

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-1348-GHG

**PERMITTEE:** Victoria WLE, L.P.

**FACILITY NAME:** Victoria Power Station

**MAILING ADDRESS:** 919 Milam Street, Suite 2300  
Houston, TX 77002

**FACILITY LOCATION:** 1205 South Bottom Street  
Victoria, TX 77901

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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 Victoria WLE, L.P. for Greenhouse Gas (GHG) emissions. The Permit authorizes a major modification that adds natural gas combined cycle generating capacity to the existing Victoria Power Station (VPS) plant.

VPS is authorized to expand its existing natural gas fired combined cycle electric generating facility 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. PSD-TX-1348. 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 VPS 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), this PSD Permit becomes effective 30 days after the service of notice of this final decision unless review is requested on the permit pursuant to 40 CFR §124.19.

  
for Wren Stenger, Director  
Multimedia Planning and Permitting Division

10/8/14  
Date

**Victoria WLE, L.P. (PSD-TX-1348-GHG)  
Prevention of Significant Deterioration Permit  
For Greenhouse Gas Emissions  
Permit Conditions**

**PROJECT DESCRIPTION**

Pursuant to the provisions of this permit, Victoria WLE, L.P. (Victoria) will carry out a major modification at the existing Victoria Power Station (VPS) located in Victoria, Victoria County, Texas. The existing VPS is a natural gas-fired combined cycle base load power generating station that currently operates in a 1 by 1 by 1 (1 x 1 x 1) configuration (one combustion turbine, one HRSG and one steam turbine) with a gas turbine (M501F), heat recovery steam generator (HRSG) equipped with duct burners and a steam generator (General Electric D5). The project would add a new gas turbine (GE.7FA.04 or equivalent) and HRSG equipped with duct burners. After these additions, the facility will be able to operate in a natural gas-fired combined cycle generating unit in a 2 by 2 by 1 (2 x 2 x 1) configuration (two combustion turbines, two HRSG and one steam turbine) that utilizes the existing non-modified M501F combustion turbine and HRSG and the existing non-modified steam turbine. The VPS plant is authorized to operate in a 1 x 1 x 1 combined cycle configuration with the new gas turbine and new HRSG, and it retains ability to operate in its original 1 x 1 x 1 combined cycle configuration without an assigned GHG BACT limit. VPS operations covered by the permit will consist of the following sources of GHG emissions:

- Natural Gas-Fired Combined Cycle Combustion Turbine (GE.7FA.04 or equivalent). The combustion turbine is equipped with a heat recovery steam generator (HRSG) and duct burners, dry low NOx (DLN) combustion system, and selective catalytic reduction (SCR), and oxidation catalyst;
- Process Fugitives; and,
- Electrical equipment insulated with sulfur hexafluoride (SF<sub>6</sub>).

**EQUIPMENT LIST**

The following devices are subject to this GHG PSD permit:

FIN	EPN	Description
VIC10	VIC10	Natural Gas-Fired Combined Cycle Combustion Turbine (GE.7FA.04 or equivalent). The combustion turbine is equipped with heat recovery steam generator (HRSG) and duct burners, dry low NOx (DLN) combustion system, and selective catalytic reduction (SCR), and oxidation catalyst.



VIC10-FUG-NGAS	VIC10-FUG-NGAS	Process Fugitives
VIC10-INS-SF6	VIC10-INS-SF6	SF <sub>6</sub> Insulated Electrical Equipment (i.e., circuit breakers) not to exceed 23 lbs

**I. GENERAL PERMIT CONDITION**

**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 V, 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 V.B.

**C. FACILITY OPERATION**

At all times, including periods of startup, shutdown, and maintenance, 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 the 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 Section 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; a copy of the letter shall be forwarded to EPA Region 6 within thirty 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 PSD-TX-1348 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.

## **II. ACRONYMS AND ABBREVIATIONS**

AVO	Auditory, Visual, and Olfactory
BACT	Best Available Control Technology
CAA	Clean Air Act
CC	Carbon Content
CCS	Carbon Capture and Sequestration
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CT	Combustion Turbine
EF	Emission Factor
EPN	Emission Point Number
FIN	Facility Identification Number
FR	Federal Register
GCV	Gross Calorific Value
GHG	Greenhouse Gas
GWP	Global Warming Potential
HHV	High Heating Value
lb	Pound
LDAR	Leak Detection and Repair
MMBtu	Million British Thermal Units
MSS	Maintenance, Start-up and Shutdown
N <sub>2</sub> O	Nitrous Oxides
NSPS	New Source Performance Standards
O <sub>2</sub>	Oxygen
PSD	Prevention of Significant Deterioration
QA/QC	Quality Assurance and/or Quality Control
RATA	Relative Accuracy Test Audit
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TOC	Total Organic Carbon
TPY	Tons per Year



