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SECRETARY

PERMITTEE

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

Authorized Representative:
Mr. Ronald D. Bishop, Director

Air Permit No. 0570039-066-AC (PSD-FL-040A)
Permit Expires: January 1, 2015

Big Bend Station
Minor Air Permit Revisions

PROJECT

This permit authorizes miscellaneous revisions to previously issued air construction permits. Big Bend Station is an electric generating utility (Standard Industrial Classification No. 4911). The existing power plant is located at 13031 Wyandotte Road, Apollo Beach in Hillsborough County, Florida. UTM Coordinates are Zone 17, 361.9 kilometers (km) East and 3075.0 km North; Latitude: 27° 47' 36" North and Longitude: 82° 24' 11" West.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

(DRAFT)

for: Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Air Permit package was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

Mr. Ronald D. Bishop, Director, TEC Big Bend Station: rdbishop@tecoenergy.com
Mr. Byron T. Burrows, P.E., Manager-Air Programs EHS, TEC: btburrows@tecoenergy.com
Mr. Rob Velasco, P.E., Air Programs EHS, TEC: ravelasco@tecoenergy.com
Mr. William F. Karl, P.E., ECT: bkarl@ectinc.com
Ms. Diana M. Lee, P.E., EPCHC: lee@epchc.org
Ms. Alisa Coe, Earth Justice: acoe@earthjustice.org
Ms. Kelley Boatwright, DEP SWD: kelley.m.boatwright@dep.state.fl.us
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Ms. Barbara Friday, DEP BAR: barbara.friday@dep.state.fl.us
Ms. Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

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FACILITY DESCRIPTION

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.

PROPOSED PROJECT

The purpose of this project is to update TEC Title V air operation permit based on the current facility design and activities. This permit addresses the following emission units (EU) at this facility:

EU 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
014	Fly Ash Silo No. 3 Baghouse
027	Fly Ash Silo No. 3 Truck Loadout
028	Fly Ash Handling System Fugitive Emissions
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
046	Transloading and Off-Site Transfer
047	Railcar Unloading and Conveying System

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This permitting action revises several conditions in underlying air construction permits primarily related to: Units 1 – 3 flue gas desulfurization (FGD) system; Units 1 – 3 limit on petcoke bunkering; clarify the supplemental material injected into Units 1 – 4; clarify circumvention requirements for Units 1 - 4; remove the flyash handling activities; SCCT CEMS monitoring availability; remove and add applicable NSPS emission standards for the SCCT; SCCT visible emission testing requirements; the replacement of the SCCT during maintenance; clarify what is used to transport solid fuels and slag off-site (by truck, rail and barge); and railcar permitted capacity and control equipment. This revision also includes minor changes in the language of Specific Conditions to clarify the intent of the rules and regulations.

This permitting action includes revisions to the existing construction permits shown in ~~strike through~~ format for deletions and in double underline format for additions. For ease of identification, all changes have been highlighted in yellow within this DRAFT permit document. The revisions follow the existing permits numerical order. Unless otherwise specified in this permit, the revisions to the conditions only cover the paragraphs where the changes are made and not necessarily repeat the entire conditions.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- 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.

RELEVANT DOCUMENTS

Several documents shown in the following link are not a part of this permit, but helped form the basis for this permitting action. Documents related to this permitting action are posted under Permit No. 0570040-066-AC (PSD-FL-040A) at the following web site address: http://appprod.dep.state.fl.us/air/emission/apds/default.asp

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SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Office of Permitting and Compliance mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Environmental Protection Commission of Hillsborough County at: 3629 Queen Palm Drive, Tampa, Florida 33619. Phone: (813) 627-2600.

3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); Appendix D (Common Testing Requirements); and Appendix E (Standard Continuous Monitoring Requirements).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(4), 62-4.080 & 62-210.300(1), F.A.C.]

8. Applicable Standards and Regulations: Except as specified in Section 3 below, the facility remains subject to all of the rules and requirements contained in all previously issued air construction permits for this facility.

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A. Fossil Fuel Fired Steam Generator Units 1 - 3 (EU 001 – EU 003)

This section of the permit addresses the following emissions units.

