

US EPA ARCHIVE DOCUMENT

**PREVENTION OF SIGNIFICANT DETERIORATION PERMIT
FOR GREENHOUSE GAS EMISSIONS
ISSUED PURSUANT TO THE REQUIREMENTS AT 40 CFR § 52.21**

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6

PSD PERMIT NUMBER: PSD-TX-1364-GHG

PERMITTEE: FGE Power, LLC
21 Waterway Avenue, Suite 300
The Woodlands, TX 77380


FACILITY NAME: FGE Texas I, LLC and FGE Texas II, LLC
FGE Texas Project

FACILITY LOCATION: 3.5 miles SSW of IH20 and Main Street
Westbrook, TX 79565

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part C (42 U.S.C. § 7470, *et seq.*), and the Code of Federal Regulations (CFR) Title 40, Section 52.21, and the Federal Implementation Plan at 40 CFR § 52.2305 (effective May 1, 2011 and published at 76 FR 25178), the U.S. Environmental Protection Agency, Region 6 is issuing a *Prevention of Significant Deterioration* (PSD) permit to FGE Power, LLC (FGE) for Greenhouse Gas (GHG) emissions. The permit applies to the construction of a new natural gas fired combined cycle electric generating plant known as the FGE Texas Project (FGETP) to be located near Westbrook, Mitchell County, Texas.

FGE is authorized to construct a new natural gas fired combined cycle electric generating plant as described herein, in accordance with the permit application (and plans submitted with the permit application), the federal PSD regulations at 40 CFR § 52.21, and other terms and conditions set forth in this PSD permit in conjunction with the corresponding Texas Commission on Environmental Quality (TCEQ) PSD permit No. PSDTX1364. Failure to comply with any condition or term set forth in this PSD permit may result in enforcement action pursuant to Section 113 of the Clean Air Act (CAA). This PSD permit does not relieve FGE of the responsibility to comply with any other applicable provisions of the CAA (including applicable implementing regulations in 40 CFR Parts 51, 52, 60, 61, 72 through 75, and 98) or other federal and state requirements (including the state PSD program that remains under approval at 40 CFR § 52.2303).

In accordance with 40 CFR § 124.15(b)(3), this PSD permit becomes effective immediately upon issuance of this final decision.


Wren Stenger, Director
Multimedia Planning and Permitting Division

4/28/14
Date

FGE Power, LLC (PSD-TX-1364-GHG)
Prevention of Significant Deterioration Permit
For Greenhouse Gas Emissions
Final Permit Conditions

PROJECT DESCRIPTION

FGE is proposing to construct a new combined cycle electric generating plant (FGETP) in Mitchell County, Texas. FGETP will generate 1,620 megawatts (MW) of gross electrical power near the City of Westbrook. FGETP will consist of the following sources of GHG emissions:

- Four natural gas-fired combustion turbines equipped with lean pre-mix low-NO_x combustors;
- Four natural gas-fired duct burner systems;
- Natural gas piping and metering;
- Two diesel fuel-fired emergency electrical generator engines;
- Two diesel fuel-fired fire water pump engines; and
- Electrical equipment insulated with sulfur hexafluoride (SF₆).

EQUIPMENT LIST

The following devices are subject to this GHG PSD permit.

| FIN | EPN | Description |
|------------------------------|------------------------------|---|
| GT-1 GT-2 GT-3 GT-4 | GT-1 GT-2 GT-3 GT-4 | 4 Natural Gas-Fired Combined Cycle Combustion Turbines (Combustion Units). The combustion turbines are equipped with duct burner fired heat recovery steam generators (HRSGs), selective catalytic reduction (SCR), and oxidation catalyst. |
| FWP-1 FWP-2 | FWP-1 FWP-2 | 2 Fire Water Pumps (Combustion Unit). Each 389 horsepower (hp) Diesel Fired Fire Water Pump is rated at 2.7 MMBtu/hr and limited to 52 hours of operation per year for non-emergency activities. |
| EG-1 EG-2 | EG-1 EG-2 | 2 Emergency Generators (Combustion Unit). Each 900 horsepower (hp) Diesel Fired Emergency Generator is rated at 6.3 MMBtu/hr and limited to 52 hours of operation per year for non-emergency activities. |
| FUG-SF6 | FUG-SF6 | SF ₆ Insulated Electrical Equipment (i.e., circuit breakers) with 462 lb SF ₆ capacity. |
| FUG-NGAS | FUG-NGAS | Process Fugitives. |

