

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-1296-GHG

PERMITTEE: Celanese, Ltd.
222 W. Las Colinas Blvd., Suite 900
Irving, TX 75039

FACILITY NAME: Celanese, Ltd.
Clear Lake Plant

FACILITY LOCATION: 9502 Bayport Blvd.
Pasadena, TX 77507

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part C (42 U.S.C. Section 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 Celanese, Ltd. for Greenhouse Gas (GHG) emissions. The Permit applies to the construction of a new methanol manufacturing unit at the existing Clear Lake Plant located in Pasadena, Texas.

Celanese is authorized to construct equipment at the Clear Lake Plant, as part of the proposed project 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. Failure to comply with any condition or terms 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 Celanese 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.


Wren Stenger, Director
Multimedia Planning and Permitting Division

12/12/13
Date

Celanese Ltd. (PSD-TX-1296-GHG)
Prevention of Significant Deterioration Permit
For Greenhouse Gas Emissions
Permit Conditions

PROJECT DESCRIPTION

With this permit application, Celanese is proposing to construct a new methanol (MeOH) manufacturing unit at the Clear Lake Plant. Celanese owns and operates multiple chemical manufacturing units at the Clear Lake Plant. Currently, methanol is one of the feedstocks imported to the facility. To provide improved reliability of their MeOH supply and reduce transportation expenses, Celanese proposes to manufacture MeOH onsite with the construction of a new MeOH manufacturing unit. The design capacity of the new Methanol plant is 1,433,000 tons per year of methanol.

To produce methanol, natural gas feedstock is compressed, preheated, and pretreated to remove sulfur compounds. The treated feed is then mixed with steam before being sent to the reformer. The reformer consists of a large number of catalyst-filled tubes suspended in the radiant section of a process heater. Process stream containing light hydrocarbons and steam flows into the tubes where it is heated to reaction temperature to produce the synthesis gas.

Steam required to operate the unit is produced from heat recovery in the secondary reformer and heat recovery from the converters. The synthesis gas is cooled, compressed, reheated, and sent to the conversion reactor. The converter effluent is cooled with the crude methanol, separated as a liquid phase, and sent to product purification. The off-gas is recycled to the methanol converter. The purge gas is used as fuel in the reformer fuel gas.

The crude methanol is sent to a three-column distillation train. Light ends are taken overhead in the first column and combined with the purge stream from the converter loop. About 60% of the finished methanol is taken overhead in the second column. The residue from the second column feeds a third column. The remainder of the finished methanol is taken overhead in the third column. A side stream from the third column is recycled to the saturation system. The process water stream from the bottom of the third column is also recycled to the saturation system. Finished methanol will be sent to the storage area.

A flare (EPN: MEOHFLR) will be available to control emissions as appropriate from Maintenance, Start-up, or Shutdown (MSS) activities or emergency vents. MSS GHG emissions not able to be controlled by the flare will be emitted to atmosphere (EPN: MEOHMSS). A back-up diesel emergency generator (EPN: MEOHENG) will be located in the Methanol Unit and will be used for back-up power. Piping components from the process equipment described above will also be a source of GHG emissions (EPN: MEOHFUG).

EQUIPMENT LIST

The following devices are subject to this GHG PSD permit.

FIN	EPN	Description
REFORM	REFORM	Reformer Furnace (Combustion Unit). The furnace has a maximum design heat input rate of 1,255 MMBtu/hr, and will be equipped with a Selective Catalytic Reduction (SCR) system and low NOx burners.
MEOHFLR	MEOHFLR	Methanol (MeOH) MSS Flare (Combustion Unit).
MEOHMSS	MEOHMSS	MSS Emissions
MEOHFUG	MEOHFUG	Process Fugitives
MEOHENG	MEOHENG	Emergency Generator (Combustion Unit). The generator shall be no larger than 350 KW.
MEOHMT	MEOHMT	Cooling Tower

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 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 Section 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, 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