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

{Permitting Note: Fossil Fuel Fired Steam Generator Unit Nos. 1, 2 and 3 are regulated under the federal Acid Rain Program for Phase II SO_2 and NO_X; Rule 62-296.405(1), F.A.C., Fossil Fuel Steam Generators with More than 250 million Btu per Hour (MMBtu/hour) Heat Input; Rule 62-296.700(6), F.A.C., Reasonable Available Control Technology (RACT) PM – Operation and Maintenance O&M Plan; Compliance Assurance Monitoring (CAM), adopted and incorporated by reference in Rule 62-204.800, F.A.C.; and, Rule 62-296.470, F.A.C., CAIR. These emissions units are also regulated under a Consent Final Judgment (DEP vs. TEC) dated December 16, 1999. These units were formerly regulated under the federal Acid Rain Program as Phase I SO_2 substitution units.}

PERMITS BEING MODIFIED

The following revisions replace the conditions in **Permit Nos. 0570039-003-AC and 0570039-004-AC.**

Section III, Specific Condition 3

3. ~~FGD Operation Required for Petcoke: Whenever each emission unit is fired with petcoke in any amount up to the allowable percentage, its flue gases shall be directed to the FGD system. [Rule 62-4.070(3), F.A.C.]~~

   ~~{Note: The owner or operator may operate each emission unit without directing its emissions to the FGD system whenever petcoke is not being fired in the emissions unit.}~~

   ~~{Note: The excess emissions provision of section II, condition 14 of this permit are also applicable to the FGD system operation.}~~

Specific Condition 4

4. ~~Limit on Petcoke Bunkering: The owner or operator at any given time shall not bunker more than the amount of petcoke that may be fired in each emissions unit in one day. [Rule 62-4.070(3), F.A.C.]~~

   ~~{Note: This condition is intended to limit possible excess emissions in the event of an unexpected breakdown of the FGD system that requires it shutdown while either emissions unit is firing petcoke.}~~

Specific Condition 9

9. Monitor ~~Petcoke~~Petroleum Coke Usage: The owner or operator shall operate and maintain equipment to record and calculate the weight percentage of ~~petcoke~~petroleum coke ~~and coal bunkered and~~ fired in each emissions unit, to verify compliance with the ~~bunkering limit and the~~ percentage limitation on ~~petcoke~~petroleum coke usage of this permit. [Rule 62-4.070(1) & (3), F.A.C.]

The following revision replaces the condition in **Permit No. 0530039-053-AC.**

Specific Condition 5

5. 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 62-4.070(3) and 62-210.650, F.A.C.; and Permit No. 0570039-053-AC]

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The following revision replaces the condition in **Permit Nos. 0570039-058-AC.**

Section III, Specific Condition 3

3. Methods of Operation.
   a. *Fuels - Normal Operation*. The only fuels allowed to be burned in 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.
   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 during startup, shutdown, flame stabilization, and during the start of an additional solid fuel mill on an already operating unit.
   c. *Other Operation.*
      (1) Raw Coal Residual. The total amount of raw coal residual fired at Big Bend Station (all Unit Nos. 1 - 4 combined) shall be limited to 200 tons/day. The raw coal residual is a by-product of the gasification of coal at the Polk Power Station. The permittee shall only fire raw coal residual in the event of a gasification process malfunction at the Polk Power Station that results in raw coal residual that has some remaining fuel value. The permittee shall document all gasification process malfunctions and record the amount of raw coal residual, if any, fired at Big Bend Station. These records should be kept on site at Big Bend and made readily available to the Department and the Environmental Protection Commission of Hillsborough County upon request.
      (2) Supplemental Material Injection. The following materials may be injected as needed for boiler conditioning and energy recovery purposes:
         (a) Magnesium Oxide, Limestone and Fluxing Agents may be injected as needed for boiler conditioning. ~~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.~~
         (b) Fly Ash. Reinjection of on-site generated flyash for energy.
         ~~(d) Limestone. Mixed with the fuel in feed as needed to optimize coal blend.~~
   d. *Daily Log*. The permittee shall maintain a daily log of the amounts and types of fuels used and copies of fuel analyses containing information on sulfur content, ash content and heating values.
   e. *Control Devices*. All air pollution control devices shall be in operation according to manufacturer's recommendations whenever the boilers are in operation. Note: under current permitted ductwork configuration, none of the air pollution control devices can be physically bypassed. In the event of a control device malfunction resulting in excess emissions beyond the allowable periods established for these units, the associated boiler shall be removed from service until such time that the control device resumes normal operation.

