FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
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SECRETARY

PERMITTEE

Tampa Electric Company
Big Bend Power Station

Authorized Representative:
Mr. Ronald D. Bishop, Director

Draft Permit No. 0570039-060-AC
Air Construction Permit
Project: Consent Decree Related Revisions

Hillsborough County, Florida

PROJECT

This is the final air construction permit, which authorizes Consent Decree related revisions at the existing electric generation facility (Project). This facility is an existing electric generation facility categorized under Standard Industrial Classification No. 4911. This existing facility is located in Hillsborough County at Big Bend Road, Apollo Beach. UTM Coordinates: Zone 17, 361.9 km East and 3075.0 km North; Latitude: 27° 47' 36" North and Longitude: 82° 24' 11" West.

This final permit is organized into the following sections: Section I (General Information), Section II (Requirements) and Section III (Emission(s) Unit(s) Specific Conditions); and, Section IV (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section IV of this permit. [(if applicable) 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.). 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. A copy of this permit modification shall be filed with the referenced permit and shall become part of the permit.

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
For the Division of Air Resource Management

JFK/sa/sms

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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) 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 persons listed below.

Mr. Ronald D. Bishop, TEC: rdbishop@tecoenergy.com
Mr. Robert A. Velasco, P.E., TEC: ravelasco@tecoenergy.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.

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FACILITY DESCRIPTION

This existing Big Bend Station is a nominal 2,028 megawatt (MW) electric generation facility. This facility consists of four fossil fuel fired steam generators, Boiler Unit Nos. 1 through 4; four steam turbines; a simple cycle combustion turbine (SCCT)-generator peaking unit set; solid fuels, fly ash, limestone, gypsum, slag, and bottom ash storage and handling facilities; and, fuel oil storage tanks.

Also included at the facility are miscellaneous unregulated/insignificant emissions units and/or activities.

This project will affect the following *existing* permitted emissions units:

E.U. ID No.	Brief 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

FACILITY REGULATORY CLASSIFICATION

- This facility is a major source of hazardous air pollutants (HAP).
- This 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 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C.
- The facility is subject to regulation pursuant to Power Plant Siting Conditions (PA 79-12).

PROPOSED PROJECT

This project is for a minor source air construction permit. The minor source air construction permit is for Consent Decree related revisions at the existing electric generation facility.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for Air Construction Permit received on October 18, 2012.

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SECTION II. REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance, Division of Air Resource Management, Florida Department of Environmental Protection (Department). The mailing address for the Office of Permitting and Compliance 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 (Compliance Authority) at 3629 Queen Palm Drive, Tampa, Florida 33619; Telephone: 813/627-2600, Fax: 813/627-2660.

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 & 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. Construction and Expiration: The Department may extend the expiration date upon a satisfactory showing that an extension is justified. For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Office of Permitting and Compliance at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, 62-210.300(1), and 62-212.400(6)(b), F.A.C.]

6. 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.]

7. 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) & 62-212.300(1)(a), F.A.C.]

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This subsection of the permit addresses the following emissions units:

E.U. ID No.	Brief 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

This facility has fossil fuel fired steam generator (boiler) type emissions units that are subject to the Consent Decree, as amended on October 23, 2000 (1st Amendment) and June 12, 2009 (2nd Amendment) {electronic versions of these documents are available at the following website: http://www.epa.gov/compliance/resources/cases/civil/caa/teco.html (note: some of the signatures may have been redacted)}.

This subsection of the permit revises historical specific conditions from AC permits relevant to the Consent Decree.

The affected specific conditions from the AC permits being revised are hereby changed (the remainder of the permit remains unchanged as a result of this permitting action).

For simplified reading, the important revisions are emphasized with yellow highlight in this electronic document. ~~Strikethrough~~ is used to denote the deletion of text and double-underlines are used to denote the addition of text.