AVO	Auditory, Visual, and Olfactory
BACT	Best Available Control Technology
C ₃ +	Hydrocarbon with Three or More Carbon Atoms
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
dscf	Dry Standard Cubic Foot
EF	Emission Factor
EPN	Emission Point Number
FIN	Facility Identification Number
FR	Federal Register
GCV	Gross Calorific Value
GHG	Greenhouse Gas
gr	Grains
GWP	Global Warming Potential
HGB	Houston, Galveston, Brazoria Area
HHV	High Heating Value
HPIB	Highly Purified Isobutylene
hr	Hour
HRS	Heat Recovery Steam Generating
LAER	Lowest Achievable Emission Rate
lb	Pound
LDAR	Leak Detection and Repair
MeOH	Methanol
MMBtu	Million British Thermal Units
MSS	Maintenance, Start-up, and Shutdown
NNSR	Nonattainment New Source Review
N ₂ O	Nitrous 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
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TOC	Total Organic Carbon
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 average, shall not exceed the following:

Table 1. Annual Emission Limits

FIN	EPN	Description	GHG Mass Basis		TPY CO ₂ e ^{2,3}	BACT Requirements
				TPY ²		
REFORM	REFORM	Reformer Furnace	CO ₂	532,787	533,334	Furnace Gas Exhaust Temperature ≤ 350 °F. 30 MMBtu (HHV)/ ton methanol produced. See permit condition III.A.1.
			CH ₄	11		
			N ₂ O	1.1		
MEOHFLR	MEOHFLR	Methanol Flare	CO ₂	1,092	1,366	Flare will meet the requirements of 40 CFR 60.18. See permit condition III.A.2.
			CH ₄	12		
			N ₂ O	0.07		
MEOHMSS	MEOHMSS	Methanol MSS	CH ₄	No Numerical Limit Established ⁴	No Numerical Limit Established ⁴	Good Operational Practices. See permit conditions III.A.6.
MEOHFUG	MEOHFUG	Fugitives	CO ₂	No Numerical Limit Established ⁵	No Numerical Limit Established ⁵	Implementation of LDAR Program. See permit condition III.A.3.
			CH ₄	No Numerical Limit Established ⁵		
MEOHENG	MEOHENG	Emergency Generator Engine	CO ₂	33.3 ⁶	33.3 ⁶	Good combustion practices, non-emergency operation limited to 100 hrs/year. See permit condition III.A.4.
			CH ₄	No Numerical Limit Established ⁷		
			N ₂ O	No Numerical Limit Established ⁷		
MEOHMT	MEOHMT	Cooling Tower	CH ₄	No Numerical Limit Established ⁸	No Numerical Limit Established ⁸	Leak detection/quarterly monitoring of cooling water; heat exchanger repair. See permit condition III.A.5.
Totals⁹			CO ₂	533,927	CO₂e 535,218	
			CH ₄	46		
			N ₂ O	1.1		

1. Compliance with the annual emission limits (tons per year) is based on a 12-month rolling average basis
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.
3. Global Warming Potentials (GWP): CH₄ = 21, N₂O = 310
4. GHG emissions from MSS activities that cannot be controlled by a flare are represented by EPN MEOHMSS. These emissions are from the venting of equipment and the isolation of pipe sections for the purposes of maintenance, startup, and shutdown operations. These emissions are estimated to be no more than 0.9 TPY of

CH₄ and 19.4 TPY of CO₂e. The emission limit will be a design/work practice standard as specified in the permit.

5. Fugitive process emissions from EPN MEOHFUG are estimated to be 3 TPY CO₂, 10 TPY of CH₄ and 213 TPY CO₂e. The emission limit will be a design/work practice standard as specified in the permit.
6. The limits associated with MEOHENG are for non-emergency use of the engine.
7. All values indicated as “No Numerical Limit Established” are less than 0.01 TPY with appropriate rounding. The emission limit will be a design/work practice standard as specified in the permit.
8. Cooling Tower emissions from EPN MEOHMT are estimated to be 12 TPY of CH₄, and 252 TPY CO₂e. The emission limit will be a design/work practice standard as specified in the permit.
9. The total emissions for CH₄ and CO₂e include the PTE for process fugitive emissions, uncontrolled MSS, and cooling tower emissions of CO₂ and CH₄. These totals are given for informational purposes only and do not constitute emission limits.

