Title V Air Operation Permit Renewal
Permit No. 1030013-007-AV

APPLICANT

The applicant for this project is Duke Energy Florida, Inc. The applicant's responsible official and mailing address are: Reginald Anderson, Plant Manager, Duke Energy Florida, Inc., Bayboro Power Plant, 1601 Weedon Drive N.E., Saint Petersburg, Florida 33702.

FACILITY DESCRIPTION

The applicant operates the existing Bayboro Power Plant, which is located in Pinellas County at 13th Avenue and 2nd Street South, Saint Petersburg, Florida.

The facility consists of four (4) emission units consisting of combustion turbines that are fired by No. 2 fuel oil. Each emission unit is used as a peaking unit to run a nominal 56.7 megawatt (MW) generator and consists of two (2) combustion turbine engines with each engine having its own stack. Emissions from the combustion turbines are uncontrolled. The turbines are not subject to 40 CFR 60 Subpart GG, Standards of Performance for Stationary Gas Turbines. Because these emissions units have no add-on control devices, they are not subject to the Compliance Assurance Monitoring (CAM) requirements of 40 Code of Federal regulations (CFR) 64. The facility is subject to the Clean Air Interstate Rule provisions.

This facility also includes miscellaneous unregulated/insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the existing Title V permit for the above referenced facility.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Air Operation Permit issued August 26, 1999
Application for a Title V Air Operation Permit Renewal received February 28, 2014

PRIMARY REGULATORY REQUIREMENTS

Standard Industrial Classification (SIC) Code: 4911 – Electrical Generation.

HAP: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

CAIR: The facility is subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility.

GHG: The facility is identified as a major source of green house gas (GHG) pollutants.

PROJECT REVIEW

Changes to the permit made as part of this renewal are shown in ~~strike-through~~ format for deletions and in double underline format for additions. For ease of identification, all changes have also been highlighted in yellow within the permit document.

Changes to the permit made as part of this renewal are:

1. **Section III, Subsection A, Emissions Units Description**

   These four emissions units are No. 2 fuel oil-fired combustion turbines (CT) manufactured by Pratt & Whitney (model number FT4C-1LF). Each ~~CT~~ emission unit is used as a peaking unit to run a nominal 56.7

MW generator~~.~~and ~~Each CT engine has~~ consists of two (2) combustion turbine engines with each engine having its own stack. The manufacturers fuel flow and heat input ratings at 30°F for each ~~turbine~~ emission unit is 5,609 gallons per hour of No. 2 fuel oil (corresponds to approximately 774 million Btu per hour (MMBtu/hr)) per emission unit (total of two combustion turbine engines). The actual heat input rate of the turbine is a function of the ambient temperature. Emissions from the CTs are uncontrolled, and therefore, are not subject to CAM. These emission units are regulated under the Clean Air Interstate Rule (CAIR).

This change was requested by the permittee to better describe the emissions units.

2. **Excess Emissions**

A.7. Excess Emissions Allowed. Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted provided best operational practices to minimize emissions are adhered to, and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by ~~PCDEM~~ the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

This change was requested by the permittee to reflect the actual rule language.

3. **Test Methods and Procedures**

A.11. Annual Compliance Tests. During each federal fiscal year (October 1st to September 30th), these emissions units shall be tested to demonstrate compliance with the emissions standards for VE. Annual emissions compliance testing for visible emissions is not required for these emissions units while burning liquid fuels for less than 400 hours per year. ~~The permittee shall conduct a fuel analysis during each calendar year. See Specific Conditions **A.15** and **A.16**.~~ [Rule 62-297.310(7)(a)4.a., F.A.C.; Permit Nos. AO52-253207A, AO52-253209A, AO52-253211A, AO52-253213A and 1030013-001-AV]

This change was requested by the permittee because the fuel stored in the storage tanks is tested for sulfur content prior to each delivery.

A.12. Compliance Tests Prior to Renewal. A visible emissions test is required and shall be conducted ~~during the 12 month period prior to permit renewal~~ once per each five-year period, coinciding with the term of its air operation permit. [Rule 62-297.310(7)(a)3., F.A.C.; Rule 62-297.310(7)(a)8., F.A.C.; and, Permit Nos. AO52-253207A, AO52-253209A, AO52-253211A, AO52-253213A and 1030013-001-AV]

This change was requested by the permittee to reflect the actual rule language.

~~**A.16.** Fuel Analysis. In order to provide reasonable assurance that the fuel oil supplier's fuel oil analysis is accurate, the permittee shall perform at least one audit sample analysis from a fuel oil delivery during each calendar year period. The fuel oil shall be analyzed for the following:~~

~~a. Btu content,~~

~~b. American Petroleum Institute (API) gravity,~~

~~c. Density, and~~

~~d. Sulfur content, percent by weight.~~

~~An audit sample analysis is not required in any calendar year for which the permittee provided fuel analysis to demonstrate compliance with the fuel oil sulfur limitation. [Permit Nos. AO52-253207A, AO52-253209A, AO52-253211A, AO52-253213A]~~

This change was requested by the permittee because the fuel stored in the storage tanks is tested for sulfur content prior to each delivery and this type of analysis is not required in other Title V permits issued by DEP.

4. **Recordkeeping and Reporting Requirements**

~~**A.18.** Test Reports. In addition to the requirements in Appendix TR, Condition **TR8.**, each test report shall include:~~

~~a. A statement of the maximum turbine performance based on the turbine performance criteria defined by Specific Condition **A.1.**~~
~~b. A copy of the graph of Fuel Heat Input verses Ambient Temperature for each peaking unit noting the maximum heat input and the ambient temperature during the compliance test; and~~
~~c. A copy of the fuel oil analysis.~~
~~[Permit Nos. AO52-253207A, AO52-253209A, AO52-253211A, AO52-253213A]~~

This change was requested by the permittee because this information is provided in the test report as detailed by Condition **TR.8** of Appendix TR. Additionally, the graph of fuel heat input verses ambient temperature is included as an appendix.

5. Emissions Unit 012 - Three Relocatable Diesel Generators was removed from the permit. This change was requested by the permittee.

6. Facility-wide conditions **FW6.** and **FW7.**; and, Appendix RR, Facility-wide Reporting Requirements were changed to reflect the new Annual Operating Report and Title V Annual Emissions Fee rule requirements.

CONCLUSION

This project renews Title V air operation permit No. 1030013-006-AV, which was effective on October 13, 2009. This Title V air operation permit renewal is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210, and 62-213, F.A.C.