   [Rules 62-4.160(2), 62-210.200, 62-4.070(1) & (3), F.A.C.; and, Permit No. 0570039-058-AC]

   {Permitting Note: "Flame stabilization" is defined as the use of new No. 2 fuel oil to stabilize a flame during times of unexpected poor coal quality or equipment failure such as coal piping pluggage. Flame stabilization due to poor coal quality occurs when coal is wet or does not provide the necessary heat to maintain a stable flame. In this situation, new No. 2 fuel oil is combusted to provide the additional required heat input to maintain a stable flame. Flame stabilization due to equipment failure occurs when coal piping is plugged, or equipment is otherwise damaged, that results in an inconsistent amount of coal reaching the burners. Under certain conditions, this may result in the burners intermittently seeing large amounts of fuel at one time, causing a potentially explosive flame "puff". In this situation, new No. 2 fuel oil must be used for stabilization to prevent flame "puffing" and ensure safe operation. Combustion of No. 2 fuel oil is also necessary during periods of load change to initialize and stabilize the flame until coal flow to the burners reaches steady state. As defined in 62-210.700(3), F.A.C., load change occurs when the operational capacity of a unit is in the 10 to 100 percent capacity range, other than startup or shutdown, which exceeds 10 percent of the unit's rated capacity and which occurs at a rate of 0.5 percent per minute or more.}

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B. Fossil Fuel Fired Steam Generator Unit 4 (EU 004)

This section of the permit addresses the following emissions unit.

EU No.	Emission Unit Description
004	Fossil Fuel Fired Steam Generator Unit No. 4

{Permitting Note: Fossil Fuel Fired Steam Generator Unit No. 4 is regulated under the federal Acid Rain Program for Phase II SO_2 and NO_X; Rule 62-296.405(2), F.A.C., Fossil Fuel Steam Generators with More than 250 MMBtu/hour Heat Input; NSPS - 40 CFR 60, Subpart Da, Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, adopted and incorporated by reference in Rule 62-204.800(8)(b)2., F.A.C.; Rule 212.400(5), F.A.C., Prevention of Significant Deterioration [PSD-FL-040]; Power Plant Siting Certification [PA 79-12]; Rule 62-296.700(6), F.A.C., RACT PM - O&M Plan; CAM, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; and, Rule 62-296.470, F.A.C., CAIR. This emissions unit is also regulated under a Consent Final Judgment (DEP vs. TEC) dated December 16, 1999.}

PERMITS BEING MODIFIED

The following revision replaces the condition in **Permit No. 0570039-053-AC.**

Section III, Specific Condition 5

5. 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 62-4.070(3) and 62-210.650, F.A.C.; Permit No. 0570039-053-AC]

The following revision replaces the condition in **Permit No. 0570039-058-AC**

Section III, Specific Condition 4

4. Methods of Operation.
   a. *Fuels - Normal Operation.* The only fuels allowed to be burned in Unit No~~s~~. ~~1, 2 and 3~~4 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.
   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 during startup, shutdown, flame stabilization, and during the start of an additional solid fuel mill on an already operating unit.
   c. *Other Operation.*
      (1) Raw Coal Residual. The total amount of raw coal residual fired at Big Bend Station (all Unit Nos. 1 - 4 combined) shall be limited to 200 tons/day. The raw coal residual is a by-product of the gasification of coal at the Polk Power Station. The permittee shall only fire raw coal residual in the event of a gasification process malfunction at the Polk Power Station that results in raw coal residual that has some remaining fuel value. The permittee shall document all gasification process malfunctions and record the amount of raw coal residual, if any, fired at Big Bend Station. These records should be kept on site at Big Bend and made readily available to the Department and the Environmental Protection Commission of Hillsborough County upon request.
      (2) Supplemental Material Injection. The following materials may be injected as needed for boiler conditioning and energy recovery purposes:
         (a) Magnesium Oxide, Limestone and Fluxing Agents may be injected as needed for boiler conditioning. ~~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.~~
         (b) Fly Ash. Reinjection of on-site generated flyash for energy recovery.

