

**Technical Support Document  
for  
Draft Air Emission Permit No. 15300004-101**

This technical support document (TSD) is intended for all parties interested in the draft permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft permit.

**1. General information**

**1.1 Applicant and stationary source location**

**Table 1. Applicant and source address**

<b>Applicant/Address</b>	<b>Stationary source/Address (SIC Code: 4922 - Natural Gas Transmission)</b>
Viking Gas Transmission Company / ONEOK Partners, L.P 100 W 5th St MD 12-4 Tulsa, Oklahoma 74103	Viking Gas Transmission - Cushing 31888 400th St Cushing, MN 56443-5023
Contact: Ling Li Phone: (651) 994-0322 x1205	

**1.2 Facility description**

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.

The Cushing facility is a natural gas compressor station consisting of one lean pre-mix combustion turbine compressor engine (EQUI 3), one water jacket heater (EQUI 2), three 1,700-hp 2-stroke lean burn reciprocating internal combustion compressor engines (EQUI 4, EQUI 5, and EQUI 6), and one reciprocating internal combustion engine emergency generator (EQUI 7).

All units except for EQUI 7 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. EQUI 7 combusts diesel fuel and is used for emergency power.

**1.3 Description of the activities allowed by this permit action**

This permit action is Part 70 Reissuance.

The permit action also incorporates the changes done by the Permittee as allowed under a minor amendment application submitted on 6/24/11. The Permittee replaced the natural gas emergency generator (EU 004) with an emergency generator that uses diesel (EQUI 7). The Permittee also replaced the stack for the emergency generator (SV 004) with a new stack (STRU 11). These changes qualified for a minor amendment, therefore the Permittee constructed and started operation of the new equipment prior to issuance of the permit, as allowed under Minn. R. 7007.1450, subp. 7.

**1.4 Description of notifications and applications included in this action**

**Table 2. Notifications and applications included in this action**

Date received	Application/Notification type and description
06/24/2011	Minor Amendment (IND20110001)
05/23/2013	Part 70 Reissuance (IND20130001)

## 1.5 Facility emissions

Table 3. Title I emissions summary

Pollutant	Emissions increase from the modification (tpy)	Limited emissions increase from the modification (tpy)	NSR/112(g) Significant thresholds for major sources (tpy)	NSR/ 112(g) review required? (yes/no)
PM	0.18	0.01	25	No
PM <sub>10</sub>	0.18	0.01	15	No
PM <sub>2.5</sub>	0.18	0.01	10	No
NO <sub>x</sub>	11.75	0.67	40	No
SO <sub>2</sub>	0.0083	0.00048	40	No
CO	0.36	0.02	100	No
Ozone (VOC)	0.36	0.02	40	No
Lead	--	--	0.6	No
CO <sub>2e</sub> **	860	49.1	75,000	No
HAPs- Total	0.02	0.0011	25	No

\*\*Carbon dioxide equivalents as defined in Minn. R. 7007.0100.

Table 4. Non-title I emissions increase summary

Pollutant	After change (lb/hr)	Before change (lb/hr)	Net change* (lb/hr)	Insignificant modification thresholds (lb/hr <)	Minor and moderate amendment thresholds (lb/hr < or ≥)	Type of amendment (minor or moderate)
PM <sub>10</sub>	0.041	0.019	0.022	0.855	3.42	Minor
NO <sub>x</sub>	2.68	4.42	-1.74	2.28	9.13	Minor
SO <sub>2</sub>	0.0019	0.0012	0.0007	2.28	9.13	Minor
CO	0.083	7.44	-7.36	5.70	22.80	Minor
VOC	0.083	0.59	-0.51	2.28	9.13	Minor
Lead	-	-	-	0.025	0.11	Minor

\*The term 'Net Change' is not equivalent to 'Net Emissions Increase' as defined at 40 CFR Section 52.21(b)(3).

Table 5. Total facility potential to emit summary

	PM tpy	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	CO <sub>2e</sub> tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total facility limited potential emissions	10.21	10.21	10.21	0.23	617.1	95.35	44921	29.01	10.28	14.85

	PM tpy	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	CO <sub>2e</sub> tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total facility actual emissions (2016)	0.442	0.422	0.125	13.78	55.41	10.77	*	1.21	*	

\*Not reported in Minnesota emission inventory.

**Table 6. Facility classification**

Classification	Major	Synthetic minor/area	Minor/Area
New Source Review	X		
Part 70	X		
Part 63	X		

### 1.6 Changes to permit

The permit incorporates the new generator as described in Section 1.3. The change itself was authorized under Minn. R. 7007.1450, subpart 7. The permit does not authorize any additional specific modifications, however, the MPCA has a combined operating and construction permitting program under Minnesota Rules Chapter 7007, and under Minn. R. 7007.0800, the MPCA has authority to include additional requirements in a permit. Under that authority, the following changes to the permit are also made through this permit action:

- The subject items including the emission units have been renamed because of the Tempo database transition.
- The permit has been updated to reflect current MPCA templates and citation formatting.
- CO<sub>2e</sub> and PM<sub>2.5</sub> emissions data was added to the facility description.
- Removed the control equipment from the lean-premix turbine (EQUI 3) from the facility description because there is not control equipment on EQUI 3. The reduction in NO<sub>x</sub> emissions came from manufacture's performance emission factors.
- Updated NO<sub>x</sub>, CO, and VOCs emission factors from latest manufacturer's performance emission factors for EQUI 6, discussed in Section 3.1 of this TSD.
- COMG 1 (GP 001) Reciprocating Internal Combustion Engines was removed and all of the applicable requirements are applied to each individual subject item (EQUIs 4, 5, and 6). The reference to NESHAP subp. ZZZZ was removed because it does not apply (see section 2.4).
- Requirements of 40 CFR pt. 63, subp. DDDDD have been added for the water jacket heater (EQUI 2).
- Changed the day the hours of operations are to be calculated for water jacket heater (EQUI 2) and emergency generator (EQUI 7) from the end of the calendar month to the 15<sup>th</sup> of the month.
- The monitoring requirements for the total hours of operation for the water jacket heater (EQUI 2) while EQUI 3, EQUI 4, EQUI 5, or EQUI 6 is in operation have been changed to ensure continuous compliance with the hour restrictions. A daily recordkeeping requirement has been added to ensure compliance with the total hours of operation for EQUI 4. The state only requirement citation was removed because the hourly limits determined from modeling are used to comply with National Ambient Air Quality Standards, 40 CRF pt. 50.
- The monitoring requirements for the total hours of operation for the emergency generator (now EQUI 7) while EQUI 3, EQUI 4, EQUI 5, or EQUI 6 is in operation have been changed. A daily recordkeeping requirement has been added to ensure compliance with the total hours of operation for EQUI 7. See section 3.3 for a full description of the changed limit relative to operation of EQUI 3, EQUI 4, EQUI5, and EQUI 6.
- Removed EU 007, the turbine building space heater, from the facility description because it qualifies as an insignificant activity. The insignificant activities are included in Appendix A to the permit. The space heaters were moved from Minn. R. 7007.1300, subp. 3(A) to 3(I) on the insignificant activities

- table in Appendix A because the total combined capacity of all indirect heating equipment, (0.634 MMBtu/hr), is greater than the 420,000 Btu/hr threshold for qualifying under Minn. R. 7007.1300, subp. 3(A). On an individual basis, these space heaters qualify under Minn. R. 7007.1300, subp. 3(I).
- Removed the insignificant activity for total facility usage of VOC of less than 200 gallons in a year period in Minn. R. 7008.4100, subp. 4. The VOCs used at the facility are tanks of lubricating oil for the engines. Storage tanks holding lubricating oils qualify as insignificant activities under Minn. R. 7007.1300, subp. 2(E)(2) and are not required to be listed in the permit application or permit.
  - Removed the insignificant activity for Minn. R. 7007.1300 because the 30 hp Waukesha 4SRBs was removed from the facility.
  - December 27<sup>th</sup>, 2016, the Omnibus Rule became effective. The Omnibus Rule revised Air Quality Rules, MN Rules Chapters. In doing so, this rule revised 7011.2300 Standards of Performance for Stationary Internal Combustion Engines. Starting January 31, 2018, owners or operators of stationary internal combustion engines must not allow any gases that contain sulfur dioxide in excess of 0.0015 lb/MMBtu heat input to be discharged into the atmosphere unless the agency establishes an alternative sulfur dioxide limit in an air permit that includes a demonstration through modeling of compliance.

## 2. Regulatory and/or statutory basis

### 2.1 New source review (NSR)

The facility is an existing major source under New Source Review regulations. No changes affecting that classification, or subject to NSR, are authorized by this permit. The replacement of the emergency engine is not subject to NSR (see Table 3).

### 2.2 Part 70 permit program

The facility is a major source under the Part 70 permit program.

### 2.3 New source performance standards (NSPS)

The lean premix gas-fired stationary combustion turbine (EQUI 3) is subject to 40 CFR pt. 60, subp. GG—Standards of Performance for Stationary Gas Turbines, based on the following: EQUI 3 commenced construction, modification, or reconstruction after October 3, 1977; has a heat input at peak load equal to or greater than 10.7 gigajoules (10 mmBtu/hr), based on the lower heating value of the fuel fired; and has a peak load of 45 mmBtu/hr.

The turbine (EQUI 3) was installed at the facility in 1997. A June 24, 1997, EPA determination established that the refurbished gas turbine units installed at the Minnesota Viking Gas Transmission facilities are exempt from the NO<sub>x</sub> performance test and other requirements of 40 CFR § 60.332(a). However, EQUI 3 is still subject to the remaining requirements of 40 CFR pt. 60, subp. GG. (EPA Determination for 40 CFR pt. 60, subp. GG, June 24, 1997, Attachment 2 in this TSD).

At the time of permit issuance, the gas turbine (EQUI 3) is not subject to 40 CFR pt. 60, subp. KKKK—Standards of Performance for Stationary Combustion Turbines because it was constructed prior to the applicability date of February 18, 2005. If turbine components are replaced such that the project meets the definition of “modification” as defined in 40 CFR § 60.14 or “reconstruction” as defined in 40 CFR § 60.15, the modified or reconstructed turbine will be subject to 40 CFR pt. 60, subp. KKKK. If the facility triggers a “reconstruction”, a major amendment may not be needed to comply with new requirements because the requirements for a reconstructed source under 40 CFR pt. 60, subp. KKKK are included in the permit at EQUI 3. If additional 40 CFR pt. 60, subp. KKKK requirements are applicable, the appropriate amendment will be needed to include the requirements in the permit. An amendment may also be needed for an increase in emissions, or if the change triggers additional applicable requirements, or if the change requires revisions to the limits or monitoring and recordkeeping in this permit.

The emergency generator engine (EQUI 7) is subject to 40 CFR pt. 60, subp. IIII— Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, based on the following: EQUI 7 commenced construction after July 11, 2005, was manufactured after April 1, 2006.

The natural gas fired compressor engines (EQUI 4, EQUI 5, and EQUI 6) are not subject to 40 CFR pt. 60, subp. JJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines because they were installed in 1967 and 1970 which is prior to the applicability date of June 12, 2006.

#### **2.4 National emission standards for hazardous air pollutants (NESHAP)**

The facility is an existing major source of HAPs under 40 CFR pt. 63.

The turbine (EQUI 3) was installed at the facility in 1997 and is not currently subject to 40 CFR pt. 63, subp. YYYY – Standards for Hazardous Air Pollutants (HAP) for Stationary Combustion Turbines. The unit is an existing stationary combustion turbine because the commenced construction date was before January 14, 2003. According to 40 CFR §63.6090(b)(4), an existing stationary combustion turbine does not have to meet the requirements for this subpart. No initial notification is necessary.

It is possible the turbine (EQUI 3) would be considered reconstruction with replacing components or new if replaced entirely. The unit would then be subject to 40 CFR pt. 63, subp. YYYY as a new or reconstructed unit at a major HAP source. The permit states that the Permittee must apply for a permit amendment to incorporate the NESHAP into the permit if this occurs. The Permittee must comply with the Initial Notification requirements set forth in 40 CFR §63.6145. In addition, as of permit issuance, the limits that would apply to the turbine are *stayed* under the rules (see 40 CFR § 63.6095(d)) until EPA takes final action and revises the rule. Specific requirements for this rule may change so the facility will have to use the appropriate amendment at that time if the changes cause the combustion turbine to become subject to 40 CFR pt. 63, subp. YYYY.

The water jacket heater (EQUI 2) is subject to 40 CFR pt. 63, subp. DDDDD – Standards for Hazardous Air Pollutants (HAP) for Industrial, Commercial, and Institutional Boilers Major Sources. The facility is a major source of HAPs and EQUI 4 is a process heater by definition in 40 CFR §63.7575.

The three, 2-stroke lean burn (2SLB) 1,700 hp compressor engines (EQUI 4, EQUI 5, and EQUI 6) are not subject to 40 CFR pt. 63, subp. ZZZZ – Standards for Hazardous Air Pollutants (HAP) for Stationary Reciprocating Internal Combustion Engines (RICE). These engines are exempt under 40 CFR 63.6590(b)(3)(i), because they are existing 2SLB stationary RICE larger than 500 hp located in a major source of HAP; they are existing engines since they commenced construction in 1967, prior to June 12, 2006.

The diesel fired emergency generator (EQUI 7) is subject to 40 CFR pt. 63, subp. ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines). Per 40 CFR 63.65909(c), the requirements of 40 CFR pt. 63, subp. ZZZZ are met by compliance with 40 CFR pt. 60, subp. IIII.

#### **2.5 Compliance assurance monitoring (CAM)**

The facility currently has no units subject to CAM (40 CFR pt. 64), because none of the units have add-on control equipment.

#### **2.6 Environmental review and air emissions risk analysis (AERA)**

This permit action does not trigger any environmental review or air emissions risk analysis requirements because there are no changes proposed at the facility.

