Title V Air Operation Permit Renewal
Permit No. 0710002-018-AV

## APPLICANT

The applicant for this project is Florida Power& Light Company. The applicant's responsible official and mailing address are: Dwayne Harper, Plant General Manager, Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408.

## FACILITY DESCRIPTION

The applicant operates the existing Fort Myers plant, which is located in Lee County at 10650 State Road 80, Fort Myers, Florida.

This facility consists of 12 simple-cycle combustion turbines, designated as Units 3 through 14; 6 combined-cycle combustion turbines, designated as Units 2A through 2F; and two simple-cycle combustion turbine peaking units, designated as Units 3A and 3B, by the Florida Power & Light Company.

Units 3 through 14 are fuel oil fired combustion turbines manufactured by the General Electric Company, each with a rated gross capacity of 63 MW. Foggers were installed at the compressor inlet to each of the twelve combustion turbines during 1999, and initial compliance testing was completed on November 30, 1999.

Units 2A through 2F are combined-cycle units. Each unit is a 170 MW General Electric MS7241FA gas-fired combustion turbine-generator with an unfired heat recovery steam generator (HRSG) that raises sufficient steam to produce another 80 MW via the existing steam-driven electrical generators. The facility includes a cooling tower for once-through brackish water and 6 direct-fired natural gas heaters with a 30-foot stack to heat the natural gas prior to use during simple cycle operation and cold start-ups.

Units 3A and 3B are simple-cycle combustion turbine peaking units. Each unit is a 170 MW General Electric MS7241FA gas-fired combustion turbine-generator with a 100.5-foot stack. Also included are two natural gas fuel pre-heaters with 30-foot stacks. Unit 3A started commercial operation on April 14, 2003, and Unit 3B started commercial operation on March 18, 2003.

The facility has six stationary reciprocating internal combustion engines (RICE) on site: EU 033, one diesel fuel-fired fire pump manufactured by Caterpillar, serial number 03Z17257, Model 3208, 2,300 RPM, 187 HP, in service 2001; EU 031, Hurricane Emergency Propane Generators (2) for the Hurricane Hardening Program **(**Emergency Spark Ignition Generators); and EU 032, Emergency Generators, fixed diesel engines (3), 2.3 MW, manufactured by Caterpillar, Model # 3500B, serial numbers: #1 8XS00544, #2 8XS00546, #3 8XS00545, 3,096 HP, 2,310 KW, in service 12/27/05, #2 distillate (diesel) fuel.

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

Application for a Title V Air Operation Permit Renewal received May 18, 2012.
Draft/Proposed Title V Air Operation Permit Renewal posted onto web site on August 14, 2012.
Public Notice published on August 22, 2012.
Notification to U.S. EPA Region 4 of Publication of Public Notice on August 24, 2012.

## PRIMARY REGULATORY REQUIREMENTS

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

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title IV: The facility operates units subject to the acid rain provisions of the Clean Air Act.

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.

NSPS: The facility operates units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

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. The older simple cycle peaking units, EU 003 through 014, have emission limits for nitrogen oxides ($NO_X$) but have no add-on control equipment. The combined cycle units and the larger simple cycle units (EU 018 through 023, 027 and 028) incorporate Dry Low $NO_X$ (DLN) technology and clean fuels. They do not have add-on pollution control devices but do have continuous emissions monitors (CEMS) for $NO_X$.

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

**PROJECT REVIEW**

The applicant requested a few minor changes (described below) as part of this Title V air operation permit renewal project. Some of the requested changes are clarifications to properly reflect the underlying applicable requirements, while others are in addition to the current underlying applicable requirements. The Department is agreeable to allowing the changes that are in addition to the current applicable requirements within this Title V air operation permit since operational efficiency should be improved through proper tuning, resulting in lower overall emissions throughout the operating year. In order to become permanent requirements/limitations, these changes will need to be established through an air construction permit to revise the original federally enforceable requirements. Unless permanently established through an air construction permit revision, these changes are only effective until the expiration date of this permit.

Changes to the previous permit conditions that have been made as part of this renewal are shown below 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. These changes have been incorporated into the renewed permit.