III. SPECIAL PERMIT CONDITIONS

A. Emission Unit Work Practice Standards, Operational Requirements, and Monitoring

1. Reformer Furnace (REFORM)

- a. The reformer furnace shall combust pipeline quality natural gas and/or plant produced high hydrogen fuel gas (process gas).
- b. The reformer furnace shall have fuel metering for each fuel, and Permittee shall:
 - i. Measure and record the fuel flow rate using an operational non-resettable elapsed flow meter or by recording the flow rate data in an electronic format with individual flow measurements being taken no less frequently than once every 15 minutes. Electronic data may be reduced to hourly averages for recordkeeping purposes.
 - ii. Record the total fuel combusted for each fuel monthly.
 - iii. Analyze process gas composition in accordance with 40 CFR § 98.34(b)(3)(ii)(E).
 - iv. The fuel gross calorific value (GCV) [high heat value (HHV)], carbon content and, if applicable, molecular weight, shall be determined, at a minimum, monthly by the procedures contained in 40 CFR § 98.34(b)(3). Records of the fuel GCV shall be maintained for a minimum period of five years. Upon request, Permittee shall provide a sample and/or analysis of the fuel that is fired in any unit covered by this permit at the time of the request, or shall allow a sample to be taken by EPA for analysis.
 - v. Pipeline Quality Natural Gas shall be exempt from this requirement (III.A.1.iii.) provided Permittee receives and maintains quarterly records of the vendor's analysis, and the data is of sufficient quality to yield further analysis as required above.
- c. Permittee shall calibrate and perform preventative maintenance checks of the fuel gas flow meters and document at the minimum frequency established per the manufacturer's recommendation, or at the interval specified per 40 CFR § 98.34(b)(1)(ii).
- d. Permittee shall install, operate, and maintain an O₂ analyzer on the furnace flue gas at a location downstream of the radiant sections of the furnace.
- e. The oxygen analyzer shall continuously monitor and record the excess oxygen concentration in the combustion gases. The monitoring data shall be reduced to hourly average concentrations at least once every day using a minimum of four equally spaced data points over each one-hour period.

- f. Permittee shall perform preventative maintenance check of the oxygen analyzer and document quarterly.
- g. A relative accuracy test audit (RATA) is required once every four quarters in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.1.
- h. The oxygen analyzers shall be quality-assured at least quarterly using cylinder gas audits (CGAs) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.2.
- i. The Permittee will validate the oxygen analyzer with zero and span gas at least weekly to maintain 1% accuracy based on full scale.
- j. Excess oxygen shall be controlled to less than 3% when the operating load is 75% or greater to ensure efficiency on a 12-month rolling average basis.
- k. All analyzers identified in this section IV.A.1. shall achieve 95% on-stream time or greater when the reformer is operational.
- l. Permittee shall utilize insulation materials where feasible to reduce heat loss.
- m. The reformer furnace shall not exceed the one-hour maximum firing rate of 1,255 MMBtu/hr.
- n. The one-hour maximum firing rates shall be determined daily to demonstrate compliance with the firing rate condition in III.A.1.m.
- o. Permittee shall continuously monitor and record the furnace gas exhaust temperature hourly and limit the temperature to less than or equal to 350 °F on a 12-month rolling average basis. This stack temperature is for normal operations and does not include commissioning, startup, and shutdown.
- p. The furnace will be continuously monitored for exhaust temperature and stack oxygen. Steam exported by the unit shall be continuously monitored. The energy efficiency of the process will be calculated daily by determining the natural gas fed as fuel and/or raw material to the reformer and composition in combination with HHV for the fuel gas components plus the HHV of the exported steam then dividing by the production of methanol measured in tons.
- q. The Permittee shall maintain a minimum overall efficiency of 30 MMBtu (HHV)/ton methanol produced on a 12-month rolling average basis, calculated monthly, for the furnace (REFORM) including periods of start-up, shutdown, and maintenance.
- r. The furnace shall be tuned annually consisting of a flame pattern inspection and adjustment for CO concentration.
- s. Permittee shall calculate, on a monthly basis, the amount of CO₂ emitted from combustion of process gas in tons/yr using equation C-5 in 40 CFR Part 98 Subpart C, converted to short tons. CO₂ emitted from the combustion of natural gas in tons/yr shall be calculated using equation C-2a in 40 CFR Part 98 Subpart C, converted to short tons. Compliance shall be based on a 12-month rolling basis to be updated by the last day of the following month.
- t. Permittee shall calculate the CH₄ and N₂O emissions on a 12-month rolling basis to be updated by the last day of the following month. Permittee shall determine compliance with the CH₄ and N₂O emissions limits contained in this section using the

