Air Quality Standard Permit for Natural Gas Electric Generating Units
Effective January 30, 2025

This standard permit authorizes natural gas electric generating units that generate electricity for use by the owner or operator and/or generate electricity to be sold to the electric grid, and that meet all of the conditions listed below.

(a) Applicability

(1) This standard permit may be used to authorize natural gas electric generating units that generate electricity for use by the owner or operator and/or generate electricity to be sold to the electric grid.

(2) This standard permit shall not relieve the owner or operator from complying with any other applicable provision of the Texas Health and Safety Code (THSC); Texas Water Code; rules of Texas Commission on Environmental Quality (TCEQ or commission); or any additional state or federal regulations.

(3) Any project that constitutes a new major stationary source or major modification as defined in 30 Texas Administrative Code (TAC) §116.12 (Nonattainment and Prevention of Significant Deterioration Review Definitions) shall not be authorized by this standard permit.

(4) The electric generating units authorized under this standard permit shall only be engines firing pipeline-quality natural gas. This standard permit may not be used to authorize boilers or turbines.

(b) Definitions

(1) All words and terms in this standard permit shall have the meanings listed in 30 TAC Chapter 116, Subchapter A (Definitions), unless the context indicates otherwise.

(c) Administrative Requirements

(1) The owner or operator shall not begin construction or operation of facilities authorized under this standard permit without prior written notification from the TCEQ executive director.

(2) Any claim under this standard permit shall comply with:

(A) 30 TAC §116.604(1) and (2) (Duration and Renewal of Registrations to Use Standard Permits).

(B) 30 TAC §116.605(d)(1) and (2) (Standard Permit Amendment and Revocation).

(C) 30 TAC §116.610(a)(2) through (6) (Applicability).

(D) 30 TAC §116.611 (Registration to Use a Standard Permit).

(E) 30 TAC §116.614 (Standard Permit Fees); and

(F) 30 TAC §116.615 (General Conditions).

(3) All records required by this standard permit:

(A) shall be maintained in written or electronic form, and

(B) shall be made available at the request of personnel from TCEQ, the Environmental Protection Agency (EPA), or any local air pollution control agency with jurisdiction.

(4) The following records shall be kept at the plant site for the life of the permit:

(A) A copy of this standard permit.

(B) All permit applications and subsequent representations submitted to TCEQ.

(C) A copy of the manufacturer's design and operation specifications and all emission-related maintenance requirements.

(D) Records of the initial performance testing completed to demonstrate initial compliance.

(5) The following information shall be maintained by the permit holder in a form suitable for inspection for a period of five years after collection and shall be made available upon request:

(A) Records of the hours of operation and quantity of natural gas used for the engine, in million British thermal units (MMBtu) and million standard cubic feet (MMscf), all kept on a monthly and rolling 12-month basis.

(B) Records of the sulfur content of the natural gas based on receipts, or chemical analyses, including test results from the fuel supplier.

(C) Records of emission-related maintenance, including replacement of control system components, media and sensors, if present.

(D) Records of visible emissions observations, including corrective actions taken, as required by this permit.

(E) Records of sampling performed to evaluate emissions.

(d) General Requirements

(1) Stack parameters shall meet all of the following:

(A) The minimum stack height for each engine shall be 25 feet.

(B) The stack diameter shall be equal to or less than 8 inches.

(C) The minimum stack exit temperature shall be at least 961 degrees Fahrenheit, except during periods of startup or shutdown not to exceed 30 minutes per event, as documented in engine manufacturer specifications.

(D) The exit velocity shall be at least 442 feet per second, except during periods of startup or shutdown not to exceed 30 minutes per event, as documented in engine manufacturer specifications.

(2) Engines must be located at least 25 feet from the nearest point on the property line. The maximum number of engines that may be authorized under this standard permit depends on the distance from the property line to the nearest engine but may not exceed six engines. The property line limitations are specified in Table 1 below.

Table 1: Engine Distance Limitations

Minimum Distance to Property Line	25 ft	25 ft	100 ft	600 ft	600 ft	900 ft
Number of Engines	1	2	3	4	5	6

(3) A non-resettable run time meter shall be installed on the engine.

(e) Emission Limitations

(1) Emissions from each engine shall not exceed the emission limitations in Table 2 and the emission standards listed in Table 3.

