TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

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

Big Bend Station
Facility ID No. 0570039

PROJECT

Project No. 0570039-066-AC
Application for Minor Source Air Construction Permit
Minor Air Construction Permit Modifications

COUNTY

Hillsborough, 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

April 18, 2014

1. GENERAL PROJECT INFORMATION

1.1. Facility Description and Location

Tampa Electric Company (TEC) Big Bend Station is a nominal 1,892 megawatt (MW) electric generation facility. This facility consists of four fossil fuel fired boiler electrical generating Units 1 – 4 (EU 001 – EU 004); four steam turbines electrical generators (STEG); two simple-cycle combustion turbine (SCCT) 4A and 4B (EU 041 and EU 042) sharing a common electrical generator; solid fuels, fly ash, limestone, gypsum, slag, bottom ash storage and handling facilities; and, fuel oil storage tanks.

Units 1 through 4 have a combined electrical generating output of 1,821 MW. Units 1 through 3 each have a design electrical generating capacity of 445 MW. Unit 4 has a design electrical generating capacity of 486 MW. The fuel fired in all four units consists of coal, or a coal/petroleum coke blend containing a maximum of 20% petroleum coke by weight, or coal blended with coal residual generated from the Polk Power Station, or a coal/petroleum coke blend further blended with coal residual generated from the Polk Power Station, and on-site generated fly ash. In addition to the fuels allowed to be burned during normal operation, each unit burns new No. 2 fuel oil during startup, shutdown, flame stabilization, and during the startup of an additional solid fuel mill on an already operating unit.

For each unit, nitrogen oxide (NO_X) emissions are controlled by low-NO_X burners (LNB) and a selective catalytic reduction (SCR) system. Unit 4 also has a separated over fire air system (SOFA) system to further control NO_X emissions. Particulate matter (PM) emissions are controlled by a dry electrostatic precipitator (ESP) while sulfur dioxide (SO_2) emissions are controlled by wet flue gas desulfurization (FGD) system on each unit. Continuous opacity monitoring systems (COMS) are used to measure opacity. Units 1 through 3 are equipped with continuous emissions monitoring systems (CEMS) to measure NO_X, SO_2, and carbon dioxide (CO_2). Unit 4 is equipped with CEMS to measure carbon monoxide (CO), NO_X, SO_2, and CO_2. These units began operation in 1970 (Unit 1), 1973 (Unit 2), 1976 (Unit 3), and 1985 (Unit 4).

The SCCT 4A and 4B (EU 041 and EU 042) consist of one PWPS FT8-3® SwiftPac® aero-derivative SCCT-electrical generator to operate in simple cycle mode. The SwiftPac® consists of two combustion turbines coupled to one common generator having a nominal gross generation capacity of 62 MW. Each SCCT is allowed to fire pipeline-quality natural gas and ultra-low sulfur distillate (ULSD) fuel oil. Each SCCT is equipped with water injection to minimize NO_X emissions and an oxidation catalyst to minimize CO and volatile organic compounds (VOC) emissions.

Figure 1. Location of TEC Big Bend Station.

Figure 2. TEC Big Bend Station.

The facility is categorized under Standard Industrial Classification Code No. 4911. The existing Big Bend Station is located in Hillsborough County at 13031 Wyandotte Road in Apollo Beach, Florida. The UTM coordinates of the existing facility are Zone 17, 363.15 kilometers (km) East, and 3074.91 km North. 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). **Figure 1** shows

the location of TEC Big Bend Station in Florida while **Figure 2** shows a view of the Big Bend Station with the four stacks for Fossil Fuel Fired Steam Generator Units clearly visible.

1.2. Project Description

This project revises several conditions in underlying air construction permits. TEC applied for concurrent revisions in multiple air construction permits that will be addressed in Permit No. 0570039-066-AC (PSD-FL-040A) and incorporated in the Title V Air Operation Revision Permit No. 0570039-067-AV affecting the emissions units listed in **Table 1** below.

TABLE 1 – AFFECTED EMISSION UNITS (EU) AT THE BIG BEND STATION.