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

d. *Daily Log*. The permittee shall maintain a daily log of the amounts and types of fuels used and copies of fuel analyses containing information on sulfur content, ash content and heating values.

e. *Control Devices*. All air pollution control devices shall be in operation according to manufacturer's recommendations whenever the boilers are in operation. Note: under current permitted ductwork configuration, none of the air pollution control devices can be physically bypassed. In the event of a control device malfunction resulting in excess emissions beyond the allowable periods established for these units, Unit 4 shall be removed from service until such time that the control device resumes normal operation.

[Rules 62-4.160(2), 62-210.200, 62-4.070(1) & (3), F.A.C.; Power Plant Siting Certification PA 79-12; and, Permit No. 0570039-053-AC.]

{Permitting Note: "Flame stabilization" is defined as the use of No. 2 fuel oil to stabilize a flame during times of unexpected poor coal quality or equipment failure such as coal piping pluggage. Flame stabilization due to poor coal quality occurs when coal is wet or does not provide the necessary heat to maintain a stable flame. In this situation, No. 2 fuel oil is combusted to provide the additional required heat input to maintain a stable flame. Flame stabilization due to equipment failure occurs when coal piping is plugged, or equipment is otherwise damaged, that results in an inconsistent amount of coal reaching the burners. Under certain conditions, this may result in the burners intermittently seeing large amounts of fuel at one time, causing a potentially explosive flame "puff". In this situation, No. 2 fuel oil must be used for stabilization to prevent flame "puffing" and ensure safe operation. Combustion of No. 2 fuel oil is also necessary during periods of load change to initialize and stabilize the flame until coal flow to the burners reaches steady state. As defined in 62-210.700(3), F.A.C., load change occurs when the operational capacity of a unit is in the 10 to 100 percent capacity range, other than startup or shutdown, which exceeds 10 percent of the unit's rated capacity and which occurs at a rate of 0.5 percent per minute or more.}

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C. Fly Ash Silo No. 3 Baghouse (EU 014)

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
014	Fly Ash Silo No. 3 Baghouse
~~027~~	~~Fly Ash Silo No. 3 Truck Loadout~~
~~028~~	~~Fly Ash Handling System Fugitive Emissions~~

{Permitting Note: These emissions units are regulated under Rules 62.296.711 RACT PM (Materials Handling, Sizing, Screening, Crushing and Grinding Operations) and 62-212.400, (Prevention of Significant Deterioration [PSD-FL-040]), F.A.C.; Power Plant Siting Certification [PA 79-12]; and Rule 1-3.52, Rules of the Environmental Protection Commission of Hillsborough County.}

PERMITS BEING MODIFIED

The following revisions only revise the following portions of the conditions in **Permit No. PSD-FL-040.**

5. *Subsection I, Specific Condition 5.e.*

   5.e. The flyash ~~handling system (including transfer and~~ silo storage~~)~~ will be maintained at negative pressures and vented to a control system.

Table 1. Allowable Emissions

Facility	PM lb/hour	Opacity
4. Flyash Silo~~s and Handling System~~Baghouse	0.2	5%[d]

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D. Simple Cycle Combustion Turbines Units 4A and 4B (EU 041 and EU 042)

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
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

{Permitting Note: NO_X emissions from SCCT 4A and 4B are controlled by steam or water injection. CO emissions are controlled by an oxidation catalyst system. These units began commercial operation on August 15, 2009. The generator nameplate rating for SCCT 4A and 4B is 31 MW each, 62 MW total. Each unit has a separate, but identical, stack with the following parameters: Stack height = 60 feet; exit diameter = 9.5 feet; exit temperature = 893 degrees Fahrenheit (ºF); and, actual volumetric flow rate = 430,737 actual cubic feet per minute (acfm). In addition to the requirements listed below, these emissions units are also subject to the standards and requirements contained in the Acid Rain Part of this permit.}

The following requirement is a "new" established specific condition which is based on the requested changes from the applicant.

