

**Draft Air Individual Permit
Part 70 Reissuance
09500004-102**

Permittee: Viking Gas Transmission - Milaca Station 2217
Co-permittee name: ONEOK
Facility name: Viking Gas Transmission - Milaca Station 2217
13224 125th Ave
Milaca, MN 56353-3723
Mille Lacs County

Expiration date: [5 years from issuance]

* All Title I Conditions do not expire

Part 70 Reissuance: [Action Issue Date]

Permit characteristics: Federal; Part 70/ Major for NSR; Limits to Avoid NSR

The emission units, control equipment and emission stacks at the stationary source authorized in this permit reissuance are as described in the submittals listed in the Permit Applications Table.

This permit reissuance supersedes Air Emission Permit No. 09500004-007 and authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in the permit. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Signature: ()

This document has been electronically signed.

for Steven S. Pak, P.E., Manager
Air Quality Permits Section
Industrial Division

for the Minnesota Pollution Control Agency

Table of Contents

	Page
1. Permit applications table	3
2. Where to send submittals.....	4
3. Facility description	5
4. Summary of subject items	6
5. Limits and other requirements	7
6. Submittal/action requirements	26
7. Appendices.....	27
Appendix A. Insignificant Activities and General Applicable Requirements.....	27
Appendix B. Stack Parameters used in Modeling for Nitrogen Dioxide	28
Appendix C. 40 CFR Part 60, Subpart KKKK—Standards of Performance for Stationary Combustion Turbines	29

Permit issued: [month day, year]
Permit expires: [month day, year]

1. Permit applications table

Title description	Application receipt date	Action number
Part 70 Reissuance	12/07/2020, supplement received 1/4/2021	09500004-102

Permit issued: [month day, year]
Permit expires: [month day, year]

09500004-102
Page 4 of 46

2. Where to send submittals

Send submittals that are required to be submitted to the EPA regional office to:

Chief Air Enforcement
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by Minn. R. 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

Fiscal Services – 6th Floor
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:

- a. Accumulated insignificant activities
- b. Installation of control equipment
- c. Replacement of an emissions unit, and
- d. Changes that contravene a permit term

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Or

Email a signed and scanned PDF copy to:
submitstacktest.pca@state.mn.us
(for submittals related to stack testing)
AQRoutineReport.PCA@state.mn.us
(for other compliance submittals)
(See complete email instructions in “Routine Air Report Instructions Letter” at
<http://www.pca.state.mn.us/nwqh472>.)

Permit issued: [month day, year]
Permit expires: [month day, year]

09500004-102
Page 5 of 46

3. Facility description

The Viking Gas Transmission - Milaca Station 2217 (Facility) is located at 13224 125th Avenue in Milaca, Mille Lacs County, Minnesota.

The Milaca facility is a natural gas compressor station consisting of one lean pre-mix combustion turbine compressor engine (EQUI 1), three 2-stroke lean burn reciprocating internal combustion compressor engines (EQUI 2, EQUI 3, and EQUI 4), one water jacket heater (EQUI 5), and one 4-stroke rich burn reciprocating internal combustion engine emergency generator (EQUI 6). All units combust only pipeline natural gas obtained from the pipeline. The four compressors pressurize the natural gas in the pipeline causing it to flow to the next compressor station. The water jacket heater is used to warm up the lubricant and condition other engine fluids before the other compressor engines are started. The pollutants emitted by the facility are from the combustion of natural gas.

This facility is located on a natural gas transmission pipeline with compressor stations located in Minnesota from north to south, at Humboldt, Angus, Ada, Frazee, Cushing, and Milaca.

4. Summary of subject items

SI ID: Description	Relationship type	Related SI ID: Description
TFAC 1: Viking Gas Transmission - Milaca Station 2217		
ACTV 1: All IA's		
EQUI 1: Turbine Engine #1 lean pre-mix 45 mmBtu/hr - Turbine	sends to	STRU 11: Turbine Engine #1
EQUI 2: #1A 2SLB 13 mmBtu/hr - Reciprocating IC Engine	sends to	STRU 6: Reciprocating Engine #1A
EQUI 3: #2A 2SLB 13 mmBtu/hr - Reciprocating IC Engine	sends to	STRU 7: Reciprocating Engine #2A
EQUI 4: #3A 2SLB 13 mmBtu/hr - Reciprocating IC Engine	sends to	STRU 8: Reciprocating Engine #3A
EQUI 5: Water Jacket Heater - Process Heater	sends to	STRU 9: Water Jacket Heater
EQUI 6: Emergency Generator 4SRB 3 mmBtu/hr - Reciprocating IC Engine	sends to	STRU 10: Reciprocating Engine - Emergency Generator

SI ID: Description	Relationship type	Related SI ID: Description
STRU 1: Equipment Garage		
STRU 2: Compressor Bldg A		
STRU 3: Office and Shop		
STRU 4: Office		
STRU 5: Compressor Bldg B		
STRU 6: Reciprocating Engine #1A		
STRU 7: Reciprocating Engine #2A		
STRU 8: Reciprocating Engine #3A		
STRU 9: Water Jacket Heater		
STRU 10: Reciprocating Engine - Emergency Generator		
STRU 11: Turbine Engine #1		

5. Limits and other requirements

Requirement number	Requirement and citation
TFAC 1	Viking Gas Transmission - Milaca Station 2217
5.1.1	<p>Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices A: Insignificant Activities and Applicable Requirements and C:40 CFR Part 60, Subpart KKKK - Standard of Performance for Stationary Combustion Turbines.</p> <p>Modeling parameters in Appendix B: Stack Parameters used in Modeling for Nitrogen Dioxide are included for reference only as described elsewhere in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B)]</p>
5.1.2	<p>The Permittee must comply with Minn. Stat. 116.385. The Permittee may not use trichloroethylene at its permitted facility after June 1, 2022, including in any manufacturing, processing, or cleaning processes, except as described in Minn. Stat. 116.385, subd. 2(b) and 4. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. Stat. 116.385]</p>
5.1.3	<p>PERMIT SHIELD: Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.</p> <p>This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800(A)(2)]</p>
5.1.4	<p>The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0090. Compliance shall be demonstrated upon written request by the MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]</p>
5.1.5	<p>Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. [Minn. R. 7011.0020]</p>
5.1.6	<p>Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated. [Minn. R. 7007.0800, subp. 16(J), Minn. R. 7007.0800, subp. 2(A) & (B)]</p>
5.1.7	<p>Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 16(J)]</p>
5.1.8	<p>Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate. [Minn. R. 7019.1000, subp. 4]</p>

Requirement number	Requirement and citation
5.1.9	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. [Minn. R. 7011.0150]
5.1.10	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
5.1.11	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A). [Minn. R. 7007.0800, subp. 9(A)]
5.1.12	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
5.1.13	<p>Monitoring Equipment Calibration - The Permittee shall either:</p> <ol style="list-style-type: none"> 1. Calibrate or replace required monitoring equipment every 12 months; or 2. Calibrate at the frequency stated in the manufacturer's specifications. <p>For each monitor, the Permittee shall maintain a record of all calibrations, including the date conducted, and any corrective action that resulted. The Permittee shall include the calibration frequencies, procedures, and manufacturer's specifications (if applicable) in the Operations and Maintenance Plan. Any requirements applying to continuous emission monitors are listed separately in this permit. [Minn. R. 7007.0800, subp. 4(D)]</p>
5.1.14	Operation of Monitoring Equipment: Unless noted elsewhere in this permit, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. [Minn. R. 7007.0800, subp. 4(D)]
5.1.15	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]
5.1.16	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. [Minn. R. 7007.0800, subp. 5(B)]
5.1.17	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]
5.1.18	These requirements apply if a reasonable possibility (RP) as defined in 40 CFR Section 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at 40 CFR Section 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of 40 CFR Section

Requirement number	Requirement and citation
	<p>52.21(r)(6)(vi)(b).</p> <p>Even though a particular modification is not subject to New Source Review (NSR), or where there isn't a RP that a proposed project could result in a SEI, a permit amendment, recordkeeping, or notification may still be required by Minn. R. 7007.1150 - 7007.1500. [Minn. R. 7007.0800, subp. 2(A), Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]</p>
5.1.19	<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following:</p> <ol style="list-style-type: none"> 1. Project description 2. Identification of any emission unit whose emissions of an NSR pollutant could be affected 3. Pre-change potential emissions of any affected existing emission unit, and the projected post-change potential emissions of any affected existing or new emission unit. 4. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the emission unit could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination. <p>The Permittee shall maintain records of this documentation. [Minn. R. 7007.0800, subps. 4-5, Minn. R. 7007.1200, subp. 4, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]</p>
5.1.20	<p>The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions in the hybrid test. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if the hybrid test was used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of five years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]</p>
5.1.21	<p>The Permittee must submit a report to the Agency if the annual summed (actual, plus potential if used in hybrid test) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain:</p> <ol style="list-style-type: none"> a. The name and ID number of the Facility, and the name and telephone number of the Facility contact person. b. The annual emissions (actual, plus potential if any part of the project was analyzed using the hybrid test) for each pollutant for which the preconstruction projection and significant emissions increase are exceeded. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]
5.1.22	<p>Before beginning actual construction of any project which includes any electric utility steam generating unit (EUSGU), the Permittee shall submit a copy of the preconstruction documentation (items 1-4 under Preconstruction Documentation, above) to the Agency. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(r)(6)(ii) and Minn. R. 7007.3000]</p>
5.1.23	<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown</p>

Requirement number	Requirement and citation
	<p>of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]</p>
5.1.24	<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]</p>
5.1.25	<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]</p>
5.1.26	<p>Notification of Deviations Endangering Human Health or the Environment Report: Within two working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. [Minn. R. 7019.1000, subp. 1]
5.1.27	<p>If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]</p>
5.1.28	<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p> <p>Upon adoption of a new or amended federal applicable requirement, and if there are three or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]</p>
5.1.29	<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the</p>