EU No.	Brief Description
Fossil Fuel Fired Steam Generator Units	
-001	Fossil Fuel Fired Steam Generator Unit No. 1
-002	Fossil Fuel Fired Steam Generator Unit No. 2
-003	Fossil Fuel Fired Steam Generator Unit No. 3
-004	Fossil Fuel Fired Steam Generator Unit No. 4
Flyash Handling and Storage - Silo No. 3	
-014	Fly Ash Silo No. 3 Baghouse
-027	Fly Ash Silo No. 3 Truck Loadout
-028	Fly Ash Handling System Fugitive Emissions
Simple-Cycle Combustion Turbines	
-041	SCCT 4A with a common electric generator that it shares with SCCT 4B
-042	SCCT 4B with a common electric generator that it shares with SCCT 4A
Solid Fuel Yard	
-046	Transloading and Off-Site Transfer
-047	Railcar Unloading and Conveying System

The purpose of this project is to update TEC Title V air operation permit based on the current facility design and activities. This revision also includes minor changes in the language of Specific Conditions to clarify the intent of the rules and regulations.

1.3. Primary Regulatory Categories

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal (CFR) 60.
- The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.
- The facility operates units subject to the Acid Rain provisions of the Clean Air Act.
- The facility operates units subject to the Federal Clean Air Interstate Rule (CAIR) in accordance with Rule

62-296.470, F.A.C.

- This facility is located in an area (Hillsborough County) designated "unclassifiable" for sulfur dioxide (SO_2), "maintenance" for Ozone (O_3), and lead (Pb), in the "area of influence" of the PM maintenance area, and "attainment" for all the other criteria pollutants pursuant to Rule 62-204.340, F.A.C.

1.4. Processing Schedule

- 09/13/2013 Received the application for a minor source air pollution construction permit.
- 11/01/2013 Requested additional information.
- 11/26/2013 Received additional information; application complete.
- 12/12/2013 Requested additional information.
- 03/20/2014 Received 30-day extension to respond to request for addition information.
- 04/17/2014 Received additional information; application complete.

2. APPLICABLE REGULATIONS

2.1. State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the F.A.C.: 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and Best Available Control Technology (BACT), and Non-attainment Area Review); 62-213 (Title V Air Operation Permits for Major Sources of Air Pollution); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures). PSD applicability and the preconstruction review requirements of Rule 62-212.400, F.A.C. are discussed in Section 2 of this report. Additional details of the other state regulations are provided in Section 3 of this report.

2.2. Federal Regulations

The Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations. Part 60 identifies NSPS for a variety of industrial activities. Part 61 specifies NESHAP based on specific pollutants. Part 63 specifies NESHAP provisions based on the Maximum Achievable Control Technology (MACT) for given source categories. Federal regulations are adopted in Rule 62-204.800, F.A.C. Additional details of the applicable federal regulations are provided in Section 3 of this report.

2.3. Project Rule Applicability

The project is a revision/clean-up of several old permit conditions. The permit does not authorize any new construction, nor does it relax any previously established operational or emissions limitations. The Department determines that there will not be emissions increase that equals or exceeds a criteria pollutant significant emission rate (SER) as defined in Rule 62-210.200 F.A.C. (Definitions); therefore, the project is not subject to PSD preconstruction review pursuant to Rule 62-212.400 F.A.C. Consequently, no air modeling was submitted and a BACT determination was not required.

3. DEPARTMENT REVIEW

The applicant is requesting the following revisions to various emissions units and multiple air construction permits. The proposed revisions to permit language do not affect emissions, production rates or any other significant change. Descriptions of these requests are stated below, followed by the Department's position on the requested changes. This permit is been processed simultaneously with the Title V Air Operation Revision Permit No. 0570039-067-AV.

3.1. Requested Revisions

Emission sources associated with the following revisions include the Fossil Fuel Fired Steam Generator Units 1 – 3 (EU 001 – EU 003).

1. *Revision of SO_2 Emission Limits*

Request: Pursuant to Rule 62-213.440(1), F.A.C., the applicant is requesting to utilize the existing single allowable SO_2 emissions limit of 0.25 lb/MMBtu of SO_2 on a 30-day rolling average to ensure compliance with each separate multiple applicable SO_2 emission limits established in this permit. TEC also blends and bunkers solid fuels to achieve a fuel content of approximately 4.7 lb/MMBtu of SO_2 as well as maintains records demonstrating that these units meet the 6.5 lb/ MMBtu (2-hour average) of SO_2 SIP emission limit. Each unit is fully controlled with FGD system and typically achieves actual emission of less than 0.20 lb/MMBtu of SO_2 as shown by data submitted by the applicant. The data given in **Table 2** below was provided as part of this application and presents data demonstrating that the 0.25 lb/MMBtu (30-day rolling average) threshold is more stringent than the SO_2 threshold established in this permit. Average SO_2 emissions are given for each unit for each limit with the values in parentheses the peak value. The applicant subsequently revised their request with regard to SO_2 emission limits. This revised request is discussed below.

