Florida Department of Environmental Protection

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PERMITTEE

Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601-0111

Authorized Representative:
Mr. Ronald Bishop, Director

Air Permit No. 0570039-109-AC (PSD-FL-040C)
Permit Expires: December 31, 2018
Minor Air Construction Permit
Big Bend Station
Gas Igniters Project - Minor Revision

PROJECT

This is the final air construction permit, which revises the previously established requirements for the natural gas igniters and process heaters. The Big Bend Station is an electric generation facility, which is categorized under Standard Industrial Classification Code No. 4911. The existing facility is in Hillsborough County at 13031 Wyandotte Road in Gibsonton, Florida. The UTM coordinates are Zone 17, 363.15 kilometers (km) East and 3074.91 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

David Lyle Read, P.E.
2017.09.14 08:52:52 -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. Ronald Bishop, TEC, Director – Big Bend Station: rdbishop@tecoenergy.com
Mr. Byron Burrows, TEC: btburrows@tecoenergy.com
Mr. Robert Velasco, P.E., TEC: ravelasco@tecoenergy.com
Ms. Diana Lee, EPCHC: lee@epchc.org
DEP Siting Office: SCO@dep.state.fl.us
Ms. Alisa Coe, Earth Justice: acoe@earthjustice.org
EPA Region 4: R4TitleVFL@epa.gov
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.

Lynn Scearce 2017.09.14 10:38:09 -04'00'

FACILITY DESCRIPTION

Tampa Electric Company, Big Bend Station, is a nominal 1,892 megawatt (MW) electric generation facility. This facility consists of four fossil fuel fired electrical generating units (Units 1 – 4); four steam turbines electrical generators; two SCCT 4A and 4B sharing a common electrical generator; solid fuels, fly ash, limestone, gypsum, slag, bottom ash storage and handling facilities; and, fuel oil storage tanks.

The existing facility consists of the following emissions units.

EU No.	Brief Description
Regulated Emissions Units	
Fossil Fuel Fired Steam Generator Units	
001	Fossil Fuel Fired Steam Generator Unit No. 1
002	Fossil Fuel Fired Steam Generator Unit No. 2
003	Fossil Fuel Fired Steam Generator Unit No. 3
004	Fossil Fuel Fired Steam Generator Unit No. 4
Simple-Cycle Combustion Turbines	
041	SCCT 4A with a common electric generator that it shares with SCCT 4B
042	SCCT 4B with a common electric generator that it shares with SCCT 4A
Solid Fuel Yard	
010	Solid Fuel Yard Fugitive Emissions
029	Fuel Blending Bin Cyclone Collectors
030	Fuel Mill Cyclone Collectors
046	Transloading and Off-site Transfer of Solid Fuels and Slag
047	Railcar Unloading and Conveying System
048	Supplemental Material Handling J3 Conveyor System
Coal Bunkers with Roto-Clones	
015	Unit No. 1 Coal Bunker with Roto-Clone
016	Unit No. 2 Coal Bunker with Roto-Clone
017	Unit No. 3 Coal Bunker with Roto-Clone
039	Unit No. 4 Coal Bunker with Roto-Clone
Limestone Handling and Storage	
012	Limestone Silo A and Baghouses (2)
013	Limestone Silo B and Baghouses (2)
023	Limestone Conveyor LB/LC and Baghouse
050	Limestone Conveyor LD/LE and Baghouse
Limestone Handling for FGD System for Units 1 & 2	
020	Limestone Conveyors LE/LF/LG/Silo C Belt Feeder Baghouse
021	Silo C and Baghouse
Wastewater Treatment Plant	
022	Lime Silo for Wastewater Treatment Plant and Baghouse

EU No.	Brief Description
Flyash Handling and Storage - Silo Nos. 1 - 3	
008	Fly Ash Silo No. 1 and Baghouse
009	Fly Ash Silo No. 2 and Baghouse
014	Fly Ash Silo No. 3 and Baghouse
Coal Residual Storage and Transfer from the Polk Power Station	
037	Coal Residual and Supplemental Additives Storage Facility
038	Coal Residual and Supplemental Additives Transfer System
Surface Coating Operations	
032	Surface Coating of Miscellaneous Metal Parts
Compression Ignition (CI) Internal Combustion Engines (ICE)	
043	SCCT Black-Start Emergency Diesel Engine (1,495 HP)
044	Units 3 & 4 Emergency Diesel Generator (1,046 HP)
053	Units 1 & 2 Emergency Diesel Generator (197 HP)
Unregulated Emissions Units and/or Activities	
036	Slag and Bottom Ash Sources BH-001 through BH-004
	Gypsum Handling and Storage Sources GH-001 through GH-017
	No. 2 Fuel Oil Storage Tanks > 550 gallons
	Vehicle Refueling Operations
045	FGD Area Emergency Diesel Generator (550 HP) and Fire Pump Diesel Engine (596 HP)

