



October 16, 2012

Jeffery F. Koerner, Program Administrator
Florida Department of Environmental Protection
Division of Air Resource Management
Office of Air Permitting and Compliance
2600 Blair Stone Road, M.S. 5505
Tallahassee, Florida 32399-2400

Via Electronic Submission

**Re: Tampa Electric Company - Big Bend Station
Title Permit No. 0570039-054-AV
Consent Decree and Permit Cleanup Application
Facility ID No. 0570039**

Dear Mr. Koerner:

Tampa Electric Company (TEC) is submitting a minor permit modification to incorporate specific language in the consent decree (2nd amendment) and additional permit cleanup items that were not previously addressed by the Florida Department of Environmental Protection (Department) during the finalization of permit nos. 0570039-053-AC and 0570039-054-AV. Therefore, a concurrent processing of an air construction permit/revised Title V Air Operation Permit is requested to incorporate the aforementioned changes.

On July 10, 2012, TEC received an email correspondence from the Department announcing its intent to issue proposed draft permits nos. 0570039-053-AC and 0570039-054-AV. During the review of these draft permits, TEC identified several permit conditions and administrative errors which should be revised prior to the finalizing the draft permits. During the public comment period, TEC submitted a correspondence to the Department, dated August 3, 2012, to address these items. Upon subsequent review of the final permits, TEC determined that several outstanding permit conditions and administrative errors were not adequately addressed by the Department. In addition to the Consent Decree close-out language, a revised description of new and previous comments is discussed below. The additions are shown as double-underlines and deletions are shown as ~~strikethroughs~~.

Requested Revisions to Close-out the Consent Decree

On September 14, 2012, TEC and Department of Justice (DOJ) discussed the closure of the Consent Decree No. 99-2524-T-23F at Big Bend Power Station. TEC and 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. It was also agreed that a permit application to modify the Title V permit would be

sufficient to satisfy the requirements to terminate the Consent Decree. The following revisions are proposed to address closure of the Consent Decree.

Completion of Certain Electrostatic Precipitator Projects

Appendix CP-1 Compliance Plan (Page CP-1 of 2), Permit No. 0570039-045-AV. The compliance plan should be revised 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.

Calculation of 30-day Rolling Average

Nitrogen Oxides (NO_x) Emissions

A.23. Nitrogen Oxides (NO_x) Emissions - Unit Nos. 1 and 2. On and after June 1, 2010, NO_x emissions (reported as NO₂) 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 NO_x emissions from Unit No. 1 are 484.4 lb/hr and 2,121.9 TPY}. NO_x emissions (reported as NO₂) from Unit No. 2 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 NO_x 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 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 Decree (U.S. vs. TECO) dated February 29, 2000, amendment dated June 12, 2009; and, Permit No. 0570039-024-AC.]

A.24. Nitrogen Oxides (NO_x) Emissions - Unit 3. NO_x emissions (reported as NO₂) from Unit No. 3 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 NO_x 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 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 Decree (U.S. vs. TECO) 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 NO_x 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.}

Nitrogen Oxides (NO_x) and Sulfur Dioxide (SO₂) Emissions

A.26. Calculation of Emission Rate. A "30-day rolling average emission rate" for NO_x and SO₂ 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 NO_x 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 or more. The emissions to be excluded during the fifth and subsequent Cold Start Up Period(s) shall be the lesser of: (1) those NO_x 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 NO_x 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. TECO) dated December 16, 1999; Consent Decree (U.S. vs. TECO) dated February 29, 2000, amendment dated February 4, 2008]

B.20 SO₂ 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 SO₂. 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.]

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. TECO) dated December 16, 1999; Consent Decree (U.S. vs. TECO) 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.]

Nitrogen Oxides (NO_x) and Sulfur Dioxide (SO₂) Emissions

B.23 Calculation of Emission Rate. A "30-day rolling average emission rate" for NO_x and SO₂ 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 NO_x 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 or more. The emissions to be excluded during the fifth and subsequent Cold Start Up Period(s) shall be the lesser of: (1) those NO_x 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 NO_x 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. TECO) dated December 16, 1999; Consent Decree (U.S. vs. TECO) dated February 29, 2000, amendment dated February 4, 2008]

Title V Air Permit Comments

0570039-054-AV

- Signature Page. The facility address is Apollo Beach, Florida. The following should be revised as follows:

This existing facility is located in Hillsborough County at Big Bend Road, ~~North Ruskin~~ Apollo Beach, Florida. UTM Coordinates: Zone 17, 361.9 km East and 3075.0 km North; Latitude: 27° 47' 36" North and Longitude: 82° 24' 11" West.

- Section III, Subsection A, A.4 - Methods of Operation, A4 b, page 9 of 105. Emission calculations were performed to evaluate the impact of the using natural gas during startup and shutdown. The calculation generally supports a decrease in emissions compared to using No. 2 fuel oil. The calculation shows a slight increase in CO and VOC emissions. TEC believes the emissions rates for NO_x, CO, and VOC are overestimated. During startup or shutdown conditions, the excess air is typically higher (30%) than the base load conditions (2%). Therefore, the higher concentrations of CO₂ and lower concentrations of NO_x and CO and VOCs are expected. Despite the emission disparities, the calculations demonstrate the significant emission levels are not exceeded using natural gas. A catalog sheet of the proposed natural gas igniters (Forney MAXFire[®] Series 140 or equivalent) and emission calculations are shown attached.