## 2.9 Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines

**Table 7. Regulatory overview of facility**

Subject item*	Applicable regulations	Rationale
EQUI 2 - Process Heater	40 CFR pt. 50, Minn. Stat. 116.07, subds, 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080	National Ambient Air Quality Standards. Limit on operating hours to demonstrate modeled compliance with NO <sub>2</sub> NAAQS. (See section 3.3 Dispersion Modeling for further details).
EQUI 2 - Process Heater	40 CFR pt. 63, subp. DDDDD, Minn. R. 7011.7050, Minn. R. 7019.0100	National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters. EQUI 2 is an existing process heater that burns natural gas with a maximum capacity of 3.0 MMBtu/hr.
EQUI 2 – Process Heater	Minn. R. 7011.0510	Standards of Performance for Existing Indirect Heating Equipment. Determination of applicable limit from rule: <ul style="list-style-type: none"> <li>• The unit was constructed in 1967.</li> <li>• This unit has an input of 3.0 MMBtu/hr of indirect heating equipment.</li> </ul>
EQUI 3 - Turbine	Title I Condition: Avoid major modification under 40 CFR pt. 52 & Minn. R. 7007.3000	Provision for replacement of combustion turbine components. The restrictions of the authorization allow the change to avoid being a major modification under NSR. The potential to emit of this unit is less than the major modification threshold, so the NSR emissions increase analysis for component replacement will be less than the major modification thresholds.
EQUI 3 - Turbine	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines.
EQUI 3 - Turbine	40 CFR pt. 60, subp. GG; Minn. R. 7011.2350	Standards of Performance for Stationary Gas Turbines. Determination of applicable limits for rule: <ul style="list-style-type: none"> <li>• Heat input at peak load ≥ 10 MMBtu/hr</li> <li>• Constructed/modified/reconstructed after Oct 3, 1977 but before Feb 18, 2005</li> </ul>
EQUI 3 - Turbine	40 CFR pt. 60, subp. KKKK	New Source Performance Standards for Reconstructed Natural Gas Combustion Turbines. Because the permit allows the component replacement of EQUI 3, it is possible that the replacements could reach the point of reconstruction under 40 CFR Section 60.14. If this is the case, then the unit would be subject to 40 CFR pt. 60, subp. KKKK; therefore the permit includes the provisions that would apply to the reconstructed turbine.
EQUI 4 - Reciprocating IC Engine	Minn. R. 7011.2300; Minn. R. 7005.0100	Standards of Performance for Stationary Internal Combustion Engines.
EQUI 5 - Reciprocating IC Engine	Minn. R. 7011.2300; Minn. R. 7005.0100	Standards of Performance for Stationary Internal Combustion Engines.

Subject item*	Applicable regulations	Rationale
EQUI 6 - Reciprocating IC Engine	Minn. R. 7011.2300; Minn. R. 7005.0100	Standards of Performance for Stationary Internal Combustion Engines.
EQUI 7 - Reciprocating IC Engine	40 CFR pt. 60, subp. IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
EQUI 7 - Reciprocating IC Engine	40 CFR pt. 63, subp. ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).
EQUI 7 - Reciprocating IC Engine	Minn. R. 7011.2300; Minn. R. 7005.0100	Standards of Performance for Stationary Internal Combustion Engines.
EQUI 7 - Reciprocating IC Engine	Title I Condition: Avoid major modification under 40 CFR pt. 52 & Minn. R. 7007.3000	Limit on hours of operation of the engine such that it is not classified as a major modification under 40 CFR 52.21.

\*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

### 3. Technical information

#### 3.1 Calculations of potential to emit (PTE) analysis

The TSD Attachment 1; PTE Summary, GHG Summary, and NO<sub>x</sub> & SO<sub>2</sub> Limit Calculations Spreadsheets contains detailed spreadsheets and supporting information prepared by the MPCA and the Permittee. Criteria pollutants and HAP emissions from the lean-premix turbine (EQUI 3) were calculated using emission factors from AP-42 Section 3.1-2A and 3.1-3 for Natural Gas-Fired Turbines for Stationary Gas Turbines unless otherwise noted. The exceptions are for NO<sub>x</sub>, CO, and VOCs; those emission factors are provided by manufacturer (Solar Turbines) values. These values can be found in the TSD Attachment 3, Predicted Emission Performance Data for NO<sub>x</sub>, CO, and Unburned Hydrocarbons (UHC/VOC), from Solar Turbines, January 25, 2016. The values used are from the first operating scenario at 4825 HP and 0 deg. F because it has the highest emission factors and is the worst case scenario. The SO<sub>2</sub> emission factor used is calculated using AP-42 Table 3.1-2a and an assumed natural gas sulfur content of 2000 grains/million cubic feet; this is the natural gas sulfur content used by EPA for other SO<sub>2</sub> emission factors in AP-42 Chapter 3 Stationary Internal Combustion Engines, and documented by EPA in AP-42 Chapter 1 External Combustion Sources. Particulate matter (PM) emissions from turbines primarily result from carryover of noncombustible trace constituents in the fuel. PM emissions are negligible with natural gas firing because of the low ash content. PM emissions can be classified as "filterable" or "condensable" PM. Filterable PM is that portion of the total PM that exists in the stack in either the solid or liquid state and can be measured on an EPA Method 5 filter. Condensable PM is that portion of the total PM that exists as a gas in the stack but condenses in the cooler ambient air to form particulate matter. The PM emission factors for both PM<sub>10</sub> and PM<sub>2.5</sub> are the sum of the filterable and the condensable emission factors. The GHG emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>, as well as the numbers for CO<sub>2</sub> equivalents, were taken 40 CFR pt. 98 Table C-1, C-2 of Subpart C, version 11/2013, and Table A-1 of Subpart A, version 1/2014.

Criteria pollutants and HAP emissions from the water jacket heater (EQUI 2) were calculated using emission factors from AP-42 Chapter 1.4-1, 1.4-2, 1.4-3, and 1.4-4 version 7/1998 Natural Gas Combustion for small uncontrolled boilers. Particulate matter (PM) from natural gas combustion has been estimated to be less than 1 micrometer in size and has filterable and condensable fractions. The PM emission factors for both PM<sub>10</sub> and PM<sub>2.5</sub> are the sum of the filterable and the condensable emission factors. GHG emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>, and numbers for CO<sub>2</sub> equivalents, were taken 40 CFR pt. 98 Table C-1, C-2 of Subpart C, version 11/2013, and Table A-1 of Subpart A, version 1/2014.

Criteria pollutants and HAP emissions from the reciprocating internal combustion engines (RICE) EQUI 4, EQUI 5, and EQUI 6 were calculated using emission factors AP-42 from Section 3.2-1 Uncontrolled Emission Factors for 2-Stroke Lean-Burn Engines version 7/2000 for Natural Gas-fired Reciprocating Engines. Emissions of particulate matter (PM) from natural gas-fired reciprocating engines are generally minimal and comprise of fine filterable and condensable PM. The PM emission factors for both PM<sub>10</sub> and PM<sub>2.5</sub> are the sum of the filterable and the condensable emission factors. GHG emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>, as well as the numbers for CO<sub>2</sub> equivalents, were taken from 40 CFR pt. 98 Table C-1, C-2 of Subpart C, version 11/2013, and Table A-1 of Subpart A, version 1/2014.

HAP emissions from the emergency generator (EQUI 7) were calculated from AP-42 Chapter 3.3 Gasoline and Diesel Industrial Engines using emission factors for uncontrolled diesel engines. Emissions for NO<sub>x</sub>, PM, PM<sub>2.5</sub>, PM<sub>10</sub>, VOC and CO were calculated from manufacturer's data. The PM emission factors for both PM<sub>10</sub> and PM<sub>2.5</sub> are the sum of the filterable and the condensable emission factors. Emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>, and numbers for CO<sub>2</sub> equivalents, were taken 40 CFR pt. 98 Table C-1, C-2 of Subpart C, version 11/2013, and Table A-1 of Subpart A, version 1/2014.

### 3.2 Combustion Turbine Replacement Authorization

The Permittee periodically replaces turbine components at specified time intervals as part of normal routine maintenance, or upon component failure. The permit prohibits any increase in potential emissions due to the replacement of any gas turbine component, and therefore the permit does not allow a modification as defined in 40 CFR §60.14.

In performing this routine replacement, the Permittee may potentially reconstruct the gas turbine as defined in 40 CFR §60.15. As a result, the permit includes requirements to accommodate the potential applicability of 40 CFR pt. 60, subp. KKKK due to reconstruction. 40 CFR pt. 60 subp. KKKK was promulgated more recently and applies to stationary gas turbines constructed, modified, or reconstructed after February 18, 2005. 40 CFR pt. 60, subp. KKKK contains emission limits that are specific to new gas turbines and also to modified/reconstructed gas turbines for various fuels and turbine sizes. The permit contains requirements for a modified or reconstructed turbine firing natural gas that has a combustion turbine heat input at peak load between 50 and 850 MMBtu/hour. Reconstruction is defined in 40 CFR §60.15 as "the replacement of components of an existing facility to the extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility." The permit does not contain requirements for a new combustion turbine subject to 40 CFR pt. 60, subp. KKKK because the Permittee indicates it has no plans to completely replace the gas turbine with a new gas turbine.

The replacement or reconstruction of the turbine does not allow an increase in emission rate (in lb/hr, tpy, lb/hp-hr, lb/mmBtu etc.) of any pollutant, or the triggering of any additional applicable requirements (apart from 40 CFR pt. 60, subp. KKKK). The Permittee must continue to comply with all existing applicable permit conditions. An amendment is required if any of these conditions are not met.

Likewise, in performing routine replacements, the Permittee could be considered reconstructed under 40 CFR pt. 63, subp. YYYY. The turbine would then be subject to 40 CFR pt. 63, subp. YYYY and the Permittee must apply for a permit amendment to incorporate the NESHAP.

### 3.3 Dispersion Modeling

The air permit is required to include conditions necessary to ensure compliance with all applicable requirements, including National and Minnesota Ambient Air Quality Standards (NAAQS and MAAQS). In the 1990's, the facility completed air dispersion modeling showing compliance with the annual NO<sub>2</sub> National Ambient Air Quality Standards (NAAQS). Operating restrictions assumed when the modeling was conducted were incorporated as permit limits (e.g., hours of operation for the emergency generator and Water Jacket



heater) in permit action 15300004-002. The requirements for the water jacket heater have been carried forward to this permit action. The requirement for the replaced emergency generator (EU004) was an operating restriction of 720 hours per year while EQUI 3, EQUI 4, EQUI 5, or EQUI 6 were in operation. For the minor amendment authorizing installation of the new generator, the Permittee requested an operating limit of 500 hours per year. Because the hourly potential emissions of the new generator (EQUI 7) are less than those of the previous generator (see Table 4), and the overall hours of operation of the new generator will be less than those of the previous generator (500 and 720, respectively), this permit action requires no restriction on which equipment can be operating simultaneously with the new generator.

At the time of permit issuance, no new modeling is required. Current MPCA practice regarding modeling at gas transmission stations is to require modeling at the largest of multiple facilities per company. Viking Gas Transmission’s Ada Compressor Station was identified as the facility where modeling will be done.

### 3.4 Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- the likelihood of the facility violating the applicable requirements;
- whether add-on controls are necessary to meet the emission limits;
- the variability of emissions over time;
- the type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- the technical and economic feasibility of possible periodic monitoring methods; and
- the kind of monitoring found on similar units elsewhere.

**Table 8. Monitoring**

Subject Item*	Requirement (basis)	Monitoring	Discussion
EQUI 2	Particulate Matter <= 0.60 pounds per million Btu heat input.  Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. {Minn. R. 7011.0510]	None	EQUI 4 only fires natural gas, therefore the likelihood of violating the emission limit is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limit by only burning natural gas. Design based PTE, using AP-42, is 0.0075 lb/MMBtu.

Subject Item*	Requirement (basis)	Monitoring	Discussion
EQUI 2	Hours <= 2150 hours per year 12-month rolling sum for EQUI 2 when EQUI 3, EQUI 4, EQUI 5, or EQUI 6 are also in operation [40 CFR pt. 50, Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1,2 & 4, Minn. R. 7009.0010-7009.0080, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]	Daily Recordkeeping; Monthly Recordkeeping	The Permittee is required daily to record and maintain the operating times of EQUI 2 whenever EQUI 3, EQUI 4, EQUI 5, or EQUI 6 are also in operation. Along with daily recordkeeping, the Permittee is required to calculate the total hours used for each month using the daily records and maintain a 12-month rolling sum.
EQUI 3	Opacity <= 20 percent opacity once operating temperatures have been attained.  Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. This limit is effective on January 1, 2018. [Minn. R. 7011.2300]	None	EQUI 3 only fires natural gas by design. Potential SO <sub>2</sub> emissions based on equipment capacity and allowable fuels is 0.000610 lb/MMBtu heat input. Based on the low potential emissions of particulate matter and sulfur dioxide based on allowable fuels, significant opacity is not expected.
EQUI 3	40 CFR pt. 60, subp. GG No Reconstruction Unit: Sulfur Content of Fuel <= 0.8 percent by weight. [40 CFR 60.333, Minn. R. 7011.2350]	Maintain current purchase contract, tariff sheet or transportation contract for the fuel or representative fuel sampling	The monitoring requirements specified in 40 CFR pt. 60, subp. GG are adequate to demonstrate continuous compliance with the limit.

Subject Item*	Requirement (basis)	Monitoring	Discussion
EQUI 3	40 CFR pt. 60, subp. KKKK Reconstructed Units: The Permittee shall 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 3 which contains total potential sulfur emissions in excess of 26 ng SO <sub>2</sub> /J (0.060 lb SO <sub>2</sub> /MMBtu) heat input. [40 CFR 60.4330(a), Minn. R. 7011.2375]	Maintain current purchase contract, tariff sheet or transportation contract for the fuel or representative fuel sampling	The monitoring requirements specified in 40 CFR pt. 60, subp. KKKK are adequate to demonstrate continuous compliance with the limit.
EQUI 3	40 CFR pt. 60, subp. KKKK Reconstructed Units: The Permittee shall limit emissions of Nitrogen Oxides $\leq$ 42 parts per million at 15 percent O <sub>2</sub> 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]	Annual performance tests for NO <sub>x</sub> emissions if the Permittee makes a change that triggers 40 CFR pt. 60, subp. KKKK	The monitoring requirements specified in 40 CFR pt. 60, subp. KKKK are adequate to demonstrate continuous compliance with the limit.