TABLE 2 - EVALUATION OF THE STATE IMPLEMENTATION PLAN (SIP) THRESHOLDS.

EU No.	SO_2 SIP limits		Unit 1 (Peak)	Unit 2 (Peak)	Unit 3 (Peak)
001 – 003	6.5 lb/MMBtu	2-hour average	0.17 (2.6)	0.16 (2.6)	0.13 (1.84)
	31.5 tons/hour	3-hour rolling average	1.5 (9.2)		
	25 tons/hour	24-hour block average	0.7 (1.8)		
	0.25 lb/MMBtu	30-day rolling average	0.17 (0.24)	0.17 (0.24)	0.13 (0.21)
001 and 002	16.5 tons/hour	24-hour block average	0.5 (1.4)	0.5 (1.4)	0.27 (0.77)
003	8.5 tons/hour	24-hour block average	0.5 (1.4)	0.5 (1.4)	0.27 (0.77)

Revised Request to SO_2 SIP Limits

The purpose of this revised request is to reduce the substantial reporting burden with regard to data that are based on obsolete requirements and are no longer of environmental benefit. The SO_2 limits were evaluated during the period 2009 to 2013. The data shows the averages were well below the 6.5 lb/MMBtu, 31.5 tons/hour and the daily 25 tons/hour SO_2 thresholds. The data revealed the peak maximum emission rates were well below the SO_2 emission thresholds. The data also shows the 6.5 lb/MMBtu limit is the most stringent standard. Furthermore, each unit is fully scrubbed and cannot bypass at this time, which ensures compliance with these limits. A summary of the historical emission rates is shown in **Table 3**.

TABLE 3 - EVALUATION OF THE SIP THRESHOLDS.

Parameters Condition A.19, SO_2 SIP limits	Unit 1	Unit 2	Unit 3
2 hr limit, 6.5 lb/MMBtu - Units 1, 2 or 3 (peak)	0.17 (2.6)	0.16 (2.6)	0.13 (1.84)
3 hr limit, 31.5 tons/hour – Units 1 to 3 (peak)	1.5 (9.2)		
24 hr limit, 25 tons/hour – Units 1 to 3 (peak)	0.70(1.8)		
24 hr limit, 16.5 tons/hour - Units 1 & 2/8.5 tons/hour – Unit 3 (peak)	0.50 (1.40)	0.50 (1.40)	0.27 (0.77)

Rule 62-213.440(1) F.A.C. requires each permit to include all emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements, with citation to the Department's rule authority for each term or condition, and identification of any difference in form from the applicable requirement upon which the term or condition is based. However, when there are multiple, redundant, or conflicting applicable requirements, these

provisions can be reduced to a single streamlined term or condition that is the most stringent of the multiple applicable requirements.

TEC is requesting to authorize the limit of 6.5 lb/MMBtu limit to demonstrate compliance. TEC believes utilizing the 6.5 lb/MMBtu limit provides reasonable assurance of meeting criteria pursuant to Rule 62-213.440(1) F.A.C.

Response: On June 2, 2010, EPA issued the final National Ambient Air Quality Standard (NAAQS) for the primary 1-hour SO_2 standard. In 2012, EPA designated areas that were in nonattainment. TEC is located just outside the designated nonattainment area in Hillsborough County. The proposed SO_2 emission standard of 0.25 lb/MMBtu is on a 30-day rolling average. Based on the information provided in **Table 2** and **Table 3** above, these units will meet the 1-hour SO_2 standard of 0.25 lb/MMBtu limit on average; however, during peaking, these units show 2.6 lb/MMBtu of SO_2 which exceeds the 1-hour SO_2 standard threshold. The revised request to establish 6.5 lb/MMBtu limit will not be done at this time. The Department is currently modeling the new 1-hour SO_2 emission standard in the designated nonattainment area in Hillsborough County. Therefore, the Department will not remove the emission standards until further evaluation (modeling) of the 1-hour SO_2 emission standard is completed new SO_2 emission standards are addressed.