No. 2 Fuel Oil and Natural Gas Startup/Shutdown Emissions Summary.

Parameter	No. 2 Fuel Oil	Natural Gas	Net Emission Rate (tons/yr)	Limit (tons/yr)
	Emission Rate (tons/yr)	Emission Rate (tons/yr)		
NO _x	24.8	19.9	-4.9	40
SO ₂	0.22	0.1	-0.14	40
CO	5.2	11.9	6.8	100
VOC	0.26	0.3	0.043	100
PM	2.1	1.1	-1.0	25
PM ₁₀	1.0	0.5	-0.49	15
PM _{2.5}	0.26	0.1	-0.12	10
SAM	0.0088	0.0	-0.0088	7
N ₂ O	0.19	0.0	-0.16	-
CH ₄	0.96	0.3	-0.64	-
CO ₂	23,607	16,945	-6,662	-
CO ₂ e	23,686	16,962	-6,725	75,000

TEC requests the ability to utilize natural gas as fuel during startup, shutdown and flame stabilization. The condition should be revised as follows to permit the use of natural gas during startup, shutdown or flame stabilization:

- b. *Fuels - Startup, Shutdown, Flame Stabilization.* In addition to the fuels allowed to be burned during normal operation, each unit may also burn ~~new~~ No. 2 fuel oil or natural gas during startup, shutdown, flame stabilization, and during the start of an additional solid fuel mill on an already operating unit.
- Section III, Subsection A, A.4 - Methods of Operation, A4 c.(3), page 9 of 105. The supplemental material injection should be defined as follows:
 - c(3) 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 such as iron ore may be injected as needed for boiler conditioning. Supplemental injection of liquid magnesium oxide as needed to reduce upper furnace pluggage.
 - ~~(b) Fluxing. Supplemental injection of iron ore to assist in lowering the ash fusion temperature.~~
 - ~~(be) Fly Ash. Reinjection of on-site generated Unit 4 flyash for energy recovery.~~
 - ~~(d) Limestone. Mixed with the fuel in feed as needed to optimize coal blend.~~
- Section III, Subsection A, A.4 - Methods of Operation, A4 c.(1) Boiler Cleaning Waste, page 9 of 105. The following condition should be deleted consistent with the air construction permit 0570039-058-AC.

~~(1) Boiler Chemical Cleaning Waste. Evaporation of up to 150,000 gallons per year, total at the facility, is allowed of non-hazardous, but potentially hazardous air pollutant (HAP)-emitting, mineral acid solution boiler chemical cleaning waste which was generated on-site.~~
- Section III, Subsection A, A.5/A.6 - Air Pollution Control Technologies and Measures, page 10 of 105. Unit Nos. 1 and 2 share a common wet flue gas desulfurization (FGD) system to control sulfur dioxide (SO₂) emissions. Unit Nos. 1 and 2 cannot bypass the FGD system and divert untreated SO₂ emission to dry stack CS001. These conditions are no longer applicable to the operation of Unit Nos. 1 and 2 and should be deleted as follows:

~~A.5 FGD Operation Required for Peteoke and Coal Residual. Whenever Unit Nos. 1 or 2 is fired with peteoke in any amount up to the allowable percentage, or any amount of coal residual, its flue gases shall be directed to the FGD system for Unit Nos. 1 and 2. [Permit Nos. 0570039-003 AC, 0570039-004 AC and 0570039-012 AC.]~~

~~A.6 Limit on Peteoke Bunkering. The owner or operator at any given time shall not bunker more than the amount of peteoke that may be fired in each emissions Unit No. 1 or No. 2 in one day. [0570039-003 AC and 0570039-004 AC]~~

~~{Permitting Note: This condition is intended to limit possible excess emissions in the event of an unexpected breakdown of the FGD system that requires its shutdown while either emissions unit is firing peteoke.}~~
- Section III, Subsection A, A.9 – SCR System Operation, page 11 of 105. The condition should be revised to more clearly define circumvention similar to Condition B.6.

A.9 SCR System Operation. The permittee shall operate and maintain each SCR system in accordance with the SCR system supplier's recommendations or in accordance with methods established by the owner/operator through site-specific testing, including operating the SCR between minimum and maximum operating temperatures, which have been demonstrated by the applicant to assure compliance with the applicable emissions limits. ~~The owner or operator shall not operate the SCR system equipment nor circumvent the air pollution control equipment in such a manner which would violate allowable emission rates. [Rule 62-210.650, F.A.C.; and, Permit Nos. 0570039-022-AC, (amended by 0570039-035-AC), 0570039-024-AC & 0570039-053-AC, Condition 5.]~~

Circumvention. The owner or operator shall not circumvent or operate the air pollution control equipment in such a manner which would violate allowable emission rates established for this unit. [Rule 62-210.650, F.A.C.; and, Permit Nos. 0570039-020-AC (amended by 0570039-026, -031 & -036-AC) & 0570039-053-AC, Condition 5.]