Subject Item*	Requirement (basis)	Monitoring	Discussion
EQUI 3	<p>Subp. KKKK Reconstructed Units: The Permittee shall limit emissions of Nitrogen Oxides &lt;= 150 parts per million at 15 percent O2 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]</p>	Annual performance tests for NO <sub>x</sub> emissions in accordance with §60.4400 to demonstrate continuous compliance	The monitoring requirements specified in 40 CFR pt. 60, subp. KKKK are adequate to demonstrate continuous compliance with the limit.
EQUI 4	<p>Opacity &lt;= 20 percent opacity once operating temperatures have been attained.</p> <p>Sulfur Dioxide &lt;= 0.0015 pounds per million Btu heat input. This limit is effective on January 31, 2018. [Minn. R. 7011.2300]</p>	None	EQUI 4 only fires natural gas; therefore, the likelihood of violating the emission limit is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limit by only burning natural gas. Since this is a permit condition, the semi-annual deviations report will document any deviations from this condition. Design based PTE using AP-42, is 0.00059 lb SO <sub>2</sub> /MMBtu.

Subject Item*	Requirement (basis)	Monitoring	Discussion
EQUI 5	<p>Opacity &lt;= 20 percent opacity once operating temperatures have been attained.</p> <p>Sulfur Dioxide &lt;= 0.0015 pounds per million Btu heat input. This limit is effective on January 31, 2018. [Minn. R. 7011.2300]</p>	None	<p>EQUI 5 only fires natural gas; therefore, the likelihood of violating the emission limit is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limit by only burning natural gas. Since this is a permit condition, the semi-annual deviations report will document any deviations from this condition. Design based PTE using AP-42, is 0.00059 lb SO<sub>2</sub>/MMBtu.</p>
EQUI 6	<p>Opacity &lt;= 20 percent opacity once operating temperatures have been attained.</p> <p>Sulfur Dioxide &lt;= 0.0015 pounds per million Btu heat input. This limit is effective on January 31, 2018. [Minn. R. 7011.2300]</p>		<p>EQUI 6 only fires natural gas; therefore, the likelihood of violating the emission limit is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limit by only burning natural gas. Since this is a permit condition, the semi-annual deviations report will document any deviations from this condition. Design based PTE using AP-42, is 0.00059 lb SO<sub>2</sub>/MMBtu.</p>
EQUI 7	<p>Opacity &lt;= 20 percent opacity once operating temperatures have been attained.</p> <p>Sulfur Dioxide &lt;= 0.0015 pounds per million Btu heat input. This limit is effective on January 31, 2018. [Minn. R. 7011.2300]</p>	None	<p>EQUI 7 only fires diesel with a sulfur content limit of 0.0015% by weight; The PTE is 0.00159 lb SO<sub>2</sub>/MMBtu due to equipment design and allowable fuels; this shows compliance with the updated emission limit.</p>
EQUI 7	<p>Sulfur Content of Fuel &lt;= 0.0015 percent by weight. [Minn. R. 7007.0800, subps. 4-5]</p>	Monthly Recordkeeping	<p>The Permittee is required monthly to record fuel type and usage. The Permittee also must obtain and maintain a fuel supplier certification for each shipment of fuel oil, certifying the sulfur content does not exceed 0.0015% by weight.</p>

Subject Item*	Requirement (basis)	Monitoring	Discussion
EQUI 7	Hours <= 500 hours per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. [Title I Condition: Avoid major modification under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]	Daily Recordkeeping; Monthly Recordkeeping; Inspections; O&M Plan	Along with daily recordkeeping, the Permittee is required to calculate the total hours used for each month using the daily records and maintain a 12-month rolling sum.

\*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

### 3.5 Insignificant activities

Viking Gas Transmission - Cushing has several operations which are classified as insignificant activities under the MPCA's permitting rules. These are listed in Appendix A to the permit.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities. See Attachment 1 of this TSD for PTE information for the insignificant activities.

**Table 9. Insignificant activities**

Insignificant activity	General applicable emission limit	Discussion
Brazing, soldering or welding equipment	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	The Permittee operates a welder and an acetylene torch.
Individual units with potential emissions less than 2000 lb/year of certain pollutants	PM ≤ 0.40 lb/MMBtu Opacity ≤ 20%, except for one 6-min period per hour of not more than 60% (Minn. R. 7011.0510)	The Permittee has a turbine building space heater with a 0.324 mmBtu/hr capacity, a compressor shop space heater with a 0.20 mmBtu/hr capacity, an office space heater with a 0.10 mmBtu/hr capacity, and two pipeline garage space heaters with 0.10 and 0.15 mmBtu/hr capacity each.
Individual units with potential emissions less than 2000 lb/year of certain pollutants	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	The facility has fugitive VOC emissions from approximately 190 valves 7 relief valves, 20 open-ended lines, and 10 compressor seals. PTE calculations for these components can be seen in Attachment 1 to the TSD. The combination of all the components is well below 2000 lb/yr threshold for VOC.

### 3.6 Permit organization

In general, the permit meets the MPCA Tempo Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Tempo guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be electronically tracked (e.g., limits, submittals, etc.), should be in the Requirements table in Tempo. The main reason is that the appendices are word processing sections and are not part of the electronic tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

### 3.7 Comments received

Public Notice Period: [start date] – [end date]

EPA Review Period: [start date] – [end date]

This Section will be completed after the referenced review periods.

## 4. Permit fee assessment

This permit action is the reissuance of an individual Part 70; therefore, no application fees apply under Minn. R. 7002.0016, subp. 1 to the changes that are covered by the reissuance application. However, the permit action rolls a minor amendment permit application to which additional points fees do apply. Attachment 4 to this TSD contains the MPCA's assessment of Application and Additional Points used to determine the permit application fee as required by Minn. R. 7002.0019.

## 5. Conclusion

Based on the information provided by Viking Gas Transmission - Cushing the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 15300004-101 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff members on permit team: Michael Van Der Wal (permit engineer)  
Amrill Okonkwo (peer reviewer)  
Michaela Leach (data coordinator/permit writing assistant)  
Laurie O'Brien (administrative support)  
Andy Place (compliance reviewer)  
Matthew Snorek (compliance reviewer)

TEMPO360 Activities: Minor Amendment (IND20110001), Part 70 Reissuance (IND20130001)

- Attachments:
1. PTE summary and calculation spreadsheets
  2. EPA Determination for 40 CFR pt. 60, subp. GG
  3. Predicted Emission Performance data from Solar Turbines
  4. Points Calculator
  5. Subject item inventory and facility requirements

**Attachment 1 – PTE Summary and Calculation Spreadsheets**



PTE Totals for All Emission Units

<i>Pollutants</i>	<i>Limited PTE (lb/hr)</i>	<i>Unrestricted Potential (tpy)</i>	<i>Limited PTE (tpy)</i>	<i>Pollutants</i>	<i>Limited PTE (lb/hr)</i>	<i>Unrestricted Potential (tpy)</i>	<i>Limited PTE (tpy)</i>
1,1,2,2-Tetrachloroethane	2.78E-03	1.22E-02	1.22E-02	NOx	143.6	628.9	617.1
1,1,2-Trichloroethane	2.21E-03	9.69E-03	9.69E-03	PM10	2.38	10.43	10.21
1,1-Dichloroethane	1.64E-03	7.19E-03	7.19E-03	PM2.5	2.38	10.43	10.21
1,2-Dichloroethane	1.77E-03	7.76E-03	7.76E-03	Total PM	2.38	10.43	10.21
1,2-Dichloropropane	1.87E-03	8.20E-03	8.20E-03	SO <sub>2</sub>	0.055	0.242	0.230
1,3-Butadiene	3.45E-02	1.51E-01	1.51E-01	VOC	6.71	29.38	29.01
1,3-Dichloropropene	1.84E-03	8.06E-03	8.06E-03	CO	21.95	96.14	95.25
2,2,4-Trimethylpentane	3.55E-02	1.56E-01	1.56E-01				
Acetaldehyde	3.29E-01	1.44E+00	1.44E+00	Total HAP	3.40	14.89	14.86
Acrolein	3.27E-01	1.43E+00	1.43E+00	Formaldehyde	2.35	10.30	10.30
Benzene	8.31E-02	3.64E-01	3.60E-01				
Biphenyl	1.66E-04	7.27E-04	7.27E-04				
Carbon Tetrachloride	2.55E-03	1.12E-02	1.12E-02				
Chlorobenzene	1.86E-03	8.17E-03	8.17E-03				
Chloroform	1.98E-03	8.66E-03	8.66E-03				
1,4-Dichlorobenzene	2.35E-06	1.03E-05	2.53E-06				
Ethylbenzene	5.98E-03	2.62E-02	2.62E-02				
Ethylene Dibromide	3.08E-03	1.35E-02	1.35E-02				
Formaldehyde	2.35E+00	1.03E+01	1.03E+01				
Hexane	2.22E-02	9.73E-02	8.57E-02				
Methanol	1.04E-01	4.56E-01	4.56E-01				
Methylene Chloride	6.17E-03	2.70E-02	2.70E-02				
Naphthalene	4.21E-03	1.84E-02	1.80E-02	Lead	9.80E-07	4.29E-06	1.05E-06
Perylene	2.09E-07	9.14E-07	9.14E-07	Arsenic	3.92E-07	1.72E-06	4.22E-07
Phenol	1.77E-03	7.74E-03	7.74E-03	Beryllium	2.35E-08	1.03E-07	2.53E-08
POM / PAH*	5.73E-03	2.51E-02	2.51E-02	Cadmium	2.16E-06	9.45E-06	2.32E-06
Propylene Oxide	1.31E-03	5.72E-03	5.72E-03	Chromium	2.75E-06	1.20E-05	2.95E-06
Styrene	2.30E-03	1.01E-02	1.01E-02	Cobalt	1.65E-07	7.21E-07	1.77E-07
Toluene	4.68E-02	2.05E-01	2.03E-01	Manganese	7.45E-07	3.26E-06	8.01E-07
Vinyl Chloride	1.04E-03	4.54E-03	4.54E-03	Mercury	5.10E-07	2.23E-06	5.48E-07
Xylene	1.45E-02	6.34E-02	6.20E-02	Nickel	4.12E-06	1.80E-05	4.43E-06
				Selenium	4.71E-08	2.06E-07	5.06E-08

\*does not include naphthalene

Pollutants	Emission Factor (lb/mmscf)	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr)	Unrestricted PTE (tpy)	Limited PTE (tpy)	EQUI 2
NOx <sup>1</sup>	1.00E+02	0.098	0.20	0.86	0.21	Water Jacket Heater WG-2000-0 from AJAX with Natural Gas Fuel
PM10 <sup>2,*</sup>	7.60E+00	0.0075	0.015	0.065	0.016	
PM2.5 <sup>2,*</sup>	7.60E+00	0.0075	0.015	0.065	0.016	
Total PM <sup>2</sup>	7.60E+00	0.0075	0.015	0.065	0.016	
SO <sub>2</sub> <sup>2</sup>	6.00E-01	5.88E-04	1.18E-03	5.15E-03	1.26E-03	
VOC <sup>2</sup>	5.50E+00	0.0054	0.011	0.047	0.012	
CO <sup>1</sup>	8.40E+01	0.082	0.16	0.72	0.18	Max Fuel Input (mil Btu) 2
						Operating hours limit (hr) 2150
						Max Design capacity (hp)
Benzene	2.10E-03	2.06E-06	4.12E-06	1.80E-05	4.43E-06	
1,4-Dichlorobenzene	1.20E-03	1.18E-06	2.35E-06	1.03E-05	2.53E-06	
Formaldehyde	7.50E-02	7.35E-05	1.47E-04	6.44E-04	1.58E-04	
Hexane	1.80E+00	0.0018	3.53E-03	1.55E-02	3.79E-03	*PM filterable added to condensable
Naphthalene	6.10E-04	5.98E-07	1.20E-06	5.24E-06	1.29E-06	Emission Factor (lb/mmscf)
POM <sup>3</sup>	8.82E-05	8.65E-08	1.73E-07	7.57E-07	1.86E-07	PM (condensable) 5.70E+00
Toluene	3.40E-03	3.33E-06	6.67E-06	2.92E-05	7.17E-06	PM (filterable) 1.90E+00
Arsenic <sup>4</sup>	2.00E-04	1.96E-07	3.92E-07	1.72E-06	4.22E-07	7.60E+00
Beryllium <sup>4</sup>	1.20E-05	1.18E-08	2.35E-08	1.03E-07	2.53E-08	
Cadmium <sup>4</sup>	1.10E-03	1.08E-06	2.16E-06	9.45E-06	2.32E-06	
Chromium <sup>4</sup>	1.40E-03	1.37E-06	2.75E-06	1.20E-05	2.95E-06	
Lead <sup>4</sup>	5.00E-04	4.90E-07	9.80E-07	4.29E-06	1.05E-06	All emission factors from AP 42 - 7/1998
Cobalt <sup>4</sup>	8.40E-05	8.24E-08	1.65E-07	7.21E-07	1.77E-07	<sup>1</sup> Table 1.4-1
Manganese <sup>4</sup>	3.80E-04	3.73E-07	7.45E-07	3.26E-06	8.01E-07	<sup>2</sup> Table 1.4-2
Mercury <sup>4</sup>	2.60E-04	2.55E-07	5.10E-07	2.23E-06	5.48E-07	Table 1.4-3
Nickel <sup>4</sup>	2.10E-03	2.06E-06	4.12E-06	1.80E-05	4.43E-06	<sup>4</sup> Table 1.4-4
Selenium <sup>4</sup>	2.40E-05	2.35E-08	4.71E-08	2.06E-07	5.06E-08	<sup>3</sup> POM sub-part C, AP-42
Total HAP	1.89E+00	0.0019	0.0037	0.0162	0.00398	Table 1.4-3

POM	(lb/mmscf)		(lb/mmscf)		(lb/mmscf)
2-Methylnaphthalene	2.40E-05	Benzo(a)pyrene	1.20E-06	Phenanathrene	1.70E-05
3-Methylchloranthrene	1.80E-06	Benzo(b)fluoranthene	1.80E-06	Pyrene	5.00E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05	Benzo(g,h,i)perylene	1.20E-06		
Dibenzo(a,h)anthracene	1.20E-06	Benzo(k)fluoranthene	1.80E-06	POM Total*	8.82E-05
Acenaphthene	1.80E-06	Chrysene	1.80E-06		
Acenaphthylene	1.80E-06	Fluoranthene	3.00E-06		
Anthracene	2.40E-06	Fluorene	2.80E-06		
Benz(a)anthracene	1.80E-06	Indeno(1,2,3-cd)pyrene	1.80E-06		

\*(does not include Naphthalene)