1. Specific Condition **A.16.**, from Permit No. 0570039-024-AC.

   Specific Condition **A.16.** (as reflected in Specific Conditions **A.23.** in the current valid Title V air operation permit No. 00570039-054-AV) is changed in its entirety to read as follows:

   A.16. Nitrogen Oxides (NOx) Emissions - Unit Nos. 1 and 2. ~~**On and after June 1, 2010,**~~ NOx emissions ~~(reported as NO_2)~~ from Unit No. 1 when combusting solid fuel, shall not exceed 0.12 lb NO_X/million Btu heat input on a heat input weighted 30-day ~~boiler operating day~~ rolling average basis {calculated equivalent NOx emissions from Unit No. 1 are 484.4 lb/hr and 2,121.9 TPY}. NOx emissions ~~(reported as NO_2)~~ from Unit No. 2 when combusting solid fuel, shall not exceed 0.12 lb NOx/million Btu heat input on a heat input weighted 30-day ~~boiler operating day~~ rolling average basis {calculated equivalent NOx emissions from Unit No. 2 are 479.5 lb/hr and 2,100.3 TPY}. ~~These emission limits are based on the definition of "emission rate" so that an equation is used that divides total pounds of NOx by total heat input in each 30-day period to reach a 30-day rolling average. These standards apply at all times except during periods of startup, shutdown, malfunction or abnormal events.~~ [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).]

2. Specific Condition **A.16.**, from Permit No. 0570039-022-AC.

   Specific Condition **A.16.** (as reflected in Specific Conditions **A.24.** in the current valid Title V air operation permit No. 00570039-054-AV) is changed in its entirety to read as follows:

   A.16. Nitrogen Oxides (NOx) Emissions - Unit 3. NOx emissions ~~(reported as NO_2)~~ from Unit No. 3 when combusting solid fuel, shall not exceed 0.12 lb NOx/million Btu heat input on a heat input weighted 30-day ~~boiler operating day~~ rolling average basis {calculated equivalent NOx emissions from Unit No. 3 are 494 lb/hr and 2,163.7 TPY}. ~~These emission limits are based on the definition of "emission rate" so that an equation is used that divides total pounds of NOx by total heat input in each 30-day period to reach a 30-day rolling average. These standards apply at all times except during periods of startup, shutdown, malfunction or abnormal events.~~ [Consent Decree (U.S. vs. TEC) dated February 29, 2000, amendment

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dated June 12, 2009; and, Permit No. 0570039-022-AC (amended by 0570039-035-AC and revised by Permit No. 0570039-060-AC).]

{Permitting Note: The Consent Decree as amended~~; which is a part of this permit~~, supersedes the SIP NOx limit of 0.70 pounds per million Btu heat input from Rules 62-296.405(1)(d)4. and 62-296.405(1)(e)4., F.A.C.

3. Permit Nos. 0570039-022-AC and 0570039-024-AC.

A *new* Specific Condition **A.16.1.** is inserted which reads as follows:

Nitrogen Oxides (NOx) and Sulfur Dioxide (SO_2) Emissions

A.16.1. Calculation of Emission Rate. A "30-day rolling average emission rate" for NOx and SO_2 shall be herein defined as the emission rate expressed as lb/mmBtu and calculated in accordance with the following procedure: first, sum the total pounds of the pollutant in question emitted from the Unit during an operating day and the previous twenty-nine (29) operating days; second, sum the total heat input to the Unit in mmBtu during the operating day and the previous twenty-nine (29) operating days; and third, divide the total number of pounds of the pollutant emitted during the thirty (30) operating days by the total heat input during the thirty (30) operating days. A new 30-day rolling average emission rate shall be calculated for each new operating day. The 30-day rolling average emission rate:

(1) Shall include all emissions and heat input in mmBtu commencing from the time the Unit is synchronized with a utility electric distribution system through the time that the unit ceases to be synchronized with such utility electric distribution system;

(2) May exclude emissions of NOx and heat input in mmBtu occurring during the fifth and subsequent "Cold Start Up" period(s) that occur in any 30-day period if inclusion of such emissions would result in a violation of any applicable 30-day rolling average emission rate. A "Cold Start Up Period" occurs whenever there has been no fire in the boiler of a Unit (no combustion of any fossil fuel) for a period of six hours of more. The emissions to be excluded during the fifth and subsequent Cold Start Up Period(s) shall be the lesser of: (1) those NOx emissions emitted during the eight hour period commencing when the Unit is synchronized with a utility electric distribution system and concluding eight hours later, or (2) those emitted prior to the time that the flue gas has achieved the SCR operational temperature as specified by the catalyst manufacturer; and (4) may exclude NOx emissions and heat input in mmBtu occurring during any period of malfunction (as defined at 40 C.F.R. 60.2) of the SCR; and

(3) Shall use the methodologies and procedures set forth in 40 C.F.R. Part 75, Appendix F.

