Florida Municipal Power Agency
Kissimmee Utility Authority
Cane Island Power Park
Title V Air Operation Permit Renewal
Permit No. 0970043-021-AV

APPLICANT

The applicant for this project is Kissimmee Utility Authority. The applicant's responsible official and mailing address are: Larry Mattern, Vice President of Power Supply, Kissimmee Utility Authority, Cane Island Power Park, 1701 West Carroll Street, Kissimmee, Florida 34741.

FACILITY DESCRIPTION

Cane Island Power Park is jointly owned by Florida Municipal Power Agency (FMPA) and Kissimmee Utility Authority (KUA). KUA operates the existing facility which is a power plant categorized under Standard Industrial Classification No 4911. The existing facility is located in Osceola County at 6075 Old Tampa Highway, Intercession City, Florida.

The facility consists of one 40 megawatt (MW) simple cycle combustion turbine (Unit 1), three combined cycle units: a 120 MW (Unit 2), a 250 MW (Unit 3) and a new 300 MW (Unit 4). The units fire natural gas as the primary fuel, with distillate fuel as backup.

EMISSION UNITS DESCRIPTION

- Unit 1 (EU 001) is a 40 megawatt (MW) General Electric Model LM-6000PA simple-cycle combustion turbine with an electrical generator set. The provisions of 40 CFR 64, Compliance Assurance Monitoring (CAM), do not apply to this Unit because the Acid Rain required NO_X CEMS is being used as a continuous compliance determination method.
- Unit 2 (EU 002) is a General Electric Model PG7111(EA) combined-cycle combustion turbine with electrical generator set and an unfired heat recovery steam generator (HRSG) with a steam-electric generator, it produces 80 MW during simple-cycle operation and 120 MW during combined-cycle operation. This Unit fires natural gas as the primary fuel with very low sulfur distillate oil (≤ 0.05% sulfur by weight) as a backup fuel. This Unit has a simple-cycle stack and a separate HRSG stack for combined-cycle operation. The provisions of 40 CFR 64, Compliance Assurance Monitoring (CAM), do not apply to this Unit because the Acid Rain required NO_X CEMS is being used as a continuous compliance determination method.
- Unit 3 (EU 003) is a nominal 167 MW stationary gas combustion turbine-electrical generator burning natural gas with very low sulfur fuel oil as backup; a supplemental gas-fired HRSG Unit 5 (EU 005) to raise sufficient steam to achieve 250 MW in combined-cycle operation; a nominal 80-90 MW steam electric generator; a 44 MMBtu/hr heat input duct burner (DB); a selective catalytic reduction unit and ancillary equipment; ammonia storage; a 130-foot stack; a 100-foot bypass stack for simple-cycle operation; and a cooling tower Unit 6 (EU 006), an unregulated emissions unit.
- Unit 4 (EU 009) consists of: a nominal 150 MW gas fueled General Electric 7241 FA combustion turbine generator (CTG); a supplementary-fired HRSG with a nominal 600 million Btu per hour (MMBtu) DB; and a nominal 150 MW steam turbine generator (STG) for an overall nominal rating of 300 MW. This Unit includes a GE Mark VI Gas Turbine Control System and a 160-foot stack.

Auxiliary equipment includes: a cooling tower; water and wastewater facilities; water storage tanks; a storm water detention pond; a 230 kilovolt (KV) transmission line; and, a 1.0 million gallon storage tank for back-up distillate fuel oil (EU 004). Nitrogen oxides (NO_X) emissions are controlled by Dry Low NO_X (DLN) combustors and wet injection under simple-cycle operation. NO_X emissions are controlled by DLN and wet injection and selective catalytic reduction (SCR) when operating in combined-cycle mode. Inherently clean fuels and good combustion practices are employed to control all pollutants. The provisions of 40 CFR 64, Compliance Assurance Monitoring

(CAM), do not apply to these Units because the Acid Rain required NO_X continuous emission monitor system (CEMS) is being used as a continuous compliance determination method. The Site Certification was approved on November 22, 1999.

This facility also includes emergency diesel engine fire pump and small diesel fuel storage tank (EU 010), a nominal 750 kilowatts diesel generator with a small diesel fuel storage tank (EU 011), a mechanical draft cooling tower with drift eliminators (EU 012), two diesel engines-driven emergency fire pumps (EU 013) and one diesel engine-driven emergency generator (EU 014).

CO, $PM/PM_{10}/PM_{2.5}$, SAM and SO_2 emissions are minimized by the efficient combustion of natural gas. NO_X emissions are reduced with dry low-NO_X (DLN) combustion technology. A selective catalytic reduction (SCR) system further controls NO_X emissions. Flue gas oxygen content or carbon dioxide content is monitored as a diluent gas.

Unregulated Emissions Units 007 and 008: Two distillate fuel oil storage tanks.

Also included in this facility are miscellaneous unregulated/insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the existing Title V air operation permit No. 0970043-017-AV for the above referenced facility, and to incorporate the terms and conditions of air construction permit No. 0970043-020-AC (PSD-FL-182J/PSD-FL-254A/PSD-FL-400B), issued concurrently with the Notice of Intent for this project.

These documents along with all other associated documents in the issued final permit package can be accessed by entering file number in the permit number field at the web link given below.
http://www.dep.state.fl.us/air/emission/apds/default.asp

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Renewal and Concurrent Air Construction Permit Revision received on June 4, 2013.