Requirement number	Requirement and citation
	requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H). [Minn. R. 7007.1400, subp. 1(H)]
5.1.30	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
5.1.31	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0085]
5.1.32	Modeled Parameters for NO ₂ : The parameters used in NO ₂ modeling for permit number 09500004-002 are listed in Appendix B of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.33	Modeling Triggers (Modeling Not Required) for NO ₂ : Changes that do not require a permit amendment or that require a minor or administrative permit amendment do not trigger the Modeling Submittal requirement. The Permittee shall keep updated records on site of all modeled NO ₂ parameters and emission rates listed in Appendix B. The Permittee shall submit any changes to modeled NO ₂ parameters and emission rates with the next required modeling submittal. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.34	Modeling Triggers (Modeling Required) for NO ₂ : Changes that require, or would require, a moderate or major permit amendment due to an increase in NO ₂ emissions and affect any modeled NO ₂ parameter or emission rate listed in Appendix B, or an addition to the information documented in Appendix B, trigger the Remodeling Submittal requirement. The Permittee shall include previously made changes to modeled NO ₂ parameters and emission rates listed in Appendix B that did not previously trigger the Modeling Submittal requirement with this modeling submittal. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.35	Computer Dispersion Modeling Protocol: due prior to submitting any moderate or major permit amendment application meeting the criteria in the "Modeling Triggers (Modeling Required) for NO ₂ " permit requirement. The Permittee shall submit a Computer Dispersion Modeling Protocol that is complete and approvable by MPCA by the deadline in this requirement. This protocol will describe the proposed modeling methodology and input data, in accordance with the current version of the MPCA Air Dispersion Modeling Guidance. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.36	Computer Dispersion Modeling Protocol: due 60 days after receipt of written MPCA request for revisions to the submitted protocol for NO ₂ modeling. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.37	Computer Dispersion Modeling Results: due at the same time as any moderate or major permit application meeting the criteria in the "Modeling Triggered (Modeling Required) for NO ₂ " based on written MPCA approval of Computer Dispersion Modeling Protocol for NO ₂ . The Permittee shall submit a final Computer Dispersion Modeling Report that is complete and approvable by MPCA by the deadline in this requirement. The submittal shall adhere to the current version of the MPCA Air Dispersion Modeling Guidance and the approved Computer Dispersion Modeling Protocol. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 1	Turbine Engine #1 lean pre-mix 45 mmBtu/hr - Turbine
5.2.1	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
5.2.2	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00061 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
5.2.3	Fuel type: Natural gas only by design. [Minn. R. 7005.0100, subp. 35a]

Requirement number	Requirement and citation
5.2.4	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
5.2.5	Fuel Type: Limited to pipeline natural gas meeting the definition in 40 CFR Section 60.331(u). [Minn. R. 7007.0800, subp. 2(A)]
5.2.6	The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [40 CFR 60.7(b), Minn. R. 7019.0100, subp. 1]
5.2.7	The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR pt. 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records, except as specified in 40 CFR Section 60.7(f)(1)-(3). [40 CFR 60.7(f), Minn. R. 7019.0100, subp. 1]
5.2.8	Excess Emissions Reporting: The Permittee shall submit reports of excess emissions and monitor downtime, in accordance with 40 CFR Section 60.7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown, and malfunction. For the purpose of reports under 40 CFR Section 60.7(c), periods of excess emissions and monitor downtime are as defined in 40 CFR Section 60.334(j)(1) through (5). [40 CFR 60.334(j), Minn. R. 7011.2350]
5.2.9	Sulfur Dioxide \leq 0.015 percent by volume at 15 percent oxygen and on a dry basis. [40 CFR 60.333, Minn. R. 7011.2350]
5.2.10	<p>Fuel Monitoring: The Permittee shall follow the applicable fuel sulfur content monitoring requirements in 40 CFR Section 60.334(h) and shall monitor at the frequency specified in 40 CFR Section 60.334(i).</p> <p>40 CFR Section 60.334(h)(3) allows the Permittee to not monitor total sulfur content of gaseous fuel if the fuel is shown to meet the definition of natural gas as defined in 40 CFR Section 60.331(u). [40 CFR 60.334(h)-(i), Minn. R. 7011.2350]</p>
5.2.11	<p>EQUI 1 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, no new applicable requirements are triggered, and the Permittee continues to comply with all existing applicable permit conditions.</p> <p>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 EQUI 1 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.</p> <p>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 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.</p> <p>The gas turbine will continue to be designated as EQUI 1 regardless if these components have been replaced, and the gas turbine shall continue to be subject to all applicable requirements listed under</p>

Requirement number	Requirement and citation
5.2.12	<p data-bbox="453 289 1560 348">subject item EQUI 1. [Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000]</p> <p data-bbox="453 363 1560 520">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. EQUI 1 is model 4-T4700S manufactured by Solar.</p> <p data-bbox="453 556 1560 714">The Permittee is authorized to replace any or all of the four components for maintenance purposes at manufacturer's 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.</p> <p data-bbox="453 749 1560 842">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. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.2.13	<p data-bbox="453 856 1560 915">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.</p> <p data-bbox="453 951 1560 1108">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. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]</p>
5.2.14	<p data-bbox="453 1123 1560 1182">Reconstructed Units: The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. KKKK as follows:</p> <ul data-bbox="453 1218 730 1732" style="list-style-type: none"> 40 CFR 60.4300; 40 CFR 60.4305(a); 40 CFR 60.4315; 40 CFR 60.4320(a); 40 CFR 60.4330(a)(1)-(2); 40 CFR 60.4333(a); 40 CFR 60.4340(a); 40 CFR 60.4365(a); 40 CFR 60.4375(b); 40 CFR 60.4385(b); 40 CFR 60.4395; 40 CFR 60.4400(a); 40 CFR 60.4400(b)(4); 40 CFR 60.4400(b)(6); 40 CFR 60.4420; and 40 CFR pt. 60, subp. KKKK, Table 1. <p data-bbox="453 1768 1117 1795">A copy of 40 CFR pt. 60, subp. KKKK is included in Appendix C.</p> <p data-bbox="453 1831 1560 1957">If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. KKKK, Minn. R. 7007.0400, subp. 3, Minn. R.</p>

Requirement number	Requirement and citation
5.2.15	Reconstructed Units: The Permittee must limit emissions of Sulfur Dioxide \leq 110 nanograms per joule (0.90 lb/MWh) gross output or the Permittee must not burn any fuel in EQUI 1 which contains total potential sulfur emissions in excess of 26 ng SO ₂ /J (0.060 lb SO ₂ /MMBtu) heat input. [40 CFR 60.4330(a), Minn. R. 7011.2375]
5.2.16	Reconstructed Units: The Permittee must limit emissions of Nitrogen Oxides \leq 42 parts per million at 15 percent O ₂ or 250 ng/J of useful output (2.0 lb/MWh) when turbine is operating at or above 75 percent of peak load and when operating at 0 deg F or above. [40 CFR 60.4320(a), Minn. R. 7011.2375]
5.2.17	Reconstructed Units: The Permittee must limit emissions of Nitrogen Oxides \leq 150 parts per million at 15 percent O ₂ or 1,100 ng/J of useful output (8.7 lb/MWh) when turbine is operating at less than 75 percent of peak load or operating at temperatures less than 0 deg F. [40 CFR 60.4320(a), Minn. R. 7011.2375]
EQUI 2	#1A 2SLB 13 mmBtu/hr - Reciprocating IC Engine
5.3.1	Change oil and filter every 4,320 hours of operation or annually, whichever comes first. The Permittee has the option of utilizing an oil analysis program in order to extend the oil change requirement as described below. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.3.2	Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.3.3	Inspect all hoses and belts every 4,320 hours of operation, or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.3.4	The Permittee must be in compliance with the operating limitations in 40 CFR pt. 63, subp. ZZZZ that apply at all times. [40 CFR 63.6605(a), Minn. R. 7011.8150]
5.3.5	At all times the Permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b), Minn. R. 7011.8150]
5.3.6	The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e), Minn. R. 7011.8150]
5.3.7	The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply. [40 CFR 63.6625(h), Minn. R. 7011.8150]
5.3.8	The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Acid

Requirement number	Requirement and citation
	<p>Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the Permittee must change the oil within 2 days or before commencing operation, whichever is later. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 63.6625(j), Minn. R. 7011.8150]</p>
5.3.9	<p>The Permittee must operate and maintain the stationary RICE according to the manufacturer's emission related operation and maintenance instructions; or the Permittee must develop and follow a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6640(a), 40 CFR pt. 63, subp. ZZZZ(Table 6)]</p>
5.3.10	<p>The Permittee must comply with the General Provisions in 40 CFR Section 63.1 through 63.15, as applicable. [40 CFR 63.1 - 63.15, 40 CFR 63.6665, 40 CFR pt. 63, subp. ZZZZ(Table 8), Minn. R. 7011.8150]</p>
5.3.11	<p>The Permittee must demonstrate continuous compliance with each emission limitation and operating limitation in Table 2d of 40 CFR pt. 63, subp. ZZZZ that apply according to methods specified in Table 6 of 40 CFR pt. 63, subp. ZZZZ. [40 CFR 63.6640(a), Minn. R. 7011.8150]</p>
5.3.12	<p>The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the Permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the maintenance plan. [40 CFR 63.6655(e), Minn. R. 7011.8150]</p>
5.3.13	<p>The Permittee shall keep records in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1).</p> <p>As specified in 40 CFR Section 63.10(b)(1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record.</p> <p>The Permittee shall keep each records readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to 40 CFR Section 63.10(b)(1). [40 CFR 63.10(b)(1), 40 CFR 63.6660, Minn. R. 7011.8150]</p>
5.3.14	<p>The Permittee must report each instance in which the stationary RICE did not meet each applicable operating limitation. These instances are deviations from the emission and operating limitations. These deviations must be reported with the deviations report required by this permit. These deviations must be reported according to the requirements in 40 CFR Section 63.6650. [40 CFR 63.6640(b), Minn. R. 7011.8150]</p>
5.3.15	<p>Recordkeeping: The Permittee shall maintain files of all information required by 40 CFR pt. 63 in a form suitable and readily available for expeditious inspection and review.</p> <p>The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site. [40 CFR 63.10(b)(1), Minn. R. 7019.0100, subp. 2(B)]</p>
5.3.16	<p>The Permittee shall maintain, at a minimum, the following information in the files:</p>