**III. 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 Limits<sup>1</sup>**

FIN	EPN	Description	GHG Mass Basis		TPY CO <sub>2</sub> e <sup>2,3</sup>	BACT Requirements
				TPY		
VIC10	VIC10	Natural Gas-Fired Combined Cycle Combustion Turbine (GE.7FA.04) <sup>4</sup>	CO <sub>2</sub>	1,070,879.0	1,072,053	940 lb CO <sub>2</sub> /MWh (gross) on a 12-month rolling average. Start-up and Shutdown emissions limited to 1,000 hours per year. MSS emissions are limited to 108 tons CO <sub>2</sub> /hr. See Special Conditions IV.A.1. and Table 2.
			CH <sub>4</sub>	23		
			N <sub>2</sub> O	2		
VIC10-FUG-NGAS	VIC10-FUG-NGAS	Process Fugitives	CH <sub>4</sub>	No Emission Limit Established <sup>5</sup>	No Emission Limit Established <sup>5</sup>	
VIC10-INS-SF6	VIC10-INS-SF6	SF <sub>6</sub> Insulated Electrical Equipment	SF <sub>6</sub>	No Emission Limit Established <sup>6</sup>	No Emission Limit Established <sup>6</sup>	
<b>Totals<sup>7</sup></b>			CO <sub>2</sub>	<b>1,070,879</b>	<b>1,072,498</b>	
			CH <sub>4</sub>	<b>41</b>		
			N <sub>2</sub> O	<b>2</b>		
			SF <sub>6</sub>	<b>0.000056</b>		

1. Compliance with the annual emission limits (tons per year) is based on a 12-month rolling average.
2. The TPY emission limits specified in this table are not to be exceeded for this facility and include emissions from the facility during all operations and include MSS activities. This total is rounded off for estimation purposes to two significant figures.
3. Global Warming Potentials (GWP): CO<sub>2</sub> = 1, CH<sub>4</sub> = 25, N<sub>2</sub>O = 298, SF<sub>6</sub> = 22,800
4. Includes emissions during all operational modes, including purging venting associated with the CT and DB shutdown and maintenance events. CH<sub>4</sub> is vented via an automatic double block and bleed at the CTG during each shutdown event. Additionally, CH<sub>4</sub> is vented from the duct burner system each time the ducts are shutdown. Annual emissions for these activities are included in the annual CO<sub>2</sub>e limit for VIC10.
5. Fugitive process emissions from EPN VIC10-FUG-NGAS are estimated to be 17.8 TPY CH<sub>4</sub>, and 445 TPY CO<sub>2</sub>e. 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.
6. SF<sub>6</sub> emissions from EPA VIC10-INS-SF6 are estimated to be 0.000056 tpy SF<sub>6</sub> and 1.28 tpy CO<sub>2</sub>e. 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. Totals are given for informational purposes only and do not constitute emission limits.

#### IV. SPECIAL PERMIT CONDITIONS

##### A. Requirements for Combustion Turbine Generator and Heat Recovery Steam Generator (EPN: VIC10)

##### 1. BACT Emission Limits for EPN: VIC10

**Table 2. BACT Emission Limits for EPN: VIC10**

Combustion Turbine Model	Combustion Turbine Annual Firing Rate <sup>1</sup> (MMBtu/hr) (HHV)	Duct Burners Annual Firing Rate <sup>1</sup> (MMBtu/hr) (HHV)	Output Based Emission Limit, gross basis <sup>2</sup> (lb CO <sub>2</sub> /MWh)	MSS Emission Limit <sup>2,3</sup> (tons CO <sub>2</sub> /hr)
GE.7FA.04 or equivalent	1,816	483	940	108

<sup>1</sup> Limits are based on a 12-month rolling average.

<sup>2</sup> This limit applies with and without duct burner firing during normal operation

<sup>3</sup> Limit is based on a 12-month rolling total.

- a. For facility operations in a 1 x 1 x 1 plant configuration operation, compliance with the output based emission limit shall be determined by the following method. The CO<sub>2</sub> mass emission values shall be calculated over each operational hour of the compliance period and summed. The summed hourly CO<sub>2</sub> mass emission values shall be divided by the summed hourly total gross electrical output. Compliance shall be demonstrated on a 12-month rolling average.
- b. For facility operations in a 2 x 2 x 1 plant configuration operation, compliance with the output based emission limit shall be determined as follows:
  - i. The hourly gross electric output from the existing non-modified steam turbine shall be apportioned based on either the measured steam load or measured heat input. A plan to demonstrate the apportionment of the gross electric output shall be submitted 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 generator.
  - ii. The CO<sub>2</sub> mass emission values shall be calculated over each operational hour of the compliance period and summed. The summed hourly CO<sub>2</sub> mass emission values shall be divided by the combined sum of the total gross electrical output from the steam turbine (as determined by the corresponding apportionment calculations represented in the plan) and the total gross electrical load from the combustion turbine generator. The resulting quotient is added to the sum of quotients of the previous 11 operating months and divided by 12 to determine compliance with the 12-month rolling average.
- c. Upon initial demonstration that the combustion turbine complies with the emission limit via emission tests, the Permittee shall not exceed the combustion turbine and duct burner annual firing rate, MMBtu/hr (HHV) from Table 2 on a 12-month rolling average. To