- Section III, Subsection A, A.53 - Determination of Heat Input, page 18 of 105. TEC requests measuring the power gross output on an average basis rather than on a 4-hour rolling basis. The arithmetic average is nearly identical to the 4-hour rolling average at base loads and is easier to calculate. In addition, industry standard practices are employed to collect and sample coal or coal blends. ASTM analytical methods and quality standards are utilized to test the coal samples. This was not addressed by the Department as previously requested. The condition should be revised to these changes as follows:

The heat input shall be calculated as the product of the gross heat rate (Btu/kWh) and gross power output (MW). The gross power output shall be measured on an arithmetic average during the compliance demonstration test on a 4-hour rolling average. The gross unit heat rate will use a 3-month rolling "seasonal" average based on calculated monthly heat rates. These rates shall be determined by the tons of coal bunkered, composite coal analyses and gross power output for the month. The composite fuel samples shall be collected by on-site personnel in accordance with industry standard practices. ASTM standards. [Rule 62-213.440, F.A.C.]

- Section III, Subsection B, B.4 - Methods of Operation, B.4 a Fuels Normal Operation, page 22 of 105. This was not addressed by the Department as previously requested. The condition should be revised as follows:
 - a. *Fuels - Normal Operation.* The only fuels allowed to be burned in Unit 4 Unit Nos. 1, 2 and 3 shall consist of 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.
- Section III, Subsection B, B.4 - Methods of Operation, B4 b, page 22 of 105. Based on the similar discussion in Title V permit Condition A.4 b, TEC requests the ability to utilize

natural gas during startup, shutdown and flame stabilization. The condition should be revised as follows to allow the use of natural gas during startup, shutdown or flame stabilization:

b. *Fuels - Startup, Shutdown, Flame Stabilization.* In addition to the fuels allowed to be burned during normal operation, each unit may also burn ~~new~~ No. 2 fuel oil or natural gas during startup, shutdown, flame stabilization, and during the start of an additional solid fuel mill on an already operating unit.

- Section III, Subsection B, B.4 - Methods of Operation, B4 c.(1) Boiler Cleaning Waste, page 22 of 105. The following condition should be deleted consistent with the air construction permit 0570039-058-AC.

~~(1) Boiler Chemical Cleaning Waste. Evaporation of up to 150,000 gallons per year, total at the facility, is allowed of non-hazardous, but potentially hazardous air pollutant (HAP)-emitting, mineral acid solution boiler chemical cleaning waste which was generated on site.~~

- Section III, Subsection B, B.4 - Methods of Operation, B.4 c(3), page 22 of 105. The supplemental material injection should be defined as follows:

c(3) 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 such as iron ore may be injected as needed for boiler conditioning. Supplemental injection of liquid magnesium oxide as needed to reduce upper furnace pluggage.~~

~~(b) Fluxing. Supplemental injection of iron ore to assist in lowering the ash fusion temperature.~~

~~(be) Fly Ash. Reinjection of on-site generated Unit 4 flyash for energy recovery.~~

~~(d) Limestone. Mixed with the fuel in feed as needed to optimize coal blend.~~

- Section III, Subsection B, B.6 – Circumvention, page 23 of 105. This condition should be revised to broaden the definition of the circumvention similar to Condition A.9.

B.6 Circumvention. The owner or operator shall not circumvent or operate the air pollution control equipment ~~nor operate the SCR system equipment~~ in such a manner which would violate allowable emission rates established for this unit. [Rule 62-210.650, F.A.C.; and, Permit Nos. 0570039-020-AC (amended by 0570039-026, -031 & -036-AC) & 0570039-053-AC, Condition 5.]

- Section III, Subsection B, B.11 - Selective Catalytic Reduction (SCR) System, page 23 of 105. The permitting note should be revised as follows to reflect actual commercial startup of the SCR Unit No. 4. This comment was not previously addressed by the Department. The permitting note should be revised as follows:

{Permitting Note: A selective catalytic reduction (SCR) system commenced operation has been installed under the following schedule:

Unit No. 4 – May 26, 2007 started in 2007, as authorized by Permit No. 0570039-020-AC (amended by 0570039-026, -031 & -036-AC).}

- Section III, Subsection B, B.53 - Determination of Heat Input, page 29 of 105. TEC requests measuring the power gross output on an average basis rather than on a 4-hour rolling basis. The arithmetic average is nearly identical to the 4-hour rolling average at base loads and is easier to calculate. In addition, industry standard practices are employed to collect and sample coal or coal blends. ASTM analytical methods and quality standards are utilized to test the coal samples. This was not addressed by the Department as previously requested. The condition should be revised as follows:

The heat input shall be calculated as the product of the gross heat rate (Btu/kWh) and gross power output (MW). The gross power output shall be measured on an arithmetic average during the compliance demonstration test, on a 4-hour rolling average. The gross unit heat rate will use a 3-month rolling "seasonal" average based on calculated monthly heat rates. These rates shall be determined by the tons of coal bunkered, composite coal analyses and gross power output for the month. The composite fuel samples shall be collected by on-site personnel in accordance with industry standard practices, ASTM standards. [Rule 62-213.440, F.A.C.]

