

Appendix A-4 Tampa Electric Company



FLORIDA DEPARTMENT OF Environmental Protection

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

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

PERMITTEE

Tampa Electric Company
9995 State Route 37 South
Mulberry, Florida 33860-0775

Authorized Representative:
Mr. Jack Prestwood, Director – Polk Power Station

Air Permit No. 1050233-050-AC
Permit Expires: December 31, 2022
Minor Air Construction Permit
Polk Power Station
New SO₂ Limit - Sulfuric Acid Plant (SAP)

PROJECT

This is the final air construction permit, which imposes at 48.0 pounds per hour sulfur dioxide (SO₂) emission limit on the Sulfuric Acid Plant (Emission Unit (EU) 004) that applies at all times, including periods of startup, shutdown, and malfunction. The proposed work will be conducted at the existing Polk Power Station, which is an electrical generating plant categorized under Standard Industrial Classification No. 4911. The existing facility is in Polk County at 9995 State Route 37 South, Mulberry, Florida. The UTM coordinates are Zone 17, 402.45 kilometers (km) East, and 3067.35 km North.

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. As noted in the Final Determination provided with this final permit, only minor changes and clarifications 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

A handwritten signature in black ink, appearing to read "David Lyle Read".

Digitally signed by David Lyle Read
Date: 2022.09.21 07:55:43 -04'00'

David Lyle Read, P.E., Environmental Administrator
Permitting Review Section
Division of Air Resource Management

FINAL PERMIT

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.

Jack Prestwood, Tampa Electric Company (jprestwood@tecoenergy.com)
Kristy Apostol, P.E., Tampa Electric Company (kapostol@tecoenergy.com)
Byron Burrows, P.E., Tampa Electric Company (btburrows@tecoenergy.com)
EPA Region 4 NSR/PSD (NSRsubmittals@epa.gov)
DEP Siting Office (SCO@dep.state.fl.us)
DEP Southwest District Air Permitting (SWD_Air_Permitting@dep.state.fl.us)
DEP Southwest District Compliance (SWD_Air@dep.state.fl.us)
Ms. Elizabeth Walker, DEP OPC: Elizabeth.Walker@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.

 Digitally signed by Amy
Hilliard
Date: 2022.09.21
10:32:06 -04'00'

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

The Polk Power Station (PPS) consists of five power generation units; however, this permit only addresses Unit 1, the integrated gasification combined cycle (IGCC) plant. Unit 1 consists of a nominal 260 megawatt (MW) solid fuel-based integrated gasification and combined cycle (IGCC) plant including: a nominal 192 MW (gross) syngas and natural gas (used for startup, backup and augmentation) fired General Electric (GE) 7FA combined cycle combustion turbine (CCCT) designated as Emission Unit (EU) 001; a heat recovery steam generator (HRSG); a nominal 133 MW (gross) steam turbine-electrical generator (STEG); a solid fuel handling system designated as EU 005; an entrained flow solid fuel gasification system designated as EU 006; an oxygen plant; a synthesis gas (syngas) cleanup and sulfur recovery system; and a sulfuric acid plant (SAP) designated as EU 004.

Approximately 65 MW are consumed by the oxygen plant and process auxiliary equipment which is the difference between net and gross power production. The startup fuel for the SAP and solid fuel gasifier is natural gas. Natural gas is used as the startup, augmentation and backup fuel for the CCCT.

The below table list the regulated EU at the PPS.

