



COMPLIANCE PLAN **CD-01**

Facility Name: Northern Natural Gas Co - Farmington

Permit Number: 03700014 - 005

Subject Item: EU 007 Natural Gas Turbine Compressor

Associated Items: SV 007

	NC/CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	Gas Turbine Replacement and Reconstruction: The gas turbine is composed of four main components: an axial compressor, combustor, high pressure turbine (provides mechanical power to drive the axial compressor), and the power turbine (converts thermal to mechanical energy to drive the pipeline compressor). The axial compressor, combustor and high pressure turbine are also known as a gas generator. The Permittee is authorized to replace any or all of the four components for maintenance purposes at manufacturer-specified time intervals as specified later in this permit. Replacement of components meeting the definition of "reconstruction" as defined at 40 CFR Section 60.15, triggers requirements of 40 CFR pt. 60, subp. KKKK for reconstructed facilities. This permit includes the 40 CFR pt. 60, subp. KKKK requirements for reconstructed affected facilities.
2.0		CD	Minn. R. 7007.0800, subp. 2 CONTINUED	Gas Turbine Replacement and Reconstruction (continued from above): In addition, replacement of components meeting the definition of "reconstruction" as defined at 40 CFR Section 63.2, may trigger requirements of 40 CFR pt. 63, subp. YYYY for reconstructed affected sources. If 40 CFR pt. 60, subp. KKKK (subp. KKKK) requirements are triggered due to reconstruction, the Permittee is no longer subject to 40 CFR pt. 60, subp. GG (subp. GG), and shall meet the subp. KKKK requirements in this subject item. Requirements specific to subp. GG are listed under headings containing the phrase "NO RECONSTRUCTION". Requirements specific to subp. KKKK are listed under headings containing the phrase "RECONSTRUCTION". Requirements listed under headers that are silent regarding reconstruction, apply regardless if there is reconstruction.
3.0		CD	hdr	OPERATING LIMITS
4.0		CD	40 CFR Section 60.12; Minn. R. 7011.0050	No owner or operator shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard.
5.0		CD	hdr	EMISSION LIMITS - NO RECONSTRUCTION
6.0		LIMIT	Minn. R. 7011.2300, subp. 1	Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.
7.0		LIMIT	Minn. R. 7011.2300, subp. 2	Sulfur Dioxide: less than or equal to 0.50 lbs/million Btu heat input (this is met through the equipment capacity burning natural gas - maximum hourly emission is 0.19 lb/hr or 0.0034 lb/MMBtu).
8.0		LIMIT	40 CFR Section 60.332(d), Minn. R. 7011.2350	Nitrogen Oxides: less than or equal to 0.0157 percent by volume at 15 percent oxygen and on a dry basis, at rated load.
9.0		LIMIT	40 CFR Section 60.333, Minn. R. 7011.2350	Sulfur Content of Fuel: less than or equal to 0.8 percent by weight OR Sulfur Dioxide: less than or equal to 0.015 percent by volume at 15 percent oxygen on a dry basis.
10.0		CD	Minn. R. 7005.0100, subp. 35a	Permitted Fuel Type: natural gas only, by design
11.0		CD	hdr	MONITORING AND REPORTING REQUIREMENTS - NO RECONSTRUCTION
12.0		CD	40 CFR Section 60.334(h)(4) (previously approved custom schedule); Minn. R. 7011.2350	Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, a gas chromatograph or an approved alternative method.
13.0		CD	40 CFR Section 60.334(h)(4) (previously approved custom schedule); Minn. R. 7011.2350	Sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR Section 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.
14.0		CD	40 CFR Section 60.334(h)(4) (previously approved custom schedule); Minn. R. 7011.2350	Sulfur Monitoring: If, after the first 2 years of sulfur monitoring, the sulfur content of fuel shows little variability and, when calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR Section 60.333, sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year.