PROPOSED PROJECT

Tampa Electric Company applied for a minor air construction permit to revise the requirements related to the natural gas igniters and process heaters. The purpose of this project is to clarify and update the Title V air operation permit based on the current facility design and activities.

This permit addresses the following emission units (EU) at this facility:

Facility ID No. 0570039

ID No.	Emission Unit Description
001	Fossil Fuel Fired Steam Generator Unit No. 1
002	Fossil Fuel Fired Steam Generator Unit No. 2
003	Fossil Fuel Fired Steam Generator Unit No. 3
004	Fossil Fuel Fired Steam Generator Unit No. 4
051	Two 6 MMBtu/hr Natural Gas-fired Process Heaters

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 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 for 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 Environmental Protection Commission of Hillsborough County at: 3629 Queen Palm Drive, Tampa, Florida 33619. Phone: (813) 627-2600.

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.]

8. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

A. Fossil Fuel Fired Steam Generator Units 1 – 4

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
001	Fossil Fuel Fired Steam Generator Unit No. 1
002	Fossil Fuel Fired Steam Generator Unit No. 2
003	Fossil Fuel Fired Steam Generator Unit No. 3
004	Fossil Fuel Fired Steam Generator Unit No. 4

{Permitting Note: Fossil Fuel Fired Steam Generator Units 1 - 4 are regulated under: the federal Acid Rain Program for Phase II SO_2 and NO_X; Rule 62-296.405, F.A.C., Fossil Fuel Steam Generators with More than 250 million Btu per Hour Heat Input; Rule 62-296.700(6), F.A.C., Reasonable Available Control Technology (RACT) PM – Operation and Maintenance Plan; Rule 62-296.470, F.A.C., Clean Air Interstate Rule; 40 CFR 64, Compliance Assurance Monitoring, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; 40 CFR 97, Transport Rule; and, NESHAP Subpart UUUUU, the Mercury and Air Toxics Standards, in 40 CFR 63. Unit 4 is also regulated under NSPS Subpart Da of 40 CFR 60, Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, adopted and incorporated by reference in Rule 62-204.800(8)(b)2., F.A.C.; and, Rule 62-212.400, F.A.C., PSD.}

PREVIOUS APPLICABLE REQUIREMENTS

1. Other Permits: The conditions of this permit supplement all previously issued air construction and operation permits for Fossil Fuel Fired Steam Generator Unit Nos. 1 - 4. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions and regulations. Specific Conditions **B.2.** and **B.3.** of Permit No. 0570039-058-AC are completely replaced by the following new Specific Condition **3.** for authorized fuels. [Rule 62-4.070, F.A.C.] *{Permitting Note: Specific Conditions **B.2.** and **B.3.** of Permit No. 0570039-058-AC previously replaced Specific Conditions **3.** and **4.** of Permit No. 0570039-053-AC.}*

PERFORMANCE RESTRICTIONS

2. FGD and ESP Operating Exemption. The FGD and ESP are not required to operate only while exclusively firing pipeline-quality natural gas. [Application No. 0570039-109-AC]

PERMITS BEING MODIFIED

The following revisions replace the referenced conditions in **Permit No. 0570039-091-AC.**

3. *Section III, Subsection A, Revision of Specific Condition 4*

   Authorized Fuels and Supplemental Materials.

   a. *Fuels – Normal Operation.* The fuels that are allowed to be burned in these units are:
      (1) Natural gas,
      (2) Solid fuels consist of coal, coal blends or a coal/petroleum coke blend containing a maximum of 20% petroleum coke by weight, or a coal blended with coal residual generated from the Polk Power Station, or a coal/petroleum coke blend further blended with coal residual generated from the Polk Power Station.
      (3) Natural gas co-fired with solid fuels,
      (4) Petroleum coke content of any fuel blend shall not exceed 20% by weight.