I. GENERAL PERMIT CONDITIONS

A. PERMIT EXPIRATION

As provided in 40 CFR § 52.21(r), this PSD permit shall become invalid if construction:

1. is not commenced (as defined in 40 CFR § 52.21(b)(9)) within 18 months after the approval takes effect; or
2. is discontinued for a period of 18 months or more; or
3. is not completed within a reasonable time.

Pursuant to 40 CFR § 52.21(r), EPA may extend the 18-month period upon a written satisfactory showing that an extension is justified.

B. PERMIT NOTIFICATION REQUIREMENTS

Permittee shall notify EPA Region 6 in writing or by electronic mail of the:

1. date construction is commenced, postmarked within 30 days of such date;
 2. actual date of initial startup, as defined in 40 CFR § 60.2, postmarked within 15 days of such date; and
 3. date upon which initial performance tests will commence, in accordance with the provisions of Section VI, postmarked not less than 30 days prior to such date.
- Notification may be provided with the submittal of the performance test protocol required pursuant to Condition VI.C.

C. FACILITY OPERATION

At all times, including periods of startup, shutdown, and maintenance (MSS), Permittee shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to EPA, which may include, but is not limited to, monitoring results, review of operating maintenance procedures and inspection of the facility.

D. MALFUNCTION REPORTING

1. Permittee shall notify EPA by mail within 48 hours following the discovery of any failure of air pollution control equipment, process equipment, or of a process to

operate in a normal manner, which results in an increase in GHG emissions above the allowable emission limits stated in Sections II and III of this permit.

2. Within 10 days of the restoration of normal operations after any failure described in I.D.1., Permittee shall provide a written supplement to the initial notification that includes a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Sections II and III, and the methods utilized to mitigate emissions and restore normal operations.
3. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or any law or regulation such malfunction may cause.

E. RIGHT OF ENTRY

EPA authorized representatives, upon the presentation of credentials, shall be permitted:

1. to enter the premises where the facility is located or where any records are required to be kept under the terms and conditions of this PSD permit;
2. during normal business hours, to have access to and to copy any records required to be kept under the terms and conditions of this PSD permit;
3. to inspect any equipment, operation, or method subject to requirements in this PSD permit; and
4. to sample materials and emissions from the source(s).

F. TRANSFER OF OWNERSHIP

In the event of any changes in control or ownership of the facilities to be constructed, this PSD permit shall be binding on all subsequent owners and operators. Permittee shall notify the succeeding owner and operator of the existence of the PSD permit and its conditions by letter, and a copy of the letter shall be forwarded to EPA Region 6 within 30 days of the letter signature.

G. SEVERABILITY

The provisions of this PSD permit are severable, and, if any provision of the PSD permit is held invalid, the remainder of this PSD permit shall not be affected.

H. ADHERENCE TO APPLICATION AND COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS

Permittee shall construct this project in compliance with this PSD permit, the application on which this permit is based, the TCEQ PSD Permit Number PSDTX1364 (when issued) and all other applicable federal, state, and local air quality regulations. This PSD permit does not release the Permittee from any liability for compliance with other applicable federal, state and local environmental laws and regulations, including the Clean Air Act.

