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Gulf Power Company
One Energy Place
Pensacola, Florida 32520-0100

Authorized Representative:
Mr. Michael Burroughs
Vice President, Power Generation

Air Permit No. 0330045-036-AC
Minor Air Construction Permit Revision
Crist Electric Generating Plant

NO_X and SO_2 Emissions Limits Revisions
Escambia County, Florida

PROJECT

This is the final air construction permit, which revises permit No. 0330045-017-AC (previously revised permit No. 0330045-005-AC) for nitrogen oxides (NO_X) emission limit during the Unit 7 selective catalytic reduction (SCR) system bypass. Also, to delete the performance restriction of the coal blend sulfur specification outlined in permit No. 0330045-029-AC. The proposed work will be conducted at the existing Crist Electric Generating Plant, which is a Power Plant categorized under Standard Industrial Classification No 4911. The existing facility is located in Escambia County on Pate Road, off of 10 Mile Road on Governors Bayou, North of Pensacola, Florida. UTM Coordinates are: Zone 16; 478.5 Kilometer (km) East, 3381.44 km North. Latitude is: 30° 34' 0.6552" North; and, Longitude is: 87° 13' 35.1261" West.

This final permit is organized into the following sections: Section 1 (General Information) and Section 2 (Permit Revisions).

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

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Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

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CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) 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. Michael Burroughs, Vice President, Gulf Power Company: mlburrou@southernco.com
Mr. G. Dwain Waters, Q.E.P., Gulf Power Company: gdwaters@southernco.com
Mr. Greg N. Terry, P.E., Gulf Power Company: gnterry@southernco.com
Mr. Armando Sarasua, DEP-NWD: armando.sarasua@dep.state.fl.us
Ms. Katy Forney, U.S. EPA Region 4: forney.kathleen@epa.gov
Ms. Heather Ceron, US EPA Region 4: ceron.heather@epa.gov
Ms. Alisa Coe, Earth Justice: acoe@earthjustice.org
Ms. Barbara Friday, DEP OPC: barbara.friday@dep.state.fl.us
Ms. Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us

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.
(Electronic Signature)

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FACILITY DESCRIPTION

The existing facility consists of four predominantly coal-fired fossil fuel fired steam generators (boilers) and two fly ash silos. Boilers 4 and 5 were Acid Rain Phase I substitution Units. Boilers 6 and 7 were Acid Rain Phase I Units. All four boilers are subject to the Acid Rain Phase II and CAIR requirements. Pulverized coal is the primary fuel for boilers 4, 5, 6 and 7. Natural gas, fuel oil and on-specification used oil are used as supplemental fuels in all four of the Boilers.

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 operates units subject to the Clean Air Interstate Rule (CAIR).
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

PROPOSED PROJECT

The purpose of this project is to revise the plant-wide NO_X emissions limit for Units 4 - 7 of 0.20 pounds per million British thermal units (lb/MMBtu), based on a 30-day rolling average, including all emissions generated during periods of startup, shutdown and malfunctions for all four units and during periods of bypass operations for the Unit 6 and 7 SCRs. This limitation replaces the current NO_X limit of 0.35 lb/MMBtu based on 24-hour average for Unit 7 during SCR bypass periods, which can be excluded from the daily NO_X averages, as established in air construction permit No. 0330045-005-AC and revised in permit No. 0330045-017-AC. This new limitation also revises the current plant-wide NO_X limit to include emissions during all periods of operation, with no exclusions from the daily NO_X averages. In addition, this project removes the unnecessary coal blend sulfur specification of 3.30 pounds of sulfur dioxide per MMBtu that was established in permit No. 0330045-029-AC. These changes are described in the Technical Evaluation and Preliminary Determination (TEPD) included in the permit package. As a concurrent project, the Title V air operation permit is also being revised by project No. 0330045-037-AV to incorporate these changes.

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This section of the permit addresses the following emissions units.

EU No.	Brief Description
004	Boiler Number 4 - 1,096.7 MMBtu/hour (Substitution Acid Rain Phase I & CAIR Unit)
005	Boiler Number 5 - 1,096.7 MMBtu/hour (Substitution for Acid Rain Phase I & CAIR Unit)
006	Boiler Number 6 - 3,704.8 MMBtu/hour (Acid Rain & CAIR Unit)
007	Boiler Number 7 - 6,406.4 MMBtu/hour (Acid Rain & CAIR Unit)

Emissions unit number 004 is a tangentially fired, dry bottom boiler designated as "Boiler Number 4" manufactured by Combustion Engineering. It is rated at a maximum heat input of 1,096.7 MMBtu/hour when firing pulverized coal, natural gas, No. 2 fuel oil, or on-specification used oil. Emissions unit number 005 is a tangentially fired, dry bottom boiler designated as "Boiler Number 5" manufactured by Combustion Engineering. It is rated at a maximum heat input of 1,096.7 MMBtu/hour when firing pulverized coal, natural gas, No. 2 fuel oil, or on-specification used oil. Units 004 and 005 can burn Biomass up to 40.2 MMBtu/hour. Units 004 and 005 were Phase I substitution units and are Phase II Acid Rain units. Gulf Power operates a temporary mercury research center using a slipstream of flu gas from unit 005 (Permit No. 0330045-011-AC) for evaluating mercury (Hg) emission reduction techniques.

