Florida Department of Environmental Protection

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PERMITTEE

Tampa Electric Company
702 North Franklin Street
Tampa, Florida 33602

Authorized Representative:
Paul Carpinone, Director, Environmental Services

Air Permit No. 0570039-119-AC
Permit Expires: December 31, 2023
Minor Air Construction Permit
Big Bend Station
Unit 1 Modernization Project

PROJECT

This is the final air construction permit, which authorizes the construction of a natural gas-fueled, 2-on-1 combined-cycle unit and the retirement of two existing boilers. The proposed work will be conducted at the existing Big Bend Station, which is an electric power plant categorized under Standard Industrial Classification No. 4911. The existing facility is in Hillsborough County at 13031 Wyandotte Road in Gibsonton, Florida. The UTM coordinates are Zone 17, 363.15 kilometers (km) East and 3074.91 km North.

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. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). 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:
Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

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CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Construction 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.

Paul Carpinone, Tampa Electric Company: plcarpinone@tecoenergy.com
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Clerk Stamp

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

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FACILITY DESCRIPTION

The Big Bend Station is a nominal 1,892 megawatt (MW) electric generation facility. This facility consists of four fossil fuel fired electric generating units (Units 1 – 4); four steam turbines; a simple cycle combustion turbine (SCCT)-generator peaking unit set; solid fuels, fly ash, limestone, gypsum, slag, and bottom ash storage and handling facilities; and, fuel oil storage tanks. Units 1 through 4 each has a nominal maximum heat input of 4,037, 3,996, 4,115 and 4,330 million British thermal units per hour, respectively. Units 1 – 4 can be fired with natural gas only, coal only, or co-fired natural gas and solid fuels consisting 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. The combustion turbine is fired with pipeline-quality natural gas and ultra-low sulfur diesel (ULSD) fuel.

The existing facility consists of the following emissions units (EU).

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
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
010	Solid Fuel Yard Fugitive Emissions
029	Fuel Blending Bin Cyclone Collectors
030	Fuel Mill Cyclone Collectors
046	Transloading and Off-site Transfer of Solid Fuels and Slag
047	Railcar Unloading and Conveying System
048	Supplemental Material Handling J3 Conveyor System
015	Unit No. 1 Coal Bunker with Roto-Clone
016	Unit No. 2 Coal Bunker with Roto-Clone
017	Unit No. 3 Coal Bunker with Roto-Clone
039	Unit No. 4 Coal Bunker with Roto-Clone
012	Limestone Silo A and Baghouses (2)
013	Limestone Silo B and Baghouses (2)
023	Limestone Conveyor LB/LC and Baghouse
050	Limestone Conveyor LD/LE and Baghouse
020	Limestone Conveyors LE/LF/LG/Silo C Belt Feeder Baghouse
021	Silo C and Baghouse
022	Lime Silo for Wastewater Treatment Plant and Baghouse
008	Fly Ash Silo No. 1 and Baghouse
009	Fly Ash Silo No. 2 and Baghouse
014	Fly Ash Silo No. 3 and Baghouse
037	Coal Residual and Supplemental Additives Storage Facility

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EU No.	Brief Description
038	Coal Residual and Supplemental Additives Transfer System
032	Surface Coating of Miscellaneous Metal Parts
043	SCCT Black-Start Emergency Diesel Engine (1,495 HP)
044	Units 3 & 4 Emergency Diesel Generator (1,046 HP)
053	Units 1 & 2 Emergency Diesel Generator (197 HP)
036	Slag and Bottom Ash Sources BH-001 through BH-004
	Gypsum Handling and Storage Sources GH-001 through GH-017
	No. 2 Fuel Oil Storage Tanks > 550 gallons
	Vehicle Refueling Operations
045	FGD Area Emergency Diesel Generator (550 HP) and Fire Pump Diesel Engine (596 HP)