I. ACRONYMS AND ABBREVIATIONS

| | |
|-------------------|---|
| BACT | Best Available Control Technology |
| BSCFD | Billion Standard Cubic Feet per Day |
| CAA | Clean Air Act |
| CC | Carbon Content |
| CCS | Carbon Capture and Sequestration |
| CEMS | Continuous Emissions Monitoring System |
| CFR | Code of Federal Regulations |
| CH ₄ | Methane |
| CO ₂ | Carbon Dioxide |
| CO ₂ e | Carbon Dioxide Equivalent |
| CT | Combustion Turbine |
| CTG | Combustion Turbine Generator |
| DLNB | Dry Low-NO _x Burner |
| dscf | Dry Standard Cubic Foot |
| EF | Emission Factor |
| EPN | Emission Point Number |
| FIN | Facility Identification Number |
| FR | Federal Register |
| GHG | Greenhouse Gas |
| gr | Grains |
| GWP | Global Warming Potential |
| HHV | High Heating Value |
| hr | Hour |
| HRSG | Heat Recovery Steam Generator |
| LAER | Lowest Achievable Emission Rate |
| lb | Pound |
| LDAR | Leak Detection and Repair |
| MMBtu | Million British Thermal Units |
| MSS | Maintenance, Start-up and Shutdown |
| NNSR | Nonattainment New Source Review |
| N ₂ O | Nitrous Oxides |
| NO _x | Nitrogen Oxides |
| NSPS | New Source Performance Standards |
| PSD | Prevention of Significant Deterioration |
| QA/QC | Quality Assurance and/or Quality Control |
| SCFH | Standard Cubic Feet per Hour |
| SCR | Selective Catalytic Reduction |
| SF ₆ | Sulfur Hexafluoride |
| TAC | Texas Administrative Code |
| TCEQ | Texas Commission on Environmental Quality |
| TPY | Tons per Year |
| USC | United States Code |
| VOC | Volatile Organic Compound |

II. Annual Emission Limits

Annual emissions, in tons per year (TPY) on a 12-month rolling total, shall not exceed the following:

Table 1. Annual Emission Limits¹

| FIN | EPN | Description | GHG Mass Basis | | TPY CO ₂ e ³ | BACT Requirements |
|-------|-------|-------------------------|------------------|--|---------------------------------------|---|
| | | | | TPY ² | | |
| GT-1 | GT-1 | CT Combined Cycle | CO ₂ | 1,459,718 | 1,472,228 | 889 lb CO ₂ /MWh (gross) on a 12-month rolling average per turbine. Special Condition III.A.1. and Table 2. Startup Emissions – 48 tons CO ₂ /hour per turbine and 1,735 lbs CH ₄ /event per turbine. Shutdown Emissions - 192 tons CO ₂ /hour per turbine and 510 lbs CH ₄ /event per turbine. MSS Emissions - Special Condition III.A.4. and Table 3. |
| | | | CH ₄ | 469.44 | | |
| | | | N ₂ O | 2.6 | | |
| GT-2 | GT-2 | CT Combined Cycle | CO ₂ | 1,459,718 | 1,472,228 | |
| | | | CH ₄ | 469.44 | | |
| | | | N ₂ O | 2.6 | | |
| GT-3 | GT-3 | CT Combined Cycle | CO ₂ | 1,459,718 | 1,472,228 | |
| | | | CH ₄ | 469.44 | | |
| | | | N ₂ O | 2.6 | | |
| GT-4 | GT-4 | CT Combined Cycle | CO ₂ | 1,459,718 | 1,472,228 | |
| | | | CH ₄ | 469.44 | | |
| | | | N ₂ O | 2.6 | | |
| FWP-1 | FWP-1 | Firewater Pump | CO ₂ | 11.55 | 12 | |
| | | | CH ₄ | No Emission Limit Established ⁴ | | |
| | | | N ₂ O | No Emission Limit Established ⁴ | | |
| FWP-2 | FWP-2 | Firewater Pump | CO ₂ | 11.55 | 12 | |
| | | | CH ₄ | No Emission Limit Established ⁴ | | |
| | | | N ₂ O | No Emission Limit Established ⁴ | | |
| EG-1 | EG-1 | Emergency Generator | CO ₂ | 26.71 | 27 | |
| | | | CH ₄ | No Emission Limit Established ⁴ | | |
| | | | N ₂ O | No Emission Limit Established ⁴ | | |