Emissions unit number 006 is a front wall fired, dry bottom boiler designated as "Boiler Number 6" manufactured by Foster Wheeler. It is rated at a maximum heat input of 3,704.8 MMBtu/hour when firing pulverized coal or natural gas, and 714.8 MMBtu/hr when firing No. 2 fuel oil or on-specification used oil. Emissions unit number 007 is a front and rear wall fired, dry bottom boiler designated as "Boiler Number 7" manufactured by Foster Wheeler. It is rated at a maximum heat input of 6,406.4 MMBtu/hour when firing pulverized coal or natural gas, and 1,282 MMBtu/hour when firing No. 2 fuel oil or on-specification used oil. Fuel oil is used as a back-up fuel in both units and for periods of start-up and flame stabilization.

These emissions units are regulated under Acid Rain, Phase II and they are subject to the standards and requirements contained in the Acid Rain Part of this permit (see Section IV). These emissions units pre-date Prevention of Significant Deterioration (PSD) regulations and are regulated under Rule 62-296.405, F.A.C., Fossil Fuel Fired Steam Generators with more than 250 million Btu per Hour Heat Input.

1. Existing Permits. This permit does not authorize any new construction or increases in allowable operating limitations or emissions limits. This permit supplements all existing valid air permits. Except as specified below, the permittee shall continue to comply with all applicable conditions from valid air construction and operation permits. [Rule 62-4.070(3), F.A.C.]

The following conditions of previous permits are revised as indicated below. ~~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 for ease of location.

2. To specify that all operational hours are now included in the 30-day rolling NO_X average (including startup, shutdown, malfunctions and SCR bypass) and to remove the 0.35 lb/MMBtu 24-houraverage NO_X limit, Specific Condition 1. of Permit No. 0330045-017-AC (which previously revised Specific Condition 9. of permit No. 0330045-005-AC) is changed as follows:

SCR Bypass, Catalyst Maintenance and Repair: The permittee may bypass the SCR system to perform maintenance and repair for up to 360 hours per consecutive 12 months during non-ozone events. ~~During such allowable bypass periods, the uncontrolled NO_X emissions from Unit 7 shall not exceed 0.35 lb/MMBtu based on a 24-hour average. The daily NO_X emission rates for these periods may be excluded from the plant-wide 30-day NO_X standard specified in Subsection 3B.~~ The daily NO_X emissions rates for these periods shall be included when demonstrating compliance with the plant-wide 30-day NO_X standard. The permittee shall

notify the Compliance Authority in advance of the purpose of the SCR bypass, the expected dates of SCR bypass, and the expected duration of SCR bypass. To the extent practical, the permittee shall schedule regular maintenance of the SCR system for the non-ozone season. {Permitting Note: The ozone season is defined as May 1st through September 15th. An Ozone event is defined as any level on the Air Quality Index for Ozone greater than good or moderate (green or yellow).} [Rules 62-210.700 and 62-4.070(3), F.A.C.]

3. A plant-wide NO_X limit was established through an agreement between Gulf Power and the Department on August 28, 2002. This limit was established as an enforceable restriction in Specific Condition 3.B.2. of permit No. 0310045-005-AC. This requirement was later revised by Specific Condition 3. of permit No. 0330045-017-AC to provide clarification of when emissions related to Unit 7 SCR bypass operations could be excluded for the compliance averages. To clarify that the limit is changing to no longer allow data exclusions for Unit 7 SCR bypass operations and to reflect the installation of an SCR on Unit 6, Specific Condition 3. of permit No. 0310045-017-AC is revised as follows:

Plant-Wide NO_X Limit: Emissions of nitrogen oxides (NO_X) from the combined operation of Units 4, 5, 6, and 7 shall not exceed 0.2 lb/MMBtu heat input based on a 30-day rolling average ~~except for periods when Unit 7 is shutdown~~. This limit shall apply when either Unit 6 or 7 is on-line. The plant-wide daily NO_X emission rate shall be determined by the following equation:

$$\text{Plant-Wide Daily MMBtu-Weighted } NO_X \text{ Emission Rate} = \frac{\sum_{\text{Units 4, 5, 6, 7}} [(\text{Unit \# daily MMBtu}) \times (\text{Unit \# daily } NO_X \text{ CEMS Rate})]}{\sum_{\text{Units 4, 5, 6, 7}} (\text{Unit \# daily MMBtu})}$$