Addendum to Title V Air Operation Permit Renewal and Concurrent Air Construction Permit Revision received on August 8, 2013.

Title V Air Operation Permit Renewal and Concurrent Air Construction Permit Revision issued on August 26, 2013.

The public notice of intent to issue air permits published on September 12, 2013.

Minor comments received on the draft/proposed Title V Air Operation Permit Renewal from the applicant on September 20, 2013.

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 that are "affected units" under the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63, Subpart YYYY, Standards for Stationary

Combustion Turbines. As existing units, there are no requirements that must be met. In addition, EPA issued a final rule on August 18, 2004 staying the effectiveness of this rule for new lean premix gas-fired turbines and diffusion flame gas-fired turbines. Under this stay, new sources in the lean premix gas-fired turbines and diffusion flame gas-fired turbines subcategories, sources constructed or reconstructed after January 14, 2003, are temporarily relieved of the obligation to apply pollution controls and to comply with associated operating, monitoring, and reporting requirements. However, such sources must continue to submit Initial Notifications pursuant to 40 CFR 63.6145.

HAP: Based on the Title V Air Permit Renewal Application received on June 4, 2013, this facility is a major source of hazardous air pollutants (HAP).

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

CAM: Emissions units at this facility are not subject to Compliance Assurance Monitoring (CAM) for one or more of the following reasons: They do not trigger the potential pre-air pollution control device major source emission thresholds; they demonstrate continuous compliance with a continuous emission monitoring system (CEMS); they are not equipped with air pollution control device(s); they are equipped with device(s) which are considered to be inherent to the process/operation.

PROJECT REVIEW

The following changes/revisions were made as part of this renewal, the key differences compared with the previous Title V air operation permit are:

1. Incorporation of updated requirements established in concurrently processed air construction permit No. 0970043-020-AC (PSD-FL-182J/PSD-FL-254A/PSD-FL-400B) related to annual and renewal carbon monoxide (CO) tests be utilized as a surrogate in lieu of the required annual and renewal Volatile Organic Compounds (VOC) tests for the gas combustion turbines for emissions Units 001 and 002.
2. Limiting the PM testing requirement for emissions Units 001 and 002 to oil firing operations only.
3. Deleting emission standards and testing requirements for metals for emissions Units 001 and 002 which demonstrated to have been emitted at rates much less than the respective emission standard and the applicable significant emission rate.
4. Incorporation of updated requirements established in concurrently processed air construction permit No. 0970043-020-AC (PSD-FL-182J/PSD-FL-254A/PSD-FL-400B), for emissions Units 001, 002., 003 and 009 related to excess emissions provisions for the combustion turbines during periods of startup and shut down, fuel switching, tuning, load change, full speed no load testing, compressor blade drying and malfunction.
5. Removing the testing requirement for duct burner for EU 003 and unit 4 (EU 009), if the duct burners are not operated more than 400 hours during the federal fiscal year.
6. Waiving the periodic compliance test requirements for those parameters for which compliance is demonstrated continuously by CEMS.
7. Changing the annual test for ammonia slip to a single test prior to permit renewal for Unit 4 (EU 009).
8. Changing the excess emissions reporting requirement for Unit 4 (EU 009) from quarterly to semiannually.
9. Changing the tuning notification requirement for Unit 4 (EU 009) from 14 days to one business day.
10. Replacement of Appendix TV, Title V General Conditions, Appendix TR, Facility-wide Testing Requirements and Appendix RR, Facility-wide Reporting Requirements with the latest versions.
11. Updated Title V air operation permits to include the latest Acid Rain and Clean Air Interstate Rule Part (CAIR) Forms.
12. Changing the maximum allowable hours of operation from 8760 hours per year to continuous operation for EU 003 and Unit 4 (EU No. 009).

13. Creation of two new updated Subsections in Section III - Emissions Units and Specific Conditions, Subsections (I and J), to accommodate the applicable requirements for the three existing emergency reciprocating internal combustion engines (RICE) to the operating permit:

    a. Two Emergency Diesel Engine-driven Emergency Fire Pump (208 HP Cummins and 231 HP Caterpillar), regulated pursuant to 40 CFR 63, Subpart ZZZZ applicable requirements (Subsection I - Creation of new Emissions Unit No. 013).
    b. One Diesel Engines-driven Emergency Generators (465 HP Cummins), regulated pursuant to 40 CFR 63, Subpart ZZZZ applicable requirements (Subsection J - Creation of new Emissions Unit No. 014).

See draft air construction permit No. 0970043-020-AC (PSD-FL-182J/PSD-FL-254A/PSD-FL-400B) for details of the changes that are being made to the Title V permit. The Technical Evaluation and Preliminary Determination for that project summarizes the requested changes made to the underlying air construction permit conditions. These changes, which are summarized above, have been reflected in the renewal draft Title V air operation permit.

These documents along with all other associated documents in the issued final permit package can be accessed by entering file number in the permit number field at the web link given below:

http://www.dep.state.fl.us/air/emission/apds/default.asp

CONCLUSION

This project renews Title V air operation permit No. 0970043-017-AV, which was effective on January 1, 2010. 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. In accordance with the terms and conditions of this permit, the above named permittee is hereby authorized to operate the facility as shown on the application and approved drawings, plans, and other documents, on file with the permitting authority.