[Consent Final Judgment (DEP vs. TEC) dated December 16, 1999; Consent Decree (U.S. vs. TEC) dated February 29, 2000, amendment dated June 12, 2009; and, Permit No. 0570039-060-AC.]

4. Specific Condition **A.16.**, from Permit No. 0570039-020-AC.

Specific Condition **A.16.** (as reflected in Specific Conditions **B.21.** in the current valid Title V air operation permit No. 00570039-054-AV) is changed in its entirety to read as follows:

A.16. Nitrogen Oxides (NO_X) Emissions - Unit 4. Unit No. 4 when combusting solid fuel, shall not emit more than 0.10 of a pound of nitrogen oxides per million Btu heat input based upon a 30-day rolling average basis {calculated equivalent NO_X emissions are 433 lb/hr and 1,896.5 TPY}. ~~These emission limits are based on the definition of "emission rate" so that an equation is used that divides total pounds of NO_x by total heat input in each 30-day period to reach a 30-day rolling average. These standards apply at all times except during periods of startup, shutdown, malfunction or abnormal events.~~ [Consent Final Judgment (DEP vs. TEC) dated December 16, 1999; Consent Decree (U.S. vs. TEC) dated February 29, 2000, amendment dated June 12, 2009; E-mail memorandum from EPA received on September 15, 2005; Rule 62-204.800(8)(b)2., F.A.C.; 40 CFR 60.44Da(a); 40 CFR 60.44Da(c); Permit

No. 0570039-020-AC (amended by 0570039-026, -031 & -036-AC and revised by Permit No. 0570039-060-AC); and, PSD-FL-040.]

5. Permit No. 0570039-020-AC.

A *new* Specific Condition **A.16.1.** is inserted which reads as follows:

Nitrogen Oxides (NOx) and Sulfur Dioxide (SO_2) Emissions

A.16.1. Calculation of Emission Rate. A "30-day rolling average emission rate" for NOx and SO_2 shall be herein defined as the emission rate expressed as lb/mmBtu and calculated in accordance with the following procedure: first, sum the total pounds of the pollutant in question emitted from the Unit during an operating day and the previous twenty-nine (29) operating days; second, sum the total heat input to the Unit in mmBtu during the operating day and the previous twenty-nine (29) operating days; and third, divide the total number of pounds of the pollutant emitted during the thirty (30) operating days by the total heat input during the thirty (30) operating days. A new 30-day rolling average emission rate shall be calculated for each new operating day. The 30-day rolling average emission rate:

(1) Shall include all emissions and heat input in mmBtu commencing from the time the Unit is synchronized with a utility electric distribution system through the time that the unit ceases to be synchronized with such utility electric distribution system;

(2) May exclude emissions of NOx and heat input in mmBtu occurring during the fifth and subsequent "Cold Start Up" period(s) that occur in any 30-day period if inclusion of such emissions would result in a violation of any applicable 30-day rolling average emission rate. A "Cold Start Up Period" occurs whenever there has been no fire in the boiler of a Unit (no combustion of any fossil fuel) for a period of six hours of more. The emissions to be excluded during the fifth and subsequent Cold Start Up Period(s) shall be the lesser of: (1) those NOx emissions emitted during the eight hour period commencing when the Unit is synchronized with a utility electric distribution system and concluding eight hours later, or (2) those emitted prior to the time that the flue gas has achieved the SCR operational temperature as specified by the catalyst manufacturer; and (4) may exclude NOx emissions and heat input in mmBtu occurring during any period of malfunction (as defined at 40 C.F.R. 60.2) of the SCR; and

(3) Shall use the methodologies and procedures set forth in 40 C.F.R. Part 75, Appendix F.

[Consent Final Judgment (DEP vs. TEC) dated December 16, 1999; Consent Decree (U.S. vs. TEC) dated February 29, 2000, amendment dated June 12, 2009; and, Permit No. 0570039-060-AC.]

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This subsection of the permit addresses the following emissions units:

E.U. ID No.	Brief 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

This facility has fossil fuel fired steam generator (boiler) type emissions units that are subject to the Consent Decree, as amended on October 23, 2000 (1st Amendment) and June 12, 2009 (2nd Amendment) {electronic versions of these documents are available at the following website: http://www.epa.gov/compliance/resources/cases/civil/caa/teco.html (note: some of the signatures may have been redacted)}.

This subsection of the permit adds new specific conditions relevant to the Consent Decree into this AC permit.