   b. *Fuels – Startup, Shutdown, Flame Stabilization.*
      (1) Natural gas.
      (2) Natural gas may also be fired during the start of an additional solid fuel mill on an already operating unit.

   c. *Other Operation.*
      (1) Raw Coal Residual. The total amount of raw coal residual fired at Big Bend Station (Units 1 – 4, combined) shall be limited to 200 tons/day. The raw coal residual is a by-product of the gasification

of coal at the Polk Power Station. The permittee shall only fire raw coal residual in the event of a gasification process malfunction at the Polk Power Station that results in raw coal residual that has some remaining fuel value. The permittee shall document all gasification process malfunctions and record the amount of raw coal residual, if any, fired at Big Bend Station. These records should be kept on site at Big Bend and made readily available to the Department and the EPCHC upon request.

(2) Supplemental Material Injection. The following materials may be injected as needed for boiler conditioning and energy recovery purposes:

(a) Magnesium Oxide, Limestone and Fluxing Agents may be injected as needed for boiler conditioning.

(b) Flyash. Reinjection of on-site generated flyash for energy recovery.

~~a. *Coal and Coal Blends (Solid Fuels).*~~

~~(1) Coal. Coal is the primary fuel burned in Units 1 – 4.~~

~~(2) Coal and Coal Blends. Units 1 – 4 are authorized to burn coal, or a coal/petroleum coke blend, or coal blended with raw coal residual, or a coal/petroleum coke blend further blended with raw coal residual. In any case, the petroleum coke content of any fuel blend shall not exceed 20% by weight during normal operation.~~

~~(3) Raw Coal Residual. The proposed work shall not increase the permitted firing of 200 tons/day of raw coal residual in Units 1 – 4 combined.~~

~~(4) Fly Ash Residual. Units 1 – 4 are authorized to re-inject on-site generated fly ash residual for energy recovery.~~

~~b. *Natural Gas.*~~

~~(1) Natural gas is authorized to be fired alone during startup, shutdown, flame stabilization, normal operation, and during the startup of an additional solid fuel mill on an already operating unit.~~

~~(2) Natural gas is authorized to be co-fired in combination with coal/solid fossil fuel during normal operation as a supplemental fuel.~~

[Rule 62-210.200(PTE), F.A.C.; Permit Nos. 0570039-066-AC and 0570039-084-AC; and, Application No. 0570039-~~091~~109-AC]

4. *Section III, Subsection A, Removal of Specific Condition 8*

~~Special Compliance Tests. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit, unless the Department obtains other information sufficient to demonstrate compliance. The owner or operator of the emissions unit shall provide a report on the results of said tests to the Department in accordance with the provisions of subsection 62-297.310(10), F.A.C. [Rule 62-297.310(8)(c), F.A.C.]~~
~~*{Permitting Note: This condition does not impose a specific testing requirement.}*~~

5. *Section III, Subsection A, Revision of Specific Condition 11*

Operational Records. The permittee shall establish and maintain the following daily records from the firing of natural gas and solid fuel in steam generator Units 1 - 4:

a. Record the heat input rate from the firing of solid fuels;

b. Record the heat input rate from the firing of natural gas~~;~~. The standard heating value of natural gas, 1,020 Btu/scf, shall be used to calculate the natural gas heat input rate;

~~c. The standard heating value of natural gas, 1,020 Btu/scf, shall be used to calculate the natural gas heat input rate;~~

~~d. The higher heating value (HHV) of coal, approximately 23.6 MMBtu/tons of coal, shall be used to calculate the coal heat input rate;~~

~~e. The methods set forth in the current Title V permit for determining the heat input of solid fuels shall be used to calculate the heat input from solid fuel during co-firing operations;~~

~~f.~~ c. Records of the heat input rates of all fuels shall be maintained on-site and made available upon request. The permittee shall maintain daily records of operation showing the date, fuels used, and the duration of all startups, shutdowns and malfunctions. Fuel bunkering and petroleum coke usage (weight percent of petroleum coke fired) records shall be maintained on a daily basis to document the percentage limitation on petroleum coke has not been exceeded. The records shall document the amount of natural gas burned and the solid fuel analyses containing information on sulfur content, ash content, and heating values.