Requirement number	Requirement and citation
	1) the occurrence and duration of each startup, shutdown, or malfunction of operation when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards; 2) the occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment; 3) all maintenance performed on the air pollution control and monitoring equipment; 4) actions taken during periods of startup, shutdown, and malfunction when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (SSMP). In this case, the Permittee shall report this action within 2 days of occurrence and follow by a written notification within 7 days of occurrence; 5) all information necessary to demonstrate conformance with the affected source's SSMP and actions taken in accordance with SSMP; 6) each period during which a continuous monitoring system (CMS) is malfunctioning or inoperative; 7) all required measurements needed to demonstrate compliance with a relevant standard; 8) all results of performance test, CMS performance evaluations, and opacity and visible emission observations; 9) all measurements as may be necessary to determine the conditions of performance tests and performance evaluations; 10) all CMS calibration checks; 11) all adjustments and maintenance performed on CMS; 12) any information demonstrating whether a source is meeting the requirements for a waiver of record keeping or reporting requirements under this part; 13) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under 40 CFR 63.8(f)(6); and 14) all documentation supporting initial notifications and notifications of compliance status. [40 CFR 63.10(b)(2), Minn. R. 7019.0100, subp. 2(B)]
5.3.17	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
5.3.18	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
5.3.19	Fuel type: Natural gas only by design. [Minn. R. 7005.0100, subp. 35a]
5.3.20	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
EQUI 3	#2A 2SLB 13 mmBtu/hr - Reciprocating IC Engine
5.4.1	Change oil and filter every 4,320 hours of operation or annually, whichever comes first. The Permittee has the option of utilizing an oil analysis program in order to extend the oil change requirement as described below. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.4.2	Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.4.3	Inspect all hoses and belts every 4,320 hours of operation, or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.4.4	The Permittee must be in compliance with the operating limitations in 40 CFR pt. 63, subp. ZZZZ that apply at all times. [40 CFR 63.6605(a), Minn. R. 7011.8150]
5.4.5	At all times the Permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does

Requirement number	Requirement and citation
	not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b), Minn. R. 7011.8150]
5.4.6	The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e), Minn. R. 7011.8150]
5.4.7	The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply. [40 CFR 63.6625(h), Minn. R. 7011.8150]
5.4.8	The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the Permittee must change the oil within 2 days or before commencing operation, whichever is later. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 63.6625(j), Minn. R. 7011.8150]
5.4.9	The Permittee must operate and maintain the stationary RICE according to the manufacturer's emission related operation and maintenance instructions; or the Permittee must develop and follow a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6640(a), 40 CFR pt. 63, subp. ZZZZ(Table 6)]
5.4.10	The Permittee must comply with the General Provisions in 40 CFR Section 63.1 through 63.15, as applicable. [40 CFR 63.1 - 63.15, 40 CFR 63.6665, 40 CFR pt. 63, subp. ZZZZ(Table 8), Minn. R. 7011.8150]
5.4.11	The Permittee must demonstrate continuous compliance with each emission limitation and operating limitation in Table 2d of 40 CFR pt. 63, subp. ZZZZ that apply according to methods specified in Table 6 of 40 CFR pt. 63, subp. ZZZZ. [40 CFR 63.6640(a), Minn. R. 7011.8150]
5.4.12	The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the Permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the maintenance plan. [40 CFR 63.6655(e), Minn. R. 7011.8150]
5.4.13	The Permittee shall keep records in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1). As specified in 40 CFR Section 63.10(b)(1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record.

Requirement number	Requirement and citation
	The Permittee shall keep each records readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to 40 CFR Section 63.10(b)(1). [40 CFR 63.10(b)(1), 40 CFR 63.6660, Minn. R. 7011.8150]
5.4.14	The Permittee must report each instance in which the stationary RICE did not meet each applicable operating limitation. These instances are deviations from the emission and operating limitations. These deviations must be reported with the deviations report required by this permit. These deviations must be reported according to the requirements in 40 CFR Section 63.6650. [40 CFR 63.6640(b), Minn. R. 7011.8150]
5.4.15	Recordkeeping: The Permittee shall maintain files of all information required by 40 CFR pt. 63 in a form suitable and readily available for expeditious inspection and review. The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site. [40 CFR 63.10(b)(1), Minn. R. 7019.0100, subp. 2(B)]
5.4.16	The Permittee shall maintain, at a minimum, the following information in the files: 1) the occurrence and duration of each startup, shutdown, or malfunction of operation when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards; 2) the occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment; 3) all maintenance performed on the air pollution control and monitoring equipment; 4) actions taken during periods of startup, shutdown, and malfunction when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (SSMP). In this case, the Permittee shall report this action within 2 days of occurrence and follow by a written notification within 7 days of occurrence; 5) all information necessary to demonstrate conformance with the affected source's SSMP and actions taken in accordance with SSMP; 6) each period during which a continuous monitoring system (CMS) is malfunctioning or inoperative; 7) all required measurements needed to demonstrate compliance with a relevant standard; 8) all results of performance test, CMS performance evaluations, and opacity and visible emission observations; 9) all measurements as may be necessary to determine the conditions of performance tests and performance evaluations; 10) all CMS calibration checks; 11) all adjustments and maintenance performed on CMS; 12) any information demonstrating whether a source is meeting the requirements for a waiver of record keeping or reporting requirements under this part; 13) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under 40 CFR 63.8(f)(6); and 14) all documentation supporting initial notifications and notifications of compliance status. [40 CFR 63.10(b)(2), Minn. R. 7019.0100, subp. 2(B)]
5.4.17	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
5.4.18	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
5.4.19	Fuel type: Natural gas only by design. [Minn. R. 7005.0100, subp. 35a]
5.4.20	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800,

Requirement number	Requirement and citation
	subp. 5]
EQUI 4	#3A 2SLB 13 mmBtu/hr - Reciprocating IC Engine
5.5.1	Change oil and filter every 4,320 hours of operation or annually, whichever comes first. The Permittee has the option of utilizing an oil analysis program in order to extend the oil change requirement as described below. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.5.2	Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.5.3	Inspect all hoses and belts every 4,320 hours of operation, or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.5.4	The Permittee must be in compliance with the operating limitations in 40 CFR pt. 63, subp. ZZZZ that apply at all times. [40 CFR 63.6605(a), Minn. R. 7011.8150]
5.5.5	At all times the Permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b), Minn. R. 7011.8150]
5.5.6	The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e), Minn. R. 7011.8150]
5.5.7	The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply. [40 CFR 63.6625(h), Minn. R. 7011.8150]
5.5.8	The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the Permittee must change the oil within 2 days or before commencing operation, whichever is later. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 63.6625(j), Minn. R. 7011.8150]
5.5.9	The Permittee must operate and maintain the stationary RICE according to the manufacturer's emission related operation and maintenance instructions; or the Permittee must develop and follow a

Requirement number	Requirement and citation
	maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6640(a), 40 CFR pt. 63, subp. ZZZZ(Table 6)]
5.5.10	The Permittee must comply with the General Provisions in 40 CFR Section 63.1 through 63.15, as applicable. [40 CFR 63.1 - 63.15, 40 CFR 63.6665, 40 CFR pt. 63, subp. ZZZZ(Table 8), Minn. R. 7011.8150]
5.5.11	The Permittee must demonstrate continuous compliance with each emission limitation and operating limitation in Table 2d of 40 CFR pt. 63, subp. ZZZZ that apply according to methods specified in Table 6 of 40 CFR pt. 63, subp. ZZZZ. [40 CFR 63.6640(a), Minn. R. 7011.8150]
5.5.12	The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the Permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the maintenance plan. [40 CFR 63.6655(e), Minn. R. 7011.8150]
5.5.13	<p>The Permittee shall keep records in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1).</p> <p>As specified in 40 CFR Section 63.10(b)(1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record.</p> <p>The Permittee shall keep each records readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to 40 CFR Section 63.10(b)(1). [40 CFR 63.10(b)(1), 40 CFR 63.6660, Minn. R. 7011.8150]</p>
5.5.14	The Permittee must report each instance in which the stationary RICE did not meet each applicable operating limitation. These instances are deviations from the emission and operating limitations. These deviations must be reported with the deviations report required by this permit. These deviations must be reported according to the requirements in 40 CFR Section 63.6650. [40 CFR 63.6640(b), Minn. R. 7011.8150]
5.5.15	<p>Recordkeeping: The Permittee shall maintain files of all information required by 40 CFR pt. 63 in a form suitable and readily available for expeditious inspection and review.</p> <p>The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site. [40 CFR 63.10(b)(1), Minn. R. 7019.0100, subp. 2(B)]</p>
5.5.16	<p>The Permittee shall maintain, at a minimum, the following information in the files:</p> <ol style="list-style-type: none"> 1) the occurrence and duration of each startup, shutdown, or malfunction of operation when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards; 2) the occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment; 3) all maintenance performed on the air pollution control and monitoring equipment; 4) actions taken during periods of startup, shutdown, and malfunction when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (SSMP). In this case, the Permittee shall report this action within 2 days of occurrence and follow by a written notification within 7 days of occurrence; 5) all information necessary to demonstrate conformance with the affected source's SSMP and actions taken in accordance with SSMP; 6) each period during which a continuous monitoring system (CMS) is malfunctioning or inoperative; 7) all required measurements needed to demonstrate compliance with a relevant standard; 8) all results of performance test, CMS performance evaluations, and opacity and visible emission

