Title V Air Operation Permit Renewal
Permit No. 0110037-008-AV

APPLICANT

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

FACILITY DESCRIPTION

The applicant operates the Lauderdale Plant, which is located 2 miles West of Ravenswood Road, Fort Lauderdale, Broward County, Florida.

This existing facility consists primarily of two combined-cycle generating units (Unit 4 and Unit 5), two banks of twelve simple-cycle gas turbine units, and six fuel storage tanks. Each combined-cycle unit consists of two combustion turbines (CT) which each exhaust through a separate heat recovery steam generator (HRSG). Each HRSG converts the heat from the CT exhaust into steam. The steam produced from the two HRSG units drives one single-reheat turbine generator. Each combined-cycle unit has a net summer continuous capability of 430 megawatts (MW). Each bank of simple-cycle gas turbines has a combined net capability of 504 MW.

Also included in this permit are regulated units for solvent usage, an emergency diesel fire pump engine and auxiliary boiler; in addition, there are miscellaneous unregulated/insignificant emissions units (EU) and/or activities.

The Department has determined that the appropriate visible emissions (VE) testing frequency for the combined-cycle turbines and the simple-cycle turbines is a VE test upon exceeding 400 hours of operation on fuel oil, and every 150 hours of operation on fuel oil thereafter, in any given federal fiscal year (October 1 through September 30). This frequency is justified by the low historical operational use of fuel oil for these units and the previous VE tests which documented compliance while firing fuel oil.

The Department has determined that the appropriate particulate testing frequency for the combined-cycle turbines is annually whenever fuel oil is used for more than 400 hours in the preceding 12-month period. This frequency is justified by the low historical operational use of fuel oil for these units and the low emission rate documented in previous emissions tests while firing fuel oil.

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 April 24, 2013.

PRIMARY REGULATORY REQUIREMENTS

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.

CAM: Compliance Assurance Monitoring (CAM) does not apply to the two combined-cycle generating units because the existing nitrogen oxides (NO_x) continuous emissions monitoring systems (CEMS) are used to demonstrate compliance with emissions limits. The other emissions units have no add-on pollution control devices.

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

PROJECT REVIEW

Some changes were made to the facility's current Title V air operation permit. These included:

- To restore the renewed permit to the conditions established in an EPA objection resolution letter dated March 10, 1998, the Department is clarifying that the heat input limitations have been placed in this permit to identify the capacity of each unit for the purposes of confirming that emissions testing is conducted within 90 to 100 percent of the unit's rated capacity (or to limit future operation to 110 percent of the test load), to establish appropriate emission limits and to aid in determining future rule applicability. A note below the permitted capacity condition clarifies this. Regular record keeping is not required for heat input. Instead, the owner or operator is expected to determine heat input whenever emission testing is required to demonstrate at what percentage of the rated capacity that the unit was tested. Rule 62-297.310(5), F.A.C., included in the permit, requires measurement of process variables for emission tests. Such heat input determination may be based on measurements of fuel consumption by various methods including but not limited to fuel flow metering or tank drop measurements, using the heat value of the fuel determined by the fuel vendor or the owner or operator, to calculate average hourly heat input during the test. It should be noted that the permitting note placed into this permit is unique to a specific EPA objection resolution related to this facility and does not establish a precedent for any other facility.
- Changes were made to the Excess Emissions Section to more accurately reflect Department applicable rules related to startup, shutdown and malfunction of the two combined-cycle generating units.
- The applicant requested the incorporation of the two (2) small Hurricane Hardening Program propane emergency generators into the Unregulated Source List. Based on manufacture dates, fuel type, construction dates, and engine size, these engines are not subject to either 40 CFR 60 Subpart JJJJ or 40 CFR 63 Subpart ZZZZ requirements.
- Because the existing, emergency diesel fire pump engine on-site is subject to 40 CFR 63, Subpart ZZZZ work practice and maintenance requirements, this unit is considered a "regulated" Title V emissions unit. As such, a new Emission Unit (EU 044) has been created to account for this classification.
- 40 CFR Part 63 Subpart DDDDD "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule" was published in the Federal Register on January 31, 2013. This standard has applicable requirements for existing EU 042, the auxiliary boiler, that were added to the permit as specific conditions.

CONCLUSION

This project renews Title V air operation permit No. 0110037-005-AV, which was effective on January 1, 2009. This Title V air operation permit 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.