TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Tampa Electric Company
13031 Wyandotte Road
Apollo Beach, FL 33572-9200

Big Bend Power Station
Facility ID No. 0570039

PROJECT

Draft Permit No. 0570039-060-AC
Application for Minor Source Air Construction (AC) Permit
Consent Decree Related Revisions

COUNTY

Hillsborough County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

February 2013

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control - General Provisions); 62-210 (Stationary Sources - General Requirements); 62-212 (Stationary Sources - Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources - Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Facility Description and Location

This facility is an existing electric generation facility categorized under Standard Industrial Classification No. 4911. The existing Big Bend Power Station is located in Hillsborough County at 13031 Wyandotte Road, Apollo Beach, Florida.

This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

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 Categories

- The 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.
- 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, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

The applicant applied on October 18, 2012, to the Department 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.

Application Processing Schedule

Application for Air Construction Permit received on October 18, 2012.
1st Request for Additional Information (RAI) sent on December 5, 2012.
Additional Information Response from Applicant received on December 23, 2012 (complete application).

{Documents specifically related to this project are posted and available on the Department's world wide web site at http://appprod.dep.state.fl.us/air/emission/apds/default.asp by entering the project number shown above.}

Relevant Document(s)

- Permit No. 0570039-054-AV, Current Title V Air Operation Permit.
- Consent Decree (U.S. vs. TEC) dated February 29, 2000.
- 1st Amendment to Consent Decree dated October 23, 2000.
- 2nd Amendment to Consent Decree dated June 12, 2009.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" (SERs) defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as PM; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the increase in emissions from the project exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project

may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

3. APPLICANT REVIEW

Background - Requested Revisions to Close out the Consent Decree

The applicant applied on October 18, 2012, to the Department 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.

The Consent Decree related revision requests were originally submitted with other requests contained in the October 18, 2012, application. By e-mail on January 28, 2013, the applicant requested that the Department proceed to only process the consent decree portion of the requests at this time. The applicant indicated that they will include the "Title V cleanup" requests as part of the Title V air operation permit revision applications for the Unit 3 modifications and the conveyor projects which will occur sometime in March or April 2013.

4. DEPARTMENT REVIEW

Background - Requested Revisions to Close out the Consent Decree

On February 29, 2000, the United States (U.S.) and Tampa Electric Company (TEC) entered into a settlement agreement (Consent Decree, Civil Action No. 99-2524). The Consent Decree was amended on October 23, 2000 (1st Amendment) and June 12, 2009 (2nd Amendment). Electronic versions of these documents are available at the following EPA web site: http://www.epa.gov/compliance/resources/cases/civil/caa/teco.html {Note: Some of the signatures may have been redacted}.

TEC indicated to the Department that on September 14, 2012, TEC and the Department of Justice (DOJ) discussed the closure of the Consent Decree at the Big Bend Power Station. TEC and the DOJ agreed to include the provisions on calculation of the 30-day rolling average as required on pages 5 and 6 of the 2nd Amendment to the Consent Decree dated June 12, 2009. Apparently, it was also agreed that a permit application to modify the Title V air operation permit would be sufficient to satisfy the requirements to terminate (close out) the Consent Decree.

The applicant requested specific conditions in the current valid Title V air operation permit, Permit No. 0570039-054-AV, to be revised to close out the Consent Decree. These permit specific conditions originate from underlying air construction (AC) permits. The permit specific conditions could not be revised in the Title V air operation permit; the underlying AC permits were required to be revised.

The specific requested changes were made by the applicant to close out the Consent Decree in the letter dated October 16, 2012 (received on October 18, 2012). Each specific requested change is extracted from the October 16, 2012 letter here and each requested change (revision) is individually reviewed. On December 23, 2012, the applicant provided the origin of each specific requested change where AC permits were affected.

The applicant's proposed additions are shown with double-underlines and proposed deletions are shown with ~~strikethroughs~~.

Subsection III.A. Revisions

These requested changes (revisions) appear generally in the same order as stated in TEC's letter dated October 16, 2012.