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15.0		CD	40 CFR Section 60.334(h)(4) (previously approved custom schedule); Minn. R. 7011.2350	Recordkeeping: Records of sample analyses and fuel supply pertinent to the custom fuel-monitoring schedule shall be retained for a period a five (5) years, and be available for inspection by personnel of federal, state, and local air pollution control agencies.
16.0		CD	40 CFR Section 60.334(h)(4) (previously approved custom schedule); Minn. R. 7011.2350	Notification of noncompliance: Should any sulfur analysis indicate noncompliance with 40 CFR Section 60.333, the Permittee shall notify the MPCA of such excess emissions and the custom fuel monitoring schedule shall be re-examined by the Administrator. Sulfur monitoring shall be conducted weekly during the interim period when this custom fuel-monitoring schedule is being re-examined.
17.0		CD	40 CFR Section 60.334(h)(4) (previously approved custom schedule); Minn. R. 7011.2350	Reporting: If there is a change in fuel supply, the Permittee must notify the MPCA of such change for re-examination of the custom fuel-monitoring schedule. A substantial change in fuel quality shall be considered as a change in fuel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
18.0		CD	40 CFR Section 60.334(h)(3), Minn. R. 7011.2350	The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR Section 60.331(u), regardless of whether an existing custom schedule approved by the administrator for Subpart GG requires such monitoring. The owner or operator shall use one of the sources of information in 40 CFR Section 60.334(h)(3)(i) or (ii) to make the required demonstration.
19.0		CD	hdr	TURBINE COMPONENT REPLACEMENT PROVISIONS
20.0		CD	Title I Condition: To avoid classification as major modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	EU 007 Turbine Component Replacement Authorization: The Permittee may make the replacements specified below without the need for a permit amendment if there is no increase in the hourly emissions rate of any pollutant, no new applicable requirements are triggered, and the Permittee continues to comply with all existing applicable permit conditions. Notification of routine repair and replacement for EU 007 shall include: the new serial number and justification that the fixed capital cost of the new components does not exceed 50 percent of the fixed capital cost that would be required to construct a comparable unit. The notification submitted to the Agency must be postmarked 5 days prior to the action.
21.0		CD	Title I Condition: To avoid classification as major modification under 40 CFR Section 52.21 & Minn. R. 7007.3000 CONTINUED	EU 007 Turbine Component Replacement Authorization (continued): The Permittee is allowed to replace any of the four main gas turbine components (defined earlier in this permit) with similar components as needed. The Permittee may also replace the entire gas generator (axial compressor, combustor, and high pressure turbine) with a gas generator of the same model and ISO-rated horsepower. If replacement of components qualifies EU 007 as a reconstructed facility for purposes of subp. KKKK, the Permittee shall follow the applicable subp. KKKK requirements in this subject item instead of the subp. GG requirements.
22.0		CD	Title I Condition: To avoid classification as major modification under 40 CFR Section 52.21 & Minn. R. 7007.3000 CONTINUED	EU 007 Turbine Component Replacement Authorization (continued): If replacement of components qualifies EU 007 as a reconstructed facility for purposes of subp. KKKK, the Permittee shall follow the applicable subp. KKKK requirements in this subject item instead of the subp. GG requirements. If replacement of components qualifies EU 007 as a reconstructed stationary turbine as defined in 40 CFR pt. 63, subp. YYYY, then the Permittee shall comply with subp. YYYY and apply for the appropriate permit amendment to incorporate the standard into the permit, if applicable. The Permittee is not authorized to install an additional gas turbine, is not authorized to completely replace the entire stationary gas turbine as defined at 40 CFR Section 60.4420, is not permitted to operate more than one stationary gas turbine at the facility, and is not authorized to increase the emission rate (lb/hr, tpy, lb/hp-hr, lb/mmBtu, etc.) of any pollutant with this authorization.
23.0		CD	Title I Condition: To avoid classification as major modification under 40 CFR Section 52.21 & Minn. R. 7007.3000 CONTINUED	EU 007 Turbine Component Replacement Authorization (continued): The gas turbine will continue to be designated as EU 007 regardless if these components have been replaced, and the gas turbine shall continue to be subject to all applicable requirements listed under subject item EU 007.
24.0		CD	Minn. R. 7007.0800, subps. 2, 4, and 5	Turbine Component Replacement Recordkeeping: The Permittee shall record the date and nature of each component replacement no later than 5 business days after completion of each replacement. The Permittee shall also record the total cost of the component replacement compared to the cost of an entirely new stationary gas turbine (as defined at 40 CFR Section 60.4420). This record shall be made at least 30 days before a NOx test is conducted on the gas turbine (as a result of the component replacement), but no later than 180 days after each component replacement.
25.0		CD	hdr	COMPLIANCE REQUIREMENTS - RECONSTRUCTION