PROPOSED PROJECT

The project entails the retirement the existing Unit 2 (EU No. 002) and the modernization of Unit 1 (EU No. 001) by ceasing the operation of its boiler and constructing a new natural gas-fueled combined-cycle unit. The new combined-cycle unit will consist of two General Electric 7HA.02 combustion turbines, each with a nominal generating capacity of 370 MW. Hot exhaust gases will be used to generate steam in two heat recovery steam generators (HRSGs). Steam from the HRSGs will be routed to the steam turbine of the existing Unit 1 for additional power generation. The total nominal net generating capacity for the unit, including both combustion turbine generators and the steam turbine generator, will be 1,090 MW. The combustion turbines will also be capable of operation in simple-cycle mode. Simple-cycle operation is expected to commence in 2021, and combined-cycle operation is expected to commence in 2023. Both existing Units 1 and 2 steam generators will cease all fuel firing as a result of this project.

This project will add the following emissions units.

EU No.	Emission Unit Description
057	CT 5 and 6 Emergency Diesel Engine (1000 kW)
058	Combustion Turbine No. 5 (Simple-Cycle Operation)
059	Combustion Turbine No. 6 (Simple-Cycle Operation)
060	Combustion Turbine No. 5H (Combined-Cycle Operation)
061	Combustion Turbine No. 6H (Combined-Cycle Operation)
062	Mechanical Draft Cooling Tower for Combined-Cycle Unit

This project will modify the following emissions units.

EU No.	Emission Unit Description
001	Fossil Fuel Fired Steam Generator Unit No. 1 (To be permanently retired)
002	Fossil Fuel Fired Steam Generator Unit No. 2 (To be permanently retired)

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 (CAA).
- 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(PSD), F.A.C.

- The facility operates units subject to the New Source Performance Standards (NSPS) of Title 40 Part 60 of the Code of Federal Regulations (40 CFR 60).
- The facility operates units subject to the National Emissions Standards of Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

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SECTION 2. ADMINISTRATIVE REQUIREMENTS (DRAFT)

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.

3. Appendices: The following Appendices are attached as a part of this permit:

   a. Appendix A (Citation Formats and Glossary of Common Terms)
   b. Appendix B (General Conditions)
   c. Appendix C (Common Conditions)
   d. Appendix D (Common Testing Requirements)
   e. Appendix NSPS Subpart A (NSPS General Provisions)
   f. Appendix NSPS Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)
   g. Appendix NSPS Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)
   h. Appendix NSPS Subpart TTTT (Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units)

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 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(3) & (4), 62-4.080 & 62-210.300(1), F.A.C.]

8. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours

of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

9. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing simple-cycle operation. The permittee shall also apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing combined-cycle operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050 and Chapter 62-213, F.A.C.]

{Permitting note: This condition requires the permittee to apply for a Title V air operation permit after commencing simple-cycle operation and again after commencing combined-cycle operation.}

10. Permanent Shutdown of Big Bend Units 1 and 2: The Permittee shall not commence commercial operation of either combustion turbine (exclusive of sale of test generation) until either Big Bend Unit 1 or Unit 2 has permanently ceased firing fuel. The Permittee shall not commence commercial operation of the second combustion turbine (exclusive of sale of test generation) until both Big Bend Units 1 and 2 have permanently ceased firing fuel. [Rule 62-210.200(189), F.A.C. and Avoidance of Rule 62-212.400, F.A.C.]

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A. EU Nos. 058—061, Combustion Turbines 5, 6, 5H, and 6H.

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
058	Combustion Turbine No. 5 (Simple-Cycle Operation)
059	Combustion Turbine No. 6 (Simple-Cycle Operation)
060	Combustion Turbine No. 5H (Combined-Cycle Operation)
061	Combustion Turbine No. 6H (Combined-Cycle Operation)

The CT proposed for the project is the General Electric (GE) 7HA.02 turbine. The two turbines will be capable of operating in both simple-cycle mode and combined-cycle mode. Emissions from each turbine will be controlled using dry low-NO_X (DLN) combustion. When operating in combined-cycle mode, emissions will also be controlled using selective catalytic reduction (SCR).

Each combustion turbine generator (CTG) will have a nominal electrical output of 370 MW. Each turbine will be connected to an unfired heat recovery steam generator (HRSG). Steam generated in the two HRSGs will be routed to a common steam turbine, with a nominal generating capacity of 350 MW. The total net nominal generating capacity is approximately 1,090 MW.