1. Completion of Certain Electrostatic Precipitator Projects.

   Applicant's Requested Change (Revision):

   The applicant requested that the Appendix CP-1 Compliance Plan (Page CP-1 of 2) in the current valid Title V air operation permit No. 0570039-054-AV be changed to read as follows:

   All of these projects shall be completed no later than December 31, 2015. ~~All of these projects are expected to be completed no later than December 31, 2015.~~

   Department's Response:

   As indicated by TEC in the proposed compliance plan outstanding work remains to be completed under the Consent Decree; unfinished work is scheduled to last through 2015. The Appendix CP-1 Compliance Plan is not in an AC permit. However, the current outstanding Consent Decree provisions are included in Subsection III.B.5. of Permit No. 0570039-060-AC. As such, it can simply be edited in the Title V air operation permit, attached as an update.

2. Unit Nos. 1 and 2 - Calculation of 30-day Rolling Average for NOx Emissions.

   Applicant's Requested Change (Revision):

   The applicant requested that the 30-day rolling average calculation for NOx emissions from Unit Nos. 1 and 2 as reflected in Specific Conditions **A.23.** in the current valid Title V air operation permit No. 00570039-054-AV be changed to read as follows:

   A.23. 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.]

   Department's Response:

   The 2nd Amendment to the Consent Decree was made on June 12, 2009. The AC permit authorizing the installation of SCR systems on Unit Nos. 1 and 2, Permit No. 0570039-024-AC, was issued on March 30, 2006, which was prior to the 2nd amendment. To be consistent with the later approved calculation as specified in the 2nd Amendment, Specific Condition **A.16.** of Permit No. 0570039-024-AC 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).]

3. Unit No. 3 - Calculation of 30-day Rolling Average for NOx Emissions.

Applicant's Requested Change (Revision):

The applicant requested that the 30-day rolling average calculation for NOx emissions from Unit No. 3 as reflected in Specific Conditions **A.24.** in the current valid Title V air operation permit No. 00570039-054-AV be changed to read as follows:

A.24. 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 dated June 12, 2009; and, Permit No. 0570039-022-AC (amended by 0570039-035-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.}*~~

Department's Response:

The 2nd Amendment to the Consent Decree was made on June 12, 2009. The AC permit authorizing the installation of SCR system on Unit No. 3, Permit No. 0570039-022-AC, was issued on November 10, 2005 and amended by Permit No. 0570039-035-AC on June 3, 2008, which was prior to the 2nd amendment. To be consistent with the later approved calculation as specified in the 2nd Amendment, Specific Condition **A.16.** of Permit No. 0570039-022-AC 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 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.}

4. Unit Nos. 1-3 - Calculation of Emission Rate for NOx and SO_2.

Applicant's Requested Change (Revision):

The applicant requested that the "30-day rolling average emission rate" for NOx and SO_2 be defined in the Title V air operation permit by inserting a new specific condition as follows:

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

A.26. 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 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 commencing from the time the Unit is synchronized with the utility electric distribution system through the time that the unit ceases to be synchronized with the utility electric distribution system;

(2) May exclude emissions of NOx and heat input 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 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 February 4, 2008]

Department's Response:

The Department has reviewed the requested insertion and found the proposed specific condition to differ only slightly from the 2nd Amendment language. The Department needs to insert the language verbatim from the 2nd Amendment to preserve EPA's intent.

To be consistent with the later approved calculation as specified in the 2nd Amendment, Permit Nos. 0570039-022-AC and 0570039-024-AC are changed by inserting the following new specific condition:

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.]

5. Unit Nos. 1-4 - Miscellaneous Edit.

Applicant's Requested Change (Revision):

The applicant requested that Specific Condition **B.20.** in the Title V air operation permit be edited as follows:

B.20. SO_2 Emissions - Unit Nos. 1 - 4. In order to provide reasonable assurance that a significant net emission rate increase will not occur as a result of combusting raw and beneficiated coal residual at Big Bend, the combined emissions from Fossil Fuel Fired Steam Generator Unit Nos. 1 - 4 shall not exceed an annual emissions cap of 71,810 tons per year of SO_2. This cap corresponds to the average emissions of the years 1999 and 2000. Any relaxation in this limit that increases the facility's potential to emit by at least 1 ton of pollutant per year will result in a reevaluation of PSD applicability for the facility as though construction had not yet commenced at the facility. [Rule 62-212.400 ~~(escape Prevention of Significant Deterioration (PSD)~~, F.A.C.; and, Permit No. 0570039-012-AC.]