- Section III, Subsection C, page 31 of 105. This was not addressed by the Department as previously requested. The reference to combustion turbine No. 1 (EU-007) should be deleted. This section should be “reserved” to preserve the emission unit number system.
- Section III, Subsection H, Authorized Emission Points, page 43 of 105. TEC requests to clarify each emission point in the Solid Fuel Yard (EU-010) as confined or unconfined emission points. In addition, the “K” feeders have been removed as part of the J3 conveyor project. The reference to “FH-058 – “K” Feeders to Conveyors L1 or L2” should be deleted as an emission point. The description of each emission point should be revised as follows:

E.U. ID No. -010: Solid Fuel Yard Unloading and Handling Operations		
Point ID	Description of Emissions Point	<u>Condition</u>
<i>Barge Unloading Operations</i>		
FH-001	Barge Clamshell to Conveyor D1	<u>Unconfined</u>
FH-002	Barge Bucket Elevator to Conveyor A1	<u>Unconfined</u>
FH-003	Conveyor A1 to Conveyor B1	<u>Unconfined</u>
FH-004	Conveyor B1 to Conveyor D1	<u>Unconfined</u>
FH-005	Self-Unloading Barge to Conveyor D1	<u>Unconfined</u>
<i>Coal Conveying Operations</i>		
FH-006	Conveyor D1 to Conveyor E1	<u>Confined</u>
FH-007	Conveyor E1 to Conveyor Y or Conveyor F1	<u>Confined</u>
FH-008a	Conveyor Y to Conveyor Z	<u>Unconfined</u>
FH-008b	Conveyor Z to West Emergency Pile	<u>Unconfined</u>
FH-012	Conveyor Z to Conveyor P	<u>Confined</u>
FH-013	Conveyor P to Intermediate Conveyor	<u>Unconfined</u>
FH-014	Intermediate Conveyor to North Stacker Conveyor (G2)	<u>Unconfined</u>

E.U. ID No. -010: Solid Fuel Yard Unloading and Handling Operations		Condition
Point ID	Description of Emissions Point	
FH-015	North Stacker Conveyor (G2) to North/Center Storage Pile	<u>Unconfined</u>
FH-017	North Stacker Conveyor (G2) to Conveyor P	<u>Unconfined</u>
FH-022	Conveyor F1 to South Stacker Conveyor (G1)	<u>Unconfined</u>
FH-023	South Stacker Conveyor (G1) to South/Center Storage Pile	<u>Unconfined</u>
FH-025	South Reclaimer Conveyor (G1) to Conveyor F1	<u>Unconfined</u>
FH-028	Conveyor P to Conveyor J2	<u>Unconfined</u>
FH-029	Conveyor J2 to Conveyor Q2	<u>Unconfined</u>
FH-030	Conveyor F1 to Conveyor J1	<u>Unconfined</u>
FH-031	Conveyor J1 to Conveyor Q1	<u>Unconfined</u>
FH-052	Conveyor U to East Emergency Storage Pile	<u>Unconfined</u>
FH-055	Conveyor W1 to Conveyor L1	<u>Unconfined</u>
FH-056	Conveyor W2 to Conveyor L2	<u>Unconfined</u>
FH-059 - FH-062	Conveyors L1 & L2 to M1 & M2, and Conveyors M1 & M2 to Coal Bunkers (These enclosed conveyors are located inside an enclosed building and are not subject to emissions limits or testing requirements.)	<u>Confined</u>
<i>Coal Equipment & Storage</i>		
FH-009	Dozer Operations on West Emergency Storage Pile	<u>Unconfined</u>
FH-010	West Emergency Storage Pile	<u>Unconfined</u>
FH-011a	Dozer Reclaim from West Emergency Pile to Portable Conveyor	<u>Unconfined</u>
FH-016	Mobile Reclaimer to North Stacker Conveyor (G2)	<u>Unconfined</u>
FH-018	Dozer Operations on North Storage Pile	<u>Unconfined</u>
FH-019	North Storage Pile	<u>Unconfined</u>
FH-020	Dozer Operations on Middle (Common) Storage Pile	<u>Unconfined</u>
FH-021	Fuel Storage - Middle (Common) Storage Pile	<u>Unconfined</u>
FH-024	South Reclaimer to South Reclaimer Conveyor (G1)	<u>Unconfined</u>
FH-026	Dozer Operations on South Storage Pile	<u>Unconfined</u>
FH-027	South Storage Pile	<u>Unconfined</u>
FH-036 - FH-047	Blending Bins to Conveyors T1, T2	<u>Confined</u>
FH-050	Crusher to Conveyor W1	<u>Unconfined</u>
FH-051	Crusher to Conveyor W2	<u>Unconfined</u>
FH-053	Dozer Operations on East Emergency Storage Pile	<u>Unconfined</u>
FH-054	East Emergency Storage Pile	<u>Unconfined</u>
FH-057	Dozer Reclaim from East Emergency Pile to "K" Feeders	<u>Unconfined</u>
FH-058	"K" Feeders to Conveyors L1 or L2	<u>Unconfined</u>
FH-063	Dozer Operations on Storage Pile	<u>Unconfined</u>
FH-064	Dozer Reclaim from Storage Pile to Loadout or Portable Conveyor	<u>Unconfined</u>
FH-070	Long Term Storage Pile	<u>Unconfined</u>
FH-071	Dozer Operations on Long Term Storage Pile	<u>Unconfined</u>
FH-072	Trucks, Full	<u>Unconfined</u>
FH-073	Trucks, Empty	<u>Unconfined</u>