Lean-Premix Turbine Engine with Natural Gas Fuel

Max Fuel Input (mil Btu)	45	Operating hours limit (hr)	8760	Max Design capacity (hp)	4719
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Pollutants	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr)	Unrestricted PTE (tpy)	Limited PTE (tpy)
NOx <sup>1</sup>	1.68E-01	7.56	33.11	33.11
PM10 <sup>2,*</sup>	6.60E-03	0.30	1.30	1.30
PM2.5 <sup>2,*</sup>	6.60E-03	0.30	1.30	1.30
Total PM	6.60E-03	0.30	1.30	1.30
SO <sub>2</sub> <sup>3</sup>	6.10E-04	2.75E-02	1.20E-01	1.20E-01
VOC <sup>1</sup>	3.50E-02	1.58	6.90	6.90
CO <sup>1</sup>	1.22E-01	5.49	24.05	24.05
1,3-Butadiene	4.30E-07	1.94E-05	8.48E-05	8.48E-05
Acetaldehyde	4.00E-05	1.80E-03	7.88E-03	7.88E-03
Acrolein	6.40E-06	2.88E-04	1.26E-03	1.26E-03
Benzene	1.20E-05	5.40E-04	2.37E-03	2.37E-03
Ethylbenzene	3.20E-05	1.44E-03	6.31E-03	6.31E-03
Formaldehyde	7.10E-04	0.0320	0.13994	0.13994
Naphthalene	1.30E-06	5.85E-05	2.56E-04	2.56E-04
POM / PAH*	2.20E-06	9.90E-05	4.34E-04	4.34E-04
Propylene Oxide	2.90E-05	1.31E-03	5.72E-03	5.72E-03
Toluene	1.30E-04	5.85E-03	2.56E-02	2.56E-02
Xylene	6.40E-05	2.88E-03	1.26E-02	1.26E-02
Total HAP	1.03E-03	0.0462	0.202	0.202

EQUI 3

Compression turbine engine lean pre-mix model number 40-T4700s from Solar burning natural gas

\*does not include naphthalene

<sup>1</sup>Manufacturer (Solar Turbines) data provide in TSD Attachment 4. (lb/mmBtu)

NOx	0.168
CO	0.122
VOC / UHC	0.035

UHC = Unburned Hydrocarbons

All other emission factors are from:

AP 42 - 4/2000

Table 3.1-3

<sup>2</sup>Table 3.1-2a

<sup>3</sup> Pipeline natural gas is assumed to have a sulfur content of 2000 grains/million cubic feet. This equates to a S content of 0.000649%, per the following calculation:

$$(0.002 \text{ gr S} / \text{scf gas}) \times (1 \text{ lb S} / 7000 \text{ gr S}) \times (1 \text{ scf gas} / 0.044 \text{ lb gas}) \times (100 \text{ lb gas} / 100 \text{ lb gas})$$

Density of natural gas from [https://www.engineeringtoolbox.com/gas-density-d\\_158.html](https://www.engineeringtoolbox.com/gas-density-d_158.html); the density varies from 0.044-0.056 lb/ft<sup>3</sup>, with a lower density resulting in the most conservative calculation of sulfur content.

\*PM filterable added to condensable

PM (filterable)	4.70E-03
PM (condensable)	1.90E-03
	6.60E-03

Pollutants	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr)	Unrestricted PTE (tpy)	Limited PTE (tpy)	EQUI 4			
Nox	3.17E+00	44.38	194.38	194.38	Max Fuel Input (mil Btu)	14		
PM10*	4.83E-02	0.68	2.96	2.96	Operating hours limit (hr)	8760		
PM2.5*	4.83E-02	0.68	2.96	2.96	Max Design capacity (hp)	1700		
Total PM	4.83E-02	0.68	2.96	2.96	Compressor Engine Clark TLA-5 2 -stroke lean burn engines with Natural Gas Fuel			
SO <sub>2</sub>	5.88E-04	0.0082	0.036	0.036				
VOC	1.20E-01	1.68	7.36	7.36				
CO	3.86E-01	5.40	23.67	23.67				
1,1,2,2-Tetrachloroethane	6.63E-05	9.28E-04	4.07E-03	4.07E-03			All emission factors from AP 42 - Table 3.2-1 7/2000	
1,1,2-Trichloroethane	5.27E-05	7.38E-04	3.23E-03	3.23E-03				
1,1-Dichloroethane	3.91E-05	5.47E-04	2.40E-03	2.40E-03				
1,2-Dichloroethane	4.22E-05	5.91E-04	2.59E-03	2.59E-03				
1,2-Dichloropropane	4.46E-05	6.24E-04	2.73E-03	2.73E-03				
1,3-Butadiene	8.20E-04	1.15E-02	5.03E-02	5.03E-02				
1,3-Dichloropropene	4.38E-05	6.13E-04	2.69E-03	2.69E-03				
2,2,4-Trimethylpentane	8.46E-04	1.18E-02	5.19E-02	5.19E-02				
Acetaldehyde	7.76E-03	1.09E-01	4.76E-01	4.76E-01	*PM filterable added to condensable			
Acrolein	7.78E-03	1.09E-01	4.77E-01	4.77E-01				
Benzene	1.94E-03	2.72E-02	1.19E-01	1.19E-01	PM (filterable)	3.84E-02		
Biphenyl	3.95E-06	5.53E-05	2.42E-04	2.42E-04	PM (condensable)	9.91E-03		
Carbon Tetrachloride	6.07E-05	8.50E-04	3.72E-03	3.72E-03	4.83E-02			
Chlorobenzene	4.44E-05	6.22E-04	2.72E-03	2.72E-03				
Chloroform	4.71E-05	6.59E-04	2.89E-03	2.89E-03				
Ethylbenzene	1.08E-04	1.51E-03	6.62E-03	6.62E-03				
Ethylene Dibromide	7.34E-05	1.03E-03	4.50E-03	4.50E-03				
Formaldehyde	5.52E-02	0.7728	3.3849	3.3849				
Methanol	2.48E-03	3.47E-02	1.52E-01	1.52E-01				
Methylene Chloride	1.47E-04	2.06E-03	9.01E-03	9.01E-03				
Naphthalene	9.63E-05	1.35E-03	5.91E-03	5.91E-03				
n-Hexane	4.45E-04	6.23E-03	2.73E-02	2.73E-02				
POM / PAH	1.34E-04	1.88E-03	8.22E-03	8.22E-03				
Perylene	4.97E-09	6.96E-08	3.05E-07	3.05E-07				
Phenol	4.21E-05	5.89E-04	2.58E-03	2.58E-03				
Styrene	5.48E-05	7.67E-04	3.36E-03	3.36E-03				
Toluene	9.63E-04	1.35E-02	5.91E-02	5.91E-02				
Vinyl Chloride	2.47E-05	3.46E-04	1.51E-03	1.51E-03				
Xylene	2.68E-04	3.75E-03	1.64E-02	1.64E-02				
Total HAP	7.96E-02	1.11	4.88	4.88				

Pollutants	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr)	Unrestricted PTE (tpy)	Limited PTE (tpy)	EQUI 5			
Nox	3.17E+00	44.38	194.38	194.38	Max Fuel Input (mil Btu)	14		
PM10*	4.83E-02	0.68	2.96	2.96	Operating hours limit (hr)	8760		
PM2.5*	4.83E-02	0.68	2.96	2.96	Max Design capacity (hp)	1700		
Total PM	4.83E-02	0.68	2.96	2.96	Compressor Engine Clark TLA-5 2 -stroke lean burn engines with Natural Gas Fuel			
SO <sub>2</sub>	5.88E-04	0.0082	0.036	0.036				
VOC	1.20E-01	1.68	7.36	7.36				
CO	3.86E-01	5.40	23.67	23.67				
1,1,2,2-Tetrachloroethane	6.63E-05	9.28E-04	4.07E-03	4.07E-03			All emission factors from AP 42 - Table 3.2-1 7/2000	
1,1,2-Trichloroethane	5.27E-05	7.38E-04	3.23E-03	3.23E-03				
1,1-Dichloroethane	3.91E-05	5.47E-04	2.40E-03	2.40E-03				
1,2-Dichloroethane	4.22E-05	5.91E-04	2.59E-03	2.59E-03				
1,2-Dichloropropane	4.46E-05	6.24E-04	2.73E-03	2.73E-03				
1,3-Butadiene	8.20E-04	1.15E-02	5.03E-02	5.03E-02				
1,3-Dichloropropene	4.38E-05	6.13E-04	2.69E-03	2.69E-03				
2,2,4-Trimethylpentane	8.46E-04	1.18E-02	5.19E-02	5.19E-02				
Acetaldehyde	7.76E-03	1.09E-01	4.76E-01	4.76E-01	*PM filterable added to condensable			
Acrolein	7.78E-03	1.09E-01	4.77E-01	4.77E-01				
Benzene	1.94E-03	2.72E-02	1.19E-01	1.19E-01	PM (filterable)	3.84E-02		
Biphenyl	3.95E-06	5.53E-05	2.42E-04	2.42E-04	PM (condensable)	9.91E-03		
Carbon Tetrachloride	6.07E-05	8.50E-04	3.72E-03	3.72E-03	4.83E-02			
Chlorobenzene	4.44E-05	6.22E-04	2.72E-03	2.72E-03				
Chloroform	4.71E-05	6.59E-04	2.89E-03	2.89E-03				
Ethylbenzene	1.08E-04	1.51E-03	6.62E-03	6.62E-03				
Ethylene Dibromide	7.34E-05	1.03E-03	4.50E-03	4.50E-03				
Formaldehyde	5.52E-02	0.7728	3.3849	3.3849				
Methanol	2.48E-03	3.47E-02	1.52E-01	1.52E-01				
Methylene Chloride	1.47E-04	2.06E-03	9.01E-03	9.01E-03				
Naphthalene	9.63E-05	1.35E-03	5.91E-03	5.91E-03				
n-Hexane	4.45E-04	6.23E-03	2.73E-02	2.73E-02				
POM / PAH	1.34E-04	1.88E-03	8.22E-03	8.22E-03				
Perylene	4.97E-09	6.96E-08	3.05E-07	3.05E-07				
Phenol	4.21E-05	5.89E-04	2.58E-03	2.58E-03				
Styrene	5.48E-05	7.67E-04	3.36E-03	3.36E-03				
Toluene	9.63E-04	1.35E-02	5.91E-02	5.91E-02				
Vinyl Chloride	2.47E-05	3.46E-04	1.51E-03	1.51E-03				
Xylene	2.68E-04	3.75E-03	1.64E-02	1.64E-02				
Total HAP	7.96E-02	1.11	4.88	4.88				

Pollutants	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr)	Unrestricted PTE (tpy)	Limited PTE (tpy)	EQUI 6			
Nox	3.17E+00	44.38	194.38	194.38	Max Fuel Input (mil Btu)	14		
PM10*	4.83E-02	0.68	2.96	2.96	Operating hours limit (hr)	8760		
PM2.5*	4.83E-02	0.68	2.96	2.96	Max Design capacity (hp)	1700		
Total PM	4.83E-02	0.68	2.96	2.96	Compressor Engine Clark TLA-5 2 -stroke lean burn engines with Natural Gas Fuel			
SO <sub>2</sub>	5.88E-04	0.0082	0.036	0.036				
VOC	1.20E-01	1.68	7.36	7.36				
CO	3.86E-01	5.40	23.67	23.67				
1,1,2,2-Tetrachloroethane	6.63E-05	9.28E-04	4.07E-03	4.07E-03			All emission factors from AP 42 - Table 3.2-1 7/2000	
1,1,2-Trichloroethane	5.27E-05	7.38E-04	3.23E-03	3.23E-03				
1,1-Dichloroethane	3.91E-05	5.47E-04	2.40E-03	2.40E-03				
1,2-Dichloroethane	4.22E-05	5.91E-04	2.59E-03	2.59E-03				
1,2-Dichloropropane	4.46E-05	6.24E-04	2.73E-03	2.73E-03				
1,3-Butadiene	8.20E-04	1.15E-02	5.03E-02	5.03E-02				
1,3-Dichloropropene	4.38E-05	6.13E-04	2.69E-03	2.69E-03				
2,2,4-Trimethylpentane	8.46E-04	1.18E-02	5.19E-02	5.19E-02				
Acetaldehyde	7.76E-03	1.09E-01	4.76E-01	4.76E-01	*PM filterable added to condensable			
Acrolein	7.78E-03	1.09E-01	4.77E-01	4.77E-01				
Benzene	1.94E-03	2.72E-02	1.19E-01	1.19E-01	PM (filterable)	3.84E-02		
Biphenyl	3.95E-06	5.53E-05	2.42E-04	2.42E-04	PM (condensable)	9.91E-03		
Carbon Tetrachloride	6.07E-05	8.50E-04	3.72E-03	3.72E-03	4.83E-02			
Chlorobenzene	4.44E-05	6.22E-04	2.72E-03	2.72E-03				
Chloroform	4.71E-05	6.59E-04	2.89E-03	2.89E-03				
Ethylbenzene	1.08E-04	1.51E-03	6.62E-03	6.62E-03				
Ethylene Dibromide	7.34E-05	1.03E-03	4.50E-03	4.50E-03				
Formaldehyde	5.52E-02	0.7728	3.3849	3.3849				
Methanol	2.48E-03	3.47E-02	1.52E-01	1.52E-01				
Methylene Chloride	1.47E-04	2.06E-03	9.01E-03	9.01E-03				
Naphthalene	9.63E-05	1.35E-03	5.91E-03	5.91E-03				
n-Hexane	4.45E-04	6.23E-03	2.73E-02	2.73E-02				
POM / PAH	1.34E-04	1.88E-03	8.22E-03	8.22E-03				
Perylene	4.97E-09	6.96E-08	3.05E-07	3.05E-07				
Phenol	4.21E-05	5.89E-04	2.58E-03	2.58E-03				
Styrene	5.48E-05	7.67E-04	3.36E-03	3.36E-03				
Toluene	9.63E-04	1.35E-02	5.91E-02	5.91E-02				
Vinyl Chloride	2.47E-05	3.46E-04	1.51E-03	1.51E-03				
Xylene	2.68E-04	3.75E-03	1.64E-02	1.64E-02				
Total HAP	7.96E-02	1.11	4.88	4.88				