Requirement number	Requirement and citation
	observations; 9) all measurements as may be necessary to determine the conditions of performance tests and performance evaluations; 10) all CMS calibration checks; 11) all adjustments and maintenance performed on CMS; 12) any information demonstrating whether a source is meeting the requirements for a waiver of record keeping or reporting requirements under this part; 13) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under 40 CFR 63.8(f)(6); and 14) all documentation supporting initial notifications and notifications of compliance status. [40 CFR 63.10(b)(2), Minn. R. 7019.0100, subp. 2(B)]
5.5.17	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
5.5.18	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
5.5.19	Fuel type: Natural gas only by design. [Minn. R. 7005.0100, subp. 35a]
5.5.20	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
EQUI 5	Water Jacket Heater - Process Heater
5.6.1	Filterable Particulate Matter <= 0.60 pounds per million Btu heat input. The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0510, subp. 1]
5.6.2	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0510, subp. 2]
5.6.3	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.6.4	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
5.6.5	Hours <= 2150 hours per year 12-month rolling sum for EQUI 5 when EQUI 1, EQUI 2, EQUI 3, or EQUI 4 are also in operation to be calculated by the 15th day of each month for the previous 12-month period as described in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a (a)]
5.6.6	Daily Recordkeeping of Hours of Operation: For each operation of EQUI 1, EQUI 2, EQUI 3, EQUI 4, and EQUI 5; the Permittee must record and maintain the following information: 1) The date; 2) The start time for EQUI 5 if EQUI 1, EQUI 2, EQUI 3, or EQUI 4 is operating; 3) The start time for EQUI 1, EQUI 2, EQUI 3, or EQUI 4 if EQUI 5 is operating; 4) The stop time for EQUI 5 if EQUI 1, EQUI 2, EQUI 3, or EQUI 4 is operating; and 5) The stop time for EQUI 1, EQUI 2, EQUI 3, or EQUI 4 if EQUI 5 is operating. The Permittee shall retain these records on a written or computerized log. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.6.7	Hours: Monthly Recordkeeping. By the 15th of the month, the Permittee must calculate and record the following: 1) The total hours of operation for EQUI 5 while EQUI 1, EQUI 2, EQUI 3, or EQUI 4 were operating for the previous calendar month using the daily records; and 2) The 12-month rolling sum hours of operation for the previous 12-month period by summing the monthly hours of operation for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5]
EQUI 6	Emergency Generator 4SRB 3 mmBtu/hr - Reciprocating IC Engine

Requirement number	Requirement and citation
5.7.1	Hours <= 720 hours per year 12-month rolling sum EQUI 6 when EQUI 1, EQUI 2, EQUI 3, or EQUI 4 are also in operation to be calculated by the 15th day of each month for the previous 12-month period as described in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a (a)]
5.7.2	<p>Daily Recordkeeping of Hours of Operation: For each operation of EQUI 1, EQUI 2, EQUI 3, EQUI 4, and EQUI 6; the Permittee must record and maintain the following information:</p> <ol style="list-style-type: none"> 1) The date; 2) The start time for EQUI 6 if EQUI 1, EQUI 2, EQUI 3, or EQUI 4 is operating; 3) The start time for EQUI 1, EQUI 2, EQUI 3, or EQUI 4 if EQUI 6 is operating; 4) The stop time for EQUI 6 if EQUI 1, EQUI 2, EQUI 3, or EQUI 4 is operating; and 5) The stop time for EQUI 1, EQUI 2, EQUI 3, or EQUI 4 if EQUI 6 is operating. <p>The Permittee must retain these records on a written or computerized log. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]</p>
5.7.3	<p>Monthly Recordkeeping of Hours of Operation.</p> <p>By the 15th of the month, the Permittee must calculate, record, and maintain the following:</p> <ol style="list-style-type: none"> 1) The total hours of operation for EQUI 6 is while EQUI 1, EQUI 2, EQUI 3, or EQUI 4 was operating for the previous calendar month using the daily hours records; and 2) The 12-month rolling sum of the hours of operation for the previous 12-month period by summing the monthly hours of operation data for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5]
5.7.4	Change oil and filter every 500 hours of operation or annually, whichever comes first. The Permittee has the option of utilizing an oil analysis program in order to extend the oil change requirement as described below. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.7.5	Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.7.6	Inspect all hoses and belts every 500 hours of operation, or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a), 40 CFR 63.6640, 40 CFR pt. 63, Subp. ZZZZ(Table 2d), Minn. R. 7011.8150]
5.7.7	The Permittee must be in compliance with the operating limitations in 40 CFR subp. ZZZZ that apply at all times. [40 CFR 63.6605(a), Minn. R. 7011.8150]
5.7.8	At all times the Permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b), Minn. R. 7011.8150]
5.7.9	The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e), Minn. R. 7011.8150]

Requirement number	Requirement and citation
5.7.10	The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply. [40 CFR 63.6625(h), Minn. R. 7011.8150]
5.7.11	The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the engine owner or operator shall change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the Permittee shall change the oil within 2 days or before commencing operation, whichever is later. The Permittee shall keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program shall be part of the maintenance plan for the engine. [40 CFR 63.6625(j), Minn. R. 7011.8150]
5.7.12	The Permittee must operate and maintain the stationary RICE according to the manufacturer's emission related operation and maintenance instructions; or the Permittee must develop and follow a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6640(a), 40 CFR pt. 63, subp. ZZZZ(Table 6), Minn. R. 7011.8150]
5.7.13	The Permittee must comply with the General Provisions in 40 CFR Section 63.1 through 63.15, as applicable. [40 CFR 63.1 - 63.15, 40 CFR 63.6665, 40 CFR pt. 63, subp. ZZZZ(Table 8), Minn. R. 7011.8150]
5.7.14	The Permittee must install a non-resettable hour meter. [40 CFR 63.6625(f), Minn. R. 7011.8150]
5.7.15	The Permittee must operate the emergency stationary RICE according to the requirements in paragraphs 40 CFR Section 63.6640 (f)(1) through (4). Any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR Section 63.6640(f)(1) through (4), is prohibited. If the engine is not operated according to the requirements in 40 CFR Section 63.6640(f)(1) through (4), the engine will not be considered an emergency engine under this subpart and will need to meet all requirements for non-emergency engines. [40 CFR 63.6640(f), Minn. R. 7011.8150]
5.7.16	There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1), Minn. R. 7011.8150]
5.7.17	The Permittee may operate the emergency stationary RICE for any combination of the purposes specified in 40 CFR Section 63.6640(f)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR Section 63.6640(f)(3) and (4) counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2). [40 CFR 63.6640(f)(2), Minn. R. 7011.8150]
5.7.18	The Permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The Permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of

Requirement number	Requirement and citation
5.7.19	<p>emergency RICE beyond 100 hours per calendar year. [40 CFR 63.6640(f)(2)(i), Minn. R. 7011.8150]</p> <p>The Permittee may operate the emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing and emergency demand response provided in 40 CFR Section 63.6640(f)(2). Except as provided in 40 CFR Section 63.6640(f)(4)(i) and (ii), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 63.6640(f)(4), Minn. R. 7011.8150]</p>
5.7.20	<p>The 50 hours per year for nonemergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:</p> <p>(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.</p> <p>(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.</p> <p>(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.</p> <p>(D) The power is provided only to the facility itself or to support the local transmission and distribution system.</p> <p>(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [40 CFR 63.6640(f)(4)(ii), Minn. R. 7011.8150]</p>
5.7.21	<p>The Permittee must demonstrate continuous compliance with each emission limitation and operating limitation in Table 2d of 40 CFR pt. 63, subp. ZZZZ that apply according to methods specified in Table 6 of 40 CFR pt. 63, subp. ZZZZ. [40 CFR 63.6640(a), Minn. R. 7011.8150]</p>
5.7.22	<p>The Permittee must keep records required in Table 6 of 40 CFR pt. 63, subp. ZZZZ, to show continuous compliance with each emission or operating limitation that applies. [40 CFR 63.6655(d), Minn. R. 7011.8150]</p>
5.7.23	<p>The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the Permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the maintenance plan. [40 CFR 63.6655(e), Minn. R. 7011.8150]</p>
5.7.24	<p>The Permittee must keep records of the hours of operation of the engine that are recorded through the non-resettable hour meter. The Permittee must document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in 40 CFR Section 63.6640(f)(2)(ii) or (iii) or 40 CFR Section 63.6640(f)(4)(ii), the Permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. [40 CFR 63.6655(f), Minn. R. 7011.8150]</p>
5.7.25	<p>The Permittee shall keep records in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1).</p> <p>As specified in 40 CFR Section 63.10(b)(1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record.</p> <p>The Permittee shall keep each records readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to 40 CFR Section 63.10(b)(1). [40 CFR 63.10(b)(1), 40 CFR 63.6660, Minn. R. 7011.8150]</p>

Requirement number	Requirement and citation
5.7.26	The Permittee must report each instance in which the stationary RICE did not meet each applicable operating limitation. These instances are deviations from the emission and operating limitations. These deviations must be reported with the deviations report required by this permit. These deviations must be reported according to the requirements in 40 CFR Section 63.6650. [40 CFR 63.6640(b), Minn. R. 7011.8150]
5.7.27	Recordkeeping: The Permittee shall maintain files of all information required by 40 CFR pt. 63 in a form suitable and readily available for expeditious inspection and review. The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site. [40 CFR 63.10(b)(1), Minn. R. 7019.0100, subp. 2(B)]
5.7.28	The Permittee shall maintain, at a minimum, the following information in the files: 1) the occurrence and duration of each startup, shutdown, or malfunction of operation when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards; 2) the occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment; 3) all maintenance performed on the air pollution control and monitoring equipment; 4) actions taken during periods of startup, shutdown, and malfunction when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (SSMP). In this case, the Permittee shall report this action within 2 days of occurrence and follow by a written notification within 7 days of occurrence; 5) all information necessary to demonstrate conformance with the affected source's SSMP and actions taken in accordance with SSMP; 6) each period during which a continuous monitoring system (CMS) is malfunctioning or inoperative; 7) all required measurements needed to demonstrate compliance with a relevant standard; 8) all results of performance test, CMS performance evaluations, and opacity and visible emission observations; 9) all measurements as may be necessary to determine the conditions of performance tests and performance evaluations; 10) all CMS calibration checks; 11) all adjustments and maintenance performed on CMS; 12) any information demonstrating whether a source is meeting the requirements for a waiver of record keeping or reporting requirements under this part; 13) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under 40 CFR 63.8(f)(6); and 14) all documentation supporting initial notifications and notifications of compliance status. [40 CFR 63.10(b)(2), Minn. R. 7019.0100, subp. 2(B)]
5.7.29	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
5.7.30	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
5.7.31	Fuel type: Natural gas only by design. [Minn. R. 7005.0100, subp. 35a]
5.7.32	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]

6. Submittal/action requirements

This section lists most of the submittals required by this permit. Please note that some submittal requirements may appear in the Limits and Other Requirements section, or, if applicable, within a Compliance Schedule section.