The nominal design heat input rate to each turbine is 3,540 MMBtu/hr in combined-cycle mode, based on an ambient air temperature of 31 degrees Fahrenheit (°F), 14.7 pounds per square inch (psi) pressure, the higher heating value (HHV) of the fuel, and 100% load.

For combined-cycle operation, each HRSG will have a stack height of 180 ft and an inner stack diameter of 23 ft. For simple-cycle operation, each stack has a height of 125 ft and an inner stack diameter of 31 ft. Each stack will be equipped with continuous emissions monitoring systems (CEMS) to measure and record NO_X emissions as well as flue gas oxygen or carbon dioxide content.

{Note: These units are regulated under the New Source Performance Standards in 40 CFR 60, Subparts KKKK and TTTT. These units are not subject to a review for Best Available Control Technology, pursuant to Subchapter 62-212.400, F.A.C.}

APPLICABLE STANDARDS AND REGULATIONS

1. NSPS Requirements: These units shall comply with the applicable NSPS in 40 CFR 60, including: Subpart A (General Provisions), Subpart KKKK (Standards of Performance for Stationary Gas Turbines), and Subpart TTTT (Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units). See Appendices Subpart A, KKKK, and TTTT of this permit. Some separate reporting and monitoring may be required by the individual subparts. [Rule 62-204.800(8)(b), F.A.C.; and NSPS 40 CFR 60, Subparts A, KKKK, and TTTT]

2. NESHAP Requirements: These units are subject to only the initial notification requirements in 40 CFR 63, Subparts A (General Provisions) and YYYY (NESHAP for Stationary Combustion Turbines). [Rule 62-204.800(11)(b)81, F.A.C.; 40 CFR 63.6095(d)]

EQUIPMENT DESCRIPTION

3. Combustion Turbines: The permittee is authorized to install, tune, operate, and maintain two GE 7HA.02 CTs with a nominal generating capacity of 370 MW each. The CTs will be designed for operation in both simple-cycle and combined-cycle modes, with one shared steam turbine for combined-cycle operation. The design includes separate stacks for each turbine for simple-cycle and combined-cycle operation. [Application 0570039-119-AC; Design]

   {Permitting note: The permittee expects to operate these units only in simple-cycle mode for the first one to two years of operation and periodically thereafter.}

4. Heat Recovery Steam Generators (HRSGs): The permittee is authorized to install, operate and maintain two HRSGs and exhaust stacks. Each HRSG shall be designed to recover exhaust heat energy from one of the

two CTGs and deliver steam to the steam turbine-electrical generator (STG). [Application 0570039-119-AC; Design]

CONTROL TECHNOLOGY

5. Combustion Technology: The permittee shall install, operate, and maintain the dry-low NO_X (DLN) combustion system or its equivalent on each CT to control NO_X emissions from the CT. Prior to the initial emissions performance tests required for the CT, the DLN combustors or its equivalent and automated gas turbine control system shall be tuned to achieve sufficiently low NO_X values to meet the NO_X limits with the additional SCR control technology described below for combined-cycle operation, and without SCR for simple-cycle operation. Thereafter, the system shall be maintained and tuned in accordance with the manufacturer's recommendations or determined best practices. [Application 0570039-119-AC; Design]

6. Selective Catalytic Reduction: The permittee shall install, tune, operate, and maintain an SCR system to control NO_X emissions from each gas turbine for combined-cycle operation. The SCR system consists of an ammonia (NH_3) injection grid, catalyst, ammonia storage, monitoring and control system, electrical, piping and other ancillary equipment. The SCR system shall be designed, constructed, and operated to achieve the permitted levels for NO_X emissions for combined-cycle operation. The storage of ammonia shall comply with all applicable requirements of the Chemical Accident Prevention Provisions in 40 CFR 68. [Application 0570039-119-AC; Design]

PERFORMANCE RESTRICTIONS

7. Authorized Fuels: The combustion turbines shall fire only natural gas with a sulfur content of no more than 2 grains per 100 standard cubic feet (gr. sulfur/100 SCF). [Rule 62-210.200 (Potential to emit), F.A.C.; 40 CFR 60.4330(a)(2); Application 0570039-119-AC]

8. Hours of Operation:
   a. *Combined Cycle*: The hours of operation of the turbines in combined-cycle mode are not restricted (i.e., 8,760 hours per year).
   b. *Simple Cycle*: Each CTG may generate no more than 1,262,701 megawatt-hours (MWh) per rolling 12-month period in simple-cycle mode.