determine the limit, the Permittee shall calculate the average hourly heat input rate over the applicable compliance period consistent with equation F-20 and procedure provided in 40 CFR Part 75, Appendix F § 5.5.2 and the GCV of the fuel combusted for the corresponding compliance period. Add the quotient to the sum of the quotients of the previous 11 operating months and divide by 12 to determine the 12-month rolling average.

- d. The Permittee shall not discharge or cause the discharge of emissions into the atmosphere in excess of the limits in tons of CO<sub>2</sub>e on a 12-month rolling total as listed in Table 1.
- e. The duct burners are limited to 4,375 hours of operation per year.
- f. Startup and Shutdown events are limited to 1,000 hours per year and shall comply with the MSS BACT emission limit of 108 tons CO<sub>2</sub> per hour on a 12-month rolling total basis.

## 2. Emissions Monitoring for EPN: VIC10

- a. Upon initial demonstration that the combustion turbine complies with the emissions limit via emission tests, the Permittee shall not exceed the CO<sub>2</sub>e annual emission limit from Table 1 during normal operation. To determine the amount of CO<sub>2</sub>e, the Permittee shall calculate the amount of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O in short tons per month based on the equation G-4 of 40 CFR Part 75, Appendix G and 40 CFR Part 98, Appendix C, and the monthly hours of operation on a 12-month rolling total. The Permittee shall also use the default CH<sub>4</sub> and N<sub>2</sub>O emission factors contained in Table C-2 of 40 CFR Part 98 and the measured actual hourly heat input (HHV) to determine compliance with the CH<sub>4</sub> and N<sub>2</sub>O emission limits. The short tons per month values are multiplied by the respective Global Warming Potentials (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1 to calculate the amount of CO<sub>2</sub>e emitted in short TPY. The resulting CO<sub>2</sub>e value is added to the previous 11 months to determine the 12 month rolling total of CO<sub>2</sub>e emissions.
- b. As an alternative, the Permittee may install and operate a volumetric stack gas flow monitor and associated data acquisition and handling system in accordance with the CO<sub>2</sub> CEMS system provided in 40 CFR 75.10(a)(3) and (a)(5). If a CO<sub>2</sub> CEMS system is utilized, the hourly CO<sub>2</sub> emission value shall be measured by installing and operating a volumetric stack gas flow monitor or calculating the volumetric stack gas flow by the procedures of 40 CFR 75, Appendix D and associated data acquisition and handling system in accordance with the CO<sub>2</sub> CEMS system provided in 40 CFR § 75.10.
- c. 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).
- d. The Permittee shall ensure compliance with the specifications and test procedures for fuel flow meter and/or CO<sub>2</sub> emission monitoring system at stationary sources, 40 CFR Part 75 and 40 CFR Part 60.
- e. 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 CO<sub>2</sub> emission monitoring system.



### **3. Work Practice and Operational Requirements for EPN: VIC10**

- a. The combined cycle combustion turbine and duct burners are limited to burning only natural gas. 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 combustion turbine and/or duct burners or shall allow a sample to be taken by EPA for analysis.
- b. The flow rate of the fuel combusted in the combustion turbine and duct burners shall be measured and recorded using an in-line flow meter and automatically record the data with a data acquisition and handling system. The steam load and/or heat input to the steam turbine shall also be measured and recorded.
- c. The Permittee shall measure and record the energy output of the apportioned steam turbine and combustion turbine (MWh, gross) on an hourly basis.
- d. 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 and oxidation catalyst so emissions are at or below the emissions limits specified in this permit.
- e. The Permittee shall perform an annual compliance test, at or above 90% of maximum load operations and conducted under such conditions to ensure representative performance of the affected facility. The conditions of the performance tests shall be recorded and made available for review upon request.
- f. On or after initial performance testing, the Permittee shall use BACT practices and designs represented in the permit application.