REPORTING AND RECORDKEEPING REQUIREMENTS

1. Combustion Turbine Replacements. The SCCT may be replaced with a temporary equivalent "like-kind" overhauled or new SCCT while the existing SCCT is undergoing routine maintenance. The replacement CT shall not increase the CT maximum heat input rate or actual emissions. The replacement CT shall be designed and constructed to achieve the emissions standards specified in this permit. The replacement CT shall be deemed in compliance with all emissions standards by demonstrating compliance with the NO_X and CO emission standards using data from the CO and NO_X CEMS. The permittee shall meet the following requirements:

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

   b. *Recordkeeping.* 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.

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

   d. *PSD Applicability*. If it is determined that the SCCTs 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.

   [Rule 62-4.170(3), F.A.C.]

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D. Simple Cycle Combustion Turbines Units 4A and 4B (EU 041 and EU 042)

PERMITS BEING MODIFIED

The following revisions replace the conditions in **Permit No. 0570039-040-AC.**

Section III, Specific Condition 10

10. Emission Standards: Emissions from each SCCT shall not exceed the following NSPS and State Implementation Plan (SIP) standards.

Pollutant	Fuel	Emission Standard [e]	Averaging Time	Compliance Method	Basis
NOx [a]	NG	25.0 ppmvd @ 15% oxygen (O_2) (NSPS)[f]	4-hr rolling avg[g]	CEMS	40 CFR 60.4320
		~~32.0 lb/hr/SCCT (SIP)~~ 96 ppmvd @ 15% O_2 (NSPS)	~~3 run avg~~ 4-hr rolling avg	~~Stack Test~~ CEMS	~~Applicant requested Rule 62-4.070(3), F.A.C.~~ 40 CFR 60.4325
	ULSD	74 ppmvd @ 15% O_2 (NSPS)	4-hr rolling avg	CEMS	40 CFR 60.4325
		96 ppmvd @ 15% O_2 (NSPS)	4-hr rolling avg	CEMS	40 CFR 60.4325
		~~42.0 ppmvd @ 15% oxygen (O_2) (SIP)~~	~~4-hr rolling avg~~	~~CEMS~~	~~Applicant requested Rule 62-4.070(3), F.A.C.~~
		~~51.3 lb/hr/SCCT (SIP)~~	~~3 run avg.~~	~~Stack Test~~	
	NG and ULSD	25.0 ppmvd @ 15% ~~oxygen (O_2)~~ (NSPS)[f] or ~~42.0 ppmvd @ 15% oxygen (O_2) (SIP)~~ 74 ppmvd @ 15% O_2 (NSPS) and 96 ppmvd @ 15% O_2 (NSPS)	4-hr rolling avg[g]	CEMS	40 CFR 60.4325
CO [b]	NG	21.0 ppmvd @ 15% O_2 (SIP)	3-hr rolling avg	CEMS	Applicant requested Rule 62-4.070(3), F.A.C.
		~~9.1 lb/hr/SCCT (SIP)~~	~~3 run avg.~~	~~Stack Test~~	
	ULSD	5.1 ppmvd @ 15% O_2 (SIP)	3-hr rolling avg	CEMS	Applicant requested Rule 62-4.070(3), F.A.C.
		~~2.1 lb/hr/SCCT (SIP)~~	~~3 run avg.~~	~~Stack Test~~	
Visible Emissions [c]		10 % Opacity (SIP)	6-minute block	Visible Emissions Test	Applicant requested Rule 62-4.070(3), F.A.C.
PM [c]		NG: 2.0 gr S/100 scf (SIP) ULSD: 0.0015% S content, by wt (SIP)	N/A	Recordkeeping	Vendor data of analyses
SO_2[d]	NG	NG: 2.0 gr S/100 scf (SIP) 0.90 lb/MWh/SCCT gross output[d] (NSPS) or 0.060 lb/MMBtu/SCCT heat input [d] (NSPS)	N/A	Demonstration of fuel combusted and vendor data of analyses	Applicant requested 40 CFR 60.4330(a)(1) 40 CFR 60.4330(a)(2)
	ULSD	ULSD: 0.0015% S content, by wt (SIP) 0.90 lb/MWh/SCCT gross output [d] (NSPS) or 0.060 lb/MMBtu/SCCT heat input [d] (NSPS)			Applicant requested 40 CFR 60.4330(a)(1) 40 CFR 60.4330(a)(2)