Requirement number	Requirement and citation
TFAC 1	Viking Gas Transmission - Milaca Station 2217
6.1.1	The Permittee must submit a semiannual deviations report : Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee must cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(B)(2)]
6.1.2	The Permittee must submit a compliance certification : Due annually, by the 31st of January (for the previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(D)]
6.1.3	The Permittee shall submit an application for permit reissuance : Due 180 calendar days before Permit Expiration Date. [Minn. R. 7007.0400, subp. 2]
EQUI 1	Turbine Engine #1 lean pre-mix 45 mmBtu/hr - Turbine
6.2.1	Subp. KKKK Reconstructed Unit: The Permittee shall submit a notification of date construction began: Due 30 calendar days after Date of Construction Start (or reconstruction). Submit the name and number of the Subject Item and the date construction began. The notification shall be submitted electronically on Form CS-02. [40 CFR 60.7(a)(1), Minn. R. 7019.0100, subp. 1]
6.2.2	Subp. KKKK Reconstructed Unit: The Permittee shall submit a notification of the actual date of initial startup: Due 15 calendar days after Initial Startup Date. The notification shall be submitted electronically on Form CS-02. [40 CFR 60.7(a)(3), Minn. R. 7019.0100, subp. 1]
6.2.3	Subp. KKKK Reconstructed Unit: The Permittee shall submit notification of the date construction of replacement began: Due 60 calendar days before Date of Construction or Replacement (or as soon as practicable). Submit the information specified in 40 CFR Section 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7011.0050]
6.2.4	Nitrogen Oxides: Initial Performance Test for Reconstructed Units: due 180 days after Initial Startup and reconstruction of EQUI 1, for NOx in accordance with 40 CFR Sections 60.8 and 60.4400. [40 CFR 60.4400, 40 CFR 60.8(a), Minn. R. 7017.2020, subp. 1]
6.2.5	Nitrogen Oxides: Annual Performance Test for Reconstructed Units: due 425 days after Initial Performance Test or most recent performance test of EQUI 1, as required in 40 CFR Section 60.8 and in accordance with 40 CFR Section 60.4400. The Permittee must conduct testing on an annual basis (no more than 14 calendar months following the previous performance test). [40 CFR 60.4400, 40 CFR 60.8(a), Minn. R. 7011.2375, Minn. R. 7017.2020, subp. 1]
6.2.6	Nitrogen Oxides: Performance Test Report for Reconstructed Units: In addition to the other notifications and submittals required by Minn. R. ch. 7017, the Permittee must 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. [40 CFR 60.4375(b), Minn. R. 7011.2375]

7. Appendices

Appendix A. Insignificant Activities and General Applicable Requirements

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

Minn. R.	Rule description of the activity	General applicable requirement
Minn. R. 7007.1300, subp. 3(E)	Brazing, soldering or welding equipment <i>two welders and two acetylene torches</i>	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)
Minn. R. 7007.1300, subp. 3(F)	Individual units with potential emissions less than 2000 lb/year of certain pollutants <i>eight natural gas space heaters</i> <i>equipment leaks of VOC</i>	PM, variable depending on airflow Opacity ≤ 20% (with exceptions) (Minn. R. 7011.0610) PM, variable depending on airflow Opacity ≤ 20% (with exceptions) (Minn. R. 7011.0715)

Permit Issued: [month day, year]
 Permit Expires: [month day, year]

Appendix B. Stack Parameters used in Modeling for Nitrogen Dioxide

Viking Gas Transmission Station, Milaca

Table B-1: Modeled Parameters, Point Sources for Annual NO₂ Emissions

Permit ID	Model ID	Emission Unit	Pollutant	Operating Scenario #	Release Type	Emission Rate (lb/hr)	Emission Rate (g/s)	Exit Temp (K)	Exit Velocity (m/s)	Flow Rate (acfm)
09500004	STRU 11	EQUI 1	NOx	8760 hr/yr	VERTICAL	7.572	0.954	711	48.98	84000
09500004	STRU 6	EQUI 2	NOx	8760 hr/yr	VERTICAL	45.239	5.7	594.8	25.8	12972
09500004	STRU 7	EQUI 3	NOx	8760 hr/yr	VERTICAL	45.239	5.7	594.8	25.8	12972
09500004	STRU 8	EQUI 4	NOx	8760 hr/yr	VERTICAL	45.239	5.7	594.8	25.8	12972
09500004	STRU 9	EQUI 5	NOx	2150 hr/yr	VERTICAL	0.301	0.0379	700	1.957	875
09500004	STRU 10	EQUI 6	NOx	720 hr/yr	HORIZONTAL	6.762	0.852	644	0.02	1172

Table B-1: Modeled Parameters, Point Sources for Annual NO₂ Emissions (continued)

Permit ID	Model ID	Emission Unit	Release Type	X –Coordinate (m)	Y – Coordinate (m)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)
09500004	STRU 11	EQUI 1	VERTICAL	448316.20	5065096.60	330.2	13.41	1.015
09500004	STRU 6	EQUI 2	VERTICAL	448268.40	5065087.10	330.7	6.71	0.549
09500004	STRU 7	EQUI 3	VERTICAL	448275.90	5065087.70	330.6	6.71	0.549
09500004	STRU 8	EQUI 4	VERTICAL	448283.70	5065087.70	330.5	6.71	0.549
09500004	STRU 9	EQUI 5	VERTICAL	448255.10	5065113.70	330.8	6.71	0.518
09500004	STRU 10	EQUI 6	HORIZONTAL	448255.10	5065097.50	330.8	4.27	0.091

Appendix C. 40 CFR Part 60, Subpart KKKK—Standards of Performance for Stationary Combustion Turbines

§60.4300 What is the purpose of this subpart?

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.

Applicability

§60.4305 Does this subpart apply to my stationary combustion turbine?

(a) If you are the owner or operator of a stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005, your turbine is subject to this subpart. Only heat input to the combustion turbine should be included when determining whether or not this subpart is applicable to your turbine. Any additional heat input to associated heat recovery steam generators (HRSG) or duct burners should not be included when determining your peak heat input. However, this subpart does apply to emissions from any associated HRSG and duct burners.

(b) Stationary combustion turbines regulated under this subpart are exempt from the requirements of subpart GG of this part. Heat recovery steam generators and duct burners regulated under this subpart are exempted from the requirements of subparts Da, Db, and Dc of this part.

§60.4310 What types of operations are exempt from these standards of performance?

- (a) Emergency combustion turbines, as defined in §60.4420(i), are exempt from the nitrogen oxides (NO_x) emission limits in §60.4320.
- (b) Stationary combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements are exempt from the NO_x emission limits in §60.4320 on a case-by-case basis as determined by the Administrator.
- (c) Stationary combustion turbines at integrated gasification combined cycle electric utility steam generating units that are subject to subpart Da of this part are exempt from this subpart.
- (d) Combustion turbine test cells/stands are exempt from this subpart.

Emission Limits

§60.4315 What pollutants are regulated by this subpart?

The pollutants regulated by this subpart are nitrogen oxide (NO_x) and sulfur dioxide (SO₂).

§60.4320 What emission limits must I meet for nitrogen oxides (NO_x)?

- (a) You must meet the emission limits for NO_x specified in Table 1 to this subpart.
- (b) If you have two or more turbines that are connected to a single generator, each turbine must meet the emission limits for NO_x.

§60.4325 What emission limits must I meet for NO_x if my turbine burns both natural gas and distillate oil (or some other combination of fuels)?

You must meet the emission limits specified in Table 1 to this subpart. If your total heat input is greater than or equal to 50 percent natural gas, you must meet the corresponding limit for a natural gas-fired turbine when you are burning that fuel. Similarly, when your total heat input is greater than 50 percent distillate oil and fuels other than natural gas, you must meet the corresponding limit for distillate oil and fu

§60.4330 What emission limits must I meet for sulfur dioxide (SO₂)?

(a) If your turbine is located in a continental area, you must comply with either paragraph (a)(1), (a)(2), or (a)(3) of this section. If your turbine is located in Alaska, you do not have to comply with the requirements in paragraph (a) of this section until January 1, 2008.

(1) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO₂ in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output;

(2) You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement; or

(3) For each stationary combustion turbine burning at least 50 percent biogas on a calendar month basis, as determined based on total heat input, you must not cause to be discharged into the atmosphere from the affected source any gases that contain SO₂ in excess of 65 ng SO₂/J (0.15 lb SO₂/MMBtu) heat input.

(b) If your turbine is located in a noncontinental area or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit, you must comply with one or the other of the following conditions:

(1) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO₂ in excess of 780 ng/J (6.2 lb/MWh) gross output, or

(2) You must not burn in the subject stationary combustion turbine any fuel which contains total sulfur with potential sulfur emissions in excess of 180 ng SO₂/J (0.42 lb SO₂/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.

General Compliance Requirements

§60.4333 What are my general requirements for complying with this subpart?

(a) You must operate and maintain your stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

(b) When an affected unit with heat recovery utilizes a common steam header with one or more combustion turbines, the owner or operator shall either:

(1) Determine compliance with the applicable NO_x emissions limits by measuring the emissions combined with the emissions from the other unit(s) utilizing the common heat recovery unit; or

(2) Develop, demonstrate, and provide information satisfactory to the Administrator on methods for apportioning the combined gross energy output from the heat recovery unit for each of the affected combustion turbines. The Administrator may approve such demonstrated substitute methods for apportioning the combined gross energy output measured at the steam turbine whenever the demonstration ensures accurate estimation of emissions related under this part.

Monitoring

§60.4335 How do I demonstrate compliance for NO_x if I use water or steam injection?

(a) If you are using water or steam injection to control NO_x emissions, you must install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine when burning a fuel that requires water or steam injection for compliance.

(b) Alternatively, you may use continuous emission monitoring, as follows:

- (1) Install, certify, maintain, and operate a continuous emission monitoring system (CEMS) consisting of a NO_x monitor and a diluent gas (oxygen (O₂) or carbon dioxide (CO₂)) monitor, to determine the hourly NO_x emission rate in parts per million (ppm) or pounds per million British thermal units (lb/MMBtu); and
- (2) For units complying with the output-based standard, install, calibrate, maintain, and operate a fuel flow meter (or flow meters) to continuously measure the heat input to the affected unit; and
- (3) For units complying with the output-based standard, install, calibrate, maintain, and operate a watt meter (or meters) to continuously measure the gross electrical output of the unit in megawatt-hours; and
- (4) For combined heat and power units complying with the output-based standard, install, calibrate, maintain, and operate meters for useful recovered energy flow rate, temperature, and pressure, to continuously measure the total thermal energy output in British thermal units per hour (Btu/h).