### **4. Requirements during Startup and Shutdown for EPN: VIC10**

- a. Permittee shall minimize emissions during startup 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 of EPN: VIC10 is initiated when the Data Acquisition and Handling System (DAHS) detects a flame signal (or equivalent signal) and ends when the permissives for the emission control system are met (i.e., steady state emissions compliance is achieved). A startup for the combustion turbine is limited to 10 hours (cold startup) per event.
  - ii. A shutdown of EPN: VIC10 begins when the load drops to the point at which steady state emissions compliance can no longer be assured and ends when a flame-off signal is detected. A shutdown for the combustion turbine is limited to 60 minutes per event.
  - iii. Start-up and Shutdown events are limited to 1,000 hours per year.
- c. 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 the total CO<sub>2</sub>e emissions. The records must include hourly CO<sub>2</sub> emission levels as measured by the



fuel flow meter (or CO<sub>2</sub> CEMS with volumetric stack gas flowrate) and the calculations based on the actual heat input for the CO<sub>2</sub>, CO<sub>2</sub>e, N<sub>2</sub>O, and CH<sub>4</sub> emissions during each startup and shutdown event based on the equations represented in the permit application. These records must be kept for five (5) years following the date of such event.

- d. During startup and shutdown, emissions from EPN: VIC10 shall comply with all provisions of BACT emission limitations in Special Condition IV.A.1.

#### **B. Requirements for Fugitive Emissions EPNs: VIC10-FUG-NGAS and VIC10-INS-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, SF<sub>6</sub> 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 SF<sub>6</sub> capacity of 23 lbs.
3. Permittee shall equip the circuit breakers with a low pressure alarm and a low pressure lockout. The SF<sub>6</sub> leak detection system shall be able to detect leaks.
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.

### **V. RECORDKEEPING AND REPORTING**

- A. 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.
  1. Operating hours for all air emission sources;
  2. 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
  3. Annual fuel sampling for natural gas.
- B. Permittee shall maintain a file of 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 plant; duration of startup, 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 file must be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records.



- C. Permittee shall maintain records and submit a written report of all 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:
1. Time intervals, data and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;
  2. Applicable time and date of each period during which the monitoring equipment was inoperative (monitoring down-time);
  3. 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;
  4. Any failure to conduct any required source testing, monitoring, or other compliance activities; and
  5. Any violation of limitations on operation.
- D. Excess emissions shall be defined as any period in which the facility emissions exceed a maximum emission limit set forth in this permit, or a malfunction occurs causing an emissions exceedance.
- E. Excess emissions indicated by GHG emission performance testing or compliance monitoring shall be considered violations of the applicable emission limit for the purpose of this permit.
- F. Instruments and monitoring systems required by this PSD permit shall have a 95% on-stream time on an annual basis.
- G. All records required by this PSD Permit shall be retained for not less than 5 years following the date of such measurements, maintenance, and reporting.
- H. Continuously means individual measurement no less frequent than once every 15 minutes. Electronic data may be reduced to hourly averages for recordkeeping purposes.

## **VI. SHAKEDOWN PERIODS**

The combustion turbine emission limits and requirements in Conditions III and IV.A.1 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 special condition I.C.



## VII. PERFORMANCE TESTING

- 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 CO<sub>2</sub> and use emission factors from 40 CFR Part 98. The Permittee shall ensure that GHG emissions from the Combustion Turbine Generator and heat recovery steam generator in to the atmosphere do not exceed the limits in lbs CO<sub>2</sub>/MWh (gross) from Table 2 during the test. To determine this BACT emission limit, Permittee shall calculate the limit based on the measured hourly energy output (MWh (gross)), 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). Sampling shall be conducted in accordance with 40 CFR § 60.8 and EPA Method 3a or 3b for the concentration of CO<sub>2</sub>.
1. Multiply the CO<sub>2</sub> hourly average emission rate determined under maximum operating test conditions by 8,760 hours for the combustion turbines and 4,375 hours for the duct burners.
  2. If the above calculated CO<sub>2</sub> emission total does not exceed the tons per year (TPY) specified in Table 1, no compliance strategy needs to be developed. If the above calculated CO<sub>2</sub> emission total exceeds the tons per year (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 CO<sub>2</sub> emission limit listed in Table 1.
- B. No later than 180 days after initial start-up, or restart after modification of the facility, performance test(s) must be conducted and a written report of the performance testing results furnished to the EPA with 60 days after the testing is completed. During subsequent operations, stack sampling shall be performed within 120 days if current production rates exceed the production rate during stack testing by 10 percent or greater, 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 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. The owner or operator must provide the EPA at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the EPA the opportunity to have an observer present and/or to attend a pre-test meeting. If there is a delay in the original test date, the facility must provide at least 7 days prior notice of the rescheduled date of the performance test.
- D. Performance tests must be conducted 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 emission limits contained in Section II.

- E. Air emissions from the HRSG exhaust stack shall be tested while firing at the minimum normal operating load (minimum normal load above 50 percent). The normal operating range consistent with emission limits is to be determined during stack testing. Air emissions that will be sampled and analyzed while at the minimum load include (but are not limited to) CO<sub>2</sub> to characterize the emissions at this load.
- F. 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.
- G. 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.
- H. 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.

### **VIII. 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