- Section III, Subsection F, F.6 - Operating Procedures, page 38 of 105. This was not addressed by the Department as previously requested. The condition should be revised as follows:

Enclosures and baghouses for these emissions units shall be properly operated and maintained at all times in a condition to minimize particulate matter emissions. All operators of air pollution control devices shall be properly trained in plant specific equipment. The owner and operator shall ensure that all facility staff responsible for these emissions units are trained in their operation and maintenance in accordance with the guidelines and procedures as established by the equipment manufacturers. [Rule 62-4.070(3), F.A.C.]

- Section III, Subsection L, L.2 - Operating Procedures, page 53 of 105. This was not addressed by the Department as previously requested. The condition should be revised as follows:

The baghouse for this emissions unit shall be properly operated and maintained at all times in a condition to minimize particulate matter emissions. All operators of air pollution control devices shall be properly trained in plant specific equipment. The owner and operator shall ensure that all facility staff responsible for these emissions units are trained in their operation and maintenance in accordance with the guidelines and procedures as established by the equipment manufacturers. [Rule 62-4.070(3), F.A.C.]

- Section III, Subsection L, L.13 - Records, page 54 of 105. This was not addressed by the Department as previously requested. The condition should be revised as follows:

All operators of air pollution control devices shall be properly trained in plant specific equipment. Tampa Electric shall keep records of facility staff training, and shall maintain, on site, an Operations and Maintenance Plan for the baghouse that details how it shall be properly operated and maintained at all times. Tampa Electric shall also take quarterly pressure readings from the baghouse pressure-sensing device. [Rule 62-213.440(1)(b)1.b. (Periodic Monitoring), F.A.C.]

- Section III, Subsection L, L.3 - Particulate Matter (PM) and Visible Emissions, page 53 of 105. This was not addressed by the Department as previously requested. The condition should be revised as follows:

This condition or other similar condition should state the 2.1 lb/hr and 0.99 tons/year PM requirements consistent with Table 1 – Summary of Air Pollutant Standards and Terms.

- Section III, Subsection O, O.8 Nitrogen Oxide (NO_x), page 62 of 105. The RATA is based 9-21 minutes tests not a 3 run average. This was not addressed by the Department as previously requested. The condition should be revised as follows:

d. *Demonstration of Compliance.* Continuous compliance shall be demonstrated with the concentration-based (ppmvd) NO_x emissions limits (4-hour rolling average) for each fuel type by data collected from the required continuous emissions monitoring system (CEMS). Compliance with the mass-based (lb/hour) NO_x emissions limits (~~3-run average~~) shall be demonstrated by data collected during the required annual Relative

Accuracy Test Audit (RATA). When firing ULSD, compliance with the SIP limit ensures compliance with the NSPS limit of 74 ppmvd @ 15% O₂.

- Section III, Subsection O, O.9 Carbon Monoxide (CO), page 62 of 105. The RATA is based 9-21 minutes tests not a 3 run average. This was not addressed by the Department as previously requested. The condition should be revised as follows:

c. Demonstration of Compliance. Continuous compliance shall be demonstrated with the concentration-based (ppmvd) CO emissions limits (3-hour rolling average) for each fuel type by data collected from the required continuous emissions monitoring system (CEMS). Compliance with the mass-based (lb/hour) CO emissions limits ~~(3-run average)~~ shall be demonstrated by data collected during the required annual Relative Accuracy Test Audit (RATA).

- Section III, Subsection O, O.32 - Reporting Schedule, page 67 of 105. This was not addressed by the Department as previously requested.

The referenced conditions in the section O.32 should be revised to reference the correct operating conditions. Also, TEC requests the notification requirement for tuning be removed to be consistent with Bayside Power Station Permit 0570040-029-AV.

O.32 Reporting Schedule.

Report	Reporting Deadline	Related Conditions
CEMS RATA Reports	15 days prior to RATA	O.34O.38.
Excess Emissions Reporting	Various	O.35O.39.
Notification of Tuning	One day prior to tuning	O.36O.40.

- Section III, Subsection O, O.36 - Notification of Tuning, page 67 of 105. This was not addressed by the Department as previously requested. TEC requests the notification requirement for tuning be deleted as follows:

~~**O.36 Notification of Tuning.** If emissions in excess of a standard could reasonably be expected to occur due to a planned tuning activity, the permittee shall notify the Compliance Authority at least one working day prior to the expected activity of the nature, extent, and duration of the planned tuning activity. In addition, the Department may request a written summary report of the extent and duration of the resulting excess emissions. [Rule 62-213.440, F.A.C.]~~

The deletion is requested to allow the flexibility to perform tune-ups required by the manufacturer or facility operations to maintain performance of the combustion turbine. There have been circumstances where the 24-hour notice was not possible and enforcement discretion could not be obtained in a reasonable manner. Furthermore, the removal of this requirement is consistent with the Bayside Title V air permit No. 0570040-029-AV and proposed draft permit for the Polk Power Station 1050233-028-AV.