§60.4340 How do I demonstrate continuous compliance for NO_x if I do not use water or steam injection?

(a) If you are not using water or steam injection to control NO_x emissions, you must perform annual performance tests in accordance with §60.4400 to demonstrate continuous compliance. If the NO_x emission result from the performance test is less than or equal to 75 percent of the NO_x emission limit for the turbine, you 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 NO_x emission limit for the turbine, you must resume annual performance tests.

(b) As an alternative, you may install, calibrate, maintain and operate one of the following continuous monitoring systems:

- (1) Continuous emission monitoring as described in §§60.4335(b) and 60.4345, or
- (2) Continuous parameter monitoring as follows:
 - (i) For a diffusion flame turbine without add-on selective catalytic reduction (SCR) controls, you must define parameters indicative of the unit's NO_x formation characteristics, and you must monitor these parameters continuously.
 - (ii) For any lean premix stationary combustion turbine, you must continuously monitor the appropriate parameters to determine whether the unit is operating in low-NO_x mode.
 - (iii) For any turbine that uses SCR to reduce NO_x emissions, you must continuously monitor appropriate parameters to verify the proper operation of the emission controls.
 - (iv) For affected units that are also regulated under part 75 of this chapter, with state approval you can monitor the NO_x emission rate using the methodology in appendix E to part 75 of this chapter, or the low mass emissions methodology in §75.19, the requirements of this paragraph (b) may be met by performing the parametric monitoring described in section 2.3 of part 75 appendix E or in §75.19(c)(1)(iv)(H).

§60.4345 What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?

If the option to use a NO_x CEMS is chosen:

- (a) Each NO_x diluent CEMS must be installed and certified according to Performance Specification 2 (PS 2) in appendix B to this part, except the 7-day calibration drift is based on unit operating days, not calendar days. With state approval, Procedure 1 in appendix F to this part is not required. Alternatively, a NO_x diluent CEMS that is

installed and certified according to appendix A of part 75 of this chapter is acceptable for use under this subpart. The relative accuracy test audit (RATA) of the CEMS shall be performed on a lb/MMBtu basis.

(b) As specified in §60.13(e)(2), during each full unit operating hour, both the NO_x monitor and the diluent monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained with each monitor for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required for each monitor to validate the NO_x emission rate for the hour.

(c) Each fuel flowmeter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. Alternatively, with state approval, fuel flowmeters that meet the installation, certification, and quality assurance requirements of appendix D to part 75 of this chapter are acceptable for use under this subpart.

(d) Each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer's instructions.

(e) The owner or operator shall develop and keep on-site a quality assurance (QA) plan for all of the continuous monitoring equipment described in paragraphs (a), (c), and (d) of this section. For the CEMS and fuel flow meters, the owner or operator may, with state approval, satisfy the requirements of this paragraph by implementing the QA program and plan described in section 1 of appendix B to part 75 of this chapter.

§60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?

For purposes of identifying excess emissions:

(a) All CEMS data must be reduced to hourly averages as specified in §60.13(h).

(b) For each unit operating hour in which a valid hourly average, as described in §60.4345(b), is obtained for both NO_x and diluent monitors, the data acquisition and handling system must calculate and record the hourly NO_x emission rate in units of ppm or lb/MMBtu, using the appropriate equation from method 19 in appendix A of this part. For any hour in which the hourly average O₂ concentration exceeds 19.0 percent O₂ (or the hourly average CO₂ concentration is less than 1.0 percent CO₂), a diluent cap value of 19.0 percent O₂ or 1.0 percent CO₂ (as applicable) may be used in the emission calculations.

(c) Correction of measured NO_x concentrations to 15 percent O₂ is not allowed.

(d) If you have installed and certified a NO_x diluent CEMS to meet the requirements of part 75 of this chapter, states can approve that only quality assured data from the CEMS shall be used to identify excess emissions under this subpart. Periods where the missing data substitution procedures in subpart D of part 75 are applied are to be reported as monitor downtime in the excess emissions and monitoring performance report required under §60.7(c).

(e) All required fuel flow rate, steam flow rate, temperature, pressure, and megawatt data must be reduced to hourly averages.

(f) Calculate the hourly average NO_x emission rates, in units of the emission standards under §60.4320, using either ppm for units complying with the concentration limit or the following equation for units complying with the output based standard:

(1) For simple-cycle operation:

$$E = \frac{(\text{NO}_x)_b * (\text{HI})_b}{P} \quad (\text{Eq. 1})$$

Where:

E = hourly NO_x emission rate, in lb/MWh,

(NO_x)_h = hourly NO_x emission rate, in lb/MMBtu,

(HI)_h = hourly heat input rate to the unit, in MMBtu/h, measured using the fuel flowmeter(s), *e.g.*, calculated using Equation D-15a in appendix D to part 75 of this chapter, and

P = gross energy output of the combustion turbine in MW.

(2) For combined-cycle and combined heat and power complying with the output-based standard, use Equation 1 of this subpart, except that the gross energy output is calculated as the sum of the total electrical and mechanical energy generated by the combustion turbine, the additional electrical or mechanical energy (if any) generated by the steam turbine following the heat recovery steam generator, and 100 percent of the total useful thermal energy output that is not used to generate additional electricity or mechanical output, expressed in equivalent MW, as in the following equations:

$$P = (Pe)_t + (Pe)_c + P_s + P_o \quad (\text{Eq. 2})$$

Where:

P = gross energy output of the stationary combustion turbine system in MW.

(Pe)_t = electrical or mechanical energy output of the combustion turbine in MW,

(Pe)_c = electrical or mechanical energy output (if any) of the steam turbine in MW, and

$$P_s = \frac{Q * H}{3.413 \times 10^6 \text{ Btu/MWh}} \quad (\text{Eq. 3})$$

Where:

P_s = useful thermal energy of the steam, measured relative to ISO conditions, not used to generate additional electric or mechanical output, in MW,

Q = measured steam flow rate in lb/h,

H = enthalpy of the steam at measured temperature and pressure relative to ISO conditions, in Btu/lb, and 3.413 × 10⁶ = conversion from Btu/h to MW.

P_o = other useful heat recovery, measured relative to ISO conditions, not used for steam generation or performance enhancement of the combustion turbine.

(3) For mechanical drive applications complying with the output-based standard, use the following equation:

$$E = \frac{(NO_x)_m}{BL * AL} \quad (\text{Eq. 4})$$

Where:

E = NO_x emission rate in lb/MWh,

(NO_x)_m = NO_x emission rate in lb/h,

BL = manufacturer's base load rating of turbine, in MW, and

AL = actual load as a percentage of the base load.

(g) For simple cycle units without heat recovery, use the calculated hourly average emission rates from paragraph (f) of this section to assess excess emissions on a 4-hour rolling average basis, as described in §60.4380(b)(1).

(h) For combined cycle and combined heat and power units with heat recovery, use the calculated hourly average emission rates from paragraph (f) of this section to assess excess emissions on a 30 unit operating day rolling average basis, as described in §60.4380(b)(1).

§60.4355 How do I establish and document a proper parameter monitoring plan?

(a) The steam or water to fuel ratio or other parameters that are continuously monitored as described in §§60.4335 and 60.4340 must be monitored during the performance test required under §60.8, to establish acceptable values and ranges. You may supplement the performance test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely. You must develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO_x emission controls. The plan must:

- (1) Include the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NO_x emission controls,
- (2) Pick ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established,
- (3) Explain the process you will use to make certain that you obtain data that are representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable),
- (4) Describe quality assurance and control practices that are adequate to ensure the continuing validity of the data,
- (5) Describe the frequency of monitoring and the data collection procedures which you will use (e.g., you are using a computerized data acquisition over a number of discrete data points with the average (or maximum value) being used for purposes of determining whether an exceedance has occurred), and
- (6) Submit justification for the proposed elements of the monitoring. If a proposed performance specification differs from manufacturer recommendation, you must explain the reasons for the differences. You must submit the data supporting the justification, but you may refer to generally available sources of information used to support the justification. You may rely on engineering assessments and other data, provided you demonstrate factors which assure compliance or explain why performance testing is unnecessary to establish indicator ranges. When establishing indicator ranges, you may choose to simplify the process by treating the parameters as if they were correlated. Using this assumption, testing can be divided into two cases:

(i) All indicators are significant only on one end of range (e.g., for a thermal incinerator controlling volatile organic compounds (VOC) it is only important to insure a minimum temperature, not a maximum). In this case, you may conduct your study so that each parameter is at the significant limit of its range while you conduct your emissions testing. If the emissions tests show that the source is in compliance at the significant limit of each parameter, then as long as each parameter is within its limit, you are presumed to be in compliance.

(ii) Some or all indicators are significant on both ends of the range. In this case, you may conduct your study so that each parameter that is significant at both ends of its range assumes its extreme values in all possible combinations of the extreme values (either single or double) of all of the other parameters. For example, if there were only two parameters, A and B, and A had a range of values while B had only a minimum value, the combinations would be A high with B minimum and A low with B minimum. If both A and B had a range, the combinations would be A high and B high, A low and B low, A high and B low, A low and B high. For the case of four parameters all having a range, there are 16 possible combinations.

(b) For affected units that are also subject to part 75 of this chapter and that have state approval to use the low mass emissions methodology in §75.19 or the NO_x emission measurement methodology in appendix E to part 75,

you may meet the requirements of this paragraph by developing and keeping on-site (or at a central location for unmanned facilities) a QA plan, as described in §75.19(e)(5) or in section 2.3 of appendix E to part 75 of this chapter and section 1.3.6 of appendix B to part 75 of this chapter.

§60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?

You must monitor the total sulfur content of the fuel being fired in the turbine, except as provided in §60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in §60.4415. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17), which measure the major sulfur compounds, may be used.

§60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?