EU No.	Brief Description
001	260 MW Combined Cycle Gas Turbine No. 1
004	Sulfuric Acid Plant
005	Solid Fuel Handling System
006	Solid Fuel Gasification System
007	Existing Emergency Equipment
018	500 kW Emergency Generator Diesel Engine
019	Mechanical Draft Cooling Tower – consisting of six cells with six individual exhaust fans
020	Unit 2H Nominal 165 MW Combustion Turbine and Duct-Fired Heat Recovery Steam Generator
021	Unit 3H Nominal 165 MW Combustion Turbine and Duct-Fired Heat Recovery Steam Generator
022	Unit 4H Nominal 165 MW Combustion Turbine and Duct-Fired Heat Recovery Steam Generator
023	Unit 5H Nominal 165 MW Combustion Turbine and Duct-Fired Heat Recovery Steam Generator

PROPOSED PROJECT

The purpose of the project is to establish a continuous SO₂ emission limit of 48.0 pounds per hour (lbs/hr) applicable to the Sulfuric Acid Plant (EU 004) that applies at all times, including periods of startup, shutdown, and malfunction. The project also stipulates testing, monitoring, recordkeeping and reporting requirements.

The following EU that will be affected by the project.

EU No.	Brief Description
004	Sulfuric Acid Plant

FACILITY REGULATORY CLASSIFICATION

- The facility is not 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).

SECTION 1. GENERAL INFORMATION

- 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 Permitting Review Section in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Permitting Review Section 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 Air Resource Section of the Department's Southwest District Office at: 13051 North Telecom Parkway, Temple Terrace, Florida 33637. The telephone number is 813/632-7600 and the fax number is 813/632-7665.
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. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Sulfuric Acid Plant (EU 004)

This section of the permit addresses the following emissions unit.

EU No.	Brief Description
004	Sulfuric Acid Plant

The sulfuric acid plant (SAP) removes sulfur from the syngas stream before it is combusted in the CCCT. The SAP takes a sulfur gas stream from the solid fuel gasification plant's hot gas cleanup or cold gas cleanup systems and converts it to sulfuric acid using the double contact process. The SAP currently has a 15 MMBtu/hr, pipeline quality natural gas fired, hydrogen sulfide (H₂S) to SO₂ conversion furnace which vents to the atmosphere only during warm-up; and a 9.0 MMBtu/hr, pipeline quality natural gas fired, non-contact SO₂ to sulfur trioxide (SO₃) converter preheater which is vented to the atmosphere. This SAP is a double contact absorption plant with a maximum production rate of 299 tons per day (TPD) and 109,135 TPY of 100% H₂SO₄ (sulfuric acid). The stack parameters are: height, 199 feet; diameter, 2.5 feet; exit temperature, 180 degrees °F; and the stack gas flow rate is approximately 17,660 acfm.

SO₂ EMISSION LIMIT

1. Established SO₂ Emission Limit: Effective January 1, 2023, the permittee shall not allow the discharge into the atmosphere from the Sulfuric Acid Plant of any gases which contain SO₂, in excess of 48.0 pounds (lb) per hour, based on six-hour average, with compliance shown by stack test. This emission standard applies at all times, including periods of startup, shutdown, and malfunction. [Application No. 1050233-050-AC and Rules 62-210.200(PTE) and 62-296.402(1)(SIP), F.A.C.]

SO₂ EMISSION TESTING AND MONITORING

2. Test Methods. The test method for sulfur dioxide emission limit given in **Specific Condition 1** of this subsection shall be EPA Method 6C, incorporated and adopted by reference in Chapter 62-297, F.A.C., and shall include six 1-hour runs. [Application No. 1050233-050-AC]

RECORDKEEPING AND REPORTING

3. Recordkeeping: The permittee shall meet the following recordkeeping requirements:
 - (a) For the SO₂ emissions rate, you must keep records for and results of the performance tests.
 - (b) You must maintain records of the reasons for any periods of noncompliance and description of corrective actions taken.
- [Application No. 1050233-050-AC]
4. Reporting: If the Sulfuric Acid Plant was not in compliance with the emissions standard the following information must be reported within one (1) business day to the Department:
 - (a) Time period;
 - (b) SO₂ emission rates (lb/hour);
 - (c) Reasons for noncompliance with the emissions standard; and
 - (d) Description of corrective actions taken.

[Application No. 1050233-050-AC; Rule 62-4.160, F.A.C.]