Permits affected by the following revisions include Permit Nos. 0570039-003-AC -and 0570039-004-AC.

Permit Nos. 0570039-003-AC and 0570039-004-AC

2. *Section III, Specific Condition No. 3 (FGD Operation Required for Petcoke).*

Request: The applicant is requesting to remove the requirement for whenever a unit fires petroleum coke in any amount up to the allowable percentage, its flue gas shall be directed to the FGD system. Additionally, the petroleum coke limit of 20% by weight and the exhaust from Units 1 - 3 cannot bypass the FGD system.

Response: The Department acknowledges that these units are equipped with a FGD system and this operation is designed so these units cannot bypass the FGD system; therefore, the condition will be deleted in its entirety.

3. *Specific Condition No. 4 (Limit on Petcoke Bunkering).*

Request: The applicant is requesting to remove the requirement not to bunker more than the amount of petroleum coke that may be fired in each emissions unit in one day. The intent of this condition is to limit possible excess emissions in the event of an unexpected breakdown of the FGD system when the units were firing petroleum coke. Firing of petroleum coke is limited to a maximum of 20% by weight. Units 1 and 2 are fully controlled using a common FGD system, and the exhaust cannot bypass the FGD system.

Response: The Department acknowledges that these units are equipped with a FGD system that cannot bypass the FGD system and the petroleum coke is currently limited to 20% by weight; therefore, the condition will be deleted in its entirety.

4. *Specific Condition No. 9 (Monitor Petcoke Usage).*

Request: The applicant is requesting to remove the requirement to calculate and record the amount of coal bunkered since this requirement has been removed.

Response: The Department will revise this condition by removing the monitoring requirements.

Emission sources associated with the following revisions include the Fossil Fuel Fired Steam Generator Units 1 – 4 (EU 001 – EU 004).

5. *Request:* The applicant is requesting to revise language used in the heat input design capacity that states "*Although the above design capacities are not intended as operational restrictions, the permittee shall*

obtain the appropriate air construction permits before making any physical or operational changes that would increase the actual heat input rate capabilities of a unit." TEC states that this specific provision is not in agreement with the definition of "Modification" in Rule 62-210(185), F.A.C. Modification is defined as

"Any physical change in, change in the method of operation of, or addition to a facility which would result in an increase in the actual emissions of any air pollutant subject to regulation under the Act, including any not previously emitted, from any emissions unit or facility."

The increase in the heat input of the unit does not necessarily require an air construction permit unless the change would result in an increase in the actual emissions. Otherwise, any physical change in, change in the method of operation that does not increase the actual emission is not subject to the applicable air construction permitting requirements under Rule 62-210.300, F.A.C. Therefore, TEC is requesting to revise this language to include "*Although the above design capacities are not intended as operational restrictions, the permittee shall obtain the appropriate air construction permits before making any physical or operational changes that would result in an actual increase in emission and heat input rate capacity of a unit.* ~~*increase the actual heat input rate capabilities of a unit.*~~*"*

Revised Request for Revising Language the Design Heat Input Capacity

"Although the above design capacities are not intended as operational restrictions, the permittee shall obtain the appropriate air construction permits before making any "Modifications" to each emission unit.~~*physical or operational changes that would increase the actual heat input rate capabilities of a unit.*~~

Response: On September 25, 2012, the Department issued a revised Title V Air Operation Permit No. 0570039-054-AV revising heat input permitted capacities to heat input design capacities. The changes made to these conditions were based on language agreed upon with TEC to ensure that the actual heat input capabilities would not increase. Therefore, the Department is not revising the language used in the heat input design capacities for Units 1 - 4.

Permits affected by these revisions include Permit Nos. 0570039-053-AC and 0570039-058-AC.

Permit No. 0530039-053-AC

6. *Section III, Specific Condition 5 (SCR Installation and Operation Conditions for Boilers 1 through 3 - Circumvention).*

Request: The applicant is requesting to revise the language used in the requirement for circumvention of the existing SCR system to read as written in Rule 62-210.650, F.A.C.

Response: The Department will revise and update this condition as requested.

Permit No. 0530039-058-AC

7. *Section III, Specific Condition 3 and 4 (Fuels for Boilers 1, 2, 3 and 4).*

Request: The applicant is requesting to make minor revisions to clarify the type of supplemental materials that may be injected into these boilers.

