Special Conditions

Permit Numbers 8707 and PSDTX655M1

1. This permit authorizes emissions only from those emission points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT), and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit.

Federal Applicability

2. These facilities shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations (40 CFR) Part 60, Subpart A on Standards of Performance for New Stationary Sources, General Provisions and the following:

   A. Subpart GG, Stationary Gas Turbines.

   B. Subpart Db, Industrial-Commercial-Institutional Steam Generating Units.

   C. Subpart KKK, Equipment Leaks of Volatile Organic Compounds (VOC) from Onshore Natural Gas Processing Plants, for all of the following facilities: Seminole fractionator, carbon dioxide removal unit, and energy improvement project.

3. These facilities shall comply with applicable requirements of EPA regulations, 40 CFR Part 63, Subpart A, General Provisions, and Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters.

4. If any condition of this permit is more stringent than the regulations incorporated by this permit, then for the purposes of complying with this permit, the permit shall govern and be the standard by which compliance shall be demonstrated.

Equipment and Operating Specifications

5. The concentration of nitrogen oxides (NO_x) in the stack gases shall not exceed 54 parts per million volume dry (ppmvd) corrected to 15 percent oxygen (O_2) from each of the two water injected 501 KC5 Allison turbines (Emission Point Number [EPN] 10), except during startup, shutdown, and planned maintenance. **(08/17)**

   Monitoring of emissions must satisfy the requirements of 40 CFR Part 60, Subpart GG, Title 30 Texas Administrative Code (30 TAC) Chapter 117 and the requirements of this permit.

6. Piping, Valves, Connectors, Pumps and Compressors in VOC Service – 28MID

   Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

   A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch (psi), absolute at 68°F, or (2) where the operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.

   B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute, American Petroleum Institute, American Society of Mechanical Engineers, or equivalent codes.

   C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak checking during plant operation. Non-accessible valves, as defined by 30 TAC Chapter 115, shall be identified in a list to be made available upon request.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a)-(b).

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. All new and replacement pumps and compressors shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump and compressor seals emitting VOC shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, connectors, compressor seals, and pump seals found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the Texas Commission on Environmental Quality (TCEQ) Executive Director or his designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.

I. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent. Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

J. The percent of valves leaking used in paragraph I shall be determined using the following formula:

$$(Vl + Vs) \times 100/Vt = Vp$$

Where:

Vl = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Vs = the number of valves for which repair has been delayed and are listed on the facility shutdown log.

Vt = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor valves.

Vp = the percentage of leaking valves for the monitoring period.

K. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or his designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standards (NSPS) or an applicable NESHAP and does not constitute approval of alternative standards for these regulations.

7. In addition to the weekly physical inspection required by paragraph E of Special Condition No. 6, all connectors in gas/vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with paragraphs F through J of Special Condition No. 6. Alternative monitoring frequency schedules of 40 CFR Part 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, may be used in lieu of the monitoring frequency required by this permit condition. Compliance with this condition does not assure compliance with requirements of applicable state or federal regulation and does not constitute approval of alternative standards for these regulations.

8. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration of greater than 1 percent are not authorized by this permit unless authorized on MAERT. Any releases directly to the atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than one weight percent are not consistent with good practice for minimizing emissions.

9. Acid gas or other waste gases generated from normal operation from these facilities must be burned in the plant flares. This condition does not apply to the process gases that are authorized by this permit to be used as fuel. Planned maintenance, startup, and shutdown activities and emissions are not authorized by this special condition.

10. Fuels fired in the gas turbines are limited to:

A. Sweet natural gas containing no more than 5 grains per 100 dry standard cubic feet (dscf) total sulfur. Fuel sampling and analysis for sulfur content is required at least once annually (calendar year) and whenever the fuel supply source changes. If a valid fuel contract or tariff sheet demonstrates compliance with the sulfur limitation of this condition, no sampling of the fuel's total sulfur content is required. **(08/17)**

B. Overhead products from the deethanizer containing a maximum of 20 parts per million by weight (ppmw) of hydrogen sulfide.

Use of any other fuel will require authorization.