- This was not addressed by the Department as previously requested. A provision to exempt VE testing based on the number of operating hours is requested. Permit Condition J.13 states annual VE testing is not required for units operating less than 400 hours per year [See Specific Condition TR7, Rule 62-297.310(7)(a)4., F.A.C.]. TEC believes the exemption is applicable to all emission units with an annual VE requirement pursuant to Condition J.13 and TR7. The requested revisions to Condition TR7 are shown below.

VE Testing Not Required. By this permit, annual emissions compliance testing for VE is not required for emissions units operating less than 400 hours per year [Condition J.13; Rule 62-297.310(7)(a)4., F.A.C.].

- Section III, Subsection Q, Q.1 – Permitted Capacity, page 72 of 105. The original coal and petcoke transloading was limited to maximum throughput up to 1,429,030 tons per year. In 2006, TEC submitted a permit application to transload a maximum of 150,000 tons per year (tpy) each of material with a maximum up to 450,000 tpy for all three materials combined without increasing the maximum hourly or annual solid fuel handling rates.

On August 22, 2007, DEP issued a revised permit 0570039-025-AC that incorporated these revisions. The permit specifically allowed the maximum annual transloading rates for Emissions Points FH-74a to FH-76b to not exceed 150,000 tons per year for each material (coal, petcoke, slag) and 450,000 tons per year for all three materials combined. This permit condition has remained unchanged since the permit (0570039-025-AC) was issued.

TEC has plans to transload additional coal, petcoke and slag in the future. The request is to increase the transloading throughput of emissions points (FH-74a to FH-76b) from 450,000 tons per year to a total of 1,200,000 tons per year. The total throughput will increase from 1,428,030 tons per year to 2,178,000 tons per year.

The emission calculations were performed to estimate the impact of emissions from the increase in throughput. The calculations show the additional transloading will result in increases in fugitive emissions, but will remain below the significant emissions thresholds for PM/PM₁₀/PM_{2.5}. A summary of the calculations are shown attached.

The permit condition should be revised to reflect the increase in throughput as follows:

Q1 Permitted Capacity.

b. *Annual Limits.*

- (1) The maximum solid fuel/slag transloading rates for these emissions points shall not exceed 2,178,030,428,030 tons per year. [PA 79-12; PA 79-12C and D; and Permit No. 0570039-025-AC]
- (2) The maximum annual transloading rates for Emissions Points FH-74a – FH-76b shall not exceed a total 200,000 tons per year for each individual material or for all three materials combined (coal, petcoke and slag). 150,000 tons per year for each material (coal, petcoke, slag) and 450,000 tons per year for all three materials combined; and, only one material shall be transloaded at a time. [Permit No. 0570039-025-AC]

- Section III, Subsection Q, Q.11 – Annual Compliance Test, page 74 of 105. “Unconfined Emissions” are defined in Rule 62-210.200 as “Emissions which escape and become airborne from unenclosed operations or which are emitted into the atmosphere without being conducted through a stack.” The emissions from petcoke and coal reclamation and truck loading (FH-074a and FH-074b) are operations related to petcoke and coal are operations related to open storage piles, (e.g. movable conveyor drops to the storage piles, the open storage piles), dozer operations, front end loaders and tail end conveyor feeding system are considered unconfined emissions subject only to the general 20% opacity standard and regular VE testing is not required. Therefore, the VE testing should not be required for emission points FH-074a and FH-074b. The permit condition should be revised on follows:

~~Q.11 Annual Compliance Test. Annual testing shall be performed on emissions points FH-074a and FH-074b. For the purpose of the VE test, the hourly transloading rate to trucks at the subject emissions points shall be as close to 144 tons per hour as practicable. [Rules 62-204.800, 62-297.310(7)(a)4. and 62-297.400, F.A.C.; and, Permit No. 0570039-025-AC] {Permitting note: No annual testing is required for emission point FH-074c based on the initial visible emissions test conducted on May 2, 2007 indicating that slag handling has minimal emissions.}~~

~~Q.12 Compliance Test Prior To Renewal. Prior to permit renewal, VE tests shall be conducted on emissions points FH-074a and FH-074b. For the purpose of the VE test, the hourly transloading rate to trucks at the subject emissions points shall be as close to 144 tons per hour as practicable. [Rule 62-297.310(7)(a)3., F.A.C. and Permit No. 0570039-025-AC]~~

~~Q.13 Visible Emissions Test. Compliance with the visible emission limits of this permit shall be demonstrated by an annual compliance test using EPA Method 9. The duration of the annual test shall be 30 minutes. [Rules 62-4.070(3) and 62-297.310(4)(a)2., F.A.C.; and, Permit No. 0570039-025-AC]~~

- All Sections, Table 1 and Table 2, Page 2 to 105. The permit was finalized on September 18, 2012. The reference to “Draft/Proposed” of the final permit should be deleted.
- Appendix 1 page I-2 of 2. This was not addressed by the Department as previously requested. The correct PM₁₀, drift rate and flow data were submitted in a letter to the Department, dated August 10, 2011. The Department incorrectly provided the PM₁₀, drift rate and flow data in both the draft and final permits. The table should be corrected as shown below.