| FIN | EPN | Description | GHG Mass Basis | | TPY CO ₂ e ³ | BACT Requirements |
|---------------------------|---------------------|------------------------------|------------------|--|--|---|
| | | | | TPY ² | | |
| EG-2 | EG-2 | Emergency Generator | CO ₂ | 26.71 | 27 | Good Combustion and Operating Practices Limit to 52 hr/yr - Special Condition III.B.2. |
| | | | CH ₄ | No Emission Limit Established ⁴ | | |
| | | | N ₂ O | No Emission Limit Established ⁴ | | |
| FUG-NGAS | FUG-NGAS | Natural Gas Fugitives | CO ₂ | No Emission Limit Established ⁵ | No Emission Limit Established ⁵ | AVO monitoring - Special Condition III.C.1. |
| | | | CH ₄ | No Emission Limit Established ⁵ | | |
| FUG-SF ₆ | FUG-SF ₆ | Electric Equipment Fugitives | SF ₆ | No Emission Limit Established ⁶ | No Emission Limit Established ⁶ | Instrument monitoring and alarm system - Special Condition III.C.3. |
| Totals⁷ | | | CO ₂ | 5,838,948 | 5,889,434 | |
| | | | CH ₄ | 1,894 | | |
| | | | N ₂ O | 10.40 | | |
| | | | SF ₆ | 0.0012 | | |

1. Compliance with the annual emission limits (tons per year) is based on a 12-month rolling total, to be updated the last day of the following month.
2. The TPY GHG Mass Basis values are for informational purposes only and do not constitute an emission limit.
3. The TPY emission limits specified in this table shall not to be exceeded for this facility and include emissions from the facility during all operations including MSS activities.
4. Global Warming Potentials (GWP): CH₄ = 25, N₂O = 298, SF₆ = 22,800
5. These values are less than 0.01 TPY with appropriate rounding. The emission limit will be a design/work practice standard as specified in the permit.
6. Fugitive process emissions from EPN FUG are estimated to be 16.64 TPY of CH₄, 0.08 TPY CO₂, and 418 TPY CO₂e. Fugitive process emission totals are for information only and do not constitute an emission limit. The emission limit will be a design/work practice standard as specified in the permit.
7. SF₆ emissions from EPN FUG-SF₆ are estimated to be 0.0012 TPY SF₆ and 26.4 TPY CO₂e. Fugitive process emission totals are for information only and do not constitute an emission limit. The emission limit will be a design/work practice standard as specified in the permit.
8. The total emissions for CH₄ and CO₂e include the PTE for process fugitive emissions of CH₄. Total emissions are for information only and do not constitute an emission limit.

III. SPECIAL PERMIT CONDITIONS

A. Requirements for Combustion Turbine Generators and Heat Recovery Steam Generators (EPNs: GT-1, GT-2, GT-3, and GT-4)

1. Combustion Turbine Generator BACT Emission Limits

Table 2. BACT Emission Limits for Combustion Turbines on a 12-month rolling average

| Turbine Model | Gross Heat Rate ¹ (Btu/kWh) (HHV) | Output Based Emission Limit gross ¹ (lb CO ₂ /MWh) |
|---------------|---|--|
| Alstom GT24 | 7,625 | 889 |

¹These limits apply with and without duct burner firing.

- a. Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days of the date of initial startup of the combustion turbine generators, the Permittee shall perform an initial emission test for CO₂ and use emission factors from 40 CFR Part 98. The Permittee shall ensure that GHG emissions from the Combustion Turbine Generators (CTGs) and Heat Recovery Steam Generators (HRSGs) (EPNs: GT-1, GT-2, GT-3, and GT-4) into the atmosphere do not exceed the limits in lbs CO₂/MWh (gross) from Table 2 during the test. To determine compliance with the BACT emission limit, the Permittee shall calculate the limit based on the measured hourly energy output (MWh) (gross) while the CTG is operating at or above 90% of its design capacity with duct burner firing, and the results shall be corrected to ISO conditions (59 °F, 14.7 psia, and 67% humidity). If the CTG does not meet the design emissions limit, then the Permittee shall remedy the CTG's failure to meet the design emissions limit and will make corrections to the CTG and only combust fuel to perform required tuning and modifications necessary to demonstrate compliance.
- b. Upon demonstration that the CTGs are in compliance with the design emissions limit via an emission test, the Permittee shall not discharge or cause the discharge of emissions from the CTGs and HRSGs into the atmosphere in excess of the limits in lb CO₂/MWh (gross) on a 12-month rolling average and shall not discharge or cause the discharge of emissions into the atmosphere in excess of the limits in tons of CO₂e on a 12-month rolling total as listed in Table 1. To determine the BACT emission limit, the Permittee shall calculate the limit based on the measured net hourly energy output (MWh gross) and the tons of CO₂ using the CO₂ emissions CEMS data.