default CH₄ and N₂O emission factors contained in Table C-2 and equation C-8 (for process gas) and C-9a (for natural gas) of 40 CFR Part 98 and the measured HHV (for process gas), converted to short tons.

- u. Permittee shall calculate the CO₂e emissions on a 12-month rolling basis, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1, as published on October 30, 2009 (74 FR 56395). The record shall be updated by the last day of the following month.

2. Flare (MEOHFLR)

- a. The flare shall be an intermittent use flare that will combust waste gases from the methanol production unit.
- b. The flare shall be designed to achieve a minimum destruction and removal efficiency (DRE) of 99% for CH₄ based on flow rate and gas composition measurements.
- c. The only gases that may flow continuously to the flare are: pilot gas, sweep gas (natural gas or nitrogen), and process safety valve fugitives.
- d. The flare shall be operated in accordance with 40 CFR § 60.18 including specifications of minimum heating value of the waste gas, maximum tip velocity, and pilot flame monitoring. An infrared monitor is considered equivalent to a thermocouple for pilot flame monitoring purposes.
- e. The flare is non-assisted.
- f. The waste gas from MSS activities from the methanol production unit is mixed with supplemental natural gas, upstream of a mass flow meter located in the flare header.
- g. Flare header flow meter will measure flow at least once each 15 minutes. The flow meter shall be calibrated at least biannually.
- h. The flare shall be equipped with a gas composition analyzer. The analyzer shall measure the gas composition at least once per hour and be calibrated monthly.
- i. The flow meter and analyzers used for flare compliance shall be operational at least 95% of the time when waste gases are directed to the flare for control.
- j. Permittee must record the time, date, HHV in MMBtu/hr and duration of each MSS event. The records must include hourly CH₄ emission levels as measured by the in-line gas analyzer (Gas chromatograph or equivalent with volumetric stack gas flowrate) and the calculations based on the actual heat input for the CO₂, N₂O, and CH₄ emissions during each MSS event. These records must be kept for five years following the date of each event.
- k. CO₂ emissions are calculated using equation Y-1 found in 40 CFR § 98.253(b)(1)(ii)(A). CH₄ and N₂O emissions are calculated using equations Y-4 and Y-5 as found in 40 CFR Part 98 Subpart Y.
- l. Compliance with the annual emission limit shall be determined on a 12-month rolling basis.

3. Process Fugitives (EFUGMEOH)

- a. The Permittee shall implement the TCEQ 28LAER leak detection and repair (LDAR) program for fugitive emissions of methane.
- b. The Permittee shall implement an as-observed AVO program to monitor for fugitive emissions between instrumented monitoring as required in III.A.3.a above.
- c. The Permittee shall use high quality components and materials of construction that is compatible with the service in which they are employed.