Department's Response:

The parenthetical label "(escape Prevention of Significant Deterioration (PSD)" does not appear in the cited AC permit. As such, it can simply be removed in the Title V air operation permit.

6. Calculation of 30-day Rolling Average for NOx emissions from Unit No. 4.

Applicant's Requested Change (Revision):

The applicant requested that the 30-day rolling average calculation for NOx emissions from Unit No. 4 as reflected in Specific Conditions **B.21.** in the current valid Title V air operation permit No. 00570039-054-AV be changed to read as follows:

B.21. 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, PSD-FL-040.]

Department's Response:

The 2nd Amendment to the Consent Decree was made on June 12, 2009. The AC permit authorizing the installation of SCR system on Unit No. 4, Permit No. 0570039-020-AC, was issued on May 6, 2005 and amended by Permit No. 0570039-026-AC on November 20, 2005, which was prior to the 2nd amendment. To be consistent with the later approved calculation as specified in the 2nd Amendment, Specific Condition **A.16.** of Permit No. 0570039-020-AC 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.]

7. Unit No. 4 - Calculation of Emission Rate for NOx and SO_2.

Applicant's Requested Change (Revision):

The applicant requested that the "30-day rolling average emission rate" for NOx and SO_2 be defined in the Title V air operation permit by inserting a new specific condition as follows:

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

B.23. 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 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 commencing from the time the Unit is synchronized with the utility electric distribution system through the time that the unit ceases to be synchronized with the utility electric distribution system;

(2) May exclude emissions of NOx and heat input 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 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 February 4, 2008]

Department's Response:

The Department has reviewed the requested insertion and found the proposed specific condition to differ only slightly from the 2nd Amendment language. The Department needs to insert the language verbatim from the 2nd Amendment to preserve EPA's intent.

To be consistent with the later approved calculation as specified in the 2nd Amendment, Permit No. 0570039-020-AC is changed by inserting the following new specific condition:

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.]

Subsection III.B. Newly Established Specific Conditions

These requested changes appear generally in the same order as stated in TEC's letter dated December 23, 2012.

1. Particulate Matter (PM)

   Applicant's Requested Changes:

   The applicant requested in their letter dated December 27, 2012 that several of the particulate matter emission related requirements from the Consent Decree to be incorporated into an AC permit. The PM emission limitations are presently in the current valid Title V air operation permit, Permit No. 0570039-054-AV, Specific Condition Nos. **A.13.**, **A.14.**, **B.15.** & **B.16.**

   Department's Response:

   The particulate matter emission related requirements do not appear in previously established AC permits. As indicated by the applicant in their letter dated December 27, 2012, these have been simply in the Title V air operation permits. At the applicant's request, the particulate matter emission related requirements are added into this AC permit. The work yet to be completed on the ESPs identified as "ESP Projects" in Section 3.0 of the compliance plan (Appendix CP-1) is added to this AC permit; the applicant is therefore authorized to perform the ESP work for the projects under this AC permit.

2. Sulfur Dioxide (SO_2)

   Applicant's Requested Changes:

   The applicant requested in their letter dated December 27, 2012 that several of the SO_2 emission related requirements from the Consent Decree to be incorporated into an AC permit. The SO_2 emission limitations are presently in the current valid Title V air operation permit, Permit No. 0570039-054-AV, Specific Condition Nos. **A.21.** & A.**22.**

   Department's Response:

   The SO_2 emission related requirements do not appear in previously established AC permits. As indicated by the applicant in their letter dated December 27, 2012, these have been simply in the Title V air operation permits. At the applicant's request, the SO_2 emission related requirements are added into this AC permit.

5. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state rules and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions.

The permit processor reviewed what the applicant proposed and confirmed that what was proposed originated from the Consent Decree 2nd Amendment dated June 12, 2009. The 2nd Amendment was subsequent to several AC permits issued by the Department. Revising the affected AC permits reconciles them with the Consent Decree 2nd Amendment requirements.

Mr. Scott M. Sheplak, P.E. is the permit processor responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting him by telephone at 850/717-9074 or by e-mail at scott.sheplak@dep.state.fl.us in the Department's Office of Permitting and Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.