Title V Air Operation Permit Revision
Duke Energy Florida, Inc.
Crystal River Power Plant
Incorporation of the CO BACT limit and the Hydrated Lime Storage and Transfer System (part of the AMM systems) for Units 4 and 5
Permit No. 0170004-042-AV

APPLICANT

The applicant for this project is Duke Energy Florida, Inc. The applicant's responsible official and mailing address are: Mr. Jay Chesser, Plant Manager, Duke Energy Florida, Inc., 299 First Avenue, North, Mail Code CN77, St. Petersburg, Florida 33701.

FACILITY DESCRIPTION

The applicant operates the existing Crystal River Power Plant, which is located in Citrus County at 15760 West Power Line Street, Crystal River, Florida.

This facility consists of: four coal-fired fossil fuel steam generating (FFSG) units with electrostatic precipitators; two natural draft cooling towers for FFSG Units 4 and 5; helper mechanical cooling towers for FFSG Units 1, 2 and nuclear Unit 3; coal, fly ash, and bottom ash handling facilities; and, relocatable diesel fired generators. FFSG Units 4 and 5 are also equipped with low-NO_X burners and selective catalytic reduction systems for the control of nitrogen oxide emissions; with flue gas desulfurization systems for the control of sulfur dioxide emissions; and, with acid mist mitigation (AMM) systems for the control of sulfuric acid mist emissions. Nuclear Unit 3, which is not a source of air pollution, is not considered part of this permit, although certain emissions units associated with Unit 3 are included in this permit.

This facility is subject to regulation under: Acid Rain, Phase II (40 CFR 75); Clean Air Interstate Rule (Rule 62-296.470, F.A.C.); and, 40 CFR 60 Subparts A, D, Y, IIII and JJJJ, General Provisions, Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After August 17, 1971, Standards of Performance for Coal Preparation Plants, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, and Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, respectively. The facility is also subject to the regulations of 40 CFR 63 Subparts A and ZZZZ, General Provisions and National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, respectively.

The facility operates two stationary reciprocating internal combustion engines associated with Unit 3 which are subject to regulation under 40 CFR 63, Subpart ZZZZ - National Emissions Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines.

The facility has three additional reciprocating internal combustion engines that are also subject to regulation under 40 CFR 63, Subpart ZZZZ and 40 CFR 60 Subpart IIII or 40 CFR 60 Subpart JJJJ. New regulated emission units (EU028, EU029 and EU030) were created for these units.

The facility operates flue gas desulfurization (FGD) systems, which include: limestone storage and handling; limestone preparation; limestone slurry injection; and, gypsum dewatering (collectively regulated as EU023, Limestone and Gypsum Material Handling Activities). The limestone preparation activities are subject to the applicable requirements in NSPS Subpart OOO of 40 CFR 60, Standards of Performance for Nonmetallic Mineral Processing Plants.

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

PROJECT DESCRIPTION

The purpose of this permit is to revise Title V air operation permit No. 0170004-024-AV for the above referenced facility to incorporate certain provisions of final air construction permits Nos. 0170004-030-AC and 0170004-037-AC. Permit 0170004-030-AC established the final CO emission limit and Permit 0170004-037-AC

authorized the construction/installation of a hydrated lime injection storage and transfer system for Units 4 and 5 to mitigate sulfuric acid mist emissions generated across the recently added selective catalytic reduction systems.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V air operation permit revision received November 14, 2013.
Draft/proposed permit posted onto web site on January 22, 2014.

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.

NESHAP: The facility operates 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.

BART: The facility operates units subject to the Best Available Retrofit Technology requirements set forth in Rule 62-296.340, F.A.C.

SITING: Emissions units EU001, EU002, EU003 and EU004 were originally certified pursuant to the Power Plant Siting provisions of Chapter 62-17, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) applies to emissions units EU001, EU002, EU003 and EU004 at the facility. CAM applies because these units have control equipment used to meet federally enforceable limits or standards.

GHG: This facility is identified as a major source of green house gas pollutants.

PROJECT REVIEW

As mentioned in the project description above, the purpose of this revision is to incorporate certain conditions of permits Nos. 0170004-030-AC and 0170004-037-AC into the Title V air operation permit. 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 draft/proposed permit document and are itemized below.

1. Facility-wide Condition FW5 was amended to include reasonable precautions to prevent fugitive emissions from the handling and storage of hydrated lime.
2. Facility Wide Conditions FW6 & 7 were replaced by new Condition FW6 to include the latest requirement for Electronic Annual Operating Report (EAOR) and Title V fees.
3. Revision of Section III, Subsection B, Specific Condition 14 to incorporate the revised CO BACT limit established in Permit 0170004-030-AC.
4. Subsection B was further revised and renumbered (as shown in the draft/proposed documents) as a result of the addition of the new conditions for the hydrated lime storage system for Units 4 and 5 established in Permit No. 0170004-037-AC.
5. Appendix CAM, Compliance Assurance Monitoring Requirements, was updated to include the hydrated lime system requirements as part of the AMM systems for sulfuric acid mist (SAM) Compliance Assurance

Monitoring for Units 4 and 5.

6. A footnote in Appendix I, List of Insignificant Emissions Units and/or Activities, was revised to clarify that the listed reciprocating internal combustion engines (RICE) that were previously unregulated at the time of the last renewal now have applicable requirements which will be clearly stated in the permit during the next renewal.
7. Appendix RR, Facility-wide Reporting Requirements and Appendix TV, Title V General Conditions were replaced with the latest versions.
8. Table H, Permit History, was updated to reflect the latest projects.

CONCLUSION

This project revises Title V air operation permit No. 0170004-024-AV for the third time, which was effective on January 1, 2010. This Title V air operation permit revision 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.