- c. Upon initial demonstration that the CTGs comply with the emissions limit via emission tests, the Permittee shall not exceed the CTG net heat rate Btu/kWh (HHV) from Table 2 on a 12-month rolling average. To determine this limit, the Permittee shall calculate the average heat rate on a hourly basis consistent with equation F-20 and procedure provided in 40 CFR Part 75, Appendix F § 5.5.2 and the measured net hourly energy output (kWh). Sum the hourly heat input for the operating month and sum the hourly gross output for the operating month. Divide the total heat input for the month by the total gross output for the month. Add the quotient to the sum of the quotients of the previous 11 operating months and divide by 12 to determine the 12-operating month rolling average.
- d. The Permittee shall determine the hourly CO₂ emission rate by installing and operating a volumetric stack gas flow monitor or volumetric stack gas flow can be determined using those procedures of 40 CFR 75, Appendix D and associated data acquisition and handling system in accordance with the CO₂ CEMS system provided in 40 CFR § 75.10(a)(3) and (a)(5).
- e. The 12-month rolling average BACT emission limitations in this Special Condition do not include periods of MSS.

2. Monitoring of CO₂ Emissions for EPNs: GT-1, GT-2, GT-3, and GT-4

- a. The Permittee shall determine the CO₂ hourly emission rate and CO₂ mass emissions for the CTGs and HRSGs using a CO₂ CEMS and volumetric stack gas flow monitoring system or volumetric stack gas flow can be determined using those procedures of 40 CFR 75, Appendix D with an automated data acquisition and handling system for measuring and recording CO₂ emissions discharged to the atmosphere.
- b. In accordance with 40 CFR Part 75, Appendix D and 40 CFR Part 60, the Permittee shall ensure that all required fuel flow meters are installed, a periodic schedule for GCV fuel sampling is initiated and all certification tests are completed on or before the earlier of 90 unit operating days or 180 calendar days after the date the unit commences commercial operation (as defined in 40 CFR § 72.2).
- c. The Permittee shall ensure compliance with the specifications and test procedures for fuel flow meter and/or CO₂ emission monitoring system at stationary sources, 40 CFR Part 75 and 40 CFR Part 60.
- d. The Permittee shall meet the appropriate quality assurance requirements specified in 40 CFR Part 75, Appendixes D and F and 40 CFR Part 60 for the fuel flow meter and/or CO₂ emission monitoring system.