4. Emergency Generator Engine (MEOHENG)

- a. The emergency generator engine purchased will be certified to meet the applicable emission standards of 40 CFR § 60.4205(b).
- b. The Permittee shall implement good combustion practices, including preventive maintenance per manufacturer's recommendations.
- c. Non-emergency use of the engine shall be limited to 100 hours per year.
- d. The Permittee shall maintain records of engine maintenance/tune-ups, as well as run times.
- e. On or after initial startup, the Permittee shall not discharge or cause the discharge of emissions in excess of 33.3 tons CO_{2e}/year from non-emergency use, based on a 12-month rolling average.
- f. The Permittee shall demonstrate compliance with the 12-month rolling average emission limit by using the calculations at 40 CFR Part 98, Subpart C.

5. Cooling Tower (MEOHMT)

- a. The Permittee shall implement a leak detection program for the cooling tower consistent with 40 CFR Part 63 Subpart F. Total Organic Carbon (TOC) will be substituted for HAP to determine if a GHG leak is present. TOC will be measured utilizing Method 5310 from *Standard Methods for the Examination of Water and Wastewater*. It will be assumed that any hydrocarbon detected utilizing this method will be CH₄.
- b. Leak detection monitoring shall occur monthly for the first 6 months of operation, then on a quarterly basis thereafter (40 CFR § 63.104(b)).
- c. The Permittee shall maintain records of cooling tower monitoring and corrective actions taken consistent with 40 CFR § 63.104(f).

6. Maintenance, Startup, and Shutdown (EPN: MEOHMSS)

- a. The Permittee shall depressure sections of pipe and equipment to the flare or other parts of the process prior to performing MSS activities.

- b. MSS emissions that cannot be controlled by the flare are vented to the atmosphere.
- c. These MSS emissions are generated from the isolation of pipe sections and venting of equipment for MSS activities. The volume of methane vented to atmosphere from these activities shall not exceed more than 15,000 ft³ of gases on a 12-month rolling basis.
- d. Celanese will plan maintenance activities in a manner to minimize the venting of emissions to the atmosphere.
- e. Records of MSS activities shall be maintained to include the date, time, and estimated volume of each MSS event.

B. Continuous Emissions Monitoring Systems (CEMS)

1. As an alternative to Special Conditions III.A.1.n. through III.A.1.p. Permittee may install a CO₂ CEMS and volumetric stack gas flow monitoring system with an automated data acquisition and handling system for measuring and recording CO₂ emissions discharged to the atmosphere, and use these values to show compliance with the annual emission limit in Table 1.
2. Permittee shall ensure that all required CO₂ monitoring system/equipment are installed 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.
3. 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.

IV. Recordkeeping and Reporting

A. Records

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. Records of the fuel consumed by each source (except MEOHENG and flare pilot gas);
 - c. The 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
 - d. Semi-annual fuel sampling for natural gas, daily fuel sampling of plant fuel gas, or other frequencies as allowed by 40 CFR § 98.34(b)(3).

2. 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 facility; 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.
3. 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:
 - 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;
 - d. Any failure to conduct any required source testing, monitoring, or other compliance activities; and
 - e. Any violation of limitations on operation.
4. 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.
5. 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.
6. Instruments and monitoring systems required by this PSD permit shall have a 95% on-stream time on an annual basis.
7. 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.
8. Continuously means individual measurement no less frequent than once every 15 minutes. Electronic data may be reduced to hourly averages for recordkeeping purposes.

V. Initial Performance Testing Requirements:

- 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 stack of the Reformer Furnace (REFORM) 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.
 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.
 3. If the above calculated CO₂ 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 CO₂ 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.
- D.** Performance tests must be conducted under such conditions to ensure representative performance of the affected facility. The owner or operator must make available to the EPA such records as may be necessary to determine the conditions of the performance tests.
- E.** 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.
- 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 every five years, plus or minus 6 months, of when the previous performance test was performed, or within 180 days after the issuance of a permit renewal, whichever comes later to verify continued performance at permitted emission limits.

VI. 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