Emergency Generator CI model QSM11-G4 from Cummins with Diesel Fuel

Max Fuel Input (mmbtu/hr)	1.2	Operating hours limit (hr)	500	Max Design capacity (hp)	470
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Pollutants	Emission Factor (lb/unit)	Emission Rate (lb/hr)	Unrestricted PTE (tpy)	Limited PTE (tpy)	EQUI 7
NOx	2.59E+00	2.68E+00	1.18E+01	6.71E-01	
PM2.5	4.00E-02	4.14E-02	1.82E-01	1.04E-02	
PM10	4.00E-02	4.14E-02	1.82E-01	1.04E-02	
Total PM	4.00E-02	4.14E-02	1.82E-01	1.04E-02	
SO2		1.90E-03	8.33E-03	4.76E-04	
VOC	8.00E-02	8.29E-02	3.63E-01	2.07E-02	
CO	8.00E-02	8.29E-02	3.63E-01	2.07E-02	
CO2*	1.63E+02	1.96E+02	8.57E+02	4.89E+01	
CH4*	6.60E-03	7.92E-03	3.47E-02	1.98E-03	
N2O*	1.32E-03	1.58E-03	6.94E-03	3.96E-04	
CO2e <sup>[1]</sup> tonnes	---	1.96E+02	8.60E+02	4.91E+01	
1,3-Butadiene	3.91E-05	4.69E-05	2.06E-04	1.17E-05	
Acetaldehyde	7.67E-04	9.20E-04	4.03E-03	2.30E-04	
Acrolein	9.25E-05	1.11E-04	4.86E-04	2.78E-05	
Benzene	9.33E-04	1.12E-03	4.90E-03	2.80E-04	
Formaldehyde	1.18E-03	1.42E-03	6.20E-03	3.54E-04	
Naphthalene	8.48E-05	1.02E-04	4.46E-04	2.54E-05	
Toluene	4.09E-04	4.91E-04	2.15E-03	1.23E-04	
Xylene	2.85E-04	3.42E-04	1.50E-03	8.55E-05	
Total HAP	3.79E-03	4.55E-03	1.99E-02	1.14E-03	

[1] CO2e = [CO2 emissions X Global Warming Potentials (GWP)] + CH4 emissions X GWP + [N2O emissions X GWP] X 2000/2204. Global Warming Potentials: CO2 = 1, CH4 = 25 and N2O = 298

SO2 Lb/hr: (1.2 MMBtu/hr) x (1000000 Btu/MMBtu) x (1 gal/140000 Btu) x (7.41 lb fuel oil/gal fuel oil) x (0.0015% S) x (2 lb SO2/lb S) = 0.0019 lb SO2/hr

SO2 lb/MMBTU = 0.001586 This appears to be higher than the Minn. R. 7011.2300 standard of 0.0015 lb/MMBtu, however due to variability in density and btu content of the fuel, which would have an effect on the calculated hourly emission rate, the calculated lb/MMBTU is assumed to be in compliance with the limit.

Greenhouse Gas (GHG) Emissions (lb/hr)						
Fuel Use (mmBtu/hr)	2	45	14	14	14	Total GHG lb/hr
Operating Hours (hr)	2150	8760	8760	8760	8760	
Emission Units	EQUI 2	EQUI 3	EQUI 4	EQUI 5	EQUI 6	
CO <sub>2</sub>	234	5264	1638	1638	1638	<b>10411</b>
CH <sub>4</sub>	4.41E-03	9.92E-02	0.0309	0.0309	0.0309	<b>0.196</b>
N <sub>2</sub> O	4.41E-04	9.92E-03	3.09E-03	3.09E-03	3.09E-03	<b>0.020</b>
CH <sub>4</sub> as CO <sub>2</sub> e	0.110	2.480	0.772	0.772	0.772	<b>4.91</b>
N <sub>2</sub> O as CO <sub>2</sub> e	0.131	2.956	0.920	0.920	0.920	<b>5.85</b>
Total CO <sub>2</sub> + CO <sub>2</sub> e	234	5269	1639	1639	1639	<b>10422</b>

Space Heater #1
0.324
8760
lb/hr
37.9
7.14E-04
7.14E-05
0.0179
0.0213
37.94

Greenhouse Gas (GHG) Emissions (tons/yr)						ton/yr
CO <sub>2</sub>	252	23056	7173	7173	7173	<b>44827</b>
CH <sub>4</sub>	0.005	4.35E-01	0.135	0.135	1.35E-01	<b>0.845</b>
N <sub>2</sub> O	0.0005	4.35E-02	0.0135	0.0135	1.35E-02	<b>0.084</b>
CH <sub>4</sub> as CO <sub>2</sub> e	0.12	10.8633	3.38	3.38	3.380	<b>21.12</b>
N <sub>2</sub> O as CO <sub>2</sub> e	0.14	12.9490	4.03	4.03	4.029	<b>25.18</b>
Total CO <sub>2</sub> + CO <sub>2</sub> e	252	23080	7180	7180	7180	<b>44873</b>

ton/yr
166
3.13E-03
3.13E-04
0.0782
0.0932
<b>166.2</b>

Table C-1 to subpart C of Part 98  
 Default CO<sub>2</sub> Emission Factors and High Heat Values for Various Types of Fuel 11/2013

emission factor						
Natural gas	53.06	kg CO <sub>2</sub> /mmBtu	116.98	lb CO <sub>2</sub> /mmBtu	2.2046	lb
						kg

Table C-2 to subpart C of Part 98  
 Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Types of Fuel 11/2013

emission factor				
Natural gas	1.00E-03	kg CH <sub>4</sub> /mmBtu	2.20E-03	lb CH <sub>4</sub> /mmBtu
	1.00E-04	kg N <sub>2</sub> O /mmBtu	2.20E-04	lb N <sub>2</sub> O /mmBtu

Table A-1 to subpart A of Part 98  
 Global Warming Potentials [100-Year Time Horizon] 1/2014

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298



### Insignificant Heater Information

Minn. R. 7007.1300, subp. 3(l)

<b>Description</b>	<b>Combustor Type</b>	<b>Burner Design (mmBtu/hr)</b>	<b>Fuel Consumption (mmscf/hr)</b>	<b>Fuel Consumption (mmscf/yr)</b>	<b>Fuel HHV (btu/scf)</b>	<b>Operating Hours</b>
Turbine Building SH	Uncontrolled	0.3240	3.16E-04	2.7663	1026	8760
Compressor Building SH	Uncontrolled	0.2000	1.95E-04	1.7076	1026	8760
Office Space Heater	Uncontrolled	0.1000	9.75E-05	0.8538	1026	8760
Pipeline Garage SH	Uncontrolled	0.2500	2.44E-04	2.1345	1026	8760
Total		0.8740				

**Viking Gas Transmission Company  
 Milaca (Station 2217)  
 Fugitive Equipment Data and Emission Factors**

Equipment Information - Gas Service						TOC Emissions											
Component	Count <sup>1</sup>		Emission Factor <sup>2</sup>		Control Efficiency	Hourly Emissions		Operating Hours		Conversion		Annual Emissions					
Valves - Gas	197	X	9.92E-03	lb/hr/source	X	0.00%	=	1.32	lb/hr	X	8,760	X	0.0005	ton/lb	=	5.78	TPY
Pump Seals - Gas	10	X	5.29E-03	lb/hr/source	X	0.00%	=	0.06	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.28	TPY
Other - Gas	0	X	1.94E-02	lb/hr/source	X	0.00%	=	0.23	lb/hr	X	8,760	X	0.0005	ton/lb	=	1.02	TPY
Connectors - Gas	0	X	4.41E-04	lb/hr/source	X	0.00%	=	0.07	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.29	TPY
Flanges - Gas	0	X	8.60E-04	lb/hr/source	X	0.00%	=	0.09	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.38	TPY
Open-Ended Lines - Gas	20	X	4.41E-03	lb/hr/source	X	0.00%	=	0.07	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.33	TPY

Equipment Information - Liquid Service						TOC Emissions											
Component	Count <sup>1</sup>		Emission Factor <sup>2</sup>		Control Efficiency	Hourly Emissions		Operating Hours		Conversion		Annual Emissions					
Valves - Light Oil	0	X	5.51E-03	lb/hr/source	X	0.00%	=	0.00	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.00	TPY
Flanges - Light Oil	0	X	2.43E-04	lb/hr/source	X	0.00%	=	0.00	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.00	TPY
Open-Ended Lines - Light Oil	0	X	3.09E-03	lb/hr/source	X	0.00%	=	0.00	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.00	TPY
Connectors - Light Oil	0	X	4.63E-04	lb/hr/source	X	0.00%	=	0.00	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.00	TPY
Pump Seals - Light Oil	0	X	2.87E-02	lb/hr/source	X	0.00%	=	0.00	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.00	TPY
Other - Light Oil	0	X	1.65E-02	lb/hr/source	X	0.00%	=	0.00	lb/hr	X	8,760	X	0.0005	ton/lb	=	0.00	TPY

Notes:

- 1) Component counts conservatively estimated.
- 2) Emission Factor Source: EPA-453/R-95-017. TOC multiplied by pollutant content of stream (weight %) to obtain pollutant emissions.

**Fugitive Emissions Calculations**  
**EPA-453/R-95-017 Emission Factors**

<u>Source Type</u>	<u>Emission</u>		
	<u>Factor</u> (lb/hr/source)	(kg/hr)	
Compressor Seals - Gas	1.94E-02	8.80E-03	Table 2-4 <sup>C</sup>
Connectors - Gas	4.41E-04	2.00E-04	Table 2-4
Connectors - Heavy Oil	1.65E-05	7.50E-06	Table 2-4
Connectors - Light Oil	4.63E-04	2.10E-04	Table 2-4
Connectors - Water/Oil	2.43E-04	1.10E-04	Table 2-4
Flanges - Gas	8.60E-04	3.90E-04	Table 2-4
Flanges - Heavy Oil	8.60E-07	3.90E-07	Table 2-4
Flanges - Light Oil	2.43E-04	1.10E-04	Table 2-4
Flanges - Water/Oil	6.39E-06	2.90E-06	Table 2-4
Other - Gas	1.94E-02	8.80E-03	Table 2-4
Other - Heavy Oil	7.05E-05	3.20E-05	Table 2-4
Other - Light Oil	1.65E-02	7.50E-03	Table 2-4
Other - Water/Oil	3.09E-02	1.40E-02	Table 2-4
Open-Ended Lines - Gas	4.41E-03	2.00E-03	Table 2-4
Open-Ended Lines - Heavy Oil	3.09E-04	1.40E-04	Table 2-4
Open-Ended Lines - Light Oil	3.09E-03	1.40E-03	Table 2-4
Open-Ended Lines - Water/Oil	5.51E-04	2.50E-04	Table 2-4
Pump Seals - Gas	5.29E-03	2.40E-03	Table 2-4
Pump Seals - Light Oil	2.87E-02	1.30E-02	Table 2-4
Pump Seals - Water/Oil	5.29E-05	2.40E-05	Table 2-4
Relief Valves - Gas	1.94E-02	8.80E-03	Table 2-4 <sup>C</sup>
Valves - Gas	9.92E-03	4.50E-03	Table 2-4
Valves - Heavy Oil	1.85E-05	8.40E-06	Table 2-4
Valves - Light Oil	5.51E-03	2.50E-03	Table 2-4
Valves - Water/Oil	2.16E-04	9.80E-05	Table 2-4

<sup>C</sup>The "other" equipment type was derived from compressors, diaphragms, drains, dump arms, hatches, instruments, meters, pressure relief valves, polished rods, relief valves, and vents.  
 This "other" equipment type should be applied for any equipment type other than connectors, flanges, open-ended lines, pumps, or valves.

### Fugitive Emissions Calculations

Component	VOC Emissions		CO <sub>2</sub> Emissions		CH <sub>4</sub> Emissions		CO <sub>2</sub> e Emissions		H <sub>2</sub> S Emissions	
Valves - Gas	0.03 lb/hr	0.12 TPY	0.02 lb/hr	0.11 TPY	1.34 lb/hr	5.87 TPY	33.53 lb/hr	146.88 TPY	0.00 lb/hr	0.00 TPY
Pump Seals - Gas	0.00 lb/hr	0.01 TPY	0.00 lb/hr	0.00 TPY	0.06 lb/hr	0.26 TPY	1.47 lb/hr	6.44 TPY	0.00 lb/hr	0.00 TPY
Other - Gas	0.00 lb/hr	0.02 TPY	0.00 lb/hr	0.02 TPY	0.22 lb/hr	0.94 TPY	5.39 lb/hr	23.61 TPY	0.00 lb/hr	0.00 TPY
Connectors - Gas	0.00 lb/hr	0.01 TPY	0.00 lb/hr	0.01 TPY	0.07 lb/hr	0.31 TPY	1.80 lb/hr	7.87 TPY	0.00 lb/hr	0.00 TPY
Flanges - Gas	0.00 lb/hr	0.01 TPY	0.00 lb/hr	0.01 TPY	0.08 lb/hr	0.35 TPY	1.99 lb/hr	8.72 TPY	0.00 lb/hr	0.00 TPY
Open-Ended Lines - Gas	0.00 lb/hr	0.01 TPY	0.00 lb/hr	0.01 TPY	0.07 lb/hr	0.32 TPY	1.84 lb/hr	8.05 TPY	0.00 lb/hr	0.00 TPY
Valves - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Flanges - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Open-Ended Lines - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Connectors - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Pump Seals - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Other - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
<b>Total</b>	<b>0.04 lb/hr</b>	<b>0.16 TPY</b>	<b>0.03 lb/hr</b>	<b>0.15 TPY</b>	<b>1.84 lb/hr</b>	<b>8.06 TPY</b>	<b>46.02 lb/hr</b>	<b>201.57 TPY</b>	<b>0.00 lb/hr</b>	<b>0.00 TPY</b>

Component	n-Hexane Emissions		Benzene Emissions		Toluene Emissions		Ethylbenzene Emissions		Xylene Emissions		2,2,4-Trimethylpentane	
Valves - Gas	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Pump Seals - Gas	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Other - Gas	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Connectors - Gas	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Flanges - Gas	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Open-Ended Lines - Gas	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Valves - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Flanges - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Open-Ended Lines - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Connectors - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Pump Seals - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
Other - Light Oil	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY	0.00 lb/hr	0.00 TPY
<b>Total</b>	<b>0.00 lb/hr</b>	<b>0.00 TPY</b>	<b>0.00 lb/hr</b>	<b>0.00 TPY</b>	<b>0.00 lb/hr</b>	<b>0.00 TPY</b>	<b>0.00 lb/hr</b>	<b>0.00 TPY</b>	<b>0.00 lb/hr</b>	<b>0.00 TPY</b>	<b>0.00 lb/hr</b>	<b>0.00 TPY</b>

Notes:

1) TOC from previous table multiplied by pollutant content of streams (weight%) to obtain pollutant emissions. See attached analysis table.