   {Permitting note: The limit on simple-cycle operation maintains the simple-cycle capacity factor below 41.9% on a 12-month rolling basis. The design efficiency of the turbine in simple-cycle operation for the purposes of Subpart TTTT is approximately 42%.}

   [Rule 62-210.200(PTE), F.A.C.]

9. Performance Curves: The permittee shall provide manufacturer's performance curves (or equations) that correct combustion turbine design heat input rating and operation for site conditions to the Permitting and Compliance Authorities within 45 days of completing the initial compliance testing. Operating data may be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Permitting and Compliance Authorities. [Rule 62-210.200(PTE), F.A.C.]

10. Tuning: The following methods of tuning, which are necessary to maintain proper operation of the combustion turbines, are authorized modes of operation:
    a. *DLN Tuning*: "DLN Tuning" means operating the gas turbine at intermittent loads throughout the full load range in order to adjust and tune the DLN combustion system. DLN tuning shall be conducted in accordance with manufacturer's recommendations (or industry standards). *{Permitting Note: For example, a major tuning session would occur after combustor change-out.}*
    b. *Other Tuning*: "Other tuning" shall mean any on-line adjustments necessary following maintenance work to allow the units to operate to manufacturers' recommendations or industry standards.

c. *Compressor Blade Drying*: Following a compressor blade wash in accordance with the manufacturer's recommendations (or industry standards), the permittee may operate a combustion turbine at very low loads to heat and dry the compressor blades. *{Permitting note: A combustion turbine would typically operate at approximately 10% of base load or less to perform compressor blade drying.}*

d. *Over Speed Trip Test*: As a periodic maintenance practice, the permittee may perform over speed trip tests in accordance with the manufacturer's recommendations (or industry standards). *{Permitting note: During this test, the gas turbine is operated at full speed, no load for approximately 5 to 6 hours. The unit is gradually accelerated to 110% speed (3960 rpm) to initiate a trip and then coasts down normally. Over speed trip tests are typically performed after a long outage or a major component overhaul.}*

{Permitting note: If emissions exceed an applicable Subpart KKKK standard occur during one of these tuning events, the excess emissions must be included in the excess emissions report required under Subpart KKKK and ***Specific Condition 23.b****.}*

[Application 0570039-119-AC; Rule 62-4.070(3), F.A.C.]

EMISSIONS AND TESTING REQUIREMENTS

11. Emission Standards: Emissions from each CT/HRSG shall not exceed the following standards:

Pollutant	Emission Standard [a]	Basis	Compliance Method [b]	Averaging Time
NO_X	15 ppm @ 15% O_2 (for CTG loads ≥ 75%) [c] and 96 ppm @ 15% O_2 (for CTG loads < 75%)	NSPS KKKK	CEMS	4-hour rolling average, for simple-cycle operation
				30-unit-operating-day rolling average, for combined-cycle operation [d]
GHGs (CO_2)	1,000 lb/MWh (gross) or 1,030 lb/MWh (net)	NSPS TTTT	CEMS or fuel-use monitoring [e] (40 CFR 75)	12-operating-month rolling avg. [f]
	120 lb/MMBtu			