You may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input for units located in continental areas and 180 ng SO₂/J (0.42 lb SO₂/MMBtu) heat input for units located in noncontinental areas or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit. You must use one of the following sources of information to make the required demonstration:

- (a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for oil use in continental areas is 0.05 weight percent (500 ppmw) or less and 0.4 weight percent (4,000 ppmw) or less for noncontinental areas, the total sulfur content for natural gas use in continental areas is 20 grains of sulfur or less per 100 standard cubic feet and 140 grains of sulfur or less per 100 standard cubic feet for noncontinental areas, has potential sulfur emissions of less than less than 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input for continental areas and has potential sulfur emissions of less than less than 180 ng SO₂/J (0.42 lb SO₂/MMBtu) heat input for noncontinental areas; or
- (b) Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input for continental areas or 180 ng SO₂/J (0.42 lb SO₂/MMBtu) heat input for noncontinental areas. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.

§60.4370 How often must I determine the sulfur content of the fuel?

The frequency of determining the sulfur content of the fuel must be as follows:

- (a) *Fuel oil.* For fuel oil, use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of appendix D to part 75 of this chapter (*i.e.*, flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank).
- (b) *Gaseous fuel.* If you elect not to demonstrate sulfur content using options in §60.4365, and the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel must be determined and recorded once per unit operating day.
- (c) *Custom schedules.* Notwithstanding the requirements of paragraph (b) of this section, operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in paragraphs (c)(1) and (c)(2) of this section, custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in §60.4330.

(1) The two custom sulfur monitoring schedules set forth in paragraphs (c)(1)(i) through (iv) and in paragraph (c)(2) of this section are acceptable, without prior Administrative approval:

(i) The owner or operator shall obtain daily total sulfur content measurements for 30 consecutive unit operating days, using the applicable methods specified in this subpart. Based on the results of the 30 daily samples, the required frequency for subsequent monitoring of the fuel's total sulfur content shall be as specified in paragraph (c)(1)(ii), (iii), or (iv) of this section, as applicable.

(ii) If none of the 30 daily measurements of the fuel's total sulfur content exceeds half the applicable standard, subsequent sulfur content monitoring may be performed at 12-month intervals. If any of the samples taken at 12-month intervals has a total sulfur content greater than half but less than the applicable limit, follow the procedures in paragraph (c)(1)(iii) of this section. If any measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section.

(iii) If at least one of the 30 daily measurements of the fuel's total sulfur content is greater than half but less than the applicable limit, but none exceeds the applicable limit, then:

(A) Collect and analyze a sample every 30 days for 3 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(B) of this section.

(B) Begin monitoring at 6-month intervals for 12 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(C) of this section.

(C) Begin monitoring at 12-month intervals. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, continue to monitor at this frequency.

(iv) If a sulfur content measurement exceeds the applicable limit, immediately begin daily monitoring according to paragraph (c)(1)(i) of this section. Daily monitoring shall continue until 30 consecutive daily samples, each having a sulfur content no greater than the applicable limit, are obtained. At that point, the applicable procedures of paragraph (c)(1)(ii) or (iii) of this section shall be followed.

(2) The owner or operator may use the data collected from the 720-hour sulfur sampling demonstration described in section 2.3.6 of appendix D to part 75 of this chapter to determine a custom sulfur sampling schedule, as follows:

(i) If the maximum fuel sulfur content obtained from the 720 hourly samples does not exceed 20 grains/100 scf, no additional monitoring of the sulfur content of the gas is required, for the purposes of this subpart.

(ii) If the maximum fuel sulfur content obtained from any of the 720 hourly samples exceeds 20 grains/100 scf, but none of the sulfur content values (when converted to weight percent sulfur) exceeds half the applicable limit, then the minimum required sampling frequency shall be one sample at 12 month intervals.

(iii) If any sample result exceeds half the applicable limit, but none exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iii) of this section.

(iv) If the sulfur content of any of the 720 hourly samples exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iv) of this section.

Reporting

§60.4375 What reports must I submit?

(a) For each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content under this subpart, you must submit reports of excess emissions and monitor downtime, in accordance with §60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.

(b) For each affected unit that performs annual performance tests in accordance with §60.4340(a), you must submit a written report of the results of each performance test before the close of business on the 60th day following the completion of the performance test.

§60.4380 How are excess emissions and monitor downtime defined for NO_x?

For the purpose of reports required under §60.7(c), periods of excess emissions and monitor downtime that must be reported are defined as follows:

(a) For turbines using water or steam to fuel ratio monitoring:

(1) An excess emission is any unit operating hour for which the 4-hour rolling average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with §60.4320, as established during the performance test required in §60.8. Any unit operating hour in which no water or steam is injected into the turbine when a fuel is being burned that requires water or steam injection for NO_x control will also be considered an excess emission.

(2) A period of monitor downtime is any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.

(3) Each report must include the average steam or water to fuel ratio, average fuel consumption, and the combustion turbine load during each excess emission.

(b) For turbines using continuous emission monitoring, as described in §§60.4335(b) and 60.4345:

(1) An excess emissions is any unit operating period in which the 4-hour or 30-day rolling average NO_x emission rate exceeds the applicable emission limit in §60.4320. For the purposes of this subpart, a "4-hour rolling average NO_x emission rate" is the arithmetic average of the average NO_x emission rate in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average NO_x emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid NO_x emission rate is obtained for at least 3 of the 4 hours. For the purposes of this subpart, a "30-day rolling average NO_x emission rate" is the arithmetic average of all hourly NO_x emission data in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NO_x emissions rates for the preceding 30 unit operating days if a valid NO_x emission rate is obtained for at least 75 percent of all operating hours.

(2) A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO_x concentration, CO₂ or O₂ concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes.

(3) For operating periods during which multiple emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

(c) For turbines required to monitor combustion parameters or parameters that document proper operation of the NO_x emission controls:

(1) An excess emission is a 4-hour rolling unit operating hour average in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan for the unit.

(2) A period of monitor downtime is a unit operating hour in which any of the required parametric data are either not recorded or are invalid.

§60.4385 How are excess emissions and monitoring downtime defined for SO₂?

If you choose the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime are defined as follows:

(a) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.

(b) If the option to sample each delivery of fuel oil has been selected, you must immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.05 weight percent. You must continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and you must evaluate excess emissions according to paragraph (a) of this section. When all of the fuel from the delivery has been burned, you may resume using the as-delivered sampling option.

(c) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

§60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?

(a) If you operate an emergency combustion turbine, you are exempt from the NO_x limit and must submit an initial report to the Administrator stating your case.

(b) Combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements may be exempted from the NO_x limit on a case-by-case basis as determined by the Administrator. You must petition for the exemption.

§60.4395 When must I submit my reports?

All reports required under §60.7(c) must be postmarked by the 30th day following the end of each 6-month period.

Performance Tests

§60.4400 How do I conduct the initial and subsequent performance tests, regarding NO_x?

(a) You must conduct an initial performance test, as required in §60.8. Subsequent NO_x performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test).

(1) There are two general methodologies that you may use to conduct the performance tests. For each test run:

(i) Measure the NO_x concentration (in parts per million (ppm)), using EPA Method 7E or EPA Method 20 in appendix A of this part. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then, use the following equation to calculate the NO_x emission rate:

$$E = \frac{1.194 \times 10^{-7} * (NO_x)_c * Q_{std}}{P} \quad (\text{Eq. 5})$$

Where:

E = NO_x emission rate, in lb/MWh

1.194 × 10⁻⁷ = conversion constant, in lb/dscf-ppm

(NO_x)_c = average NO_x concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

(ii) Measure the NO_x and diluent gas concentrations, using either EPA Methods 7E and 3A, or EPA Method 20 in appendix A of this part. Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the NO_x emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the NO_x emission rate in lb/MWh.

(2) Sampling traverse points for NO_x and (if applicable) diluent gas are to be selected following EPA Method 20 or EPA Method 1 (non-particulate procedures), and sampled for equal time intervals. The sampling must be performed with a traversing single-hole probe, or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

(3) Notwithstanding paragraph (a)(2) of this section, you may test at fewer points than are specified in EPA Method 1 or EPA Method 20 in appendix A of this part if the following conditions are met:

(i) You may perform a stratification test for NO_x and diluent pursuant to

(A) [Reserved], or

(B) The procedures specified in section 6.5.6.1(a) through (e) of appendix A of part 75 of this chapter.

(ii) Once the stratification sampling is completed, you may use the following alternative sample point selection criteria for the performance test:

(A) If each of the individual traverse point NO_x concentrations is within ±10 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±5ppm or ±0.5 percent CO₂ (or O₂) from the mean for all traverse points, then you may use three points (located either 16.7, 50.0 and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at

0.4, 1.2, and 2.0 meters from the wall). The three points must be located along the measurement line that exhibited the highest average NO_x concentration during the stratification test; or

(B) For turbines with a NO_x standard greater than 15 ppm @ 15% O₂, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_x concentrations is within ±5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±3ppm or ±0.3 percent CO₂ (or O₂) from the mean for all traverse points; or

(C) For turbines with a NO_x standard less than or equal to 15 ppm @ 15% O₂, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_x concentrations is within ±2.5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±1ppm or ±0.15 percent CO₂ (or O₂) from the mean for all traverse points.

(b) The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. You may perform testing at the highest achievable load point, if at least 75 percent of peak load cannot be achieved in practice. You must conduct three separate test runs for each performance test. The minimum time per run is 20 minutes.

(1) If the stationary combustion turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel.

(2) For a combined cycle and CHP turbine systems with supplemental heat (duct burner), you must measure the total NO_x emissions after the duct burner rather than directly after the turbine. The duct burner must be in operation during the performance test.

(3) If water or steam injection is used to control NO_x with no additional post-combustion NO_x control and you choose to monitor the steam or water to fuel ratio in accordance with §60.4335, then that monitoring system must be operated concurrently with each EPA Method 20 or EPA Method 7E run and must be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the applicable §60.4320 NO_x emission limit.

(4) Compliance with the applicable emission limit in §60.4320 must be demonstrated at each tested load level. Compliance is achieved if the three-run arithmetic average NO_x emission rate at each tested level meets the applicable emission limit in §60.4320.