VIKING GAS / ONEOK  
 Permit Number 15300004-101

Cushing Compression Station

**EQUI 3, conversion from ppm to lb/MMBtu for NOx standards under KKKK**

Pollutant concentration (ppmvd)	42 ppmvd, 15%O2	Table 1 KKKK		
Ambient Temperature (T <sub>a</sub> ) °F	45 °F	Modified or reconstructed turbine firing natural gas, 50 MMBtu/hr and 850		
Exhaust Flow Rate (acfm)	84,000 acfm, 15%O <sub>2</sub> , dry	MMBtu/hr only value for natural gas despite being outside the range with		
Heat Input Capacity (MMBtu/hr)	45 MMBtu/hr (HHV)	45 MMBtu/hr		
Stack Temp (T <sub>s</sub> ) °F	820 °F		(m)	(ft)
Molecular Weight (MW)	46 grams/mole NO <sub>2</sub>	330.2 (m) base elevation + 13.41 (m) stack height =	343.61	1127
Barometric Pressure (P)	14.11 psia		(kPa)	(psia)
universal gas constant 'R'	8.2056E-05 m <sup>3</sup> *atm/mole*K		97.26 kPa	14.11

**Pollutant concentration conversion to mass/volume**

ppmvd = m <sup>3</sup> pollutant/10 <sup>6</sup> m <sup>3</sup> exhaust	4.20E-05 m <sup>3</sup> pollutant/10 <sup>6</sup> m <sup>3</sup> exhaust
(m <sup>3</sup> /1.0E+06 m <sup>3</sup> ) * (P/14.696) psia/((8.2056E-05 m <sup>3</sup> * atm/mole) * (((T <sub>s</sub> °F-32)/1.8)+273)) = moles pollutant/m <sup>3</sup> exhaust	6.91E-04 moles pollutant/m <sup>3</sup> exhaust
moles pollutant/m <sup>3</sup> exhaust * grams pollutant/mole pollutant * 10 <sup>6</sup> u g/gram = u g pollutant/m <sup>3</sup> exhaust	31804.66 ug pollutant/m <sup>3</sup> exhaust

(ppmvd) \* (MW)\*(P/14.696 psia/atm)/8.2056E-05/(((T<sub>s</sub>-32)/1.8)+273) = 31804.66 ug/m<sup>3</sup>

**Controlled Pollutant Emission Rate lb/hr**

(ug/m3)/(1000000 ug/g)/(453.59 g/lb)\*(0.3048^3 ft3/m3)\*(acfm)\*(60 min/hr) = 10.01 lb/hr

**Controlled Pollutant Emission Rate lb/MMBtu**

(lb pollutant/hr)/(MMBtu/hr) = 0.22238 lb NOx/MMBtu

Rule NO <sub>x</sub> factor	0.22238 lb/MMBtu	from KKKK	60.4330 (a)(2)
Emission factor	0.15 lb/MMBtu	from AP-42/turbine design value	

**Comparison to GG Sulfur Dioxide Limit**

SO <sub>2</sub> limit	0.8 % by weight	
Density of natural gas	0.05 lb/cubic foot	average natural gas density found online
Btu value	1020 Btu/cubic foot	
Fuel rate	44118 cubic feet/hr (MMBtu/hr * cubic foot/1020 Btu * 1E+6 Btu/MMBtu)	
Weight of gas/hr	2206 lb gas/hr (X cubic feet/hr * X lb/cubic foot)	
lbs of sulfur/hr	17.6 lb/hr (lb gas/hr * % sulfur by weight)	
lbs of SO <sub>2</sub> /hr	35.3 lb/hr (2 lbs of SO <sub>2</sub> for each lb of sulfur)	

Rule SO <sub>2</sub> factor	0.78431 lb/MMBtu	from GG	
	0.06 lb/MMBtu	from KKKK	60.4330 (a)(2)
Emission Factor	0.0034 lb/MMBtu	from AP-42	

**Attachment 2 – EPA Determination for 40 CFR pt. 60, subp. GG**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

Official file  
copy

JUN 24 1997

REPLY TO THE ATTENTION OF:

(AE-17J)

Denise Leezer, Permit Writer  
Minnesota Pollution Control Agency  
Division of Air Quality  
520 Lafayette Road  
St. Paul, Minnesota 55155-3898

Re: New Source Performance  
Standards (NSPS), Subpart  
GG - Applicability  
Determination

Dear Ms. Leezer:

This letter is in response to your request of February 26, 1997, for an applicability determination pertaining to 40 C.F.R. Part 60, Subpart GG Standards of Performance for Stationary Gas Turbines.

The request pertains to the installation of an additional turbine engine at each of Viking Gas Transmissions Company's five facilities. Viking Gas is planning to purchase and install a refurbished turbine from a company that buys old turbines, refurbishes them and resells them. The refurbishing company restores the turbines to the original condition and installs low NO<sub>x</sub> burners.

The NSPS Subpart GG (40 C.F.R. §60.330(a)) defines affected facilities as all stationary gas turbines with a heat input at a peak load equal to or greater than 10.7 gigajoule per hour, based on the lower heating value of the fuel fired and which commenced construction after October 3, 1977. Currently, Minnesota Pollution Control Agency reported that none of the Viking Gas turbines are subject to the provisions of Subpart GG, as they do not meet the definition of an affected facility.

The NSPS defines a modification as any physical change in, or change in the method of operation of, an existing facility which increases the amount of air pollutant (to which the standard applies) emitted into the atmosphere by that facility.

In the case of Viking Gas, the affected facility is the individual gas turbine unit. The company that refurbishes the gas turbine unit installs a low NO<sub>x</sub> burner, so the emissions from the unit would decrease from the previous design and the

refurbishing company guarantees the emission decrease.

The five refurbished gas turbines that Viking gas will be purchasing were originally manufactured prior to October 3, 1982. In the Standards for Nitrogen Oxides (40 C.F.R. §60.332(e)) there is an exemption from the NO<sub>x</sub> Performance Test requirements for gas turbines between 10 Million Btu/hour and 100 Million Btu/hour that were constructed before October 3, 1982. Thus, the five refurbished gas turbines are exempt from the NO<sub>x</sub> performance test and other requirements of 40 C.F.R. 332(a). However, this exemption does not cause an affected facility to be exempt from the remaining requirements of Subpart GG. This means that an affected facility is subject to Subpart GG, and must also comply with the standards for sulfur dioxides, monitoring, and testing, as applicable.

While the individual turbine unit may be exempt from the NO<sub>x</sub> emission standards, the Company needs to ensure that the installation of this new piece of equipment does not trigger a modification elsewhere in the plant (e.g., it could cause a NO<sub>x</sub> or SO<sub>x</sub> emission increase at another turbine due to the ability to increase production levels).

This applicability determination would apply to each of the Viking Gas facilities, provided similar conditions are met.

This interpretation is based on a strict reading of the regulation. The interpretation has been coordinated with the Office of Enforcement and Compliance Assistance.

If you have any questions or comments, please call Catherine Collins, of my staff, at (312) 353-4389.

Sincerely yours,



George T. Czerniak, Chief  
Air Enforcement and Compliance Assurance Branch

cc: Chris Oh, HQ



Standard bcc's: official file copy w/attachment(s)  
originator's file copy w/attachment(s)  
originating file copy w/attachment(s)

other bcc's: NSPS Files  
Roger Fields, ORC

ARD/AECAB/AECAS(MN-OH)/collins/sm:06/10/97  
Saved A:ggdet.2

**Attachment 3 – Predicted Emission Performance Data from Solar Turbines**

Customer <b>OneOK</b>	
Job ID	
Inquiry Number	
Run By <b>David A Pocengal</b>	Date Run <b>8-Mar-16</b>

Engine Model <b>CENTAUR 40-4700S CS/MD 59F MATCH</b>	
Fuel Type <b>SD NATURAL GAS</b>	Water Injection <b>NO</b>
Engine Emissions Data <b>REV. 0.1</b>	

### NOx EMISSIONS

### CO EMISSIONS

### UHC EMISSIONS

<b>1</b>	<b>4858 HP</b>	<b>100.0% Load</b>	<b>Elev. 904 ft</b>	<b>Rel. Humidity 60.0%</b>	<b>Temperature 0 Deg. F</b>
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PPMvd at 15% O2	<b>42.00</b>	<b>50.00</b>	<b>25.00</b>
ton/yr	<b>33.10</b>	<b>23.99</b>	<b>6.87</b>
lbm/MMBtu (Fuel LHV)	<b>0.168</b>	<b>0.122</b>	<b>0.035</b>
lbm/(MW-hr)	<b>2.09</b>	<b>1.51</b>	<b>0.43</b>
(gas turbine shaft pwr) lbm/hr	<b>7.56</b>	<b>5.48</b>	<b>1.57</b>

<b>2</b>	<b>4664 HP</b>	<b>100.0% Load</b>	<b>Elev. 904 ft</b>	<b>Rel. Humidity 60.0%</b>	<b>Temperature 32.0 Deg. F</b>
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PPMvd at 15% O2	<b>42.00</b>	<b>50.00</b>	<b>25.00</b>
ton/yr	<b>31.73</b>	<b>23.00</b>	<b>6.59</b>
lbm/MMBtu (Fuel LHV)	<b>0.168</b>	<b>0.122</b>	<b>0.035</b>
lbm/(MW-hr)	<b>2.08</b>	<b>1.51</b>	<b>0.43</b>
(gas turbine shaft pwr) lbm/hr	<b>7.24</b>	<b>5.25</b>	<b>1.50</b>

<b>3</b>	<b>4405 HP</b>	<b>100.0% Load</b>	<b>Elev. 904 ft</b>	<b>Rel. Humidity 60.0%</b>	<b>Temperature 59.0 Deg. F</b>
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PPMvd at 15% O2	<b>42.00</b>	<b>50.00</b>	<b>25.00</b>
ton/yr	<b>29.98</b>	<b>21.73</b>	<b>6.22</b>
lbm/MMBtu (Fuel LHV)	<b>0.167</b>	<b>0.121</b>	<b>0.035</b>
lbm/(MW-hr)	<b>2.08</b>	<b>1.51</b>	<b>0.43</b>
(gas turbine shaft pwr) lbm/hr	<b>6.84</b>	<b>4.96</b>	<b>1.42</b>

#### Notes

- For short-term emission limits such as lbs/hr., Solar recommends using "worst case" anticipated operating conditions specific to the application and the site conditions. Worst case for one pollutant is not necessarily the same for another.
- Solar's typical SoLoNOx warranty, for ppm values, is available for greater than 0 deg F or -20 deg C, and between 50% and 100% load for gas, fuel, and between 65% and 100% load for liquid fuel (except for the Centaur 40). An emission warranty for non-SoLoNOx equipment is available for greater than 0 deg F or -20 deg C and between
- Fuel must meet Solar standard fuel specification ES 9-98. Emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
- If needed, Solar can provide Product Information Letters to address turbine operation outside typical warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and formaldehyde.
- Solar can provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.
- Any emissions warranty is applicable only for steady-state conditions and does not apply during start-up, shut-down, malfunction, or transient event.

Customer <b>OneOK</b>	
Job ID	
Inquiry Number	
Run By <b>David A Pocengal</b>	Date Run <b>8-Mar-16</b>

Engine Model <b>CENTAUR 40-4700S</b> <b>CS/MD 59F MATCH</b>	
Fuel Type <b>SD NATURAL GAS</b>	Water Injection <b>NO</b>
Engine Emissions Data <b>REV. 0.1</b>	

**NOx EMISSIONS**

**CO EMISSIONS**

**UHC EMISSIONS**

<b>4</b>	<b>3894 HP</b>	<b>100.0% Load</b>	<b>Elev. 904 ft</b>	<b>Rel. Humidity 60.0%</b>	<b>Temperature 80.0 Deg. F</b>
<b>PPMvd at 15% O2</b>	<b>42.00</b>	<b>50.00</b>	<b>25.00</b>		
<b>ton/yr</b>	<b>27.30</b>	<b>19.78</b>	<b>5.67</b>		
<b>lbm/MMBtu (Fuel LHV)</b>	<b>0.166</b>	<b>0.120</b>	<b>0.034</b>		
<b>lbm/(MW-hr)</b>	<b>2.15</b>	<b>1.56</b>	<b>0.45</b>		
<b>(gas turbine shaft pwr)</b>	<b>6.23</b>	<b>4.52</b>	<b>1.29</b>		
<b>lbm/hr</b>					

- Notes
1. For short-term emission limits such as lbs/hr., Solar recommends using "worst case" anticipated operating conditions specific to the application and the site conditions. Worst case for one pollutant is not necessarily the same for another.
  2. Solar's typical SoLoNOx warranty, for ppm values, is available for greater than 0 deg F or -20 deg C, and between 50% and 100% load for gas, fuel, and between 65% and 100% load for liquid fuel (except for the Centaur 40). An emission warranty for non-SoLoNOx equipment is available for greater than 0 deg F or -20 deg C and between
  3. Fuel must meet Solar standard fuel specification ES 9-98. Emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
  4. If needed, Solar can provide Product Information Letters to address turbine operation outside typical warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and formaldehyde.
  5. Solar can provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.
  6. Any emissions warranty is applicable only for steady-state conditions and does not apply during start-up, shut-down, malfunction, or transient event.