Table 2: Emissions Limits, per Engine

Air Contaminant	Pounds per Hour	Tons per Year, 12-month rolling period
Nitrogen Oxides (NO_X)	1.62	0.32
Formaldehyde	0.97	0.19
Carbon Monoxide (CO)	6.47	1.29
Volatile Organic Compounds (VOC)*	2.27	0.45
Total Particulate Matter (PM)	0.003	0.001
Total particulate matter equal to or less than 10 microns in diameter (PM_{10})	0.003	0.001
Total particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$)	0.003	0.001
Sulfur Dioxide (SO_2)	0.014	0.003
Sulfuric Acid (H_2SO_4)	0.002	0.0004

*VOC emission rate totals include formaldehyde emissions

Table 3: Emission Standards, per Engine

Air Contaminant	Emission Standards in g/hp-hr, one-hour averaging period
NO_X	0.5
CO	2.0
VOC*	0.7
PM	0.0008
PM_{10}	0.0008
$PM_{2.5}$	0.0008
Formaldehyde	0.3

*VOC emission standard includes formaldehyde

(2) Compliance with the NO_X and CO emission limits shall be demonstrated in accordance with sections (f)(4) and (f)(5).

(f) Operational Requirements

(1) Emissions from each engine shall be limited to no more than 400 hours of operation per rolling 12-month period.

(2) The engine and after-treatment control device shall be operated and maintained according to the manufacturer's emission-related written instructions.

(3) Fuel Specifications:

(A) Fuel is limited to pipeline-quality, sweet natural gas containing no more than 0.5 grains total sulfur per 100 dry standard cubic feet (dscf) on an hourly and annual basis.

(B) Permit holder shall install and operate a totalizing fuel flow meter to measure the fuel usage for the unit and fuel usage shall be recorded monthly. The monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5%.

(C) The natural gas shall be sampled annually to determine total sulfur and net heating values. Test results from the fuel supplier may be used to satisfy this requirement. Additionally, upon written request by the TCEQ executive director or any air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel utilized at this facility at the time the request is made or shall allow air pollution control agency representatives to obtain a sample for analysis.

(4) Initial Determination of Compliance

(A) If the certified stationary spark-ignited internal combustion engine and control device are operated and maintained according to the manufacturer's emission-related written instructions, the permit holder must keep records of conducted maintenance to demonstrate compliance, but no initial determination of compliance nor continuous demonstration of compliance testing under subsections (f)(4)(B)-(H) or (f)(5) is required. To ensure continuing compliance with the emissions limitations, the owner or operator shall re-certify a unit at least every three years. Re-certification may be accomplished by following a maintenance schedule that the manufacturer certifies will ensure continued compliance with the required NO_X standard or by third party testing of the unit using appropriate EPA reference methods, California Air Resources Board methods, or equivalent alternative testing methods approved by the TCEQ executive director to demonstrate that the unit still meets the required emission standards.

(B) Stack sampling and other testing shall be performed as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the engine(s) to demonstrate compliance with any emission rate represented in the registration and emission standards listed in subsection (e)(1). The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at their expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual (including but not limited to the TCEQ Guidelines for Stack Sampling Facilities and Submitting a Complete Air Emission Test Report) and the U.S. EPA Stack Testing Guidance.

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 Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60) testing requiring EPA approval shall be submitted to the TCEQ regional office. 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. The TCEQ regional office must approve any deviation from specified sampling procedures.

(i) The appropriate TCEQ regional office shall be notified through the TCEQ Stack Testing Online Reporting System (STORS) no less than 45 days prior to sampling. The notice shall include:

1. Proposed date for pretest meeting.
2. Date sampling will occur.
3. Name of firm conducting sampling.
4. Type of sampling equipment to be used.
5. Method or procedure to be used in sampling.
6. Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.
7. Procedure used to determine worst case emissions such as monitoring engine horsepower load during the sampling period.

(C) The nitrogen dioxide (NO_2)-to-NO_X ratio shall be determined for the engine tested at full load and full speed.

(D) Air contaminants emitted from the engines to be tested for include (but are not limited to) NO_X, CO, and oxygen (O_2).

(E) Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after initial start-up of the facility and at such other times as may be required by the TCEQ executive director. Requests for additional time to perform sampling shall be submitted to the appropriate TCEQ regional office.