Location	Installation Date	PM tons/yr	PM ₁₀ tons/yr	Drift Rate%	Flow (gpm)
FGD	1985	0.047	0.00660 0.029	0.005	6,500 200

- Appendix 1 page I-2 of 2. The new emergency diesel generators should be included in the current Title V revision. The current permit shows following as an administrative error:

Identification	In-service date	Horsepower (HP)
Emergency Diesel Generator	06/1970	<u>195160</u>
Emergency Diesel Generator	06/ <u>1975-1995</u>	<u>1951600</u>

The new emergency diesel generators should be revised as follows:

Identification	In-service date	HP Rating Horsepower (HP)	Rule Applicability
Emergency Diesel Generator (125ekW)	<u>10/201206/1970</u>	<u>195197</u>	<u>NSPS Subpart IIII NESHAPS subpart</u>
Emergency Diesel Generator (800 ekW)	<u>10/201206/1975</u>	<u>1951,194</u>	<u>NSPS Subpart IIII NESHAPS subpart</u>

- Appendix 1 page I-2 of 2. The following changes are requested to include Supplemental Material Injection, reinjection of flyash generated on-site and evaporation up to 300,000 gallons per year.

19. Magnesium oxide, limestone and fluxing agents such as iron ore for boiler conditioning. Introduction of Fluxing Material in the combustion process.
20. Reinjection of on-site generated flyash for energy recovery. Reinjection of Unit 4 Fly Ash Units 1, 2, 3 and/or 4.
21. Transportation of coal via truck to Big Bend Station.
22. Evaporation up to 300,000 gallons per year of boiler cleaning waste generated on-site.

Table 1, Summary of Air Pollutant Standards and Terms.

- This was not addressed by the Department as previously requested. Please delete EU-007, Combustion Turbine No.1. This unit was removed from service on 10/26/2010.
- This was not addressed by the Department as previously requested. The fonts appear inconsistent throughout Table 1. Please revise the font to match the Table 2, Summary of Compliance Requirements.

General Permit Comments

- This was not addressed by the Department as previously requested. The Big Bend nominal rated capacity is “1,892 MW” not “2,028 MW” as shown below. Please correct the technical evaluation (Facility Description and Location, page 2 of 5) and Title V air permit (Section 1, page 2 of 107) accordingly.

Unit No.	Unit Type	Fuel	Nominal Capacity (kW)
Unit 1	Steam	Coal	445,500
Unit 2	Steam	Coal	445,500
Unit 3	Steam	Coal	445,500
Unit 4	Steam	Coal	486,000
SCCT 4A/B	Gas turbine	Gas/Oil	69,985
Total Nominal Rated Capacity (kW)			1,892,485

- This was not addressed by the Department as previously requested. The simple cycle combustion turbines (EU-041 and -042) should be referenced as “SCCT” not “CT” in order to be consistent with the Title V permit. Please correct technical evaluation (Facility Description and Location, page 2 of 5), air construction permit (Facility Description, page 2 of 11), Title V air permit (Facility Description, page 2 of 105; Section O.3b, page 60 of 105; Section O.30, page 66 of 105; Section O.38, page 68 of 105) and Statement of Basis (10. Section III O.3b, page 13 of 19).

Letter of Authorization 0570039-051-AC

- Determination, page 2 of 3. This was not addressed by the Department as previously requested. The letter of authorization requires the Title V air operation permit shall be updated at the next opportunity to incorporate the proposed changes in the description of the authorized emergency limestone handling equipment and methods of operation.

Air Construction Permit 0570039-053-AC/PSD-FL-040

PSD-FL-040

- Heat Input for Boiler 4, page 6 of 12. A subsequent review of Table 1 of the PSD-FL-040 shows this reference to “Continuous Limit” in Table 1 - Allowable Emission Limits. The heat input rate 4,330 mmBtu/hr is design limit and is not intended as an operational restriction. Therefore, please delete the reference “~~Continuous Limit~~” and revise to “Design Heat Input Rate” consistent with Condition B.2. This was not addressed by the Department as previously requested.

Permits Nos. 0570039-001-AC, 0570039-003-AC, 0570039-004-AC, 0570039-012-AC and 0570039-016-AC.

- Fuels for Boiler 1, 2, and 3, Methods of Operation, 3b Methods of Operation, Fuels- Startup, Shutdown, Flame Stabilization, page 7 of 12. Based on the similar discussion in Title V permit Condition A.4 b, TEC requests the ability to utilize natural gas during startup, shutdown and flame stabilization. The condition should be revised as follows to allow the use of natural gas during startup, shutdown or flame stabilization:

- b. *Fuels - Startup, Shutdown, Flame Stabilization.* In addition to the fuels allowed to be burned during normal operation, each unit may also burn ~~new~~ No. 2 fuel oil or natural gas during startup, shutdown, flame stabilization, and during the start of an additional solid fuel mill on an already operating unit.
- Fuels for Boiler 1, 2, and 3, Methods of Operation 3c(1) Boiler Chemical Cleaning Waste, page 7 of 12. A review of the boiler cleaning wastes compositions at other similar facilities indicates that more than 150,000 gallons per year could be potentially evaporated and still would qualify as an Insignificant Activity. As such, the Department has agreed to remove the limit of 150,000 gallons per year from the Methods of Operation [Conditions A.4 c(1) and B.4 c(1)] to provide the ability for TEC to submit a request that this activity be incorporated into their Title V permit at the next available opportunity. Condition B.2 in air construction permit 0570039-058-AC specifically removes the limit to evaporate 150,000 gallons per year from the Methods of Operation.

