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

Florida Power Corporation dba
Progress Energy Florida, Inc.
1729 Baillies Bluff Road
Holiday, Florida 34691-9753

Authorized Representative:
William Luke, Plant Manager

Air Permit No. 1010017-013 -AC (PSD-FL-419)
Progress Energy Anclote Power Plant
SIC Code: 4911 - Electric Services

Natural Gas Conversion Project
Expiration Date: December 31, 2014
Pasco County, Florida

PROJECT

This is the final air construction permit, which authorizes conversion of Units 1 and 2 and associated equipment from present use of heavy fuel oil and natural gas to exclusive use of natural gas and establishes permit limits for nitrogen oxides (NO_X) and carbon monoxide (CO) at the Progress Energy Anclote Power Plant, located in Pasco County at 1729 Baillies Bluff Road, Holiday, Florida. The UTM coordinates are Zone 17, 324.4 km East and 3118.7 km North.

This final permit is organized into the following sections: Section 1 (General Information), Section 2 (Administrative Requirements), Section 3 (Emissions Units Specific Conditions) and Section 4 (Appendices).

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 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. A copy of this permit modification shall be filed with the referenced permit and shall become part of the permit.

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)

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 the date indicated below to the following persons.

William Luke, Plant Manager, Anclote Power Plant: william.luke@pgnmail.com
Scott Osbourn, P.E., Golder Associates: sosbourn@golder.com
Robert Wong, Administrator, DEP SWD: robert.wong@dep.state.fl.us
Cindy Mulkey, DEP Siting Office: cindy.mulkey@dep.state.fl.us
Heather Ceron, EPA Region 4: ceron.heather@epa.gov
Lynn Scearce, DEP OPC: lynn.scearce@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)

FACILITY DESCRIPTION

The existing facility consists of the following emissions units (E.U.) and activities.

E.U. ID No.	Brief Description
Regulated Emissions Units	
001	Fossil Fuel Fired Steam Generator Unit No. 1
002	Fossil Fuel Fired Steam Generator Unit No. 2
007	Two, 12-cell Mechanical Draft Helper Cooling Towers
008	Relocatable Diesel Fired Engine Driven Generator(s)
Unregulated Emissions Units and/or Activities	
003	Surface Coating Operations
005	Emergency Diesel Generator
006	Diesel Air Compressor

Units 1 and 2 are residual fuel oil and natural gas-fired steam electric generating units. Each boiler provides steam to a steam turbine-electric generator with a gross nameplate rating of 556.2 megawatts (MW). Units 1 and 2 began commercial operation in 1974 and 1978, respectively as residual fuel oil units. Limited natural gas firing capability of 2,300 million Btu per hour (MMBtu/hour) was installed on each in 1998.

The two units exhaust through a single stack that is 499 feet in height, 24 feet in diameter and at a temperature of approximately 320 degrees Fahrenheit (°F).

Units 1 and 2 are each equipped with continuous emissions monitoring systems (CEMS) to measure and record NO_X emissions and a continuous opacity monitoring system (COMS) to measure and record the opacity of the exhaust gas.

FACILITY REGULATORY CLASSIFICATION

- Upon conversion to exclusive use of natural gas, the facility will not be major source of hazardous air pollutants (HAP).
- The facility operates 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 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

PROPOSED PROJECT

This project: authorizes construction to increase natural gas firing capability on Units 1 and 2; removes residual fuel oil and other liquid fuels as authorized fuels for Units 1 and 2; establishes a nitrogen oxides (NO_X) emission standard of 0.30 pounds per million Btu heat input (lb/MMBtu) on a 12-month rolling average; and establishes a Best Available Control Technology (BACT) carbon monoxide (CO) emission standard of 0.15 lb CO/mmBtu on a 30-day rolling average.

SECTION 2. ADMINISTRATIVE REQUIREMENTS (DRAFT)

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Office of Permitting and Compliance mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

2. Compliance Authority: Southwest District Office. The mailing address and phone number of the Southwest District Office is: 13051 N. Telecom Parkway, Temple Terrace, FL 33637-0926, 813/632-7600.

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: 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. Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.

   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 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.

   c. 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 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 at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and 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 each Compliance Authority.
[Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

A. Fossil Fuel-Fired Steam Generators, Units 1 and 2

This section of the permit addresses the following emissions units.