1. Specific Condition **A.13.** was changed to reflect the correct language of Specific Condition 20. of underlying air construction permit No. 0710002-005-AC, as follows:

   **A.13.** Nitrogen Oxides Testing. Nitrogen oxides emissions shall be determined by a stack test on one representative turbine. Testing shall be preformed each federal fiscal year, no later than September 30th~~, and on a different turbine not previously tested~~. [0710002-005-AC, Specific Condition No. 20.]

2. Although the applicant requested the following language be added to align this facility's permit language with other FP&L facility permits, Specific Condition **A.13.** was not changed because the language conflicts with Specific Condition 20 of the underlying air construction permit:

   "Provided operation is no more than 320 hours/year/turbine on oil, $NO_X$ emissions for the combustion turbines shall be tested every five (5) years by EPA Method 20 or Method 7E tests as described in 40 CFR 60, Appendix A on any representative unit in the bank of the combustion turbines. Tests shall be conducted with 100% light distillate oil."

3. Specific Condition **B.17.** was changed to parallel similar language from other FP&L facility permits:

   **B.17.** Excess Emissions Allowed. Excess emissions resulting from startup, shutdown, or malfunction of the combustion turbines and heat recovery steam generators shall be permitted provided that best operational

practices are adhered to and the duration of excess emissions shall be minimized. Excess emissions occurrences shall in no case exceed two hours in any 24-hour period except during "cold start-up" to or shutdowns from combined cycle operation (or shall not exceed 12 hours per 6-unit site, assuming all 6 units are operating, with the additional provision of a limit of 2 startup periods per 24 hours per unit). During cold start-up to combined cycle operation, up to four hours of excess emissions are allowed per unit. During shutdowns from combined cycle operation, up to three hours of excess emissions are allowed per unit. Cold start-up is defined as a startup to combined cycle operation when the heat recovery steam generator high-pressure drum is below 450 psig for at least one hour.

4. Specific Condition **C.25.** was added to parallel similar language in other FP&L facility permits:

   **C.25.** DLN Tuning / FSNL Testing. CEMS data collected during major DLN tuning sessions and during manufacturer required Full Speed No Load (FSNL) trip tests 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 a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice of at least one working (business) day that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail. [Rules 62-4.160(2), 62-4.070(1) & (3), F.A.C.]

5. In addition to changes requested by the applicant, Specific Conditions **B.8.** and **C.39.** were revised to remove obsolete language:

   **B.8.** Peaking Mode Operation Compliance Procedures.
   Compliance with the allowable emission limiting standards shall be determined ~~within 60 days after achieving the maximum production rate at which each unit will be operated, but not later than 180 days following initial operation of the unit~~ in the *peaking* mode, by using the following reference methods as described in 40 CFR 60, Appendix A, and adopted by reference in Chapter 62-204.800, F.A.C.

   The following reference methods shall be used. No other test methods may be used for compliance testing unless prior DEP approval is received in writing.

   EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources".

   EPA Reference Method 7, "Determination of Nitrogen Oxides Emissions from Stationary Sources**.**

   Compliance for each pollutant ~~after the initial tests~~ shall be the same as non-peaking operation ~~outlined in the original permit 0710002-004-AC issued on 11/25/98~~.

   Testing for peak operation may be carried out on two of the units. The Department will consider testing of two of the units to be representative of all six units.

   [Rules 62-210.200 (PTE) and 62-4.070 (3), F.A.C.; 0710002-004-AC and 0710002-014-AC, Specific Condition 5.]

   **C.39.** Combustion Turbine Testing Capacity Procedures.
   ~~a. *Initial performance tests* shall be conducted in accordance with 40 CFR 60.8 and 40 CFR 60.335 for pollutants subject to New Source Performance Standards (NSPS) in Subpart GG for gas turbines.~~

6. A new Section III.D. was added to reflect the applicable requirements from 40 CFR 63, Subpart ZZZZ for the Emergency Diesel-Fired Fire Pump Engine installed at the facility.

7. Appendix U was updated to include the emergency generators.

## CONCLUSION

This project renews Title V air operation permit No. 0710002-016-AV, which was effective on January 1, 2008. 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, 62-213 and 214, F.A.C.