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26.0		CD	40 CFR Section 60.4333(a)	The Permittee must operate and maintain EU 007, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including startup, shutdown, and malfunction.
27.0		CD	40 CFR Section 60.4340(b)	As an alternative to 40 CFR Section 60.4340(a) performance testing requirements, the Permittee may install, calibrate, maintain and operate one of the following continuous monitoring systems: (1) Continuous emission monitoring as described in Sections 60.4335(b) and 60.4345, or (2) Continuous parameter monitoring as follows: - For any lean premix stationary combustion turbine, the Permittee must continuously monitor the appropriate parameters to determine whether the unit is operating in low-NOx mode. If any of these options are chosen, the Permittee shall comply with all applicable portions of 40 CFR pt. 60, subp. KKKK, and the Permittee shall apply for a permit amendment as applicable to incorporate such requirements.
28.0		CD	40 CFR Section 60.4365(a)	Fuel Sulfur Content: The Permittee shall maintain a current valid purchase contract, tariff sheet, or transportation contract for the fuel, specifying the maximum total sulfur content for natural gas is 20 grains of sulfur or less per 100 standard cubic feet.
29.0		CD	hdr	PERFORMANCE TESTING - RECONSTRUCTION
30.0		CD	40 CFR Section 60.4340(a)	The Permittee shall perform annual performance tests in accordance with 40 CFR Section 60.4400 to demonstrate continuous compliance. If the NOx emission result from the performance test is less than or equal to 75 percent of the NOx emission limit in 40 CFR 60.4320(a) for the turbine, the Permittee may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NOx emission limit for the turbine, the Permittee must resume annual performance tests.
31.0		CD	40 CFR Sections 60.8(a) and 60.4400; Minn. R. 7017.2020, subp. 1	Initial Performance Test: due 180 days after Initial Startup and reconstruction of EU 007, for NOx in accordance with 40 CFR Sections 60.8 and 60.4400.
32.0		CD	40 CFR Sections 60.8(a) and 60.4400; Minn. R. 7017.2020, subp. 1	Annual Performance Test: due 425 days after Initial Performance Test (for NOx) or most recent performance test of EU 007, as required in 40 CFR Section 60.8 and in accordance with 40 CFR Section 60.4400. The Permittee shall conduct testing on an annual basis (no more than 14 calendar months following the previous performance test).
33.0		CD	40 CFR Section 60.4375(b)	NOx Performance Test Report: In addition to the other notifications and submittals required by Minn. R. ch. 7017, the Permittee shall submit a written report of the results of each NOx performance test before the close of business on the 60th day following completion of the performance test.
34.0		CD	hdr	NOTIFICATIONS - RECONSTRUCTION
35.0		CD	40 CFR Section 60.7(a)(1); Minn. R. 7019.0100, subp. 1	Notification of the Date Reconstruction Began: due 30 days after start of Reconstruction. Submit the name and number of each unit and the date construction of each unit began.
36.0		CD	40 CFR Section 60.7(a)(3); Minn. R. 7019.0100, subp. 1	Notification of the Actual Date of Initial Startup: due 15 days after Initial Startup of the Reconstructed EU 007.
37.0		CD	40 CFR Section 60.15(d); Minn. R. 7019.0100, subp. 1	Notification of Proposed Replacement of Components: If the Permittee proposes to replace components of EU 007, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable unit, the Permittee shall notify the MPCA of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information specified in 40 CFR Section 60.15(d)(1) through (7).