FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

PERMITTEE

Duke Energy Florida, LLC
1601 Weedon Island Drive NE
Crystal River, Florida 33702

Authorized Representative:
C. Wayne Toms, Station Manager

Air Permit No. 0170004-059-AC (PSD-FL-383I)
Permit Expires: December 31, 2021
Air Construction Permit Revision
Crystal River Power Plant
Units 4 & 5 SO_2 MATS Limit

PROJECT

This is the final air construction permit, which authorizes a modification of the sulfur dioxide (SO_2) emission limit for Units 4 and 5 from 0.25 pounds per million British thermal unit (lb/MMBtu) to 0.20 lb/MMBtu to comply with the alternate SO_2 limits per 40 CFR 63.9991(c) of the Mercury and Air Toxics Standards (MATS). This facility is an existing electric power generation facility categorized under Standard Industrial Classification No. 4911. The Crystal River Power Plant is in Citrus County at 15760 West Power Line Street in Crystal River, Florida. UTM coordinates are: Zone 17, 334.3 km East and 3204.5 km North. Latitude is: 28° 57' 34" North and Longitude is: 82° 42' 1" West.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

David Lyle Read, P.E.

Digitally signed by David Read
Date: 2020.10.30 10:52:24 -04'00'

For:
Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Construction Permit package was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

Mr. C. Wayne Toms, Duke Energy: cwayne.toms@duke-energy.com
Mr. Jamie Hunter, Duke Energy: jamie.hunter@duke-energy.com
Mr. Michael Ballenger, P.E., Trinity Consultants: mballenger@trinityconsultants.com
DEP Southwest District Office: SWD_Air@dep.state.fl.us
DEP Siting Office: SCO@dep.state.fl.us
EPA Region 4 NSR/PSD: NSRsubmittals@epa.gov
Ms. Lynn Scearce, DEP: Lynn.Scearce@FloridaDEP.gov

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Lynn Scearce Digitally signed by Lynn Scearce
Date: 2020.10.30 11:25:47 -04'00'

FACILITY DESCRIPTION

The facility consists of units operated on two adjacent tracts of land: the Crystal River Energy Complex and the Citrus County Combined Cycle Station. The Crystal River Energy Complex consists of the North Plant and the South Plant. The South Plant is no longer active since Units 1 and 2 (coal-fired fossil fuel steam generating units) and Unit 3 (nuclear unit) have been decommissioned and shut down.

The Crystal River Energy Complex (North Plant) consists of: two coal-fired fossil fuel steam generating (FFSG) units (Units 4 and 5) with electrostatic precipitators (ESPs) for the control of particulate matter (PM); natural draft cooling towers for FFSG Units 4 and 5; coal, fly ash, and bottom ash handling facilities; and various fire pumps and emergency generators. Material handling activities located at the South Plant remain in service to Units 4 and 5 at the North Plant.

In addition, on Units 4 and 5, the facility continuously operates low-nitrogen oxide (NO_X) burners and selective catalytic reduction (SCR) systems for the control of NO_X emissions, flue gas desulfurization (FGD) systems for the control of SO_2 emissions, and acid mist mitigation (AMM) systems for the control of sulfuric acid mist (SAM) and hydrogen chloride (HCl) emissions. The FGD system also includes limestone storage and handling, limestone preparation; limestone slurry injection; and gypsum dewatering (collectively regulated as Emissions Unit 023, Limestone and Gypsum Material Handling Activities).

The Citrus County Combined Cycle Station (CCCS) consists of two natural gas-fired combined cycle power blocks designated as CCCS Units 1 and 2. Each power block consists of: two natural gas-fired Mitsubishi Power Systems (MPS) 501GAC combustion turbine-electric generators (CTGs) with optional inlet chillers; two heat recovery steam generators (HRSGs) equipped with natural gas-fired duct burners and SCR systems; two 180-foot exhaust stacks; and a steam turbine-electric generator (STG). Ancillary equipment includes: an auxiliary boiler; two ultra-low sulfur diesel (ULSD)-fired emergency generators; one ULSD-fired emergency firewater pump engine; two mechanical draft cooling towers; and two optional CTG inlet chiller cooling towers.

The existing facility consists of the following emissions units (EU).