a. NO_X concentration emission standards are expressed in parts per million by volume corrected to 15 percent oxygen, abbreviated as ppm @ 15% O_2.
b. CEMS means continuous emissions monitoring system.
c. "CTG" refers to operation of the combustion turbine generator.
d. The composite NSPS KKKK NO_X emission limit for periods during which multiple NO_X emission standards apply shall be determined in accordance with 40 CFR 60.4380(b)(3).
e. GHG monitoring shall be in accordance with Subpart TTTT and with 40 CFR 75, which include options for continuous monitoring of fuel use combined with the use of emissions factors for GHGs, or the use of a continuous emissions monitor for CO_2.
f. The NSPS Subpart TTTT GHG standard applies during all periods of operation.
   - The Subpart TTTT limit of 1,000 (or 1,030) lb/MWh applies if the CT supplies more than its design efficiency or 50 percent, whichever is less, times its potential electric output as net-electric sales on both a 12-operating month and 3-year rolling average basis. *{Permitting note: This is the most likely operating scenario for a base-load unit fueled primarily with natural gas.}*
   - The Subpart TTTT limit of 120 lb/MMBtu applies if the CT supplies its design efficiency or 50 percent, whichever is less, times its potential electric output or less as net-electric sales on either a 12-operating-month or a 3-year rolling average basis. *{Permitting note: This limit is most likely to apply to simple-cycle units and is unlikely to apply to a combined-cycle unit. The design efficiency of the turbine in simple-cycle operation for the purposes of Subpart TTTT is approximately 42%.}*

[Rules 62-4.070(3), 62-210.200, 62-297, F.A.C.; 40 CFR 60.4350(g) and (h); Table 1 to Subpart KKKK; and Table 2 to Subpart TTTT]

12. Test Methods: Required initial and annual compliance stack tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
3A	Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources
7E	Determination of NO_X Emissions - Instrumental
20	Determination of NO_X, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines

The methods are described in 40 CFR 60 and 63, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used for compliance testing unless prior written approval is received from the administrator of the Department's Office of Permitting and Compliance Section in accordance with an alternate sampling procedure pursuant to 62-297.620, F.A.C. [Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

13. Subpart KKKK Initial Compliance Demonstrations: The initial compliance demonstrations for NO_X shall be in accordance with Subpart KKKK. This subpart allows for the initial compliance demonstration to be performed as part of the relative accuracy test audit (RATA) for the NO_X CEMS. Each turbine shall be tested for initial compliance under simple-cycle operation. After the turbines are capable of operating in combined-cycle mode, each turbine shall be tested for initial compliance under combined-cycle operation. The initial compliance demonstration must be conducted within 60 days after achieving the maximum production rate of the turbine, but not later than 180 days after initial startup of the turbine. [Rules 62-4.070 and 62-297.310(8)(b), F.A.C., and 40 CFR 60.8 and 60.4405]

14. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(9), F.A.C.]

15. Notification Requirements: The permittee shall notify the Compliance Authority within one working day of discovering any emissions that demonstrate non-compliance for a given averaging period. [Rule 62-4.070, F.A.C.]

MONITORING REQUIREMENTS

16. CEMS: Subject to the following, the permittee shall install, calibrate, operate, and maintain a CEMS to measure and record the emissions of NO_X from the combustion turbines, for both simple-cycle and combined-cycle operation, in terms of the applicable standards. The monitoring system shall be installed, and functioning within the required performance specifications by the time of the initial compliance demonstration.

    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. The annual and required RATA tests required for the NO_X monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60.

    b. *Diluent Monitor*: The oxygen (O_2) or carbon dioxide (CO_2) content of the flue gas shall be monitored at the location where NO_X is monitored to correct the measured emissions rates to 15% O_2. If a CO_2 monitor is installed, the O_2 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.

    [Rules 62-4.070(3), F.A.C., and 40 CFR Part 75]

17. Monitoring of Operations: The permittee shall monitor and record the operating rate of each CT on a daily average basis, considering the number of hours of operation during each day (including the times of startup,

shutdown, malfunction, and DLN tuning or its equivalent). This shall be accomplished by monitoring daily rates of consumption and heat content of fuel in accordance with the provisions of 40 CFR 75 Appendix D. [Rule 62-4.070(3), F.A.C.]

