Title V Air Operation Permit Renewal
Permit No. 1050003-017-AV

APPLICANT

The applicant for this project is Lakeland Electric. The applicant's responsible official and mailing address are: Tony Candales, Associate General Manager of Production, Lakeland Electric, Charles Larsen Memorial Power Plant, 501 East Lemon Street, Lakeland, Florida 33801-5079.

FACILITY DESCRIPTION

The applicant operates the Charles Larsen Memorial Power Plant, which is located at 2002 Hwy 92 East, Lakeland, Florida.

Existing emissions units -005 and -006 are simple cycle combustion turbine (CT) peaking units #3 and #2 respectively, and are fired with natural gas or No. 2 distillate fuel oil with a maximum sulfur content of 0.50 percent, by weight. CT #2 and #3 began commercial service in 1962. The maximum heat input rate for each CT is 209 MMBtu per hour. Each unit is rated at 11.5 megawatts (electric). Emissions from each CT are uncontrolled. Each CT has its own stack. A Compliance Assurance Monitoring (CAM) plan is not required because there are no specific limiting standards and there are no add-on control devices installed. These emissions units are regulated under Rule 62-210.300, F.A.C., Permits Required. These units are not subject to 40 Code of Federal Regulations (CFR) Part 60, Subpart GG, Standards of Performance for New Stationary Gas Turbines. These units started-up in 1962 and have 31feet tall, 11.8 feet diameter stacks.

Existing emission unit -008 is a 120 megawatt combined or simple cycle CT with an unfired heat recovery steam generator (HRSG) designated as Larsen Unit #8. CT #8 began commercial service in July, 1992. The CT fires natural gas as the primary fuel and No. 2 distillate fuel oil with a maximum sulfur content of 0.20 percent, by weight, as a limited auxiliary fuel. The CT is a GE Model PG7111 Frame 7EA unit equipped with low-NO_x burners and water injection, to reduce nitrogen oxides (NO_x) emissions, and an inlet fogger system, to boost flow output. A duct module was installed that is suitable for future installation of selective catalytic reduction (SCR) equipment. The HRSG powers an existing steam turbine-generator. The emissions unit can exhaust through the HRSG or through a by-pass stack. CAM does not apply because a continuous emissions monitoring system (CEMS) is used for compliance purposes even though the NO_x emissions are greater than 100 TPY before control and post control of NO_x is by water injection. Compliance is demonstrated annually by stack testing, by using a continuous monitoring system to monitor and record the fuel consumption and the ratio of water-to-fuel being fired in the turbine, and by the 40 CFR Part 75 acid rain NO_x CEMS. The emissions unit is regulated under Acid Rain, Phase II; NSPS - 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; Prevention of Significant Deterioration (PSD), Permit No. PSD-FL-166, and as amended (A thru D); and, Best Available Control Technology (BACT), signed July 26, 1991. The unit started up July 7, 1992 and has155 feet, 16 feet diameter main stack and a 100 feet, 18.3 feet by 13.3 feet rectangular by-pass stack.

Existing emissions units -014 and -015 are Cummins Diesel engines, Model No. VT903-C. They are used as startup engines for the simple cycle combustion turbine peaking units. They were previously listed as unregulated emissions units, but are now regulated by 40 CFR 63, Subpart ZZZZ.

Existing emission unit -016 is an International Harvester V8, propane fired engine use for emergency lighting at the facility. This unit was previously listed as an unregulated emissions unit, but is now regulated by 40 CFR 63, Subpart ZZZZ.

Also included in this permit are 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

Renewed Title V Air Operation Permit issued January 1, 2008
Title V Air Operation Permit Revision issued February 25, 2009
Application for a Title V Air Operation Permit Renewal received May 21, 2012

PRIMARY REGULATORY REQUIREMENTS

Title III: 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.

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

NESHAP: The facility does operate 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: CAM does not apply to any of the units at the facility. Emissions unit -008 has NO_x emissions are greater than 100 TPY before control and post control of NO_x is by water injection but CAM does not apply because a CEMS is used for compliance purposes.

PROJECT REVIEW

Changes made to this Title V renewal include: Fossil fuel fired steam generator No. 7 (EU -004) is retired and was removed from the facility. As a result, this emissions unit was removed from the renewed permit. Combustion turbine No. 8 (EU -008) was previously required to submit a CAM Plan. Lakeland Electric requested the existing NO_X CEM be used to demonstrate compliance and thereby eliminating the need for a CAM Plan. Appendix U-1 contained three engines that are now regulated under 40 CFR 63, Subpart ZZZZ. These engines were removed from Appendix U-1 and included in the permit as regulated emissions units -014, -015 and -016. At the request of Lakeland Electric, the three remaining unregulated emissions units (emergency generators, sand blasting and parts washing) were reclassified as insignificant emissions units because their emissions will not exceed 5 tons per year.

CONCLUSION

This project renews Title V air operation permit No. 1050003-014-AV, which was issued 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 and 62-213, F.A.C.