(5) If you elect to install a CEMS, the performance evaluation of the CEMS may either be conducted separately or (as described in §60.4405) as part of the initial performance test of the affected unit.

(6) The ambient temperature must be greater than 0 °F during the performance test.

§60.4405 How do I perform the initial performance test if I have chosen to install a NO_x-diluent CEMS?

If you elect to install and certify a NO_x-diluent CEMS under §60.4345, then the initial performance test required under §60.8 may be performed in the following alternative manner:

(a) Perform a minimum of nine RATA reference method runs, with a minimum time per run of 21 minutes, at a single load level, within plus or minus 25 percent of 100 percent of peak load. The ambient temperature must be greater than 0 °F during the RATA runs.

(b) For each RATA run, concurrently measure the heat input to the unit using a fuel flow meter (or flow meters) and measure the electrical and thermal output from the unit.

(c) Use the test data both to demonstrate compliance with the applicable NO_x emission limit under §60.4320 and to provide the required reference method data for the RATA of the CEMS described under §60.4335.

(d) Compliance with the applicable emission limit in §60.4320 is achieved if the arithmetic average of all of the NO_x emission rates for the RATA runs, expressed in units of ppm or lb/MWh, does not exceed the emission limit.

§60.4410 How do I establish a valid parameter range if I have chosen to continuously monitor parameters?

If you have chosen to monitor combustion parameters or parameters indicative of proper operation of NO_x emission controls in accordance with §60.4340, the appropriate parameters must be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in §60.4355.

§60.4415 How do I conduct the initial and subsequent performance tests for sulfur?

(a) You must conduct an initial performance test, as required in §60.8. Subsequent SO₂ performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test). There are four methodologies that you may use to conduct the performance tests.

(1) The use of a current, valid purchase contract, tariff sheet, or transportation contract for the fuel specifying the maximum total sulfur content of all fuels combusted in the affected facility. Alternately, the fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter may be used.

(2) Periodically determine the sulfur content of the fuel combusted in the turbine, a representative fuel sample may be collected either by an automatic sampling system or manually. For automatic sampling, follow ASTM D5287 (incorporated by reference, see §60.17) for gaseous fuels or ASTM D4177 (incorporated by reference, see §60.17) for liquid fuels. For manual sampling of gaseous fuels, follow API Manual of Petroleum Measurement Standards, Chapter 14, Section 1, GPA 2166, or ISO 10715 (all incorporated by reference, see §60.17). For manual sampling of liquid fuels, follow GPA 2174 or the procedures for manual pipeline sampling in section 14 of ASTM D4057 (both incorporated by reference, see §60.17). The fuel analyses of this section may be performed either by you, a service contractor retained by you, the fuel vendor, or any other qualified agency. Analyze the samples for the total sulfur content of the fuel using:

(i) For liquid fuels, ASTM D129, or alternatively D1266, D1552, D2622, D4294, D5453, D5623, or D7039 (all incorporated by reference, see §60.17); or

(ii) For gaseous fuels, ASTM D1072, or alternatively D3246, D4084, D4468, D4810, D6228, D6667, or GPA 2140, 2261, or 2377 (all incorporated by reference, see §60.17).

(3) Measure the SO₂ concentration (in parts per million (ppm)), using EPA Methods 6, 6C, 8, or 20 in appendix A of this part. In addition, the American Society of Mechanical Engineers (ASME) standard, ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," manual methods for sulfur dioxide (incorporated by reference, see §60.17) can be used instead of EPA Methods 6 or 20. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then use the following equation to calculate the SO₂ emission rate:

$$E = \frac{1.664 \times 10^{-1} * (SO_2)_e * Q_{sd}}{P} \quad (\text{Eq. 6})$$

Where:

E = SO₂ emission rate, in lb/MWh

1.664×10^{-7} = conversion constant, in lb/dscf-ppm

$(SO_2)_c$ = average SO₂ concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

(4) Measure the SO₂ and diluent gas concentrations, using either EPA Methods 6, 6C, or 8 and 3A, or 20 in appendix A of this part. In addition, you may use the manual methods for sulfur dioxide ASME PTC 19-10-1981-Part 10 (incorporated by reference, see §60.17). Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the SO₂ emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the SO₂ emission rate in lb/MWh.

(b) [Reserved]

Definitions

§60.4420 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein will have the meaning given them in the Clean Air Act and in subpart A (General Provisions) of this part.

Biogas means gas produced by the anaerobic digestion or fermentation of organic matter including manure, sewage sludge, municipal solid waste, biodegradable waste, or any other biodegradable feedstock, under anaerobic conditions. Biogas is comprised primarily of methane and CO₂.

Combined cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to generate steam that is only used to create additional power output in a steam turbine.

Combined heat and power combustion turbine means any stationary combustion turbine which recovers heat from the exhaust gases to heat water or another medium, generate steam for useful purposes other than additional electric generation, or directly uses the heat in the exhaust gases for a useful purpose.

Combustion turbine model means a group of combustion turbines having the same nominal air flow, combustor inlet pressure, combustor inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure.

Combustion turbine test cell/stand means any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) combustion turbines.

Diffusion flame stationary combustion turbine means any stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary combustion turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

Efficiency means the combustion turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output—based on the higher heating value of the fuel.

Emergency combustion turbine means any stationary combustion turbine which operates in an emergency situation. Examples include stationary combustion turbines used to produce power for critical networks or equipment, including power supplied to portions of a facility, when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of emergency combustion turbines.

Excess emissions means a specified averaging period over which either (1) the NO_x emissions are higher than the applicable emission limit in §60.4320; (2) the total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in §60.4330; or (3) the recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.

Gross useful output means the gross useful work performed by the stationary combustion turbine system. For units using the mechanical energy directly or generating only electricity, the gross useful work performed is the gross electrical or mechanical output from the turbine/generator set. For combined heat and power units, the gross useful work performed is the gross electrical or mechanical output plus the useful thermal output (i.e., thermal energy delivered to a process).

Heat recovery steam generating unit means a unit where the hot exhaust gases from the combustion turbine are routed in order to extract heat from the gases and generate steam, for use in a steam turbine or other device that utilizes steam. Heat recovery steam generating units can be used with or without duct burners.

Integrated gasification combined cycle electric utility steam generating unit means a coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No solid coal is directly burned in the unit during operation.

ISO conditions means 288 Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

Lean premix stationary combustion turbine means any stationary combustion turbine where the air and fuel are thoroughly mixed to form a lean mixture before delivery to the combustor. Mixing may occur before or in the combustion chamber. A lean premixed turbine may operate in diffusion flame mode during operating conditions such as startup and shutdown, extreme ambient temperature, or low or transient load.

Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, the Northern Mariana Islands, or offshore platforms.

Peak load means 100 percent of the manufacturer's design capacity of the combustion turbine at ISO conditions.

Regenerative cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine.

Simple cycle combustion turbine means any stationary combustion turbine which does not recover heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine, or which does not recover heat from the combustion turbine exhaust gases for purposes other than enhancing the performance of the combustion turbine itself.

Stationary combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

Unit operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Unit operating hour means a clock hour during which any fuel is combusted in the affected unit. If the unit combusts fuel for the entire clock hour, it is considered to be a full unit operating hour. If the unit combusts fuel for only part of the clock hour, it is considered to be a partial unit operating hour.

Useful thermal output means the thermal energy made available for use in any industrial or commercial process, or used in any heating or cooling application, i.e., total thermal energy made available for processes and applications other than electrical or mechanical generation. Thermal output for this subpart means the energy in recovered thermal output measured against the energy in the thermal output at 15 degrees Celsius and 101.325 kilopascals of pressure.

Table 1 to Subpart KKKK of Part 60—Nitrogen Oxide Emission Limits for New Stationary Combustion Turbines

Combustion turbine type	Combustion turbine heat input at peak load (HHV)	NO _x emission standard
New turbine firing natural gas, electric generating	≤ 50 MMBtu/h	42 ppm at 15 percent O ₂ or 290 ng/J of useful output (2.3 lb/MWh).
New turbine firing natural gas, mechanical drive	≤ 50 MMBtu/h	100 ppm at 15 percent O ₂ or 690 ng/J of useful output (5.5 lb/MWh).
New turbine firing natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	25 ppm at 15 percent O ₂ or 150 ng/J of useful output (1.2 lb/MWh).

Combustion turbine type	Combustion turbine heat input at peak load (HHV)	NO _x emission standard
New, modified, or reconstructed turbine firing natural gas	> 850 MMBtu/h	15 ppm at 15 percent O ₂ or 54 ng/J of useful output (0.43 lb/MWh)
New turbine firing fuels other than natural gas, electric generating	≤ 50 MMBtu/h	96 ppm at 15 percent O ₂ or 700 ng/J of useful output (5.5 lb/MWh).
New turbine firing fuels other than natural gas, mechanical drive	≤ 50 MMBtu/h	150 ppm at 15 percent O ₂ or 1,100 ng/J of useful output (8.7 lb/MWh).
New turbine firing fuels other than natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	74 ppm at 15 percent O ₂ or 460 ng/J of useful output (3.6 lb/MWh).
New, modified, or reconstructed turbine firing fuels other than natural gas	> 850 MMBtu/h	42 ppm at 15 percent O ₂ or 160 ng/J of useful output (1.3 lb/MWh).
Modified or reconstructed turbine	≤ 50 MMBtu/h	150 ppm at 15 percent O ₂ or 1,100 ng/J of useful output (8.7 lb/MWh).
Modified or reconstructed turbine firing natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	42 ppm at 15 percent O ₂ or 250 ng/J of useful output (2.0 lb/MWh).
Modified or reconstructed turbine firing fuels other than natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	96 ppm at 15 percent O ₂ or 590 ng/J of useful output (4.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0 °F	≤ 30 MW output	150 ppm at 15 percent O ₂ or 1,100 ng/J of useful output (8.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0 °F	> 30 MW output	96 ppm at 15 percent O ₂ or 590 ng/J of useful output (4.7 lb/MWh).
Heat recovery units operating independent of the combustion turbine	All sizes	54 ppm at 15 percent O ₂ or 110 ng/J of useful output (0.86 lb/MWh).

Permit Issued: [month day, year]
Permit Expires: [month day, year]