(F) Engine emissions and exhaust flow rates shall be determined using EPA methodology approved by the TCEQ regional office prior to sampling. Emissions shall be sampled at four points over the normal load range of the engine, including the minimum and maximum of the range.

(i) At each test load, the following operating parameters shall be varied to identify the range over which the allowable emission limits are not exceeded: engine speed and heat rate. The NO_X emission levels measured by Reference Method 20 shall be adjusted accordingly. The unadjusted NO_X emission level shall be used to determine compliance with the brake-specific emission limits of this permit.

(G) Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the TCEQ Regulatory Guidance RG-578 - Submitting a Complete Air Emissions Test Report. The reports shall be distributed as follows:

(i) One copy to the appropriate TCEQ regional office through STORS.

(ii) One copy to each local air pollution control program, if applicable.

(H) Sampling ports and platform(s) shall be incorporated into the design of the source stack according to the specifications set forth in "Guidelines for Stack Sampling Facilities (Formerly Chapter 2)". Alternate sampling facility designs must be submitted for approval to the TCEQ regional office.

(5) Continuous Demonstration of Compliance

(A) The permit holder shall begin performing the following for the engine(s) represented in the registration within 180 days of the completion of initial stack testing per section (f)(4).

(i) Conduct evaluations of engine performance quarterly, with at least 60 days between tests, based on the calendar year, by measuring the NO_X, CO, and O_2 content of the exhaust. After four consecutive acceptable quarterly tests, the engine testing schedule may be changed to semiannually, with at least four months between tests, on approval by the TCEQ regional office.

(ii) The use of portable analyzers specifically designed for measuring the concentration of each contaminant in parts per million by volume is acceptable for these evaluations. A hot air probe or equivalent shall be used with portable analyzers to prevent error in results due to high exhaust gas temperatures. Three sets of measurements shall be averaged to determine the concentrations. Prior to and following the measurements, the portable analyzer shall be checked for accuracy using an audit gas that conforms to the specifications in 40 CFR Part 60, Appendix F, 5.1.2(3). Any other method approved by the appropriate TCEQ regional office is also acceptable.

(iii) If the portable analyzer is capable of measuring nitric oxide and nitrogen dioxide, then these measurements shall be summed to determine the NO_X emission rate. Emissions shall be measured and recorded in the as-found operating condition, except no compliance determination shall be established during start-up, shutdown, or under breakdown conditions.

(iv) Emissions calculations shall be used to convert the portable analyzer data to a clear demonstration of compliance with the allowable pounds per hour of NO_X and CO represented in the registration on a quarterly or semiannual basis, per subparagraph (5)(A)(i), for the engine.

(v) If the engine is out of operation for more than one year, other than for maintenance and readiness checks, the performance of the engine shall be evaluated within the first 200 operating hours after returning the engine to service.

(vi) Within 14 days after each occurrence of engine maintenance that is reasonably expected to affect emissions, such as oxygen sensor replacement, air fuel ratio controller replacement, catalyst cleaning, or catalyst replacement, the engine shall be tested for NO_X and CO emission limits in this permit.

(vii) Install and operate a monitoring device capable of recording the inlet flue gas temperature to the catalyst. The monitoring device shall be calibrated according to the manufacturer's specifications or at least annually. The monitoring device shall be accurate to 2% of reading or 2.5 degrees Celsius.

(B) An O_2 or NO_X sensor shall be installed on the engine. The sensor shall be maintained and replaced per manufacturer recommendations. The sensor shall be connected to a visible or audible indicator of the proper O_2, or NO_X content and checks of the indicator shall be made at least daily.

(C) The permit holder shall either measure, or develop a program to calculate, the total mass flow rate through the stack to ensure continuous compliance with the emission limitations represented in the registration. After the initial demonstration of compliance, ongoing compliance with the NO_X and CO per year emission rates represented in the registration shall be demonstrated by calculating rolling 12-month annual emissions from emission factors (lb/MMBtu, HHV) obtained from the results of the sampling required by paragraph (f)(5)(A)(i) and the monthly total heat input (MMBtu, HHV) from natural gas fuel.

(6) Visible Emissions Requirements

(A) No visible emissions shall leave the property. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA Test Method (TM 22) or equivalent.