3. Combustion Turbine Work Practice and Operational Requirements

- a. The Permittee shall calculate the amount of CO₂ emitted from the CTs from combustion in tons per hour (tons/hr) on a 12-month rolling total, and converted to tons per year (tpy) based on CO₂ CEMS data.
- b. The Permittee shall calculate the CH₄ and N₂O emissions on a 12-month rolling total. The Permittee shall determine compliance with the CH₄ and N₂O emissions limits contained in Section II using the default CH₄ and N₂O emission factors contained in Table C-2 of 40 CFR Part 98 and the measured actual hourly heat input (HHV).
- c. The Permittee shall calculate the CO₂e emissions on a 12-month rolling total, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1.
- d. Fuel for the CTs shall be limited to natural gas with a fuel sulfur content of up to 1 grain of sulfur per 100 dry standard cubic feet (gr S/100 dscf). The gross calorific value of the fuel shall be determined monthly by the procedures contained in 40 CFR Part 75, Appendix F, § 5.5.2, and records shall be maintained of the monthly fuel gross calorific value for a period of five years. Upon request, the Permittee shall provide a sample and/or analysis of the fuel-fired in the CTs or shall allow a sample to be taken by EPA for analysis.
- e. The flow rate of the fuel combusted in CTs shall be measured and recorded using an inline flow meter and automatically record the data with a data acquisition and handling system.
- f. The Permittee shall measure and record the energy output (MWh net/gross) on an hourly basis.
- g. On or before the date of initial performance test required by 40 CFR §60.8, and thereafter, the Permittee shall install, and continuously operate, and maintain the HRSGs equipped with a SCR so emissions are at or below the emissions limits specified in this permit and TCEQ permit PSDTX1364.
- h. The Permittee shall perform an annual compliance test, at or above 90% of maximum load operations for the atmospheric conditions which exist during testing, corrected to ISO conditions to demonstrate compliance with the proposed heat rate in Table 2.
- i. On or after initial performance testing, the Permittee shall use the CTGs, HRSGs, Steam Turbines and Plant-wide energy efficiency processes, work practices and designs as represented in the permit application.

4. Requirements during Combustion Turbine Startup and Shutdown

- a. The Permittee shall minimize emissions during start-up and shutdown activities by operating and maintaining the facility and associated air pollution control

equipment in accordance with good air pollution control practices, safe operating practices, and protection of the facility.

- b. Emissions during startup and shutdown activities shall be minimized by limiting the duration of operation in startup and shutdown mode as follows:
 - i. A startup is defined as the period that begins when fuel is first fired. A planned startup for each combustion turbine is limited to 180 minutes (cold startup) per event.
 - ii. A planned shutdown is defined as the period that begins when the gas turbine passes below 50% of full load and fuel flow ceases. The shutdown shall not exceed 60 minutes.
 - iii. Startup and shutdown activities are limited to 1,460 hours per year per turbine on a 12-month rolling total basis.
- c. Startup and shutdown emissions shall not exceed the BACT emission and maximum heat inputs limits in Table 3.

Table 3. Startup/Shutdown, Emission, and Heat Input Limitations (per turbine)

| Alstom GT24 | BACT Emission Limit (tons CO ₂ /hr) | BACT Emission Limit (lb CH ₄ per Event) | Maximum Heat Input (MMBtu/hr) |
|-------------|---|--|----------------------------------|
| Startup | 48 | 1,735 | 820.0 |
| Shutdown | 192 | 510 | 2,236.8 |

- d. Permittee must record the time, date, fuel heat input (HHV) in MMBtu/hr and duration of each startup and shutdown event in order to calculate total CO₂e emissions. The records must include hourly CO₂ emission levels as measured by the CO₂ CEMS with volumetric stack gas flowrate, and the calculations based on the actual heat input for the N₂O, and CH₄ emissions during each startup and shutdown event based on the equations represented in the permit application. These records must be kept for five years following the date of such event.

B. Requirements for the Fire Water Pumps (EPNs: FWP-1 and FWP-2) and Emergency Generators (EPNs: EG-1 and EG-2)

1. The Fire Water Pumps and Emergency Generators are authorized to fire diesel fuel containing no more than 0.0015 percent sulfur by weight. Upon request, Permittee shall provide a sample and/or an analysis of the fuel fired in the emission units or shall allow a sample to be taken by EPA for analysis to demonstrate the percent sulfur of the fuel.
2. The Fire Water Pump and Emergency Generator are limited to 52 hours of non-emergency operation per year for each unit and a heat input value of 2.7 MMBtu/hr

and 6.3 MMBtu/hr, respectively. Compliance with the 52 hour non-emergency operational requirement is determined on a 12-month rolling total basis.