For simplified reading, the important revisions are emphasized with yellow highlight in this electronic document. Double-underlines are used to denote the addition of text.

Applicant Request, Permit No. 0570039-060-AC.

Several *new* specific conditions are established in this permit which read as follows:

Particulate Matter (PM) Requirements

Unit Nos. 1 - 3 - PM Emissions

1. PM Emissions. Particulate matter emissions from each unit shall not exceed 0.03 pounds per million Btu heat input. [Applicant Request; and, Permit No. 0570039-060-AC.]

{Permitting Note: This PM limit originating from the Consent Final Judgment and/or the Consent Decree as amended; supersedes the SIP PM limit of 0.1 pounds per million Btu heat input from Rule 62-296.405(1)(b), F.A.C.}

2. PM Emissions. The maximum particulate matter emission rate for each unit is as follows:

Unit No.	lbs./hour	tons/yr
1	121.1	530
2	119.9	525
3	123.5	541

In the event that the design heat input rate for a unit is reduced, the maximum permitted particulate matter emission rate for that unit shall also be reduced accordingly. [Rule 62-296.700(4)(b)1. (PM RACT - lbs./hour & tons/yr), F.A.C.; and, Applicant Request; Permit No. 0570039-060-AC.]

Unit No. 4 - Particulate Matter (PM) Emissions

3. PM Emissions. Particulate matter emissions shall not exceed 0.01 pounds per million Btu heat input when burning solid or liquid fuel. This standard applies at all times except during periods of startup, shutdown, or malfunction. [Applicant Request; and, Permit No. 0570039-060-AC.]

{Permitting Note: This PM limit originating from the Consent Final Judgment and/or the Consent Decree as amended; supersedes the NSPS 40 CFR 60 Subpart Da PM limit of 0.03 pounds per million Btu heat input.}

4. PM Emissions. The maximum particulate matter emission rate for this unit is as follows:

Unit No.	lbs./hour	tons/yr
4	43.3	189.7

In the event that the design heat input rate for this unit is reduced, the maximum permitted particulate matter emission rate for this unit shall also be reduced accordingly. [Rule 62-296.700(4)(b)1. (PM RACT - lbs./hour & tons/yr), F.A.C.; and, Applicant Request; Permit No. 0570039-060-AC.]

5. CURRENT OUTSTANDING CONSENT DECREE PROVISIONS

Section 32D - The current schedule is based upon current ESP inspections and future outage schedules. The schedule can be revised and the work may be performed earlier or later depending on such factors as ESP performance, equipment condition, outage duration, safety issues, specific unit operating parameters, and system demand.

ESP Project	Unit 1	Unit 2	Unit 3	Unit 4
Wide plate spacing and rigid electrodes	2014-2015	C	2013	N/A
Increased T/R sectionalization	N/A	C	2013	N/A
Air Construction Permits	C	C	C {-058-AC}	N/A

Where "C" represents complete and "N/A" represents not applicable.

This permit authorizes the ESP Projects listed above.

TEC shall notify the permitting and compliance authorities upon initiation of the work.

TEC shall notify the permitting and compliance authorities upon completion of the work.

All of these projects shall be completed no later than December 31, 2015.

Sulfur Dioxide (SO_2) Requirements

Unit Nos. 1 - 3 - SO_2 Emissions

6. SO_2 Emissions - Unit Nos. 1 - 2. When combusting solid fuels, Unit Nos. 1 and 2, each shall meet at least one of the following limits:

a. the scrubber shall remove at least 95% of the SO_2 in the flue gas that entered the scrubber; or,
b. **on and after January 1, 2013**, the "emission rate" for SO_2 does not exceed 0.25 pounds per million Btu heat input on a 30-day rolling average. The term "emission rate" is specifically defined in Specific Condition A.16.1.

[Applicant Request; and, Permit No. 0570039-060-AC.]

7. SO_2 Emissions - Unit No. 3. When combusting solid fuels, Unit No. 3 shall meet at least one of the following limits:

c. the scrubber shall remove at least 95% of the SO_2 in the flue gas that entered the scrubber; or,
d. the "emission rate" for SO_2 does not exceed 0.25 pounds per million Btu heat input on a 30-day rolling average. The term "emission rate" is specifically defined in Specific Condition A.16.1.

[Applicant Request; and, Permit No. 0570039-060-AC.]

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