes installation of a Continuous Dynamics Monitoring (CDM) system to ensure that the combustion system parameters are kept at optimal performance. CDM is part of General Electric's remote dry low-NO_X (DLN) tuning service. [Application No. 0050014-019-AC]

PERFORMANCE RESTRICTIONS

3. Hours of Operation: Combined operation in steam power augmentation mode plus OpFlex Peak mode shall not exceed a total of 1,000 hours per year per unit. [Rule 62-210.200 (Definitions-Potential Emissions), F.A.C. and Application No. 0050014-019-AC]

EMISSIONS STANDARDS

4. Emissions Standards: Emissions from each combustion turbine shall not exceed the emissions standards specified in the below table.

Operating Mode	NOx [b]	CO [a, c]	SO2/SAM [a, d]	Visible Emissions [e]
OpFlex Peaking [a]	113.3 lb/hour	23ppmvd @ 15% O2	2 grains per 100 scf of natural gas	10% opacity

a. "lb" means pound. "ppmvd" means parts per million by volume, dry". "O_2" refers to the flue gas oxygen content. The Opflex peaking mode will be used to displace some of the steam power augmentation mode and is subject to the same emissions standards and initial Best Available Control Technology (BACT) determinations.

b. Emissions of NOx in the stack exhaust gas with the combustion turbine operating in the Opflex peaking mode with or without duct firing shall not exceed 113.3 lb/hour based on a 30-day rolling average of data collected by the continuous emissions monitor system (CEMS) and prorated daily as necessary based upon hours of operation per operating mode.

c. Compliance with the CO emissions standard shall be demonstrated by stack testing accordance with Method 10, promulgated by the Environmental Protection Agency (EPA). *{Permitting Note: For informational purposes, the CO limit equates to 116.6 lb/hour. Compliance with the CO limit also provides reasonable assurance that VOC emissions are very low (<6 ppmvd @ 15% O_2).}*

d. Emissions of SO_2 and SAM shall be minimized by the firing of natural gas meeting this fuel sulfur specification. Compliance with this requirement may be demonstrated with data collected from the natural gas pipeline transmission company in conjunction with the current NSPS Custom Fuel Monitoring Schedule specified in the Title V air operation permit.

e. Compliance with the visible emissions standard shall be determined by EPA Method 9.

{Permitting Note: Compliance with the emissions standards specified in the original air construction permit provides reasonable assurance that the project avoids PSD preconstruction review.} [Application No. 0050014-019-AC; and 62-212.400(12), F.A.C.]

TESTING REQUIREMENTS

5. Initial Compliance Tests: Each combustion turbine shall be tested to demonstrate initial compliance with the emissions standards for CO and opacity while operating in the OpFlex peaking mode. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

6. Compliance Tests Prior to Renewal: Prior to renewal of the Title V air operation permit, each combustion turbine shall be tested to demonstrate compliance with the emissions standards for CO and opacity while operating in the OpFlex peaking mode. [Rule 62-297.310(7)(a)4, F.A.C.]

7. 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)(a)9, F.A.C.]

8. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7, 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.}*
18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography *{Note: This optional method may be used to deduct non-regulated VOC emissions such as methane from the total measured VOC.}*
20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines

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; Application Nos. 0050014-002-AC and 0050014-019-AC]

MONITORING AND RECORD KEEPING REQUIREMENTS

9. Operational Records: To demonstrate compliance with the operational restriction on hours, the permittee shall maintain records of the hours of operation of each combustion turbine when operating in OpFlex Peaking mode and steam power augmentation mode. [Rule 62-4.070(3), F.A.C.]

10. NOx CEMS: Continuous compliance with the NOx emissions standard shall be demonstrated by data collected from the existing CEMS. [Rule 62-4.070(3), F.A.C.]

11. Fuel Sulfur Monitoring: To demonstrate compliance with the fuel sulfur limit, the permittee shall monitor the sulfur content of natural gas with data collected from the natural gas pipeline transmission company consistent with the current NSPS Custom Fuel Monitoring Schedule specified in the Title V air operation permit. [Rules 62-4.070(3), F.A.C. and NSPS Subpart GG in 40 CFR 60.]