3. The Fire Water Pumps and Emergency Generators shall meet the applicable monitoring and recordkeeping requirements as required in 40 CFR Part 60, Subpart III, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
4. The Permittee shall install and maintain an operational non-resettable elapsed time meter for the Fire Water Pump and Emergency Generator.
5. The Permittee shall maintain a file of all records, data measurements, reports and documents related to the operation of the Fire Water Pumps and Emergency Generator, including, but not limited to, the following: all records or reports pertaining to maintenance performed, and all records relating to performance tests and monitoring of the emergency generator and fire pump equipment; for each diesel fuel oil delivery, documents from the fuel supplier certifying compliance with the fuel sulfur content limit of Special Condition III.B.1., fuel heat input values and hours of operation required in Special Condition III.B.2.; and all other information required by this permit recorded in a permanent form suitable for inspection. The file must be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records.

C. Requirements for Fugitive Emission Sources (FUG-NGAS and FUG-SF6)

1. The Permittee shall implement an auditory/visual/olfactory (AVO) method for detecting leaking from natural gas piping components, and make observations on a daily basis.
2. For emission unit FUG-SF6, SF₆ emissions shall be calculated annually (calendar year) in accordance with the mass balance approach provided in equation DD-1 of the Mandatory Greenhouse Gas Reporting rules for Electrical Transmission and Distribution Equipment Use, 40 CFR Part 98, Subpart DD. Permittee shall not exceed insulated circuit breaker SF₆ capacity of 462 lbs.
3. Permittee shall equip the circuit breakers with a low pressure alarm and a low pressure lockout. The SF₆ leak detection system shall be able to detect a leak of at least 1 lb per year.
4. Permittee shall maintain a file of all records, data measurements, reports and documents related to the fugitive emission sources including, but not limited to, the following: all records or reports pertaining to maintenance performed, all records relating to compliance with the Monitoring and Quality Assurance and Quality Control (QA/QC) procedures outlined in 40 CFR § 98.304.

D. Continuous Emissions Monitoring Systems (CEMS)

1. The Permittee shall ensure that all required CO₂ monitoring systems/equipment is installed at first fire and all certification tests are completed on or before the earlier of 90 unit operating days or 180 calendar days after the date the unit commences operation.
2. The Permittee shall ensure compliance with the specifications and test procedures for CO₂ emission monitoring system at stationary sources, 40 CFR Part 75, or 40 CFR Part 60, Appendix B, Performance Specification numbers 1 through 9, as applicable.
3. The Permittee shall meet either the appropriate quality assurance requirements specified in 40 CFR Part 60, Appendix F for the CO₂ emission monitoring system, or the quarterly linearity tests in 40 CFR Part 60, Appendix F.

IV. RECORDKEEPING AND REPORTING

1. In order to demonstrate compliance with the GHG emission limits in Table 1, the Permittee will monitor the following parameters and summarize the data on a calendar month basis.
 - a. Operating hours for all air emission sources;
 - b. The natural gas fuel usage for all combustion sources, using continuous fuel flow monitors (a group of equipment can utilize a common fuel flow meter, as long as actual fuel usage is allocated to the individual equipment based upon actual operating hours and maximum firing rate); and
 - c. Annual fuel sampling for natural gas.
2. The Permittee shall implement an AVO program and keep records of the monitoring results, as well as the repair and maintenance records.
3. The Permittee shall maintain all records, data, measurements, reports, and documents related to the operation of the facility, including, but not limited to, the following: all records or reports pertaining to significant maintenance performed on any system or device at the facility; duration of startup and shutdown; the initial startup period for the emission units; pollution control units; malfunctions; all records relating to performance tests, calibrations, checks, and monitoring of combustion equipment; duration of an inoperative monitoring device and emission units with the required corresponding emission data; and all other information required by this permit recorded in a permanent form suitable for inspection. The records must be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records.
4. The Permittee shall maintain records of all GHG emission units and CO₂ emission certification tests and monitoring and compliance information required by this permit.
5. The Permittee shall maintain records and submit a written report of all GHG excess emissions to EPA semi-annually, except when more frequent reporting is specifically

required by an applicable subpart or the Administrator or authorized representative, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The report is due on the 30th day following the end of each semi-annual period and shall include the following:

