FLORIDA DEPARTMENT OF Environmental Protection

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PERMITTEE

JEA
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Authorized Representative:
Kevin Holbrooks
Director, Environmental Compliance (Air and Lab)

Air Permit No. 0310045-57-AC
Permit Expires: December 31, 2023
Minor Air Construction Permit
Northside Generating Station
Activated Carbon Injection Authorization

PROJECT

This is the final air construction permit that establishes a SO_2 emission limit for Boiler No. 3 and a conditional fuel oil sulfur content limit for the purpose of complying with the Environmental Protection Agency's (EPA) Regional Haze Program. The project also involves several notification requirements. The proposed work will be conducted at the existing Northside Generating Station, which is a power plant categorized under Standard Industrial Classification No. 4911. The existing facility is in Duval County at 4377 Heckscher Drive in Jacksonville, Florida. The UTM coordinates are Zone 17, 446.751 kilometers (km) East and 3,365.327 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); and Section 3 (Emissions Unit Specific Conditions). As noted in the Final Determination provided with this final permit, no changes were made to the draft 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: 2021.06.17 15:25:13 -04'00'

David Lyle Read, P.E., Environmental 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. Kevin Holbrooks, JEA: holbke@jea.com
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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: 2021.06.17 15:28:23 -04'00'

FACILITY DESCRIPTION

Northside Generating Station (NGS) consists of three boilers (Boiler No. 3 and CFB Boiler Nos. 1 and 2) and four combustion turbines (CTs). Boiler No. 3 is an existing, pre-NSPS boiler coupled to a steam turbine-electrical generator (STEG) with a nominal rating of 564 megawatts (MW) and fired by natural gas, No. 6 fuel oil and used oil. NO_X emissions from Boiler No. 3 are controlled by low-NO_X burners.

CFB Boiler Nos. 1 and 2 are circulating fluidized bed boilers fired by coal, coal coated with latex, petroleum coke (petcoke), biomass and combinations of these fuels. Each CFB boiler is coupled to a STEG rated at 297.5 MW for a combined generating capacity of 595 MW. CFB combustion technology reduces the formation of NO_X while also achieving high combustion efficiency to reduce carbon monoxide (CO) and volatile organic compound (VOC) emissions. Each CFB boiler is equipped with a selective non-catalytic reduction (SNCR) system to reduce NO_X emissions, fabric filter to reduce particulate matter (PM) and particulate matter less than 10 microns in diameter (PM_{10}) emissions and dry limestone injection and a spray dryer absorber (SDA) polishing scrubber to reduce SO_2 emissions.

The four pre-NSPS distillate fuel oil-fired simple cycle CTs have a nominal rating of 52.5 MW each (210 MW total) and are referred to as CT Nos. 3, 4, 5 and 6. Emissions from CT Nos. 3, 4, 5 and 6, are controlled by firing low sulfur No. 2 fuel oil.

The NGS also includes coal, petroleum coke, biomass, limestone and fly ash handling activities, of which various control devices, control strategies and control techniques are required. The material handling and storage operations process ash, limestone, biomass, coal, coal coated with latex, and petroleum coke to support the operation of CFB Boiler Nos. 1 and 2. Each materials handling and storage operation employs one or more control strategies to limit emissions of particulate matter to meet specific emission limitations and/or visible emissions limits. The control strategies include the use of best operating/design practices, total or partial enclosures, conditioned materials, wet suppression, water sprays and dust collection systems.

Ancillary equipment includes 2 emergency engine-electrical generators, 2 diesel engines that service a black start generator and 3 emergency engine-fire pumps. Each emergency engine is fired with ultra-low-sulfur diesel (ULSD) fuel oil.

The NGS consists of the following regulated emissions units (EU).

EU No.	Emission Unit Description
Regulated Emissions Units	
003	Boiler No. 3
006	Combustion Turbine No. 3
007	Combustion Turbine No. 4
008	Combustion Turbine No. 5
009	Combustion Turbine No. 6
026	Circulating Fluidized Bed Boiler No. 2
027	Circulating Fluidized Bed Boiler No. 1
028	Materials Handling and Storage Operations
029	Crusher House/Building Baghouse Exhaust (DC1)
031	Fuel Silos Dust Collectors (DC2 and DC3)
033	Limestone Dryer/Mills Building
034	Limestone Prep Building Dust Collectors
035	Limestone Silos Bin Vent Filters
036	Fly Ash Transport Blower Discharge
037	Fly Ash Silos Bin Vents

EU No.	Emission Unit Description
038	Bed Ash Silos Bin Vents
051	Fly Ash Slurry Mix System Vents
053	Bed Ash Surge Hopper Bin Vents
055	Emergency Generator Diesel Engines (Diesel Engine Nos. 1 and 2)
056	Black Start Engine Generator Diesel Engines (Diesel Engine Nos. 3 and 4)
057	Emergency Fire Pumps Diesel Engine Nos. 5 and 6

PROPOSED PROJECT

The purpose of this project is to establish a SO_2 emission limit for Boiler No. 3 and a conditional fuel oil sulfur content limit for the purpose of complying with the Environmental Protection Agency's (EPA) Regional Haze Program. The project also involves several notification requirements

The following existing EU that will be affected by this project.