11. The following fuels may be burned in the fired heat recovery unit (HRU): **(08/17)**

A. Sweet natural gas as described in Special Condition No. 10.A; and

B. Process gas, including amine flash gas, CSP off-gas, ISOM off-gas, and fuel gas, containing no more than 5 grains per 100 dscf total sulfur.

12. The VOC associated with cooling tower water designated as Emission Point No. (EPN) F8A shall be monitored once a month. The monthly sampling shall meet the air stripping system requirements of the TCEQ "Sampling Procedures Manual," Appendix P (dated January 2003 or a later edition), or another air stripping method approved by the TCEQ Executive Director.

Cooling water VOC concentrations above 0.08 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs.

The VOC emissions from the cooling tower are not authorized if the VOC concentration of water returning to the cooling tower exceeds 0.80 ppmw. VOC concentrations above 0.80 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded.

The permit holder may choose to monitor cooling water tied to the heat exchanger system under EPN F8A once a day. If the permit holder chooses to monitor the cooling water once a day to comply with the once per month VOC cooling water monitoring requirements of this special condition; the arithmetic average of five consecutive once a day monitoring results may be used to determine if the cooling water VOC concentrations are above 0.08 ppmw (indicative of faulty equipment), 0.5 ppmw (begin planning for repairs), or above the 0.80 ppmw (unauthorized VOC emissions). For purposes of this special condition, once a day cooling water monitoring is defined as monitoring that occurs within a calendar day.

If the VOC cooling water concentrations in accordance with the leak definition defined in the preceding paragraph is equal to or greater than 0.08 ppmw, the following requirements apply:

A. At equal to greater than 0.08 ppmw VOC, the cooling tower heat exchange system sample results indicate that a leaking heat exchanger may exist and shutdown and repairs must be made at the next planned process unit shutdown. The leaking heat exchanger is eligible for delay of repair. The process unit can continue to operate at or above the 0.08 ppmw VOC level only up to when the sample results meet or exceed the 0.80 ppmw VOC concentration level.

B. At VOC cooling water concentrations that are equal or exceed 0.50 ppmw, but are less than 0.80 ppmw, the permit holder must begin planning and preparation for safely shutting the process unit down for repairs as soon as practical. These specific repairs shall be completed prior to the next planned process unit startup following the most recent planned process unit shutdown required by this paragraph. VOC cooling water concentrations that equal or exceed 0.50 ppmw are not eligible for delay of repair.

C. At VOC cooling water concentrations that equal or exceed 0.80 ppmw, VOC emissions are no longer authorized and the unit must shutdown in an orderly manner or a written petition must be made to the TCEQ regional office to continue to operate at unauthorized emission levels.

Cooling water shall be sampled once a week for total dissolved solids (TDS) and once a week for conductivity from the cooling tower water used in the cooling tower designated as EPN F8A. The TDS is a limited to a maximum of 3,500 ppmw in the cooling water utilized by the cooling water circulation system. **(08/17)**

Dissolved solids in the cooling water drift are considered to be emitted as particulate matter less than or equal to 10 microns in diameter. The data shall result from collection of water samples from the cooling tower feed water and represent the water being cooled in the tower. Water samples should be capped upon collection and transferred to a laboratory area for analysis. The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C (SM - 19th edition of Standard Methods for Examination of Water). The analysis method for conductivity shall be ASTM D1125-95A and SM2510 B. Use of an alternative method shall be approved by the TCEQ Regional Director prior to its implementation.

The Cooling Tower designated as EPN F8A shall be equipped with mist eliminators to meet a drift value of 0.002 percent for particulate emissions.

Initial Demonstration of Compliance

13. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the two 501 KC5 Allison Turbines. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ "Sampling Procedures Manual" and in accordance with EPA Reference Method 8 for Sulfur Dioxide (SO_2), Reference Method 10 for the concentration of carbon monoxide (CO), and Reference Method 20 for the concentrations of NO_x and O_2. Fuel sampling using the methods and procedures of 40 CFR § 60.335(b)(10) may be conducted in lieu of stack sampling for SO_2. Compliance with the MAERT and the fuel sulfur limits of Special Condition No. 10 shall be based upon 100 percent conversion of the sulfur in the fuel to SO_2. The holder of this permit is responsible for providing sampling and testing facilities and conducting sampling and testing operations at his expense.