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a. The permittee shall conduct initial and annual tests [Relative Accuracy Test Audit (RATA)] on each SCCT to demonstrate compliance with the short-term NO_X emission limits [ppmvd @ 15% O_2 ~~and lb/hr (mass emissions)~~] per fuel type. Thereafter, continuous compliance shall be demonstrated with the 4-hour rolling average NO_X emission limits by data collected from the required continuous emissions monitoring system (CEMS). ~~When firing ULSD, compliance with the SIP limit ensures compliance with the NSPS limit of 74 ppmvd @ 15% O_2.~~ When firing both NG and ULSD, compliance with the NSPS limit is ensured ~~by complying with either the NSPS limit, for NG, or the SIP limit, for ULSD,~~ depending on the contribution of the fuels of the total heat input: if the total heat input contribution is equal to or greater than 50 percent from NG, you must meet the corresponding limit for a NG-fired turbine when you are burning that fuel; similarly, when your total heat input contribution is greater than 50 percent from ULSD, you must meet the corresponding limit for ULSD for the duration of the time that you burn that particular fuel. When operating the SCCT at less than 75% of peak load the NSPS limit of 96 ppmvd @ 15% O_2 shall be met.

b. The permittee shall conduct an initial test on each SCCT to demonstrate compliance with the short-term [ppmvd @ 15% O_2 ~~and lb/hr (mass emissions)~~] CO emission limits per fuel type. Thereafter, continuous compliance shall be demonstrated with the 3-hour rolling average CO emission limits by data collected by the required CEMS. CO will be used as a surrogate for VOC emissions as a demonstration of good combustion.

c. The sulfur fuel specification combined with the efficient combustion design and operation of the turbines should minimize PM emissions (PM emissions are a surrogate for PM_{10} emissions) as well as visible emissions. No stack tests are required. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. *{Permitting Note: Maximum expected PM/PM_{10} emissions from each turbine are approximately 2.5 and 7.5 lb/hr for NG and ULSD, respectively.}*

d. The fuel sulfur specifications effectively limit the potential emissions of SO_2 (and essentially sulfuric acid mist). For compliance purposes, the permittee elected to demonstrate that the fuel combusted will not exceed the potential sulfur emissions of 0.060 lb SO_2/MMBtu heat input (see Appendix G of the permit). *{Permitting Note: Maximum expected SO_2 emissions from each turbine are approximately 1.9 lb/hr and 0.5 lb/hr for NG and ULSD, respectively.}*

e. The mass emission rate standards are based on a turbine inlet temperature condition of 59 °F, evaporative cooling on, and using the HHV of the fuel. Mass emission rate may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

f. 40 CFR 60, Subpart KKKK as described in 40 CFR 60.4320(a).

g. 40 CFR 60, Subpart KKKK as described in 40 CFR 60.4350(g).

{Permitting Note: In combination with the annual restriction on hours of operation, the above emissions standards effectively limit annual potential emissions from both gas turbines to: 16.5 tons/year of CO, ~~121.7~~141.2 tons/year of NO_X, 11.3 tons/year of PM/PM_{10}, 6.6 tons/year of SO_2, 0.8 tons/year of SAM, and 4.7 tons/year of VOC.}

[Applicant requested; Rules 62-4.070(3), 62-210.200(Definitions-PTE) and 62-212.400(PSD), F.A.C.; and 40 CFR 60, Subpart KKKK]

Specific Condition 16

16. Annual Compliance Testing: During each federal fiscal year (October 1st to September 30th), 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.~~annual compliance tests for visible emissions shall be conducted. For each visible emissions test,~~ E~~e~~missions of CO and NO_X recorded by the CEMS shall also be reported. [Rules 62-297.310(7)(a) and (b), F.A.C. and Appendix D of this permit]

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Specific Condition 27

27. CEMS: The permittee shall install, calibrate, maintain and operate the diluent CEMS to measure CO_2 emissions and CEMS to measure and record the emissions of CO and NO_X from each gas turbine in a manner sufficient to demonstrate continuous compliance with the emission standards of this section. All continuous monitoring systems shall be installed and functioning within the required performance specification by the time of the initial performance tests.