EU No.	Description
003	Boiler No. 3

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 operates 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 operates 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 DEP Northeast District Office at: 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256.

3. 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.

4. 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.]

5. 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.]

6. 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.]

7. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050 and Chapter 62-213, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Boiler No. 3

This section of the permit addresses the following EU.

EU No.	Description
003	Boiler No. 3

Boiler No. 3 is an electric utility fossil fuel-fired steam generator with a nominal generator nameplate rating of 563.7 MW. The emissions unit is fired with No. 6 fuel oil, natural gas, liquefied petroleum (LP) gas, "on-specification" used oil, and a blend of fuel oil and natural gas. The maximum heat inputs are (1) 5,033 million British thermal units per hour (MMBtu/hr) when firing No. 6 fuel oil and/or "on-specification" used oil; (2) 5,260 MMBtu per hour when firing natural gas; or (3) 5,033 – 5,260 MMBtu per hour when firing a combination of fuel oil and natural gas. These heat input rates are based on the higher heating value (HHV) of the fuel. LP gas is used as the igniter fuel when natural gas is not available. Fuel additives, typically of a magnesium oxide, hydroxide or sulfonate, or calcium nitrate origin, are used to enhance combustion and/or control acidity. Low NO_X burners are used to control NO_X emissions. This unit does not use any add-on pollution control devices. The combustion gases exhaust through a stack with a height of 300 feet (ft) and an exit diameter of 15.5 ft with a temperature and flow rate of 260 degrees Fahrenheit (ºF) and 1,727,700 actual cubic feet per minute (acfm), respectively. Boiler No. 3 began commercial operation in 1977.

{Permitting Note: This emissions unit is regulated under 40 CFR 63, Subpart A, General Provisions, and 40 CFR 63, Subpart UUUUU, NESHAP for Coal- and Oil-Fired Electric Utility Steam Generating Units, adopted by reference in Rule 62-204.800(11)(d)1. and (b)102., F.A.C}

PREVIOUS APPLICABLE PERMITS

1. Other Permits: The conditions of this permit supplement all previously issued air construction permits. Unless otherwise specified in this subsection, these emissions units remain subject to the applicable requirements established in all previous air construction permits. [Rule 62-4.070(3), F.A.C.]

NEW CONDITIONS REALTED TO EPA REGIONAL HAZE RULE

2. Purchased Fuel Oil Sulfur Limit: Upon issuance of this final permit, the permittee shall be prohibited from buying any fuel oil with a sulfur content greater than 1.0 percent by weight. [Regional Haze SIP; Application No. 0310045-057-AC and Rule 62-210.200(PTE), F.A.C.]

3. New SO_2 Emission Limit: Effective on January 1, 2022, SO_2 emissions from Boiler No. 3 shall not exceed 3,500 pounds per hour, on a 24- hour block average basis as determined by CEMS. The 24-hour block average SO_2 emission limit shall exclude boiler operating days where a documented gas curtailment event as defined in 40 CFR 63, Subpart DDDDD (§63.7575)limits the natural gas supply to the boiler [Application No. 0310045-057-AC and Rule 62-210.200(PTE), F.A.C.]

4. Notification of Gas Curtailment Events: The permittee shall notify the Permitting Authority within 5 business days of the start and end of any gas curtailment event and keep records onsite for a period of 5 years documenting each gas curtailment event. [Application No. 0310045-057-AC and Rule 62-4.070(3), F.A.C.]

5. Future Operation of Boiler No. 3: No later than January 1, 2026, the permittee shall determine either that going forward Boiler No. 3 shall only fire fuel oil with a sulfur content of 1.0 percent or less by weight or that Boiler No. 3 shall be permanently shut down effective December 31, 2028. [Regional Haze SIP; Application No. 0310045-057-AC and Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

6. Notification of Future Operation of Boiler No. 3: The permittee shall notify the Permitting Authority by a letter signed by the Responsible Office no later than December 1, 2025 which of the boiler operation options given in **Specific Condition 5** of this subsection has been chosen. [Regional Haze SIP; Application No. 0310045-057-AC and Rule 62-4.070(3), F.A.C.]