Response: The Department will revise these conditions as requested.

Emission sources associated with the following revisions include the Fly Ash Silo No. 3 Baghouse (EU 014), Fly Ash Silo No. 3 Truck Loadout (EU 027) and Fly Ash Handling System Fugitive Emissions (EU 028). Permits affected by these revisions include Permit No. PSD-FL-040.

Permit No. PSD-FL-040

8. *Part I, Specific Condition 5.e.*

Request: The applicant is requesting to remove the requirement for the fly ash handling system (including transfer) to be maintained at a negative pressure since TEC no longer conducts truck loading

operations except during emergency situations and the Fly Ash Silo No. 3 Truck Loadout (EU 027) and Fly Ash Handling System Fugitive Emissions (EU 028) are insignificant activities. Additionally, the truck loadout drop transfer point and drop point are intermittently moved in relationship to each other; therefore are exempt from Rule 62-296.700, F.A.C. (RACT PM).

Response: The Department agrees and will remove the requirement for the fly ash handling system (including transfer) to be maintained at a negative pressure since these activities are insignificant.

9. *Table 1. Allowable Emissions*

Request: The applicant is requesting to remove the fly ash handling system emission standards since TEC no longer conducts truck loading operations except during emergency situations and identify the actual emission point subject to this emission standard.

Response: The Department will revise this condition to reflect the actual activities and applicable emission point.

Emission sources associated with the following revisions include the SCCT 4A and 4B (EU 041 and EU 042). A new condition was established in this permit for these units. The appendices and Permit **No. 0570039-040-AC** were affected by these revisions.

The following request requires a "new" specific condition to be established in this air construction permit:

10. *Combustion Turbine Replacement.*

Request: The applicant is requesting the flexibility to replace the CT in response to maintenance and business demands. Replacing with "like-kind" CT will enable the permittee to satisfy their agreement with the manufacturer in maintaining the units. Instead of performing the maintenance activities on the ground at the station these smaller units can be more affordably transported to the manufacturer. The manufacturer would perform the maintenance and a "like kind" temporary replacement will be put in its place until the original unit is returned and put in service. This allows maintenance to be performed without significant unit downtime in order to support the reliability of the grid. Therefore, the applicant has requested authorization to replace a CT without acquiring a permit.

Response: The Department understands that in this industry equipment maintenance and outages are common and that there exists a critical need to be able to replace the equipment quickly. The simple cycle combustion turbines operate only in simple cycle mode and are only used as peaking units. The Department agrees that the replacement of a CT with equivalent "like kind" overhauled or new temporary CT will not require an application for an air construction permit provided the following requirements are met:

a. The CT shall be replaced with equivalent "like-kind" overhauled or new temporary CT while the existing CT is undergoing routine maintenance. Replacement CT shall not increase the maximum heat input rate, capacity or actual emissions. Replacement CT shall be designed and constructed to comply with the emissions standards specified in this permit.

b. The temporary CT shall only be used for a maximum of 3-months. The permittee shall notify the Department within one day prior to replacing the CT with a temporary CT and when the original CT is back in operation. The permittee shall notify the Department if additional time is needed for the replacement CT.

c. The permittee shall maintain a log on-site to record the date of any CT replacement, the manufacturer, model number, and serial number of the CT that is replaced during the term of this permit, and the manufacturer, model number, serial number, and the installation and removal date of the replacement CT. All records related to any testing shall be maintained on-site for five years and made available to the Department upon request.

d. The permittee shall comply with the requirements for notification, test methods, test procedures, and reporting required by this permit.

e. If it is determined that the CTs actual emissions, heat input or capacity increased as a result of the maintenance performed, the applicant shall submit an application for an air construction permit within 30 days to evaluate PSD applicability resulting from the modification.

Permit No. 0570039-040-AC

11. *Section III, Specific Condition 10 (Emission Standards).*

Request: The applicant is requesting to remove the NO_X emission limit of 42 parts per million by volume, dry (ppmvd) at 15% oxygen (O_2) when firing ULSD fuel that was requested in the original application by the applicant to avoid PSD review. The applicant is also requesting to remove the corresponding pound/hour (lb/hour) SIP limits of 32 lb/hour (equivalent to the existing NO_X emission limit of 25 ppmvd at 15% O_2) when firing natural gas and 51.3 lb/hour (equivalent to 42 ppmvd at 15% O_2) when firing ULSD fuel. Based on the original application these SCCT should only be subject to the applicable requirements in NSPS Subpart KKKK of 40 CFR 60. The applicant is not proposing to do any physical changes or changes in the operation of the SCCT that would result in an increase in actual emissions.