    A. The TCEQ Houston Regional Office shall be contacted as soon as testing is scheduled but not less than 45 days prior to sampling to schedule a pretest meeting.

        The notice shall include:

        i. Date for pretest meeting.

        ii. Date sampling will occur.

        iii. Name of firm conducting sampling.

        iv. Type of sampling equipment to be used.

        v. Method or procedure to be used in sampling.

        vi. Procedure used to determine turbine loads during and after the sampling period.

        The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

        A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or the EPA sampling procedures shall be made available to the TCEQ at, or prior to, the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.

        Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for the NSPS testing, which must have the EPA approval, shall be submitted to the EPA and copied to the TCEQ Regional Office. Any deviation from the sampling procedures, the use of any alternative or equivalent test procedures, or any test waivers shall be approved by the TCEQ and, if necessary, by the EPA prior to the test date required in Special Condition No. 13.E for conducting the tests.

B. Air contaminants emitted from the water-injected turbines to be tested for at full load include (but are not limited to) NO_x, CO, O_2, and SO_2 while firing natural gas only.

C. For each type of turbine fuel fired, CO and NO_x from the water-injected turbines shall be sampled concurrently at full operating load only.

D. The water-injection rates necessary to comply with the NO_x concentration limit stated in Special Condition No. 5 shall be established during the stack sampling required in this condition. Plots of water-injection rate versus turbine fuel input rate shall be constructed from the corrected NO_x concentrations. The adjusted NO_x emission concentrations as measured by stack tests shall be used to determine initial compliance with Special Condition No. 5. The plots shall be used to determine continuous compliance with Special Condition No. 5.

E. Sampling shall occur within 60 days after achieving the maximum production rate at which the turbines will be operated, but no later than 180 days after initial startup of water injection.

F. For the turbines sampled pursuant to this condition, the holder of this permit shall record during the stack sampling the value of each operating parameter which is significant to maintaining emission compliance as identified during the pretest meeting required in paragraph a of this special condition.

G. During the testing, the water-to-fuel ratio rate necessary to comply with the NO_x concentration limit of 54 ppmvd at 15 percent O_2 shall be established over the normal operating load range. Testing of the two 501 KC5 Allison Turbines to determine NO_x concentrations shall be conducted at the exhaust of each gas turbine using either EPA reference Method 7, EPA Reference Method 7E or EPA Reference Method 20. Notification shall be provided to the TCEQ Regional Office at least 30 days prior to testing. The sampling report shall be submitted to the TCEQ Regional Office within 45 days of sampling.

H. Within 60 days after the completion of the testing and sampling required herein, one copy of the sampling report shall be distributed to the TCEQ Houston Regional Office.

Continuing Demonstration of Compliance

14. The holder of this permit shall install, calibrate, maintain and operate a continuous monitoring system to measure and record the fuel and water consumption in the two 501 KC5 Allison turbines. The system shall be accurate to ±5 percent. The water-to-fuel ratio determined during initial compliance testing shall be used to demonstrate continual compliance with the NO_x concentration limits specified in Special Condition No. 5. This testing was completed in January 2000. **(08/17)**

15. The permit holder shall install, calibrate, and maintain a continuous emissions monitoring system (CEMS) to measure and record the in-stack concentration of NO_x, CO, and diluent gases (CO_2 or O_2) from EPN 10. **(08/17)**

    A. The NO_x and diluent gas CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 2 and 3, 40 CFR Part 60, Appendix B. The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1.

    B. Compliance with the CEMS requirements of 40 CFR Part 60 can be demonstrated by meeting the applicable requirements of 40 CFR Part 75 provided that the holder of this permit demonstrates compliance with all applicable 40 CFR Part 60 emission standards.

    C. The CO CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable performance specifications in 40 CFR Part 60, Performance Specification No. 4.

