Title V Air Operation Permit Renewal
Permit No. 1130168-011-AV

APPLICANT

The applicant for this project is Calpine Operating Services Company, Inc operating as Santa Rosa Energy, LLC. The applicant's responsible official and mailing address are: Ms. Heidi M. Whidden, Director of Environmental Services Southeast Region, Calpine Operating Services Company, Inc., Santa Rosa Energy Center, 717 Texas Ave., Suite 100, Houston, Texas 77002-2743.

FACILITY DESCRIPTION

The applicant operates the existing Santa Rosa Energy Center, which is located in Santa Rosa County at 5001 Sterling Way**,** Santa Rosa County, Florida.

This is an existing facility located on the site of the steam host, Sterling Fiber, which is a manufacturer of acrylonitrile-based fibers. It is a cogeneration plant and consists of one natural gas-fired nominal 167 megawatt combined-cycle combustion turbine-electrical generator with a heat recovery steam generator, one 200-foot exhaust stack, an unregulated wet cooling tower, and a small natural gas preheater. The combustion turbine unit is equipped with General Electric's Dry Low-NOx combustion for natural gas. Emissions from the combustion turbine are also controlled by the use of pipeline natural gas and good combustion techniques. Drift eliminators are installed on the cooling tower to reduce particulate emissions

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 and to incorporate minor revisions from Permit No. 1130168-012-AC/PSD-FL-253C, issued concurrently with this permit.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Air Operation Permit issued on October 31, 2002
Title V Air Operation Permit Administrative Correction issued on July 21, 2003
Title V Air Operation Permit Renewal issued on December 19, 2007
Title V Air Operation Permit Revision on November 12, 2010
Application for Title V Operation Permit Renewal received on April 18, 2012

PRIMARY REGULATORY REQUIREMENTS

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

Title III: The facility is not 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.

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

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 because there is no add-on control technology in use.

PROJECT REVIEW

Calpine Operating Services Company, Inc., on behalf of Santa Rosa Energy Center, LLC, requests revisions to Santa Rosa Energy Center's PSD permit No. 1130168-009-AC (PSD-FL-253B) to clarify the excess emissions conditions resulting from startup, shutdown, and malfunction according to Rules 62-210.700(1), F.A.C. and 62-210.700(5), F.A.C.; revisions of PSD Permit No. 1130168-001-AC (PSD-FL-253) to include additional language in the Continuous Emissions Monitoring System (CEMS) Quality assurance requirements according to 40 CFR 60 Subpart GG; and revisions of PSD Permit No. 1130168-009-AC (PSD-FL-253B) to include CEMS data exclusion during combustor tuning according to Rule 62-4.070(3), F.A.C.

Changes to the permit made as part of this revision are shown 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 within the permit document.

1. **Permit Being Modified: Permit No. 1130168-010-AV, Section III. A. 16**
   This section will be replaced by the below language:

   Permit No. 1130168-011-AV, Section II. A. 12: Excess Emissions Allowed

   A. 12. Excess Emissions Allowed. Excess emissions resulting from startup, shutdown, or malfunction 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 (120 minutes) in any operating day. The following exception provisions apply for excess emissions under different start-up modes, shut-down, and documented malfunctions:

   a. During a cold start-up to Mode 6 operation, up to four hours (240 minutes) of excess emissions are allowed in any operating day. Cold start-up is defined as a start-up to Mode 6 operation following flame out of the combustion turbine with no Mode 6 operation in the interim for a minimum of 48 hours (2,880 minutes).

   b. During a warm start up to Mode 6 operation, up to three hours (180 minutes) of excess emissions are allowed in any operating day. Warm start-up is defined as a startup to Mode 6 operation following flame out of the combustion turbine with no Mode 6 operation in the interim for a minimum of 8 hours (480 minutes) up to 48 hours (2,880 minutes).

   c. During a hot start-up to Mode 6 operation, up to two hours (120 minutes) of excess emissions are allowed in any operating day. Hot start-up is defined as a start-up to Mode 6 operation following flame out of the combustion turbine with no Mode 6 operation in the interim for less than 8 hours (480 minutes).

   d. During a shut-down from Mode 6 operation, up to three hours (180 minutes) of excess emissions are allowed in any operating day.

   e. Due to documented malfunction, up to three additional hours (180 minutes) of excess emissions are allowed in any operating day. A malfunction is any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process (on or off site) resulting in operation in an abnormal or unusual manner including but not limited to a restart due to turbine trip, natural gas pressure drop, or grid swing. 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.

   An operating day is defined as a day (midnight to midnight) that includes operation.

Allowable Excess Emissions Convenience Summary for information only:

Method of Operation	Excess Emissions Conditions	Period Authorized for Excess Emissions
Hot Start-up	Complete shutdown of CT-HRSG lasting < 8 hours	≤ 2 hours/start-up
Cold STG Start-up	STG shutdown lasting ≥ 48 hours	≤ 4 hours /start-up
Warm CT-HRSG Start-up	Complete shutdown of CT-HRSG lasting > 8 hours	≤ 3 hours/start-up
Shutdown	Shutdown	≤ 3 hours/shutdown
Documented Malfunctions	Malfunctions	≤ 3 hours in any 24-hour block

2. **Permit Being Modified: Permit No. 1130168-001-AC (PSD-FL-253), Section III, Specific Condition 27**
Per applicant's request, the below specific condition will be incorporated into this facility's permit operating conditions.

Permit No. 1130168-011-AV, Section III. Subsection A. 14: CEMS Data Exclusion – Combustor Tuning

A. 14. CEMS Data Exclusion – Combustor Tuning: CEMS data collected during major DLN tuning sessions shall be excluded from the CEMS compliance demonstration for short term emissions standards provided the tuning session is performed in accordance with the manufacturer's specifications. A "major tuning session" would occur after completion of 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 Department's Northwest District Compliance Authority with advance notice that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail.

3. **Permit Being Modified: Permit No. 1130168-009-AC (PSD-FL-253B), Section 2, Specific Condition 6**
To clarify the quality assurance requirements for the CEMS, this condition is revised as follows:

Permit No. 1130168-011-AV, Section III. Subsection A. 35

A. 35. Continuous Monitoring System Reports: The monitoring devices shall comply with the certification requirements of each device and quality assurance, and any other applicable requirements of Rule 62-297.520, F.A.C., 40 CFR 60.13, including certification of each device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5) or 40 CFR Part 75. Quality assurance procedures must conform to all applicable sections of 40 CFR 60, Appendix F or 40 CFR 75, as applicable. A valid hourly emission rate shall be calculated for each hour in which at least two measurements are obtained at least 15-minutes apart. The monitoring plan, consisting of data on CEM equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location shall be provided to the DEP Emissions Monitoring Section Administrator and EPA for review no later than 45 days prior to the first scheduled certification test pursuant to 40 CFR 75.62.

4. **Permit No. 1130168-011-AV, Section III, Subsection B**
Per 40 CFR 63, Subpart ZZZZ, National Emission Standards for Reciprocating Internal Combustion Engines, Emission Unit 004: 160 HP Diesel Emergency Fire Pump, is included in this permit renewal.

5. Incorporate new Title V formatting as adopted by the Division of Air Resource Management as of November 1, 2010

CONCLUSION

This project renews Title V air operation permit No. 1130168-007-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.