    a. *NO_X Monitor:* Each NO_X monitor shall be certified pursuant to the specifications of 40 CFR 75. Quality assurance procedures shall conform to the requirements of 40 CFR 75, Appendix B. The annual and required Relative Accuracy Test Audit (RATA) tests required for the NOx monitor shall be performed using EPA Method 7E or 20 in 40 CFR 60, Appendix A.

    b. *CO Monitor:* Each CO monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR ~~60~~75, Appendix ~~F~~B. The annual and required RATA tests required for the CO monitor shall be performed using EPA Method 10 in 40 CFR 60, Appendix A, and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately, considering the allowable methods of operation and corresponding emission standards.

    c. *SO_2 Monitoring:* SO_2 monitoring will be in accordance with 40 CFR 75, Appendix D requirements (using sulfur content and fuel flow rates).

    d. *Diluent Monitor:* The oxygen (O_2) or carbon dioxide (CO_2) content of the flue gas shall be monitored at the location where CO and NO_X are monitored to correct the measured emissions rates to 15% oxygen. If a CO_2 monitor is installed, the oxygen content of the flue gas shall be calculated using F-factors that are appropriate for the fuel fired. Each monitor shall comply with the performance and quality assurance requirements of 40 CFR 75, Appendix B.

    [Rules 62-4.070(3) and 62-297.520, F.A.C.; 40 CFR 75; and Appendix E of this permit]

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E. Transloading and Off-Site Transfer of Solid Fuels and Slag (EU 046)

This section of the permit addresses the following emission unit.

EU No.	Emission Unit Description
046	Transloading and Off-site Transfer of Solid Fuels and Slag (by truck, rail and barge)

{Permitting Note: This emissions unit is regulated under the following: Rule 62-210.300, F.A.C., Permits Required; 62-296.320(4)(b), General Visible Emissions Standard; 62-296.320(4)(c), F.A.C., Unconfined Emissions of PM; and Power Plant Siting Certification [PA 79-12].}

PERMITS BEING MODIFIED

The following revision replaces the condition in **Permit No. 0570039-025-AC.**

Section III, Specific Condition 6

6. Recordkeeping and Report Duration: The number of railcars, trucks and barges, and the quantity and type of material loaded~~The quantity and type of fuel loaded~~ and transported off-site by each fuel transloading operation emissions point covered in this permit (i.e., off-loading and loading of fuel or slag {for export from Big Bend Station}) shall be recorded and maintained, and kept on file for a minimum of five years. The annual quantity of each transloaded material shall be submitted in the Annual Operation Report. All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. [Rule 62-4.160(14)(b), F.A.C.]

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F. Railcar Unloading and Conveying System (EU 047)

This section of the permit addresses the following emission unit.

EU No.	Emission Unit Description
047	Railcar Unloading and Conveying System

{Permitting Note: This emissions unit is regulated under Rule 62-210.300, F.A.C., Permits Required; and NSPS Subpart Y of 40 CFR 60}

PERMITS BEING MODIFIED

The following revisions replace the conditions in **Permit No. 0570039-041-AC.**

Section III, Specific Condition 3

3. Permitted Capacity: The maximum unloading rate is 4000 tons per hour on a daily average~~(24-hour rolling average)~~. The maximum annual transfer for the railcar unloading operations is 8,000,000 tons per year. [Rule 62-210.200(PTE), F.A.C.]

Specific Condition 6

6. Railcar Coal Unloading Building. The permittee shall ~~install a~~utilize the water spray system or chemical dust suppression system in the railcar unloading building~~water/surfactant dust suppression system~~ to control particulate matter emissions from the railcar unloading hopper. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C. and Application No. 0570039-041-AC]

Specific Condition 7

7. Railcar Coal Unloading Conveying System. The permittee shall ~~install a~~utilize the water spray system or chemical dust suppression system in the railcar unloading building~~water/surfactant dust suppression system~~ to control particulate matter emissions from the railcar unloading conveying system. [Rules 62-4.070, F.A.C.]

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