- a. Time intervals, data and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;
 - b. Applicable time and date of each period during which the monitoring equipment was inoperative (monitoring down-time);
 - c. A statement in the report of a negative declaration, that is, a statement when no excess emissions occurred or when the monitoring equipment has not been inoperative, repaired or adjusted; and
 - d. Any failure to conduct any required source testing, monitoring, or other compliance activities.
6. Excess emissions shall be defined as any period in which the facility emissions exceed a maximum emission limit set forth in this permit.
 7. Excess emissions indicated by GHG emission source certification testing or compliance monitoring shall be considered violations of the applicable emission limit for the purpose of this permit.
 8. All records required by this PSD permit shall be retained and remain accessible for not less than 5 years following the date of such measurements, maintenance, and reporting.

V. SHAKEDOWN PERIODS

The combustion turbine emission limits and requirements in conditions II., III.A.1., and III.B. shall not apply during combustion shakedown periods. Shakedown is defined as the period beginning with initial startup and ending no later than initial performance testing, during which the Permittee conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. The shakedown period shall not exceed the time period for performance testing as specified in 40 CFR § 60.8. The requirements of general permit condition I.C. of this permit shall apply at all times.

VI. PERFORMANCE TESTING

- A. The Permittee shall perform stack sampling and other testing to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the stacks of the CTGs and HRSGs (EPNs: GT-1, GT-2, GT-3, and GT-4) to determine the initial compliance with the CO₂ emission limits established in this permit. Sampling shall be conducted in accordance with 40 CFR § 60.8 and EPA Method 3a or 3b for the concentration of CO₂.

1. Multiply the CO₂ hourly average emission rate determined under maximum operating test conditions by 8,760 hours for the combustion turbines.
 2. If the above calculated CO₂ emission total does not exceed the tons per year (TPY) specified on Table 1, no compliance strategy needs to be developed. If the above calculated CO₂ emission total exceeds the TPY specified in Table 1, the facility shall:
 - a. Document the potential to exceed in the test report; and
 - b. Explain within the report how the facility will assure compliance with the CO₂ emission limit listed in Table 1.
- B.** Other than within the Shakedown Period described under Section V of this permit, within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility, performance tests(s) must be conducted and a written report of the performance testing results furnished to EPA. Additional sampling may be required by TCEQ or EPA.
- C.** Permittee shall submit a performance test protocol to EPA no later than 30 days prior to the test to allow review of the test plan and to arrange for an EPA observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.
- D.** The turbine shall be tested at or above 90% of maximum load operations for the atmospheric conditions which exist during testing. The duct burners shall be tested at their maximum firing rate within the mechanical limits of the equipment for the atmospheric conditions which exists during the performance test while the turbine is operating as close to base load as possible. The tested turbine load shall be identified in the sampling report. The permit holder shall present in the performance test protocol the manner in which stack sampling will be executed in order to demonstrate compliance with the emissions limits contained in Section II.
- E.** Performance tests must be conducted under such conditions to ensure representative performance of the affected facility. The owner or operator must make available to EPA such records as may be necessary to determine the conditions of the performance tests.
- F.** The owner or operator shall provide, or cause to be provided, performance testing facilities as follows:
1. Sampling ports adequate for test methods applicable to this facility,
 2. Safe sampling platform(s),
 3. Safe access to sampling platform(s), and
 4. Utilities for sampling and testing equipment.
- G.** Unless otherwise specified, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For purposes of determining compliance

with an applicable standard, the arithmetic mean of the results of the three runs shall apply.

- H. Emissions testing, as outlined above, shall be performed on an annual basis, beginning one year after the initial performance test is completed.

VII. Agency Notifications

Permittee shall submit GHG permit applications, permit amendments, and other applicable permit information to:

Multimedia Planning and Permitting Division
EPA Region 6
1445 Ross Avenue (6 PD-R)
Dallas, TX 75202
Email: Group R6AirPermits@EPA.gov

Permittee shall submit a copy of all compliance and enforcement correspondence as required by this Approval to Construct to:

Compliance Assurance and Enforcement Division
EPA Region 6
1445 Ross Avenue (6EN)
Dallas, TX 75202