Title V Air Operation Permit Revision
Permit Revision No. 1110121-007-AV

APPLICANT

The applicant for this project is the Florida Municipal Power Agency. The applicant's responsible official and mailing address are: Mr. Edward S. Leongomez, Plant Manager, Treasure Coast Energy Center, 4545 Energy Lane, Fort Pierce, Florida 34981.

FACILITY DESCRIPTION

The applicant operates the Treasure Coast Energy Center, which is located at 4545 Energy Lane, Fort Pierce, in Saint Lucie County, Florida.

This facility is a nominal 300 megawatt (MW) gas-fired combined cycle electrical power plant. The plant includes one 170 MW combustion turbine generator, one heat recovery steam generator (HRSG), a 130 MW steam turbine generator, a 930,000 gallon fuel oil storage tank, a mechanical draft cooling tower, and auxiliary equipment. The facility is located southwest of the City of Fort Pierce, East of Highway 95, in Saint Lucie County.

PROJECT DESCRIPTION

The purpose of this permitting project is to revise the current Title V air operation permit for the above referenced facility based on a request by the applicant. This Title V air operation permit revision incorporates provisions from air construction permit modification No. 1110121-006-AC (PSD-FL-353C) that changed selected specific conditions related to *excess emissions due to fuel switching, dry low nitrogen oxides tuning description and reporting frequency*. An additional change was made to the *Compliance Tests Prior to Renewal specific condition* in the current Title V air operation permit.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V air operation permit revision was received and deemed complete on May 17, 2012.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not 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 Code of Federal Regulations 63.

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

PROJECT REVIEW

Applicant Requested Changes

This Title V air operation permit revision incorporates provisions from air construction permit revision No. 1110121-006-AC (PSD-FL-353C), which changed selected specific conditions related to *excess emissions due to*

fuel switching, *dry low nitrogen oxides tuning description* and *reporting frequency*. Details are provided in the Technical Evaluation and Preliminary Determination. An additional change was made to the *Compliance Tests Prior to Renewal specific condition* in the current Title V air operation permit to clarify compliance requirements for SAM/SO_2 and PM/PM_{10}.

Specific Condition **A.14.** is changed as follows (~~strikethrough~~ indicates text deletions, double underline indicates text addition):

A.14. Excess Emissions Allowed. Excess emissions resulting from startup, shutdown, and documented malfunctions shall be permitted, provided that operators employ the best operational practices to minimize the amount and duration of emissions during such incidents. For the gas turbine/HRSG system, excess emissions resulting from startup, shutdown, or documented malfunctions shall not exceed two hours in a 24-hour block except for the following specific cases. A "documented malfunction" means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail.

a. *Steam Turbine Generator/Heat Recovery Steam Generator (STG/HRSG) System Cold Startup:* For cold startup of the steam turbine/HRSG system, excess emissions from the gas turbine/HRSG system shall not exceed six hours in a 24-hour block. A "cold startup of the steam turbine/HRSG system" is defined as startup of the combined cycle system following a shutdown of the steam turbine lasting at least 48 hours.

{Permitting Note: During a cold startup of the steam turbine system, the gas turbine/HRSG system is brought on line at low load to gradually increase the temperature of the steam-electrical turbine and prevent thermal metal fatigue}

b. *Steam Turbine/HRSG System Warm Startup:* For warm startup of the steam turbine/HRSG system, excess emissions shall not exceed four hours in a 24-hour block. A "warm startup of the steam turbine/HRSG system" is defined as a startup of the combined cycle system following a shutdown of the steam turbine lasting at least 8 hours and less than 48 hours.

c. *Steam Turbine Generator (STG)/HRSG System Hot Startup:* For hot startup of the STG/HRSG system, excess emissions shall not exceed two hours in a 24-hour block. A "hot startup of the STG/HRSG system" is defined as a startup of the combined cycle system following a shutdown of the steam turbine lasting less than 8 hours.

d. *Shutdown:* For shutdown of the combined cycle operation, excess emissions from the gas turbine/HRSG system shall not exceed three hours in a 24-hour block.

e. *Fuel Switching:* Excess emissions due to oil-to-gas and gas-to-oil fuel switching shall not exceed ~~1~~ 2 hours each, respectively, in a 24-hour block.

f. *Documented Malfunction:* For the combustion turbine generator (CTG)/HRSG system, excess emissions resulting from documented malfunctions shall not exceed two hours in a 24-hour block.

[1110121-001-AC, Specific Condition A.18.]

Specific Condition **A.20.** is changed as follows:

A.20. 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 circumstances as identified or requested by the equipment vendor. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice of at least ~~14~~ one working (business) day~~s~~ that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail. [Design; Rule 62-4.070(3), F.A.C.; 1110121-001-AC, Specific Condition A.20.]

Specific Condition **A.27.** is changed as follows to clarify compliance requirements for SAM/SO_2 and PM/PM_{10} based on Specific Condition **A.13.**:

A.27. Compliance Tests Prior To Renewal. Compliance tests shall be performed for PM/PM_{10}, ammonia slip, and SAM/SO_2 once every 5 years. NO_X emissions recorded by the CEMS shall be reported for each ammonia slip test run. The tests shall occur prior to obtaining a renewed operating permit to demonstrate compliance with the emission limits in Specific Condition **A.13.** In-stack compliance testing is not required for SAM/SO_2 and PM/PM_{10}. Compliance with the limits and control requirements of SAM/SO_2 and PM/PM_{10} is based on the recordkeeping required in Specific Condition **A.31.**, visible emissions testing and CO continuous monitoring. [Rules 62-210.300(2)(a) and 62-297.310(7)(a), F.A.C.]

Specific Condition **A.33.b.** is changed as follows:

A.33.b. *SIP* ***~~Quarterly~~ Semiannual*** *Report*: Within 30 days following the end of each calendar-~~quarter~~ half, the permittee shall submit a report to the Compliance Authority summarizing periods of CO and NO_X emissions in excess of the BACT permit standards following the NSPS format in 40 CFR 60.7(c), Subpart A. Periods of startup, shutdown and malfunction, shall be monitored, recorded and reported as excess emissions when emission levels exceed the standards specified in this permit. In addition, the report shall summarize the CEMS systems monitor availability for the previous ~~quarter~~ calendar-half.

Other Changes

The most current version of Appendix TV was included in the Appendices Section.

CONCLUSION

This project is a revision to the Title V air operation permit for the facility, and is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210, 62-213 and 62-214, F.A.C.