TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Florida Power & Light Company (PSN)
700 Universe Boulevard
Juno Beach, Florida 33408

Sanford Power Plant
Facility ID No. 1270009

PROJECT

Project No. 1270009-023-AC
Application for Minor Source Air Construction Permit
Turbine Excess Emissions

COUNTY

Volusia County, Florida

PERMITTING AUTHORITY

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

April 18, 2014

1. GENERAL PROJECT INFORMATION

1.1. 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 Chapters 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 in Rule 62-204.800, F.A.C.

1.2. 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.

1.3. Facility Description and Location

The Florida Power & Light Company (PSN) Sanford Power Plant is an existing stationary source, which is categorized under Standard Industrial Classification Code No. 4911. The existing Sanford Power Plant is located in Volusia County at 950 South Highway 17-92, DeBary, Florida in Florida. The UTM coordinates of the existing facility are Zone 17, 468.1kilometers (km) East, and 3190.86 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to Ambient Air Quality Standards (AAQS).

1.4. Facility Regulatory Categories

- The facility is not 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 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.

1.5. Project Description

The Florida Power & Light Company (PSN) Sanford Power Plant requests a revision to the excess emissions language in Air Construction Permit 1270009-022-AC to be consistent with the excess emissions language in other Florida Power & Light Company facility Title V permits that have similar GE 7FA combustion turbines. The change addresses situations where excess emissions are excluded from the 24-hour CEMS data.

1.6. Processing Schedule

- 02/14/2014 Received the application for a minor source air pollution construction permit.
- 02/14/2014 Application is complete.

2. PSD APPLICABILITY

2.1. General PSD Applicability

For areas currently in attainment with the 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:

- 5 tons per year or more of lead;
- 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: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, Portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); 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 $\mu g/m^3$, 24-hour average.

If the potential emission equals or 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

There will be no change in emissions as a result of the requested change so the total project emissions will not exceed the PSD significant emissions rates; therefore, the project is not subject to PSD preconstruction review.

3. DEPARTMENT REVIEW

3.1. Brief Discussion of Emissions

There is no change in emissions as a result of this project.

3.2. State Requirements

None.

3.3. Federal NSPS Provisions

None.

3.4. Federal NESHAP Provisions

None.

3.5. Other Draft Permit Requirements

The language in Specific Condition 5 of permit No. 1270009-022-AC is changed, as follows:

{The following permit condition is revised as indicated. ~~Strikethrough~~ is used to denote the deletion of text. Double-underlines are used to denote the addition of text. All changes are emphasized with yellow highlight in the electronic document.}

5. Allowable Excess Emissions: Subject to the following conditions, excess emissions resulting from startup, shutdown, tuning and malfunction of the combustion turbines shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized. For each CT/HRSG system, excess emissions from startup, shutdown, tuning, and malfunction shall be excluded from the CEMS data in any 24-hour period for the following conditions (these conditions are considered separate events and each event may occur independently in any 24-hour period):

   a. Except during "cold startup to combined cycle operation" or "shutdown from combined cycle operation" excess emissions occurrences shall not exceed two hours in any 24-hour period. Specifically, for a warm startup of any gas turbine/HRSG system, excluded emissions shall not exceed two hours in any single startup and no more than two startups can occur in any 24-hour period. "Warm startup of a gas turbine/HRSG system" is defined as a startup after the pressure in the high-pressure (HP) steam drum is above 450 psig.

   b. Cold startup to combined cycle operation is defined as operation when the HRSG high-pressure drum has been below 450 psig for at least one hour. During cold startup to combined cycle operation, up to four hours of excess emissions are allowed.

   c. During shutdown from combined cycle operation, up to three hours of excess emissions are allowed.

   d. During cold startup of the steam turbine system (combustion turbines, HRSG and steam turbine electrical generator), up to 12 hours per combustion turbine per cold startup of the steam turbine system are allowed. Cold startup of the steam turbine system shall be completed within 12 hours.

   e. DLN Tuning. CEMS data collected during initial or other major DLN tuning sessions shall be excluded from the CEMS compliance demonstration provided the tuning session is performed in accordance with the manufacturer's specifications. A "major tuning session" would occur after completion of initial construction, a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances as identified by the equipment manufacturer. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail.

   f. Subject to the following conditions, excess emissions resulting from full speed no load (FSNL) testing

shall be permitted for limited periods:

(1) The permittee notifies the Compliance Authority for each day that FSNL testing is required;

(2) The duration of excess emissions shall not exceed 15 hrs for the entire test period

(3) The permittee submits a report to the Compliance Authority summarizing the hourly NO_X emissions during the FSNL period; and

(4) This authorization does not waive any applicable federal requirements of NSPS Subparts A or GG.

[Rules 62-4.070(3), 62-4.130 & 62-210.700, F.A.C.; Permit No. 1270009-022-AC/PSD-FL-270(E); and, applicant request from project No. 1270009-023-AC]

The requested change is consistent with other Florida Power & Light Company facility Title V permits that have similar GE 7FA combustion turbines

4. 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. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Edward Svec 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 Office of Permitting and Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.