18. NSPS Subpart TTTT Monitoring Requirements:
    a. The permittee shall install and certify monitoring systems required for quantifying CO_2 emissions from each CT in accordance with the applicable requirements in 40 CFR Part 60, Subpart TTTT, and 40 CFR Part 75. Consistent with 40 CFR 75.4(b), all applicable certification tests shall be completed within 180 calendar days after the date the unit commenced commercial operation (as defined in 40 CFR 72.2). Following initial certification, the CO_2 continuous measurement systems shall be quality assured in accordance with the applicable requirements in 40 CFR Part 75. The CO_2 continuous measurement system shall be capable of producing hourly determinations of CO_2 mass emissions in tons per hour.
    b. The permittee shall submit an initial monitoring plan that identifies the methodology by which CO_2 mass emissions will be continuously monitored. The permittee shall submit this monitoring plan no later than 21 days prior to the initial certification tests required in **Specific Condition 18.a**.
    c. The permittee shall provide notifications as specified in 40 CFR 75.61 for any event related to the continuous measurement of CO_2.

    [Application 0570039-119-AC; 40 CFR 60.5535]

CEMS AND CO_2 MONITOR REQUIREMENTS FOR ANNUAL EMISSIONS

19. CEMS and CO_2 Monitor Annual Emissions Requirement: The owner or operator shall use data from the NO_X CEMS and CO_2 monitoring system when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rule 62-210.370(3), F.A.C. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of startup and shutdown of the emissions unit. [Rules 62-210.200, and 62-210.370(3), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

20. Monthly Operations Summary: By the 15th calendar day of each month, the permittee shall record the following in a written or electronic log for the combustion turbines for the previous month of operation: fuel consumption, hours of operation, electricity (MWh) generated in simple-cycle mode, electricity (MWh) generated in combined-cycle mode, and the updated 12-month-rolling totals for each. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Compliance Authority. The fuel consumption shall be monitored in accordance with the provisions of 40 CFR 75 Appendix D. [Rule 62-4.070(3), F.A.C.]

21. Fuel Sulfur Records: Compliance with the fuel sulfur limit for natural gas shall be demonstrated by keeping reports obtained from the vendor indicating the average sulfur content of the natural gas being supplied from the pipeline for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM methods D4084-82, D4468-85, D5504-01, D6228-98 and D6667-01, D3246-81 or more recent versions. These methods shall be used to determine the fuel sulfur content in conjunction with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

22. Emissions Performance Test Reports: A report indicating the results of any required emissions performance test shall be submitted to the Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Compliance Authority to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(9)(c), F.A.C. and in Appendix D of this permit. [Rule 62-297.310(8), F.A.C.]

23. Periodic Emissions Reporting:

    a. *Malfunction Notification*: If emissions in excess of a standard (subject to the specified averaging period) occur due to malfunction, the permittee shall notify the Compliance Authority within one working day of the following: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Compliance Authority may request a written summary report of the incident.

    b. *Subpart KKKK Semi-Annual Report*: Within 30 days following the end of each semi-annual period, the permittee shall submit a report to the Compliance Authority summarizing periods of NO_X emissions in excess of the Subpart KKKK limit, following the NSPS format in 40 CFR 60.7(c), Subpart A. In addition, the report shall summarize the NO_X CEMS system monitor availability for the previous semi-annual period.

    c. *Subpart TTTT Quarterly Report*: After the unit has accumulated the first 12 months of operation, the permittee shall submit quarterly reports of CO_2 emissions in accordance with 40 CFR 60.5555, within 30 days following the end of each calendar quarter. Subpart TTTT requires electronic submission of these reports through the Emissions Collection and Monitoring Plan System (ECMPS) Client Tool.

    [Rules 62-4.130 and 62-210.700(5), F.A.C.; 40 CFR 60.7, 60.4375, and 60.5555]

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B. EU No. 057. CT 5 and 6 Emergency Diesel Engine (1000 kW).

This section of the permit addresses the following emissions unit.

EU No.	Emission Unit Description
057	CT 5 and 6 Emergency Diesel Engine (1000 kW)

NSPS AND NESHAP APPLICABILITY

1. NSPS, Subpart IIII Applicability: The emergency generator is a Stationary Compression Ignition Internal Combustion Engine (Stationary ICE) and is subject to 40 CFR 60, Subpart IIII. The applicant shall comply with 40 CFR 60, Subpart IIII only to the extent that the regulations apply to the emission unit and its operations (e.g. non-road, emergency, displacement, capacity and model year selected).