Permit No. 0570039-040-AC authorized the construction of the SCCT. These SCCT are permitted to fire 3,000 hours/year of natural gas and 500 hours/year of ULSD fuel. The project was not subject to PSD preconstruction new source review and a BACT determination was not required due to contemporaneous creditable emissions acquired from the committed shutdown of the existing combustion turbines (CT) Nos. 1 - 3. Data provided in the original application (Project No. 0570039-040-AC), which is shown **Table 4** below summarizes the potential emission from the project, the contemporaneous creditable emissions changes and the net changes in emissions:

TABLE 4 - SUMMARY OF THE APPLICANT'S PSD APPLICABILITY ANALYSIS FOR PROJECT NO. 0570039-040-AC.

Pollutant	Annual Emissions for 2-CTs (TPY) [1]	Annual Emissions for Emergency Generator (TPY)	Contemporaneous Emissions Decreases from 3-CT Shutdowns[3] (TPY)	Net Change in Emissions[4] (TPY)	PSD Threshold (TPY)	PSD Applies?
NO_X	121.7	0.8	-545.2	-422.7	40	**No**
CO	16.5	0.034	NN[5]	16.5	100	**No**
SO_2	6.6	0.00061	NN	6.6	40	**No**
PM[2]	11.3	0.0035	NN	11.3	25	**No**
PM_{10}	11.3	0.0035	NN	11.3	15	**No**
VOC	4.7	0.0044	NN	4.7	40	**No**
Lead	0.0006	negligible	NN	0.00062	0.6	**No**
SAM	0.8	negligible	NN	0.8	7	**No**

(1) Based on operation at 3,500 hours/year/SCCT while firing only natural gas (NG), or 3,000 hour/year/SCCT while firing NG and 500 hour/year/SCCT while firing ULSD at the highest emission rate in the simple cycle mode. Emissions are highest for CO, VOC, SO_2 and sulfuric acid mist (SAM) when firing only NG and for NO_X, PM, PM with a mean diameter of 10 microns or less (PM_{10}) and lead when firing both fuels.

(2) All PM (filterable and condensable) is considered to be PM_{10} when firing both fuels.

(3) Credible emission decreases (in tons/year (TPY) were based on the shutdown of the existing CT Nos. 1 - 3.

(4) Emission rates for CO, SO_2, PM, PM_{10}, VOC, lead and SAM represent potential to emit for the SCCT project without consideration of netting.

(5) Contemporaneous emissions decrease not needed (NN) because the potential to emit (PTE) for the pollutant for the proposed new construction does not exceed the significant emissions rate.

As shown in the above table, no pollutant exceeded the PSD significant emission rate and the project was considered to be a minor modification to a major facility.

The original application specifies that this NO_X emission limit was based on vendor guarantee and applicant request. However, the applicant states that the previous permit application should have only addressed the applicable requirements in the NSPS Subpart KKKK of 74 ppmvd NO_X at 15% O_2 when firing fuel other than natural gas (ULSD fuel). As shown in **Table 4** above, the potential emission of NO_X was 121.7 TPY less the contemporaneous emission credit from the shutdown of SCCT Nos. 1 – 3 of 545.2 TPY which resulted in a net change in NO_X emission of -422.7 TPY. The potential of all other pollutants were well below the significant rates and the contemporaneous emissions credits were not needed. Therefore, the SCCTs were not subject to PSD preconstruction review and a BACT determination was not done for any pollutants.

The applicant provided new calculations based on the SCCT firing a maximum of 500 hours/year of ULSD fuel and the NSPS NO_X limit of 74 ppmvd at 15% O_2, which showed the potential emissions for NO_X to be increased from 121.7 TPY to 141.2 TPY (a difference of 19.5 TPY). Based on the contemporaneous emission credit of 545.2 TPY would have resulted in a decrease in emission of 403.2 TPY rather than -422.7 TPY, which is still well below the significant emission a threshold of 40 TPY for NO_X emissions.