D. All CEMS shall meet the applicable quality assurance requirements specified in 40 CFR Part 60, Appendix F, except that cylinder gas audits (CGA) conducted in all four quarters may be used in lieu of the annual relative accuracy test audit. Quarterly CGAs shall be conducted at least 60 days apart. Relative accuracy exceedances (as specified in 40 CFR 60, Appendix F), CGA exceedances of ±15 percent accuracy, and any CEMS downtime shall be reported to the applicable TCEQ regional office, and necessary corrective action shall be taken. Supplemental stack sampling may be required at the discretion of the applicable TCEQ Regional Director.

E. If any emission monitor fails to meet specified performance, it shall be repaired or replaced immediately. If repair or replacement is not immediately feasible, the monitor shall be repaired or replaced no later than seven days after the failure is first detected by an employee at the site, unless written permission is obtained from the TCEQ Regional Office which allows for longer repair/replacement time. The holder of this permit shall develop an operation and maintenance program (including stocking necessary spare parts) to ensure that the continuous monitors are available as required. A monitor with downtime due to breakdown or repair of more than 10 percent of the facility operating time for any calendar year will be considered as a defective monitor and the monitor must be replaced within two weeks after exceeding the 10 percent threshold.

F. The monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of pounds per hour (lbs/hr) at least once every day.

G. The monitoring data and quality-assurance data may be kept in electronic format and shall be maintained by the permit holder and be made available upon request. The data from the CEMS will be used to determine compliance with the NO_x and CO maximum allowable emission rates for EPN 10. During periods where the CEMS data is unavailable or not quality assured, compliance may alternatively be determined by using manufacturer emission factors, stack test data, or valid and representative data previously measured and recorded by the unit's CEMS under similar operating conditions.

H. The applicable TCEQ Regional Office shall be notified at least 30 days prior to any Relative Accuracy Test Audit (RATA) in order to provide them the opportunity to observe the testing.

16. The holder of this permit shall determine the hourly emission rates from the fired heat recovery unit using daily fuel usage rates and total heat input values. The total daily heat input in million British thermal units for the gas turbines and the gas-fired heater shall be defined as the summation of the daily flow rate for each type of fuel used multiplied by the fuels higher heating value. **08/17**

17. Total daily SO_2 emissions from the fired heat recovery unit shall be calculated using the total daily fuel usage rates and fuel sulfur concentrations. These emission rates shall be based on 100 percent conversion of the sulfur in the fuel into SO_2. **08/17**

18. Total calculated annual emissions from the fired heat recovery unit shall be defined as the summation of the daily emissions based on a rolling 12-month period. **08/17**

Recordkeeping

19. The following information shall be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and shall be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:

A. The CEMS data of NO_x and CO to demonstrate compliance with the emission rates listed in the Special Conditions and the MAERT. **08/17**

B. Raw data files of all CEMS data including calibration checks and adjustments and maintenance performed on these systems in a permanent form suitable for inspection. **08/17**

C. Records for the hourly calculated values required to determine mass flow rates from CEMS data and compliance with the MAERT will be cumulatively added during each hour of the month and stored on a computer hard drive or other TCEQ-accepted computer media. **08/17**

D. Records of planned maintenance engine rinsing operations for the two 501 KC5 Allison turbines which include date of activity, start and ending time, amount of water used, firing rate load and total estimated emissions; **08/17**

E. The results of all fuel sampling conducted or vendor contracts pursuant to Special Condition No. 10 and all hourly periods during which any fuel other than natural gas or overhead product from the deethanizer is fired into the turbines;

F. Daily records of each turbine's operation which includes total heat input, total fuel usage rate and total fuel sulfur concentration;

G. Daily records of fired heat recovery unit operations which includes the total heat input, total fuel usage rates, fuel sulfur concentration, and total daily emissions; **08/17**

H. Monthly records of emission rates that show compliance with the rolling 12-month emission rate limits for EPN 10; **08/17**

I. The monthly (or daily) VOC monitoring and weekly TDS monitoring records required by Special Condition No. 12; and **08/17**

J. Any other records necessary to show compliance with the limits of the MAERT.

Dated: August 25, 2017