The "Unit # daily MMBtu" shall be determined by the daily as-burned fuel analysis and the fuel fired for each unit. The "Unit # daily NO_X CEMS Rate" shall be determined by the daily average of NO_X CEMS data for each unit and reported in terms of "lb/MMBtu heat input". The plant-wide daily NO_X emissions rate shall be determined each day regardless of the operating status for Units 6 or 7. The plant-wide 30-day rolling NO_X average shall be determined for each 30 sequential Unit 6 or 7 operating days, which need not be consecutive. A Unit 6 or 7 operating day means any calendar day that either Unit 6 or 7 operates a minimum of 18 hours. The Unit 6 or 7 daily NO_X CEMS rate may consist of less than 18 hours of data if this is due to: CEMS malfunction~~;~~ or invalid CEMS data~~; or exempted data due to start up, shut down or SCR bypass, described below. When the catalyst temperature is below 600° F during a startup or shutdown, NO_X emissions data collected during such periods may be excluded from the daily NO_X CEMS Rate~~. ~~In accordance with Condition No. 9 of Subsection 3A, limited NO_X emissions data collected during SCR bypass during non-ozone events may be excluded from the daily NO_X CEMS Rate.~~ The plant-wide NO_X emission standard shall be achieved by utilizing the SCR systems for Units 6 and 7 and ~~implementing the selected NO_X control strategy~~the SNCR systems for Units 4~~,~~ and 5~~, and 6~~. ~~The effective date for the plant-wide NO_X emission standard is:~~

~~a. The startup date of the selected additional NO_X reduction project, (excluding an SCR project for Unit 6), but no later than May 1, 2006; or~~

~~b. The startup date of the SCR project for Unit 6, but no later than December 31, 2007.~~

~~For purposes of this condition, "startup date" shall mean the date that the permittee demonstrates initial compliance with the terms of the required air construction permit (or other Department approval) that authorized implementation of the additional NO_X reduction project.~~ [Paragraphs 2, 3 and Exhibit B of the Agreement; Permit Nos. 0330045-005-AC & 0330045-017-AC; and, Application No. 0330045-036-AC]

4. To remove the unnecessary coal blend sulfur specification of 3.30 pounds of sulfur dioxide per MMBtu and to clarify that the required uncontrolled SO_2 emissions rate can be monitored either with a process CEMS at the

inlet to the scrubber or by a fuel-based calculation, Specific Condition 1. of permit No. 0330045-029-AC is hereby deleted and Specific Conditions 8 and 10. are revised as follows.

~~1. Coal Blend Sulfur Specification: Once the permanent HLI system is installed and fully functional, Units 4 – 7 are authorized to fire a coal blend having a maximum specification of 3.30 pounds of sulfur dioxide per million Btu (lb SO_2/MMBtu, equivalent to 2.1% sulfur by weight) based on the actual sulfur content and heating value of the fuel blend. Prior to permanently installing the HLI system, the permittee may conduct temporary operational trial burns on Unit 7 of coal blends up to this maximum specification; however, all such temporary trials shall be limited to no more than a total of 20 operational days. [Application No. 0330045-029-AC and Rule 62-210.200(PTE), F.A.C.]~~

8. Data Collected for SAM Performance Tests: The operator shall use best efforts to maintain the designated heat input rate throughout each SAM performance test run. During each test run, the following information shall be recorded: fuel firing rate of each unit; heat input rate of each unit; hydrated lime injection rate; controlled SO_2 emission rate based on CEMS; opacity based on COMS; uncontrolled SO_2 emission rate in lb/MMBtu based on either the process CEMS at the inlet to the FGD system ~~(~~or a fuel-based calculation ~~if the CEMS is down)~~; ammonia injection rates for SCR on Units 6 and 7; and ammonia injection rates for SNCR on Units 4 and 5. [Rule 62-4.070(3), F.A.C.]

10. Increase in Coal Blend Sulfur Specification: If the actual coal blend sulfur specification increases by 0.30 lb SO_2/MMBtu or more based on a 10-day average above the current maximum tested coal blend sulfur specification, the permittee shall conduct new "SAM Performance Stack Tests" pursuant to Condition **Error! Reference source not found.** of this subsection. The tests shall be conducted within 45 days of determining that the actual coal blend sulfur specification increased by 0.30 lb SO_2/MMBtu or more based on a 10-day average. The actual coal blend sulfur specification shall be monitored either by the process CEMS at the inlet to the FGD system ~~content and shall not exceed 3.30 lb/MMBtu~~ ~~(~~or by a fuel-based calculation ~~if the CEMS is down)~~. [Rule 62-4.070(3), F.A.C.]

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