E.U. ID No.	Brief Description
001	Fossil Fuel Fired Steam Generator Unit No. 1 – Gross Nameplate Rating of 556.2 MW
002	Fossil Fuel Fired Steam Generator Unit No. 2 – Gross Nameplate Rating of 556.2 MW
Design Heat Input Rating of Units 1 and 2: The design heat input rating of each unit after conversion to exclusive natural gas firing is 5,500 million Btu per hour (MMBtu/hour).	

{Permitting Note: Existing Units 1 and 2 commenced construction prior to the applicable dates of federal or State requirements to obtain a permit for the Prevention of Significant Deterioration (PSD) and prior to the applicability dates of 40 Code of Federal Regulations (CFR), Part 60, Subparts D - Standards of Performance for Fossil Fuel Fired Steam generators and Da - Standards of Performance for Electric Utility Steam Generating Units. In accordance with Rule 62-212.400(PSD), F.A.C., this project subjects these units to a BACT determination for carbon monoxide (CO). Emissions standards specified in this permit allow these units to avoid PSD preconstruction review for nitrogen oxides (NO_X)}

AUTHORIZED CONSTRUCTION

1. Previous Permits: The conditions of this section supplement all previously issued air construction permits affecting Units 1 and 2. These include the original construction permit issued in 1971, a permit issued in 1999 to install partial natural gas capability and a permit issued in 2007 affecting sulfur dioxide (SO_2) monitoring. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions. However, this permit supersedes the approved fuels and authorized heat input authorizations and limitations contained in previous permits. Relevant provisions of these permits are incorporated in the Facility Title V Operation Permit. [Permits AC-367, 1010017-004-AC, 1010017-009-AC and 1010017-012-AV]

2. Natural Gas Conversion Project: For Units 1 and 2, the permittee is authorized to perform the following work to convert Units 1 and 2 and associated equipment from present use of heavy fuel oil and natural gas to exclusive use of natural gas.

   a. Three additional levels of natural gas burners per furnace;
   b. Superheater surface area reductions;
   c. Disabling of residual fuel oil firing capability;
   d. Upgrade of superheater metallurgy;
   e. Upgrade of the burner control and management system;
   f. Other modifications to maintain the gross generating capacity or improve the net generating capacity of the units.

3. BACT Controls for CO: For Units 1 and 2, the applicant shall incorporate combustion controls based on good combustion practices for CO and NO_X including, but not limited to, combustion by air staging achieved by close coupled overfire air (CCOFA).
   [Rule 62-210.200(Definition BACT) and 62-212.400(PSD/BACT), F.A.C.]

PEFORMANCE REQUIREMENTS

4. Permitted Capacities: Maximum heat input rates are not established. The design heat input rating is increased by this project to 5,500 MMBtu/hour/unit to achieve the gross nameplate capacity of 556.2

MW per steam turbine-electrical generator. Greater or lower heat input may be required to achieve the gross capacity of each unit.

5. Authorized Fuels. After December 31, 2013 only natural gas may be fired in Units 1. After June 30, 2014 only natural gas may be fired in Unit 2. [Application No. 1010017-013-AC; Rules 62-4.070 (Reasonable Assurance), 62-210.200(Definition BACT) and 62-212.400(PSD, BACT), F.A.C.]

6. Capacities and Restrictions: Units 1 and 2 are not restricted in hours of operation and may operate 8,760 hours per year.
[Application No. 1010017-013-AC; Rule 62-210.200(Definition Potential to Emit), F.A.C.]

EMISSION LIMITATIONS AND PERFORMANCE STANDARDS

7. Emission Standards: Emissions from Units 1 and emissions from Unit 2 shall not exceed the following standards based on the data collected by the continuous emission monitoring systems (CEMS) and the continuous opacity monitoring systems (COMS).

   a. *NO_X emissions:* As determined by CEMS data, after December 31, 2013 and after June 30, 2014 emissions of NO_X from Unit 1 and Unit 2, respectively, shall not exceed 0.30 lb/mmBtu heat input on a 12-month rolling average for all periods of operation including startup, shutdown and malfunction. [Rules 62-4.070, 62-210.200 (Definition-Potential to Emit), F.A.C. and avoidance of Rule 62-212.400(PSD/BACT), F.A.C.]

