Florida Department of Environmental Protection

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

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

PERMITTEE

Tampa Electric Company
Post Office Box 111
Tampa, Florida 33600-0111

Authorized Representative:
Karen Sheffield, Director, Polk Power Station

Air Permit No. 1050233-043-AC/PSD-FL-421B
Permit Expires: January 1, 2018
Minor Air Construction Permit
Polk Power Station
Steam Turbine Output Reallocation Project

PROJECT

This is the final air construction permit, which authorizes a change to the greenhouse gas compliance allocation methodology for electricity generated by the steam turbine generator (STG) for combined cycle Unit 2 at the Polk Power Station. The proposed work will be conducted at the existing Polk Power Station, which is an electric power plant categorized under Standard Industrial Classification No. 4911. The existing facility is located in Polk County at 9995 State Route 37 South in Mulberry, Florida. The UTM coordinates are Zone 17, 402.44 kilometers (km) East, and 3067.36 km North.

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

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

David Lyle Read, P.E.
2016.07.14 09:34:58 -04'00'

For:

Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Construction Permit package 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.

Karen Sheffield, Tampa Electric Company: kasheffield@tecoenergy.com
Lyndsey Figler, Tampa Electric Company: lfigler@tecoenergy.com
Byron Burrows, P.E., Tampa Electric Company: btburrows@tecoenergy.com
EPA Region 4 NSR/PSD: NSRsubmittals@epa.gov
DEP Siting Office: SCO@dep.state.fl.us
DEP Southwest District Air Permitting: SWD_Air_Permitting@dep.state.fl.us
DEP Southwest District Compliance: SWD_Air@dep.state.fl.us
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.

Friday_B

Digitally signed by Friday_B
DN: o=Florida Dept of Environmental Protection, email=Barbara.Friday@dep.state.fl.us, cn=Friday_B
Date: 2016.07.14 10:37:09 -04'00'

FACILITY DESCRIPTION

The Polk Power Station consists of: a nominal 250 MW (net) solid fuel-based integrated gasification and combined cycle (Unit 1) including a sulfuric acid plant and an auxiliary boiler; four natural gas-fueled nominal 165 MW simple cycle combustion turbine-electrical generators (CTGs) designated as Units 2, 3, 4 and 5; and ancillary equipment. The existing facility consists of the following emissions units.

Facility ID No. 1050233

ID No.	Emission Unit Description
001	260 MW Combined Cycle Gas Turbine No. 1
003	120 Million Btu per Hour Auxiliary Boiler
004	Sulfuric Acid Plant
005	Solid Fuel Handling System
006	Solid Fuel Gasification System
007	Emergency Equipment
009	Nominal 165 MW Simple Cycle Turbine No. 2
010	Nominal 165 MW Simple Cycle Turbine No. 3
013	Nominal 165 MW Simple Cycle Turbine No. 4
014	Nominal 165 MW Simple Cycle Turbine No. 5

PROPOSED PROJECT

As was permitted in Permit Nos. 1050233-034-AC (PSD-FL-421) and PSD-EPA-R4014, the permittee intends to convert the four 165 MW simple cycle turbines generators (EU Nos. 009, 010, 013, and 014) into a “4-on-1” combined cycle unit. This combined cycle unit will consist of the four combustion turbines generators (CTG), four newly constructed heat recovery steam generators (HRSG) with natural gas-fired duct burners, and a single nominal 500 MW STG.

This permit entails a minor modification to Permit No. PSD-EPA-R4014, by changing the manner in which electricity generated by the steam turbine generator is allocated to the four CTG/HRSG units.

The following emission units were added in Permit No. 1050233-034-AC and are affected by this steam turbine reallocation project.

Facility ID No. 1050233

ID No.	Emission Unit Description
020	Unit 2A Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator
021	Unit 2B Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator
022	Unit 2C Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator
023	Unit 2D Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator

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 (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

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: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Compliance Assurance Program of the Department's Southwest District Office at 13051 North Telecom Parkway, Temple Terrace, Florida 33637. The telephone number is 813-470-5700 and the fax number is 813-470-5995.

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. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(3) & (4), 62-4.080 & 62-210.300(1), F.A.C.]

8. 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.]

9. 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 and Chapter 62-213, F.A.C.]

A. Combined Cycle Unit 2 (EU Nos. 020, 021, 022, and 023)

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
020	Unit 2A Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator
021	Unit 2B Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator
022	Unit 2C Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator
023	Unit 2D Nominal 165 MW Combustion Turbine and Duct-fired Heat Recovery Steam Generator

REVISION TO EXISTING PERMIT

1. Permit Condition Revision: Condition Number IX.D.10 of the greenhouse gas PSD permit for these emissions units, Permit No. PSD-EPA-R4014, issued by US EPA on December 18, 2013, is amended as follows, where strikethrough font denotes a deletion, and double underline font denotes an insertion:

   10. For demonstrating compliance with the limits specified in **Condition IX.B.2**, Permittee shall:

   a. For combined cycle/natural gas (with or without duct burners): use the procedures set forth in 40 CFR parts 75 and 98 to determine, on a monthly basis, resulting GHG emissions (as CO_2e) based on the combination of measured CO_2 emissions (from continuous monitoring system) and calculated CO_2e of other GHG pollutants [as specified in **Condition H:** ***GLOBAL WARMING POTENTIAL (GWP)***]. Permittee shall apportion the STG output (gross MW) based on the ~~output (gross MW) of the individual CTs~~ heat input (MMBtu) to the individual CT/HRSG units, including duct burners. Permittee shall keep adequate records of these GHG emission calculations according to requirements in **Condition IX.F.1.**

   b. For combined cycle/ULSD fuel oil, simple cycle/natural gas, and simple cycle/ULSD fuel oil: use the procedures set forth in 40 CFR parts 75 and 98 to determine, initially upon startup and on a 12-month basis thereafter, resulting GHG emissions as (CO_2e) based on an annual 3-hour test (EPA Reference Test Method 3A) at 100 percent load, corrected to ISO conditions, using the measured CO_2 emissions (from continuous monitoring system) and calculated CO_2e of other GHG pollutants [as specified in **Condition H:** ***GLOBAL WARMING POTENTIAL (GWP)***]. For the combined cycle/ULSD fuel oil operating scenario, Permittee shall apportion the STG output (gross MW) based on the ~~output (gross MW) of the individual CTs~~ heat input (MMBtu) to the individual CT/HRSG units, including duct burners. Permittee shall keep adequate records of these GHG emission calculations according to requirements in **Condition IX.F.1.**

   [Permit No. PSD-EPA-R4014; Application No. 1050233-043-AC]

2. Limitation of Permit Scope: All other conditions related to these emissions units remain unchanged. [Permit Nos. 1050233-034-AC (PSD-FL-421) and PSD-EPA-R4014]