The following condition should be deleted consistent with the air construction permit 0570039-058-AC.

~~e(1) Boiler Chemical Cleaning Waste. Evaporation of up to 150,000 gallons per year, total at the facility, is allowed of non-hazardous, but potentially hazardous air pollutant (HAP)-emitting, mineral acid solution boiler chemical cleaning waste which was generated on site.~~

- Fuels for Boiler 1, 2, and 3, Methods of Operation b Supplement Material Injection, page 7 of 12. The supplemental material injection should be defined as follows:
 - c(3) 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 such as iron ore may be injected as needed for boiler conditioning. Supplemental injection of liquid magnesium oxide as needed to reduce upper furnace pluggage.
 - (b) ~~Fluxing. Supplemental injection of iron ore to assist in lowering the ash fusion temperature.~~
 - (be) Fly Ash. Reinjection of on-site generated Unit 4 flyash for energy recovery.
 - (d) ~~Limestone. Mixed with the fuel in feed as needed to optimize coal blend.~~

Permits Nos. 0570039-008-AC, 0570039-009-AC, 0570039-012-AC, 0570039-016-AC and PSD-FL-040.

- Fuels for Boiler 4, Methods of Operation, 4b Fuels- Startup, Shutdown, Flame Stabilization, page 8 of 12. Based on the similar discussion in Title V permit Condition A.4 b, TEC requests the ability to utilize natural gas during startup, shutdown and flame stabilization. The condition should be revised as follows to allow the use of natural gas during startup, shutdown or flame stabilization:

- b. *Fuels - Startup, Shutdown, Flame Stabilization.* In addition to the fuels allowed to be burned during normal operation, each unit may also burn ~~new~~ No. 2 fuel oil or natural gas during startup, shutdown, flame stabilization, and during the start of an additional solid fuel mill on an already operating unit.
- Fuels for Boiler 4, Methods of Operation, 4c(1) Boiler Chemical Cleaning Waste, page 8 of 12. A review of the boiler cleaning wastes compositions at other similar facilities indicates that more than 150,000 gallons per year could be potentially evaporated and still would qualify as an Insignificant Activity. As such, the Department has agreed to remove the limit of 150,000 gallons per year from the Methods of Operation [Conditions A.4 c(1) and B.4 c(1)] to provide the ability for TEC to submit a request that this activity be incorporated into their Title V permit at the next available opportunity. Condition B.2 in air construction permit 0570039-058-AC specifically removes the limit to evaporate 150,000 gallons per year from the Methods of Operation.

The following condition should be deleted consistent with the air construction permit 0570039-058-AC.

~~e(1) Boiler Chemical Cleaning Waste. Evaporation of up to 150,000 gallons per year, total at the facility, is allowed of non-hazardous, but potentially hazardous air pollutant (HAP)-emitting, mineral acid solution boiler chemical cleaning waste which was generated on-site.~~

- Fuels for Boiler 4, Methods of Operation c(3) Supplement Material Injection, page 8 of 12. The supplemental material injection should be defined as follows:

c(3) 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 such as iron ore may be injected as needed for boiler conditioning. Supplemental injection of liquid magnesium oxide as needed to reduce upper furnace pluggage.
 - (b) Fluxing. Supplemental injection of iron ore to assist in lowering the ash fusion temperature.
 - (be) Fly Ash. Reinjection of on-site generated Unit 4 flyash for energy recovery.
 - (d) Limestone. Mixed with the fuel in-feed as needed to optimize coal blend.

0570039-026-AC (original 0570039-020) Boiler 4; 0570039-022-AC - Boiler 3; 0570039-024-AC – Boilers 1 and 2

- SCR Installation and Operation Conditions for Boiler 1, 2, 3 and 4, page 9 of 12. The condition should be revised to more clearly define circumvention similar to Title V Conditions A.9 and B.6.

Condition A.14. Circumvention. The owner or operator shall not circumvent or operate the air pollution control equipment nor operate the SCR system equipment in such a manner which would violate allowable emission rates established for these units. [Rules 62-

Mr. Jeffery F. Koerner

October 16, 2012

Page 19 of 19

4.070(3) and 62-210.650, F.A.C.; Permit Nos. 0570039-022-AC, 0570039-024-AC & 0570039-026-AC; and, Application No. 0570039-053-AC]

TEC is submitting additional revisions to the above referenced permits in accordance with the public commenting period. These permit revisions are not considered substantial changes that would warrant another public notice. TEC believes the revisions provide reasonable assurance of complying with the provisions of Chapter 62-4 F.A.C.

Please contact me at (813) 228-4232 or Byron Burrows at (813) 228-1282, if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert A. Velasco".

Robert A. Velasco, P.E., BCEE, QEP

Air Programs

Environmental, Health & Safety

Tampa Electric Company