[Rule 62-4.070(3), F.A.C.~~;~~ and Application No. 0570039-109-AC]

The following revision replaces Specific Condition 1.B. in **PSD-FL-040.**

6. *Section III, Subsection A, Revision of Specific Condition 1.B.*

Recordkeeping. Records of the heat input rates of all fuels shall be maintained on-site and made available upon request. The permittee shall maintain daily records of operation showing the date, fuels used, and the duration of all startups, shutdowns and malfunctions. Fuel bunkering and petroleum coke usage (weight percent of petroleum coke fired) records shall be maintained on a daily basis to document the percentage limitation on petroleum coke has not been exceeded. The records shall document the amount of natural gas burned and the solid fuel analyses containing information on sulfur content, ash content, and heating values.~~Gravimetric instrument data verifying that the 20% maximum petroleum coke content by weight has not been exceeded shall be maintained for 5 years and submitted to the EPCHC with each AOR. Also to be maintained and available for inspection shall be a daily record of operation showing the date, fuel used, and the duration of all startups, shutdowns and malfunctions. The permittee shall maintain copies of fuel analyses containing information on sulfur content, ash content, and heating values.~~ [Rule 62-213.440(1)(b)2.b., F.A.C.; ~~PA 79-12; and, PSD-FL-040~~ and Application No. 0570039-109-AC]

The following revision replaces Specific Condition 1 in **Permit No. 0570039-060-AC.**

7. *Section III, Subsection A, Specific Condition 1*

NO_X Emissions.

a. As determined by CEMS, NO_X emissions from each electrical generating unit shall not exceed 0.12 pounds per million British thermal unit (lb/MMBtu) of heat input based on a heat input weighted 30-day rolling average ~~when combusting solid fuels~~. *{Permitting Note: For informational purposes, the NO_X limit equates to: 484.4 lb/hour and 2,121.9 tons/year for Unit 1; 479.5 lb/hour and 2,100.3 tons/year for Unit 2; and 494 lb/hour and 2,163.7 tons/year for Unit 3.}*

b. As determined by CEMS, NO_X emissions from Unit 3 shall not exceed 0.70 lb/MMBtu based on a 30-day rolling average. *{Permitting Note: Compliance with this emission limit will be demonstrated by complying with the 0.12 lb/MMBtu NO_X limit.}*

[~~Consent Decree (U.S. vs. TEC) dated February 29, 2000, amendment dated June 12, 2009; and, Permit No. 0570039-024-AC (revised by Permit No. 0570039-060-AC).~~Rule 62-296.405(1)(d)4, and 62-213.440, F.A.C.; ~~and,~~ Permit No. 0570039-060-AC; and Application No. 0570039-109-AC]

The following revision replaces Specific Condition 6 in **Permit No. 0570039-071-AC (PSD-FL-040B).**

8. *Section III, Subsection A, Specific Condition No. 6*

SO_2 Emissions

a. As determined by CEMS, SO_2 emissions shall not exceed 0.82 lb/MMBtu heat input and 10% of the potential combustion concentration (90% reduction) based on a 30-day rolling average ~~when combusting solid fuels~~.

[~~Permit No. 0570039-071-AC~~ Application No. 0570039-109-AC]

B. Two 6 MMBtu/hr Natural Gas-fired Process Heaters

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
051	Two 6 MMBtu/hr Natural Gas-fired Process Heaters

{Permitting Note: The process heaters are regulated under NESHAP Subpart DDDDD (Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters) of 40 CFR 63 adopted and incorporated by reference in Rule 62-204.800, F.A.C.}

PERMITS BEING MODIFIED

The following revisions replace the referenced conditions in **Permit No. 0570039-091-AC.**

1. *Section III, Subsection B, Removal of Specific Conditions 10, 11 and 12*

~~Special Compliance Tests. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit, unless the Department obtains other information sufficient to demonstrate compliance. The owner or operator of the emissions unit shall provide a report on the results of said tests to the Department in accordance with the provisions of subsection 62-297.310(10), F.A.C. [Rule 62-297.310(8)(c), F.A.C.]~~

~~Test Requirements. The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9, F.A.C.]~~

~~Test Methods. Required tests shall be performed in accordance with the following reference methods.~~

~~Method~~	~~Description of Method and Comments~~
~~9~~	~~Visual Determination of the Opacity of Emissions from Stationary Sources~~

~~The above method is described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; and Appendix A of 40 CFR 60]~~