Response: The SCCT 4A and 4B commenced operation in August 2009. The Department reviewed the actual NO_X emissions for the SCCT for the years 2009 – 2012, which shows these SCCT actual emissions are well below the current permitted emission limits of 25 ppmvd @ 15% O_2 when firing natural gas and 42 ppmvd @ 15% O_2 when firing ULSD fuel. The results are summarized in **Table 5** below.

TABLE 5 - 2009 – 2012 ACTUAL NO_X EMISSIONS FOR SCCT 4A AND 4B (EU 041 AND EU 042).

EU No.	Description	Year	NO_X Emission (TPY)	NO_X Emission (ppmvd @ 15% O_2)
041	SCCT 4A	2009	3.1	21.8
042	SCCT 4B		3.2	22.5
041	SCCT 4A	2010	10.1	22.4
042	SCCT 4B		11.4	23.1
041	SCCT 4A	2011	1.9	18.3
042	SCCT 4B		1.7	17.4
041	SCCT 4A	2012	2.6	19.3
042	SCCT 4B		2.4	17.8

Based on the contemporaneous emission credits for the permanent shutdown on SCCT 1 – 3 which resulted in a large reduction of NO_X emissions, the Department agrees that these SCCT should have been subject to the NSPS Subpart KKKK of 40 CFR 60 NO_X emission limits of 74 ppmvd @ 15% O_2 when firing ULSD fuel. TEC is not proposing to do any modifications to the SCCT or making any changes in the method of operation. The SCCT are equipped with a NO_X CEMS. Additionally, these SCCT are emitting emissions of NO_X well below the current respective emission limits when firing natural gas and fuel oil and there will be no changes in the actual emissions. In regards to removing the corresponding lb/hour SIP limits, TEC performs an annual Relative Accuracy Test Audit (RATA) tests required for the NO_X CEMS using EPA Method 7E or 20 in accordance with 40 CFR 60, Appendix A, which meets this requirement. Therefore, the Department will remove the NO_X emission limit of 42 ppmvd at 15% O_2 when firing ULSD fuel and remove the equivalent 51.3 lb/hour limits as well as the 32.0 lb/hour (equivalent to the existing NO_X emission limit of 25 ppmvd). These limits will be replaced with the NSPS Subpart KKKK of NO_X emission limit when firing fuel oil of 74 ppmvd @ 15% O_2 during normal operation and 96 ppmvd @ 15% O_2 when operating the SCCT at less than 75% of peak load.

12. *Request:* The applicant is also requesting to include the NO_X emission standard of 96 ppmvd at 15% O_2 for turbines operating at less than 75% of peak load in accordance with Table 1 of NSPS Subpart KKKK of 40 CFR 60.

Response: The Department acknowledges SCCT 4A and 4B are subject to the applicable requirements of NSPS Subpart KKKK of 40 CFR 60 which includes the NO_X emission standard of 96 ppmvd at 15% O_2 and this emission standard will be included in the permit.

13. *Request:* The applicant is requesting to remove the corresponding lb/hour SIP limits for CO of 9.1 lb/hour (equivalent to 21 ppmvd at 15% O_2) when firing natural gas and 2.1 lb/hour (equivalent to 5.1 ppmvd at 15% O_2) when firing ULSD fuel.

    Response: The SCCT are equipped with a CO CEMS. TEC performs an annual RATA tests required for the CO CEMS using EPA Method 10 in accordance with 40 CFR 60, Appendix A, which meets this requirement. Therefore, the Department will remove the lb/hour limits that correspond to the existing ppmvd emission limits for CO.

14. *Specific Condition 16 (Annual Compliance Testing)*

    Request: The applicant is requesting to revise the annual compliance testing requirements for visible emissions to only requiring a visible emissions test when these units are firing natural gas in combination with ULSD fuel for more than 400 hours per year or only when firing only ULSD fuel for more than 400 hours/year and not required to do a visible emission test when only firing natural gas. The applicant states that the SCCT are limited to 3,500 hour/year on natural gas and 500 hour/year on ULSD fuel. Any hour used to fire ULSD will decrease an hour that could have been used to fire natural gas. Additionally, these units do have a PM limit and seldom fire fuel oil.