   [Rule 62-204.800(8)(b)80., F.A.C.; and 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines]

2. NESHAP, Subpart ZZZZ Applicability: The emergency generator is a Stationary Reciprocating Internal Combustion Engine (RICE) located at an area source of hazardous air pollutants emissions and is subject to 40 CFR 63, Subpart ZZZZ. Because the emergency generator is subject to regulation under 40 CFR 60, Subpart IIII, Subpart ZZZZ only requires that the emergency generator meet the requirements of 40 CFR 60, Subpart IIII. No further requirements of Subpart ZZZZ apply to the emergency generator.

   [Rule 62-204.800(11)(b)82., F.A.C.; and 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines]

EQUIPMENT SPECIFICATIONS

3. Equipment: The permittee is authorized to install, operate, and maintain one nominal 1,000 kW diesel emergency generator. [Rule 62-210.200(PTE), F.A.C.; and Application No. 0570039-119-AC]

EMISSIONS AND PERFORMANCE REQUIREMENTS

4. Fuel Specifications: The generator shall burn ULSD fuel oil with a sulfur content of 15 ppm (0.0015%) by weight or less. The fuel must have a minimum cetane index of 40 or must have a maximum aromatic content of 35 volume percent. [Rule 62-210.200 (PTE), F.A.C.; 40 CFR 60.4207(b) & 80.510(b)]

5. Restricted Operation:
   a. *Emergency Situations*: There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 60.4211(f)(1)]
   b. *Maintenance and Testing*: This unit is authorized to operate for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year. [40 CFR 60.4211(f)(2)(i)]
   c. *Non-Emergency Situations*: This emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph b., above. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 60.4211(f)(3)]

6. Emergency Generator Emission Limits: The emergency generator shall comply with the following emission limits and demonstrate compliance in accordance with the procedures given in NSPS 40 CFR 60, Subpart IIII the language of which is given in Appendix IIII. Manufacturer certification can be provided to the Compliance Authority in lieu of actual stack testing.

Emergency Generator (> 560 kilowatts)	**CO** (g/kW-hr)[1]	**PM** (g/kW-hr)	**NMHC[2]+NO_X** (g/kW-hr)	**Diesel Fuel[3]** (sulfur)
2007 and later	3.5	0.20	6.4	15 ppm

1. g/kW-hr means grams per kilowatt-hour.
2. NMHC means Non-Methane Hydrocarbons.
3. Nonroad diesel specification of 15 ppm is from 40 CFR part 80, subpart I – Motor Vehicle Diesel Fuel; Nonroad, Locomotive, and Marine Diesel Fuel; and ECA Marine Fuel.

[40 CFR 60.4205]

RECORDS AND REPORTS

7. Notification, Recordkeeping, and Reporting Requirements: The permittee shall adhere to the compliance testing and certification requirements listed in 40 CFR 60.4211 and maintain records demonstrating fuel usage and quality. [40 CFR 60.4211]

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C. EU No. 062. Mechanical Draft Cooling Tower.

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
062	Mechanical Draft Cooling Tower

{Permitting note: After installation of the cooling tower and confirmation of the design drift rate, the cooling tower will be considered an insignificant activity in the facility's Title V air operation permit.}

EQUIPMENT SPECIFICATIONS

1. Mechanical Draft Cooling Tower: The permittee is authorized to install one mechanical draft cooling tower with the following nominal design characteristics: two cells; circulating water flow rate of 6,000 gallons per minute per cell; and a drift rate of no more than 0.001%. [Rule 62-210.200(PTE), F.A.C.; Application No. 0570039-119-AC]

EMISSIONS AND PERFORMANCE REQUIREMENTS

2. Drift Rate: Within 60 days of commencing commercial operation, the permittee shall submit certification to the Permitting and Compliance Authorities that the cooling tower was constructed to achieve the specified drift rate of no more than 0.001 percent of the circulating water flow rate. [Rule 62-4.070, F.A.C.]

HOURS OF OPERATION

3. Hours of Operation: The hours of operation of are not limited (8,760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

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