   b. *CO emissions:* As determined by CEMS data, after December 31, 2013 and after June 30, 2014 emissions of CO from Unit 1 and Unit 2, respectively, shall not exceed 0.15 lb/mmBtu heat input on a 30-operating day rolling average excluding periods of startup, shutdown and malfunction. [Rules 62-4.070, 62-210.200 (Definition-BACT) and 62-212.400(PSD/BACT), F.A.C.]

   c. *Visible Emissions:* As determined by COMS data or EPA Method 9, after December 31, 2013 and after June 30, 2014 visible emissions from Unit 1 and Unit 2, respectively, shall not exceed 15 percent (%) opacity based on a 6-minute block average, except for one 6-minute per hour of not more than 20%. For periods of startup, shutdown and malfunction, visible emissions shall not exceed 20% opacity except for one 6-minute period per hour of not more than 27% as determined by COMS data or EPA Method 9.
   [Rules 62-4.070, 62-210.200 (Definition-BACT and 62-212.400(PSD/BACT), F.A.C.]

   {Permitting Note: The permittee shall implement the calculation approach specified by this permit for each CEMS, as follows: 24-hour Block Average. Compliance shall be determined after each 24-hour block by calculating the arithmetic average of all valid hourly averages occurring within that block averaging period; 30-day Rolling Average. Compliance shall be determined after each operating day by calculating the arithmetic average of all valid hourly averages occurring within that day and the prior 29 operating days; 12-month Rolling Average. Compliance shall be determined after each operating month by calculating the arithmetic average of all valid hourly averages occurring within that month and the prior 11 operating months. [Rule 62-4.070(3), F.A.C.]}

8. Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. The natural gas burners, CCOFA systems and upgraded burner control and management system shall operate as necessary to comply with the emission standards of this permit. [Rule 62-210.650, F.A.C.]

9. 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. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]

10. Excess Emissions - Allowed: In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]

CONTINUOUS EMISSIONS MONITORING REQUIREMENTS

11. Existing CEMS/COMS: For Units 1 and 2, the permittee shall continue to calibrate, operate, and maintain continuous monitoring equipment to measure and record opacity and NO_X. The monitors shall be installed, operated and maintained in accordance with the existing requirements of 40 CFR 60.45, as well as the provisions of the federal acid rain program. [Rule 62-4.070(3), F.A.C.]

12. CO-CEMS Installation: The applicant shall install CO-CEMS and conduct the appropriate performance specification by December 31, 2013 for Unit 1, and June 30, 2014, for Unit 2, respectively. Thereafter, the permittee shall properly, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B.
[Rules 62-4.070(3) and 62-212.400(Definition-BACT), F.A.C.]

13. Compliance by COMS and CEMS: Compliance with the standards for opacity and emissions of CO and NO_X shall be demonstrated with data collected from the required continuous monitoring systems. Within 90 days of reestablishing commercial operation of each unit, the permittee shall certify proper operation of each required monitor. [Rules 62-4.070(3) and 62-212.400(Definitions-BACT), F.A.C.]

COMPLIANCE TESTING REQUIREMENTS

14. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]

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

EPA Methods	Description of Method and Comments
1-4	Determination of Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content. Methods shall be performed as necessary to support other methods.
3 or 3A	Any of these methods shall be used to determine O_2 or carbon dioxide (CO_2) diluent concentration when conducting relative accuracy test audits (RATA) in conjunction with diluent O_2 or CO_2-CEMS installed, calibrated, maintained and operated in accordance with 40 CFR 60, Appendix B, Performance Specification 3 (PS-3) and Appendix F.
7E	This method shall be used to determine NO_x emissions when conducting RATA in conjunction with NO_x-CEMS installed, calibrated, maintained and operated in accordance with 40 CFR 60, Appendix B, PS-2 and Appendix F.
9	Visual Determination of the Opacity of Emissions.
10	This methods shall be used to determine CO emissions when conducting RATA in conjunction with CO-CEMS installed, calibrated, maintained and operated in

	accordance with 40 CFR 60, Appendix B, PS-4A and Appendix F.
The above methods are described in 40 CFR 60, Appendix A and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used without prior written approval from the Department.	

[Rules 62-4.070(3), 62-204.800(8) and 62-212.400(BACT), F.A.C.; 40 CFR 60, Appendix A]

RECORDS AND REPORTS

16. Malfunction Notifications: If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind or by other cause, the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its 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 Department rules. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the malfunction.
[Rules 62-210.700(6) and 62-4.130, F.A.C.]