    Response: The Department revised this condition to state "each SCCT shall be tested to demonstrate compliance with the emission standard for opacity if the SCCT fired ULSD fuel more than 400 hours/year. Unless specifically requested by the Compliance Authority pursuant to Rule 62-297.310(7)(b), F.A.C., periodic opacity tests are not required when firing natural gas. Any SCCT that did not fire ULSD fuel for more than 400 hours/year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit."

15. *Specific Condition 27 (CEMS) and Appendix E. (Standard Continuous Monitoring Requirements), Condition 7.*

    Request: The applicant is requesting to follow the monitor and quality assurance procedures in 40 CFR 75 instead of 40 CFR 60 for the CO CEMS.

    Response: The purpose of 40 CFR 75 is to establish requirements for the monitoring, recordkeeping, and reporting of SO_2, NO_X, and CO_2 emissions, volumetric flow, and opacity data from affected units under the Acid Rain Program which are more stringent than 40 CFR 60 requirements. Therefore, the Department will make the requested revisions in Appendix E (Standard Continuous Monitoring Requirements) for the CO CEMS to follow the quality assurance procedures in 40 CFR 75. However, 40 CFR 75 does not recognize performance specification for CO; therefore, the Department will not revise the monitoring procedures for the CO CEMS.

16. *Appendix E (Standard Continuous Monitoring Requirements), Condition 14.*

    Request: The applicant is requesting that the quarterly excess emissions report be required only if the units operate more than 760 hours. The excess emissions report identifies the monitor availability when the CEMS are not achieving 95% availability. The reason for this request is due to the fact that these units typically do not have a lot of run hours. When hours need to be marked as bad (such as failed or expired calibrations) and are unable to be counted towards the monitoring availability the unit may not be able to meet the 95% monitor availability. When this occurs additional hours are needed to obtain the 95% availability threshold; therefore, the unit is forced to run in order to obtain more operating hours to meet the monitor availability of 95% of actual run time. This puts unnecessary wear and tear on the units and also results in emitting unnecessary emissions. The applicant is seeking relief from having to meet the 95% monitor availability based upon operating hours so that these units are not forced to run.

Gainesville Renewable Energy Center, LLC, Permit No. 0010131-001-AC was referenced as having to submit a quarterly excess emissions report if their units did not achieve 95% monitoring availability if operated more than 760 hours.

Response: The monitoring availability requirement was established for PSD projects for the purposes of determining compliance with the CEMS emission standards. However, the Department agrees that these units should not operate additional hours causing the units to emit unnecessary emissions. Therefore, the Department revises the condition as requested.

Emission sources associated with the following revision include the Transloading and Off-site Transfer of Solid Fuels and Slag (by truck, rail and barge) (EU 046). Permit No. 0570039-025-AC is affected by this revision.

Permit No. 0570039-025-AC

17. *Section III, Specific Condition 6 (Recordkeeping and Report Duration).*

Request: For clarity, TEC is requesting to revise this condition to reflect the actual equipment used to transport the materials off-site.

Response: The Department will revise this language for clarity.

Emission sources associated with the following revisions include the Railcar Unloading and Conveying System (EU 047). Permit No. 0570039-041-AC is affected by these revisions.

Permit No. 0570039-041-AC

18. *Section III, Specific Condition3 (Permitted Capacity).*

Request: TEC is requesting to change the averaging time used in determining the maximum unloading/ transfer rate from the railcar unloading operation from a 24-hour rolling average to a daily average since the total amount of coal unloaded (tons) during each unloading event is recorded.

Response: The requested daily average is more restrictive than the 24-hour rolling average; therefore, the Department will make the revision as requested.

19. *Specific Condition 6 (Railcar Coal Unloading Building) and Specific Condition 7 (Railcar Coal Unloading Conveying System).*

Request: TEC is requesting to revise these conditions to clarify that "*permittee shall utilize the water spray system or chemical dust suppression system"* to control PM emissions from the railcar unloading hopper and the railcar unloading conveying system. The dust control plan for 40 CFR 60 Subpart Y (Standards of Performance for Coal Preparation Plants) allows for either the surfactant dust suppression system or the water/fogging system.

Response: NSPS Subpart Y allows either dust control systems to be used; therefore, the Department will revise these conditions to allow either the surfactant dust suppression system or the water/fogging system to control emissions of PM.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state 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. Tammy McWade is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer by mail at the Department's Office of Permitting and Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, by phone at 850-717-9086 or by email at Tammy.McWade@dep.state.fl.us .