EU No.	Description
Regulated Emissions Units	
North Plant	
003	FFSG Unit 5
004	FFSG Unit 4
015	Cooling Towers for FFSG Units 4 & 5
023	Limestone and Gypsum Material Handling Activities
032	Hydrated Lime Storage and Transfer System for Units 4 & 5
039	175 kW Emergency Diesel Generator for Site Administration Building
056	167 kW Diesel Fire Pump (FP-1) to Support FFSG Units 4 and 5
057	167 kW Diesel Fire Pump (FP-3) to Support FFSG Units 4 and 5
Common Equipment-(North and South Plant)	
016	Materials Handling Activities for Coal-Fired Steam Units
055	85 HP Emergency Generator (Telecommunications Tower)
Citrus County Combined Cycle Station (CCCS)	
051	CCCS Unit 1A – Nominal 300 MW CTG with Duct-Fired HRSG
052	CCCS Unit 1B – Nominal 300 MW CTG with Duct-Fired HRSG
042	CCCS Unit 2A – Nominal 300 MW CTG with Duct-Fired HRSG
043	CCCS Unit 2B – Nominal 300 MW CTG with Duct-Fired HRSG

EU No.	Description
044	Auxiliary Boiler
046	1,500 kW ULSD Emergency Generator
047	1,500 kW ULSD Emergency Generator
048	305 HP ULSD Emergency Firewater Pump Engine
Unregulated Emissions Units and/or Activities	
049	Two 12-Cell Mechanical Draft Cooling Towers

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

PROPOSED PROJECT

To demonstrate compliance with regional haze requirements, Crystal River is requesting a modification of the SO_2 emission limit for Units 4 and 5 from 0.25 lb/MMBtu to 0.20 lb/MMBtu to comply with the alternate SO_2 limits per 40 CFR 63.9991(c) of the MATS. In order to provide this clarification, Permit No. 0170004-054-AC (PSD-FL-383G) is being revised through this permitting action.

This project will affect the following emissions units.

EU No.	Emission Unit Description
003	FFSG Unit 5
004	FFSG Unit 4

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the PSD of Air Quality.
- The facility does operate units subject to the New Source Performance Standards (NSPS) of Title 40 Part 60 of the Code of Federal Regulations (40 CFR 60).
- The facility does operate units subject to the National Emissions Standards of Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Office of Permitting and Compliance mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Southwest District Office at: 13051 North Telecom Parkway, Temple Terrace, Florida 33637-0926.

3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); and Appendix D (Common Testing Requirements).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Construction and Expiration: The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(3) & (4), 62-4.080 & 62-210.300(1), F.A.C.]

SECTION 3. PERMIT REVISIONS

The following permit conditions are revised as indicated. ~~Strikethrough~~ is used to denote the deletion of text. Double-underlines are used to denote the addition of text. All changes are emphasized with yellow highlight. Except for the modified conditions noted below, all other previously established permits and conditions remain in effect.

Permit Being Modified: Permit No. 0170004-054-AC (PSD-FL-383G)

Affected Emissions Units: FFSG, Units 5 & 4 (EU 003 & 004)

1. PSD-FL-383G, Page 6 of 7, Section 3, Subsection B, Specific Condition 3.A.9.b:

9. Standards Based on CEMS: ~~Including the emissions from the CBO unit, e~~Emissions from Units 4 and 5 each shall not exceed the following standards based on data collected by the CEMS.

a. …

b. *SO_2 Emissions*: As determined by CEMS data, SO_2 emissions shall not exceed 0.20 lb/MMBtu based on a heat input-weighted 30-boiler operating day rolling average. Compliance shall be demonstrated as determined in 40 CFR 63.10021(a) and (b) of the MATS rule. [40 CFR 63.10021(a) & (b)] ~~0.27 lb/MMBtu of heat input on or before December 31, 2017 and 0.25 lb/MMBtu of heat input after December 31, 2017 based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction~~. As determined by CEMS data, SO_2 emissions shall not exceed 1944.0 lb/hour per unit based on a 24-hour block average excluding startup, shutdown and malfunction of the FGD system. [Application Nos. 0170004-016-AC & 0170004-059-AC (PSD-FL-383I)~~054-AC/PSD-FL-383G~~; Rules 62-4.070(3), 62-4.080, and 62-212.400(12), F.A.C.]

{Permitting notes: The more stringent SO_2 emission limit of 0.20 lb/MMBtu ensures compliance with the less stringent yet applicable SO_2 emission standards from NSPS 40 CFR 60, Subpart D and this federally enforcement condition satisfies the "effectively controlled emission unit" criteria for the Regional Haze Rule. ~~Compliance with the revised SO_2 emission standard of 0.25 lb/MMBtu of heat input based on a 30-day rolling average for all period of operation including startup, shutdown, and malfunction shall occur after December 31, 2017. In addition, the more stringent SO_2 emission limit assures compliance with the less stringent, yet applicable SO_2 emission standard from NSPS 40 CFR 60, Subpart D~~.}

…