17. Fuel Monitoring – Units 1 and 2: Using the existing operating data system, the permittee shall continuously monitor each fuel to determine the heat input rates to Units 1 and 2. The heat input rates shall be calculated from the amounts of fuel fired and the higher heating value (HHV) of each fuel as determined by vendor certifications or the regular sampling and analysis required by the current Title V permit. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

18. Reporting Annual Emissions: The permittee shall use data from each required CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rules 62-210.370(3) and 62-212.300(1)(e), F.A.C.
[Rule 62-4.070(3), F.A.C.]

B. Mechanical Draft Helper Cooling Towers (EU 007)

EMISSIONS UNITS

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
007	Mechanical Draft Helper Cooling Towers with maximum circulation rate of 660,000 GPM.

PREVIOUS PERMITS

1. Previous Permits: The conditions of this section supplement the original air construction (PSD) permit issued in 2007 authorizing the replacement of previously installed cooling towers. However, this permit supersedes the performance restrictions in hours of operation. Relevant provisions of the PSD permit for the cooling towers are incorporated in the Facility Title V Operation Permit. [Permits 1010017-007-AC (PSD-FL-379), 1010017-008-AC and 1010017-012-AV]

2. Hours of Operation. Both cooling towers shall not operate more than 9,000 hours in total per calendar year. This equates to an average of 4,500 hours/year/cooling tower. [Rule 62-210.200 (Definitions – Potential to Emit (PTE), F.A.C.; and Permit No. 1010017-007-AC (PSD-FL-379)]

C. Natural Gas Fuel Heaters (EU 009)

This section of the permit addresses the following emissions unit.

EU No.	Emissions Unit Description
009	Two nominal 16.5 MMBtu/hour (HHV) natural gas-fired process heaters

NESHAP APPLICABILITY

1. NESHAP Subpart DDDDD Applicability: These emissions units are subject to Subpart DDDDD, which applies to an industrial, commercial, or institutional boiler or process heater as defined in Sec. 63.7575 that is located at, or is part of, a major source of HAP as defined in Sec. 40 CFR 63.2.

   The listed emission units shall comply with 40 CFR 63, NESHAP Subpart DDDDD only to the extent that the regulations apply to the emission unit and its operations (e.g. limited use gas-fueled or small gas-fueled categories.

   [40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, or Institutional Boiler or Process Heater]

NSPS APPLICABILITY

2. NSPS Subpart Dc Applicability: Each 16.5 MMBTU/hr process heater is subject to all applicable requirements of 40 CFR 60, Subpart Dc which applies to Small Industrial, Commercial, or Institutional Boiler. Specifically, each emission unit shall comply with 40 CFR60.48c Reporting and Recordkeeping Requirements.

   [Rule 62-204.800(7)(b) and 40 CFR 60, NSPS-Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, attached as Appendix Dc].

EMISSIONS AND TESTING REQUIREMENTS

3. Natural Gas Fired Process Heaters BACT Emissions Limits:

NO_X	CO	VOC, SO_2, PM/PM_{10}
0.095 lb/MMBtu	0.08 lb/MMBtu	2 gr S/100SCF natural gas spec and 10% Opacity

4. Natural Gas Fired Process Heaters Testing Requirements: Each unit shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each combined cycle unit. As an alternative, a Manufacturer certification of emissions characteristics of the purchased model that are at least as stringent as the BACT values can be used to fulfill this requirement.

   [Rule 62-297.310(7)(a)1, F.A.C. and 40 CFR 60.8]

EQUIPMENT SPECIFICATIONS

5. Equipment: The permittee is authorized to install, operate, and maintain two 16.5 MMBtu/hour (HHV) process heaters for the purpose of heating the natural gas supply to the CTGs. [Application No. 1010017-013-AC; Rule 62-210.200(PTE), F.A.C.]

PERFORMANCE REQUIREMENTS

6. Hours of Operation: The gas-fueled process heaters are allowed to operate continuously (8760 hours per year). [Applicant Request; Rule 62-210.200(PTE), F.A.C. and 40 CFR 63.7575]

NOTIFICATION, REPORTING AND RECORDS

7. Notification: Initial notification is not required for the two small gas-fueled 16.5 MMBtu/hr process heaters.
[40 CFR 63.9, 40 CFR 63.7506(c) and Rule 62-204.800(11)(b) F.A.C.]