# Solar Turbines

A Caterpillar Company

## PREDICTED ENGINE PERFORMANCE

Customer <b>OneOK</b>	
Job ID	
Run By <b>David A Pocengal</b>	Date Run <b>8-Mar-16</b>
Engine Performance Code <b>REV. 4.17.1.19.11</b>	Engine Performance Data <b>REV. 2.3</b>

Model <b>CENTAUR 40-4700S</b>
Package Type <b>CS/MD</b>
Match <b>59F MATCH</b>
Fuel System <b>GAS</b>
Fuel Type <b>SD NATURAL GAS</b>

### DATA FOR NOMINAL PERFORMANCE

Elevation	feet	<b>904</b>			
Inlet Loss	in H2O	<b>4.0</b>			
Exhaust Loss	in H2O	<b>4.0</b>			
Accessory on GP Shaft	HP	<b>15.5</b>			
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Engine Inlet Temperature	deg F	<b>0</b>	<b>32.0</b>	<b>59.0</b>	<b>80.0</b>
Relative Humidity	%	<b>60.0</b>	<b>60.0</b>	<b>60.0</b>	<b>60.0</b>
Driven Equipment Speed	RPM	<b>15500</b>	<b>15500</b>	<b>15500</b>	<b>15500</b>
Specified Load	HP	<b>FULL</b>	<b>FULL</b>	<b>FULL</b>	<b>FULL</b>
Net Output Power	HP	<b>4858</b>	<b>4664</b>	<b>4405</b>	<b>3894</b>
Fuel Flow	mmBtu/hr	<b>44.89</b>	<b>43.09</b>	<b>40.89</b>	<b>37.50</b>
Heat Rate	Btu/HP-hr	<b>9241</b>	<b>9241</b>	<b>9283</b>	<b>9629</b>
Therm Eff	%	<b>27.536</b>	<b>27.535</b>	<b>27.408</b>	<b>26.425</b>
Engine Exhaust Flow	lbm/hr	<b>159631</b>	<b>151843</b>	<b>143932</b>	<b>133885</b>
PT Exit Temperature	deg F	<b>779</b>	<b>809</b>	<b>840</b>	<b>856</b>
Exhaust Temperature	deg F	<b>779</b>	<b>809</b>	<b>840</b>	<b>856</b>

Fuel Gas Composition (Volume Percent)	<b>Methane (CH4)</b>	<b>92.79</b>
	<b>Ethane (C2H6)</b>	<b>4.16</b>
	<b>Propane (C3H8)</b>	<b>0.84</b>
	<b>N-Butane (C4H10)</b>	<b>0.18</b>
	<b>N-Pentane (C5H12)</b>	<b>0.04</b>
	<b>Hexane (C6H14)</b>	<b>0.04</b>
	<b>Carbon Dioxide (CO2)</b>	<b>0.44</b>
	<b>Hydrogen Sulfide (H2S)</b>	<b>0.0001</b>
	<b>Nitrogen (N2)</b>	<b>1.51</b>

Fuel Gas Properties	<b>LHV (Btu/Scf)</b>	<b>939.2</b>	<b>Specific Gravity</b>	<b>0.5970</b>	<b>Wobbe Index at 60F</b>	<b>1215.6</b>
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This performance was calculated with a basic inlet and exhaust system. Special equipment such as low noise silencers, special filters, heat recovery systems or cooling devices will affect engine performance. Performance shown is "Expected" performance at the pressure drops stated, not guaranteed.

**Attachment 4 – Points Calculator**

Points Calculator

1) AI ID No.:	590	<b>Total Points</b>	<b>14</b>
2) Facility Name:	Viking Gas Transmission - Cushing		
3) Small business? y/n?	N		
4) Air Project Tracking Numbers (including all)	4422, 3558		
5) Date of each Application Received:	05/23/13, 6/24/11		
6) Final Permit No.	15300004-101		
7) Permit Staff	Toni Volkmeier		

Application Type	Air Project Tracking No.	Tempo Activity ID	Qty.	Points	Total Points	Total Additionl Cost	Details
Administrative Amendment				1	0	\$ -	
Minor Amendment	3558	IND20110001	1	4	4	\$ 1,140.00	
Applicability Request				10	0	\$ -	
Moderate Amendment				15	0	\$ -	
Major Amendment				25	0	\$ -	
Individual State Permit (not reissuance)				50	0	\$ -	
Individual Part 70 Permit (not reissuance)				75	0	\$ -	

**Additional Points**

Modeling Review				15	0	\$ -	
BACT Review				15	0	\$ -	
LAER Review				15	0	\$ -	
CAA section 110(a)(2)(D)(i)(I) Review (i.e., Transport Rule/CAIR/CSAPR)				10	0	\$ -	
Part 75 CEM analysis				10	0	\$ -	
NSPS Review	3558	IND20110001	1	10	10	\$ 2,850.00	Subpart III
NESHAP Review				10	0	\$ -	
Case-by-case MACT Review				20	0	\$ -	
Netting				10	0	\$ -	
Limits to remain below threshold				10	0	\$ -	
Plantwide Applicability Limit (PAL)				20	0	\$ -	
AERA review				15	0	\$ -	
Variance request under 7000.7000				35	0	\$ -	
Confidentiality request under 7000.1300				2	0	\$ -	
<b>FAW review</b>					0		
Part 4410.4300, subparts 18, item A; and 29				15	0	\$ -	
Part 4410.4300, subparts 8, items A & B; 10, items A to C; 16, items A & D; 17, items A to C & E to G; and 18, items B & C				35	0	\$ -	
Part 4410.4300, subparts 4; 5 items A & B; 13; 15; 16, items B & C; and 17 item D				70	0	\$ -	
				<b>Add'l Points</b>	<b>10</b>		

NOTES:

Total Additional Fee is \$2,850.00

**Attachment 5 – Subject item inventory and facility requirements**



## List of SIs

Agency Interest: Viking Gas Transmission - Cushing













Agency Interest ID: 590

Activity: IND20130001 (Part 70 Reissuance)

Details for:

SI Category: None

SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Viking Gas Transmission - Cushing	ACTV1	Null All IAs	
	AISI590	Null Null	
	EQUI2	EU005 Water Jacket Heater	
	EQUI3	EU006 Turbine Engine #1 lean pre-mix Solar 45 mmBtu/hr	
	EQUI4	EU001 RICE #1A 2SLB Clark 14 mmBtu/hr	
	EQUI5	EU002 RICE #2A 2SLB Clark 14 mmBtu/hr	
	EQUI6	EU003 RICE #3A 2SLB Clark 14 mmBtu/hr	
	EQUI7	Null Cummins Emergency Generator	
	STRU1	BG001 Compressor Building A	
	STRU2	BG002 Equipment Garage	
	STRU3	BG003 Office & Utility	
	STRU4	BG004 Compressor Building B	

## List of SIs

Agency Interest: Viking Gas Transmission - Cushing








Agency Interest ID: 590

Activity: IND20130001 (Part 70 Reissuance)

Details for:

SI Category: None

SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Viking Gas Transmission - Cushing	STRU5	SV001 Reciprocating Engine #1A	
	STRU6	SV002 Reciprocating Engine #2A	
	STRU7	SV003 Reciprocating Engine #3A	
	STRU9	SV005 Water Jacket	
	STRU10	SV006 Turbine #1	
	STRU11	Null Cummins Emergency Generator	
	TFAC1	15300004 Viking Gas Transmission - Cushing	

Insignificant air emissions activity

Agency Interest: Viking Gas Transmission - Cushing



Agency Interest ID: 590

Activity: IND20130001 (Part 70 Reissuance)

Details for:

SI Category: Activity

SI Type: Insignificant Air Emissions Activity

Agency Interest Na..	Activity ID	Subject Ite..	Subject Item Type Description	Subject Item ID	SI Designation and Description	Status Desc..	Sub Attribute Description	
Viking Gas Transmission - Cushing	IND20130001	Activity	Insignificant Air Emissions Activity	ACTV1	Null All IAs	Active/ Existing	Minn. R. 7007.1300, subp. 3(H)(3)	
							Minn. R. 7007.1300, subp. 3(I)	

PTE by subject item

Agency Interest: None

Agency Interest ID: 590

Activity: None (Part 70 Reissuance)

Details for:

SI Category: Equipment

SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	Subject Item Designation	Subject Item Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)				
Equipment	Process Heater	EQUI2	EU005	Water Jacket Heater	1,4-Dichlorobenzene (par..	2.35e-06	1.03e-05	2.53e-06					
					Arsenic compounds	3.92e-07	1.72e-06	4.22e-07					
					Benzene	4.12e-06	1.8e-05	4.43e-06					
					Beryllium Compounds	2.35e-08	1.03e-07	2.53e-08					
					Cadmium compounds	2.16e-06	9.45e-06	2.32e-06					
					Carbon Dioxide Equivalent	234	252	252					
					Carbon Monoxide	0.165	0.721	0.177					
					Chromium compounds	2.75e-06	1.2e-05	2.95e-06					
					Cobalt compounds	1.65e-07	7.21e-07	1.77e-07					
					Formaldehyde	0.000147	0.000644	0.000158					
					HAPs - Total	0.0037	0.0162	0.00398					
					Hexane	0.00353	0.0155	0.00379					
					Lead Compounds	9.8e-07	4.29e-06	1.05e-06					
					Manganese compounds	7.45e-07	3.26e-06	8.01e-07					
					Mercury Compounds	5.1e-07	2.23e-06	5.48e-07					
					Naphthalene	1.2e-06	5.24e-06	1.29e-06					
					Nickel compounds	4.12e-06	1.8e-05	4.43e-06					
					Nitrogen Oxides	0.196	0.859	0.211					
					Particulate Matter	0.0149	0.0653	0.016					
					PM < 2.5 micron	0.0149	0.0653	0.016					
					PM < 10 micron	0.0149	0.0653	0.016					
					Polycyclic organic matter	1.73e-07	7.57e-07	1.86e-07					
					Selenium compounds	4.71e-08	2.06e-07	5.06e-08					
					Sulfur Dioxide	0.00118	0.00515	0.00126					
					Toluene	6.67e-06	2.92e-05	7.17e-06					
					Volatile Organic Compoun..	0.0108	0.0472	0.0116					
					Reciprocating IC Engine	EQUI4	EU001	RICE #1A 2SLB Clark 14 mmBtu/hr	1,1-Dichloroethane	0.000547	0.0024	0.0024	
									1,1,2-Trichloroethane	0.000738	0.00323	0.00323	
									1,1,2,2-Tetrachloroethane	0.000928	0.00407	0.00407	
									1,2-Dibromoethane (Ethyl..	0.00103	0.0045	0.0045	
									1,2-Dichloroethane	0.000591	0.00259	0.00259	
									1,2-Dichloropropane	0.000624	0.00273	0.00273	
									1,3-Butadiene	0.0115	0.0503	0.0503	
									1,3-Dichloropropene	0.000613	0.00269	0.00269	
									2,2,4-trimethylpentane	0.0118	0.0519	0.0519	
									Acetaldehyde	0.109	0.476	0.476	
									Acrolein	0.109	0.477	0.477	
									Benzene	0.0272	0.119	0.119	
									Biphenyl	5.53e-05	0.000242	0.000242	
									Carbon Dioxide Equivalent	1,639	7,180	7,180	
									Carbon Monoxide	5.4	23.7	23.7	
									Carbon tetrachloride	0.00085	0.00372	0.00372	
Chlorobenzene (Monochlo..	0.000622	0.00272	0.00272										
Chloroform	0.000659	0.00289	0.00289										
Dichloromethane (Methyl..	0.00206	0.00901	0.00901										
Ethylbenzene	0.00151	0.00662	0.00662										
Formaldehyde	0.773	3.38	3.38										
HAPs - Total	1.11	4.88	4.88										
Hexane	0.00623	0.0273	0.0273										
Methanol	0.0347	0.152	0.152										
Naphthalene	0.00135	0.00591	0.00591										
Nitrogen Oxides	44.38	194.38	194.38										
Particulate Matter	0.676	2.96	2.96										
Phenol	0.000589	0.00258	0.00258										
PM < 2.5 micron	0.676	2.96	2.96										
PM < 10 micron	0.676	2.96	2.96										
Polycyclic organic matter	0.00188	0.00822	0.00822										
Styrene	0.000767	0.00336	0.00336										
Sulfur Dioxide	0.00823	0.0361	0.0361										
Toluene	0.0135	0.0591	0.0591										
Vinyl chloride (chloroethe..	0.000346	0.00151	0.00151										
Volatile Organic Compoun..	1.68	7.36	7.36										
Xylenes, Total	0.00375	0.0164	0.0164										
EQUI5		EU002	RICE #2A 2SLB Clark 14	1,1-Dichloroethane					0.000547	0.0024	0.0024		

PTE by subject item

Agency Interest: None

Agency Interest ID: 590

Activity: None (Part 70 Reissuance)

Details for:

SI Category: Equipment

SI Type: All

Subject Item Category Description	Subject Item Description	Subject Item ID	Subject Item Designation	Subject Item Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)					
Equipment	Reciprocating IC Engine	EQUI5	EU002	RICE #2A 2SLB Clark 14 mmBtu/hr	1,1,2-Trichloroethane	0.000738	0.00323	0.00323						
					1,1,2,2-Tetrachloroethane	0.000928	0.00407	0.00407						
					1,2-Dibromoethane (Ethyl..	0.00103	0.0045	0.0045						
					1,2-Dichloroethane	0.000591	0.00259	0.00259						
					1,2-Dichloropropane	0.000624	0.00273	0.00273						
					1,3-Butadiene	0.0115	0.0503	0.0503						
					1,3-Dichloropropene	0.000613	0.00269	0.00269						
					2,2,4-trimethylpentane	0.0118	0.0519	0.0519						
					Acetaldehyde	0.109	0.476	0.476						
					Acrolein	0.109	0.477	0.477						
					Benzene	0.0272	0.119	0.119						
					Biphenyl	5.53e-05	0.000242	0.000242						
					Carbon Dioxide Equivalent	1,639	7,180	7,180						
					Carbon Monoxide	5.4	23.7	23.7						
					Carbon tetrachloride	0.00085	0.00372	0.00372						
					Chlorobenzene (Monochlo..	0.000622	0.00272	0.00272						
					Chloroform	0.000659	0.00289	0.00289						
					Dichloromethane (Methyl..	0.00206	0.00901	0.00901						
					Ethylbenzene	0.00151	0.00662	0.00662						
					Formaldehyde	0.773	3.38	3.38						
					HAPs - Total	1.11	4.88	4.88						
					Hexane	0.00623	0.0273	0.0273						
					Methanol	0.0347	0.152	0.152						
					Naphthalene	0.00135	0.00591	0.00591						
					Nitrogen Oxides	44.38	194.38	194.38						
					Particulate Matter	0.676	2.96	2.96						
					Phenol	0.000589	0.00258	0.00258						
					PM < 2.5 micron	0.676	2.96	2.96						
					PM < 10 micron	0.676	2.96	2.96						
					Polycyclic organic matter	0.00188	0.00822	0.00822						
					Styrene	0.000767	0.00336	0.00336						
					Sulfur Dioxide	0.00823	0.0361	0.0361						
					Toluene	0.0135	0.0591	0.0591						
					Vinyl chloride (chloroethe..	0.000346	0.00151	0.00151						
					Volatile Organic Compoun..	1.68	7.36	7.36						
					Xylenes, Total	0.00375	0.0164	0.0164						
					Equipment	Reciprocating IC Engine	EQUI6	EU003	RICE #3A 2SLB Clark 14 mmBtu/hr	1,1-Dichloroethane	0.000547	0.0024	0.0024	
										1,1,2-Trichloroethane	0.000738	0.00323	0.00323	
										1,1,2,2-Tetrachloroethane	0.000928	0.00407	0.00407	
										1,2-Dibromoethane (Ethyl..	0.00103	0.0045	0.0045	
										1,2-Dichloroethane	0.000591	0.00259	0.00259	
										1,2-Dichloropropane	0.000624	0.00273	0.00273	
										1,3-Butadiene	0.0115	0.0503	0.0503	
1,3-Dichloropropene	0.000613	0.00269	0.00269											
2,2,4-trimethylpentane	0.0118	0.0519	0.0519											
Acetaldehyde	0.109	0.476	0.476											
Acrolein	0.109	0.477	0.477											
Benzene	0.0272	0.119	0.119											
Biphenyl	5.53e-05	0.000242	0.000242											
Carbon Dioxide Equivalent	1,639	7,180	7,180											
Carbon Monoxide	5.4	23.7	23.7											
Carbon tetrachloride	0.00085	0.00372	0.00372											
Chlorobenzene (Monochlo..	0.000622	0.00272	0.00272											
Chloroform	0.000659	0.00289	0.00289											
Dichloromethane (Methyl..	0.00206	0.00901	0.00901											
Ethylbenzene	0.00151	0.00662	0.00662											
Formaldehyde	0.773	3.38	3.38											
HAPs - Total	1.11	4.88	4.88											
Hexane	0.00623	0.0273	0.0273											
Methanol	0.0347	0.152	0.152											
Naphthalene	0.00135	0.00591	0.00591											
Nitrogen Oxides	44.38	194.38	194.38											
Particulate Matter	0.676	2.96	2.96											
Phenol	0.000589	0.00258	0.00258											

PTE by subject item

Agency Interest: None

Agency Interest ID: 590

Activity: None (Part 70 Reissuance)

Details for:

SI Category: Equipment

SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	Subject Item Designation	Subject Item Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI6	EU003	RICE #3A 2SLB Clark 14 mmBtu/hr	PM < 2.5 micron	0.676	2.96	2.96	
					PM < 10 micron	0.676	2.96	2.96	
					Polycyclic organic matter	0.00188	0.00822	0.00822	
					Styrene	0.000767	0.00336	0.00336	
					Sulfur Dioxide	0.00823	0.0361	0.0361	
					Toluene	0.0135	0.0591	0.0591	
					Vinyl chloride (chloroethe..	0.000346	0.00151	0.00151	
					Volatile Organic Compoun..	1.68	7.36	7.36	
					Xylenes, Total	0.00375	0.0164	0.0164	
					1,3-Butadiene	4.69e-05	0.000206	1.17e-05	
					Acetaldehyde	0.00092	0.00403	0.00023	
					Acrolein	0.000111	0.000486	2.78e-05	
					Benzene	0.00112	0.0049	0.00028	
					Carbon Dioxide Equivalent	196.3	859.7	49.07	
					Carbon Monoxide	0.0829	0.363	0.0207	
	Formaldehyde	0.00142	0.0062	0.000354					
	HAPs - Total	0.00455	0.0199	0.00114					
	Naphthalene	0.000102	0.000446	2.54e-05					
	Nitrogen Oxides	2.68	11.75	0.671					
	Particulate Matter	0.0416	0.182	0.0104					
	PM < 2.5 micron	0.0416	0.182	0.0104					
	PM < 10 micron	0.0416	0.182	0.0104					
	Sulfur Dioxide	0.0019	0.00833	0.000476					
	Toluene	0.000491	0.00215	0.000123					
	Volatile Organic Compoun..	0.0829	0.363	0.0207					
	Xylenes, Total	0.000342	0.0015	8.6e-05					
	Turbine	EQUI3	EU006	Turbine Engine #1 lean pre-mix Solar 4S mmBtu/hr	1,3-Butadiene	1.94e-05	8.48e-05	8.48e-05	
					Acetaldehyde	0.0018	0.00788	0.00788	
					Acrolein	0.000288	0.00126	0.00126	
					Benzene	0.00054	0.00237	0.00237	
					Carbon Dioxide Equivalent	5,269	23,080	23,080	
					Carbon Monoxide	5.49	24.05	24.05	
					Ethylbenzene	0.00144	0.00631	0.00631	
Formaldehyde					0.032	0.14	0.14		
HAPs - Total					0.0462	0.202	0.202		
Naphthalene					5.85e-05	0.000256	0.000256		
Nitrogen Oxides					7.56	33.1	33.1		
Particulate Matter					0.297	1.3	1.3		
PM < 2.5 micron					0.297	1.3	1.3		
PM < 10 micron					0.297	1.3	1.3		
Polycyclic organic matter					9.9e-05	0.000434	0.000434		
Propylene oxide					0.00131	0.00572	0.00572		
Sulfur Dioxide					0.0275	0.12	0.12		
Toluene					0.00585	0.0256	0.0256		
Volatile Organic Compoun..					1.575	6.899	6.899		
Xylenes, Total					0.00288	0.0126	0.0126		

SI - SI relationships

Agency Interest: None







Agency Interest ID: 590

Activity: None (Part 70 Reissuance)

Details for:

SI Category: Equipment

SI Type: All



Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Start Date (Related Subject Item)	End Date (Related Subject Item)	
Equipment	Process Heater	EQUI2	EU005 Water Jacket Heater	sends to	STRU9	100	Stack/Vent	10/8/1997	Null	
	Reciprocating IC Engine	EQUI4	EU001 RICE #1A 2SLB Clark 14 mmBtu/hr	sends to	STRU5	100	Stack/Vent	10/8/1997	Null	
		EQUI5	EU002 RICE #2A 2SLB Clark 14 mmBtu/hr	sends to	STRU6	100	Stack/Vent	10/8/1997	Null	
		EQUI6	EU003 RICE #3A 2SLB Clark 14 mmBtu/hr	sends to	STRU7	100	Stack/Vent	10/8/1997	Null	
		EQUI7	Null Cummins Emergency Generator	sends to	STRU11	100	Stack/Vent	11/30/2011	Null	
	Turbine	EQUI3	EU006 Turbine Engine #1 lean pre-mix Solar..	sends to	STRU10	100	Stack/Vent	10/8/1997	Null	

Emission Units 1

Agency Interest: None  
Agency Interest ID: 590  
Activity: None (Part 70 Reissuance)

Details for:

SI Category: None  
SI Type: Process Heater & Turbine

Subject Item Type	Description	Subject Item ID	SI Designation and Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material	Construction Start Date	Operation Start Date	Modification Date	
Process Heater		EQUI2	EU005 Water Jacket Heater	AJAX	WG-2000-0	2	million British thermal units	hours	Heat	1/1/1960	1/1/1960	Null	
Turbine		EQUI3	EU006 Turbine Engine #1 lean pre-mix Solar 45 mmBtu/hr	Solar	40-T4700S	4719	horsepower	hours	Energy	8/1/1997	10/1/1997	Null	







Emission Units 2

Agency Interest: None  
 Agency Interest ID: 590  
 Activity: None (Part 70 Reissuance)

Details for:

SI Category: Equipment  
 SI Type: Reciprocating IC Engine

Subject Item Type Description	Subject Item ID	SI Designation and Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material	Construction Start Date	Operation Start Date	Modification Date	
Reciprocating IC Engine	EQUI4	EU001 RICE #1A 2SLB Clark 14 mmBtu/hr	Clark	TLA-5	1700	horsepower	hours	Energy	10/18/1960	10/18/1960	Null	
	EQUI5	EU002 RICE #2A 2SLB Clark 14 mmBtu/hr	Clark	TLA-5	1700	horsepower	hours	Energy	10/16/1960	10/16/1960	Null	
	EQUI6	EU003 RICE #3A 2SLB Clark 14 mmBtu/hr	Clark	TLA-5	1700	horsepower	hours	Energy	11/3/1960	11/3/1960	Null	
	EQUI7	Null Cummins Emergency Generator	Cummins	QSM11-G4	23.2	gallons	hours	Diesel Fuel	11/23/2011	11/30/2011	Null	

Emission Units 2 (continued)

Agency Interest: None

Agency Interest ID: 590

Activity: None (Part 70 Reissuance)

Details for:

SI Category: Equipment

SI Type: Reciprocating IC Engine

Subject Item Type Description	Subject Item ID	SI Designation and Description	Firing Method	Engine Use	Engine Displacement	Engine Displacement Units	Subject to CSAPR?	Electric Generating Capacity (MW)	
Reciprocating IC Engine	EQUI4	EU001 RICE #1A 2SLB Clark 14 mmBtu/hr	SI-2SLB	Unlimited use	70.67	liters per cylinder	Null	Null	■
	EQUI5	EU002 RICE #2A 2SLB Clark 14 mmBtu/hr	SI-2SLB	Unlimited use	70.67	liters per cylinder	Null	Null	■
	EQUI6	EU003 RICE #3A 2SLB Clark 14 mmBtu/hr	SI-2SLB	Unlimited use	70.67	liters per cylinder	Null	Null	■
	EQUI7	Null Cummins Emergency Generator	CI	Emergency/blackstart	1.8	liters per cylinder	Null	Null	■

## Buildings, General

Agency Interest: None





Agency Interest ID: 590

Activity: None (Part 70 Reissuance)

### Details for:

SI Category: Structure

SI Type: Building

Subject Item Type	Subject Item ID	SI Designation and Description	Height	Units (height)	Length	Units (length)	Width	Units (width)	
Building	STRU1	BG001 Compressor Building A	33	feet	108	feet	40	feet	
	STRU2	BG002 Equipment Garage	19	feet	54	feet	33	feet	
	STRU3	BG003 Office & Utility	24	feet	80	feet	40	feet	
	STRU4	BG004 Compressor Building B	25.5	feet	30	feet	45	feet	

Stack/Vent, General

Agency Interest: None

Agency Interest ID: 590

Activity: None (Part 70 Reissuance)

Details for:

SI Category: Structure

SI Type: Stack/Vent

Subject Item Type	Description	Subject Item ID	SI Designation and Description	Stack Height (feet)	Stack Diameter (feet)	Stack Length (feet)	Stack Width (feet)	Stack Flow Rate (cubic ft/min)	Discharge Temperature (°F)	Flow Rate/Temp Information Source	Discharge Direction	
Stack/Vent	STRU5	SV001	Reciprocating Engine #1A	36	1.6	Null	Null	17868	637	Test data	Upwards with no cap on stack/vent	■
	STRU6	SV002	Reciprocating Engine #2A	36	1.6	Null	Null	17868	637	Test data	Upwards with no cap on stack/vent	■
	STRU7	SV003	Reciprocating Engine #3A	36	1.6	Null	Null	17868	637	Test data	Upwards with no cap on stack/vent	■
	STRU9	SV005	Water Jacket	30	1.7	Null	Null	595	250	Manufacturer	Upwards with no cap on stack/vent	■
	STRU10	SV006	Turbine #1	44	3.3	Null	Null	84000	820	Test data	Upwards with no cap on stack/vent	■
	STRU11	Null	Cummins Emergency Generator	11	4.67	Null	Null	19916	800	Estimate	Upwards with no cap on stack/vent	■

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TFAC 1 (15300004)	1240	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendix A (Insignificant Activities and Applicable Requirements), Appendix B (40 CFR pt. 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines), and Appendix C (40 CFR 60 Subpart A - General Provisions).	Minn. R. 7007.0800, subp. 2
TFAC 1 (15300004)	1260	<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.</p>	Minn. R. 7007.1800, (A)(2)
TFAC 1 (15300004)	1280	<p>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 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 Section 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.</p>	Minn. R. 7007.0800, subp. 2, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000
TFAC 1 (15300004)	1290	<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following:</p> <ol style="list-style-type: none"> <li>1. Project description</li> <li>2. Identification of any emission unit whose emissions of an NSR pollutant could be affected</li> <li>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.</li> <li>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.</li> </ol> <p>The Permittee shall maintain records of this documentation.</p>	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
TFAC 1 (15300004)	1300	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 5 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

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TFAC 1 (15300004)	1310	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: 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
TFAC 1 (15300004)	1320	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. 7007.0100, subp. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9
TFAC 1 (15300004)	1330	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
TFAC 1 (15300004)	1340	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
TFAC 1 (15300004)	1350	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)
TFAC 1 (15300004)	1360	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
TFAC 1 (15300004)	1370	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
TFAC 1 (15300004)	1390	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
TFAC 1 (15300004)	1400	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)
TFAC 1 (15300004)	1410	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
TFAC 1 (15300004)	1420	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit.	Minn. R. ch. 7017
TFAC 1 (15300004)	1430	Performance Test Notifications and Submittals:  Performance Test Notification and Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test  The Notification, Test Plan, and Test Report must be submitted in a format specified by the commissioner.	Minn. R. 7017.2017, Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2

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TFAC 1 (15300004)	1440	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025, subp. 3
TFAC 1 (15300004)	1450	Monitoring Equipment Calibration - The Permittee shall either: 1. Calibrate or replace required monitoring equipment every 12 months; or 2. Calibrate at the frequency stated in the manufacturer's specifications. 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)
TFAC 1 (15300004)	1460	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)
TFAC 1 (15300004)	1510	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of 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)
TFAC 1 (15300004)	1520	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)
TFAC 1 (15300004)	1530	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
TFAC 1 (15300004)	1540	Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown 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.  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
TFAC 1 (15300004)	1550	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.  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
TFAC 1 (15300004)	1590	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

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TFAC 1 (15300004)	1620	Notification of Deviations Endangering Human Health or the Environment Report: Within 2 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: 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
TFAC 1 (15300004)	1630	The Permittee shall submit a semiannual deviations report : Due semiannually, by the 30th of January and July The first semiannual report submitted by the Permittee shall 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. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Minn. R. 7007.0800, subp. 6(A)(2)
TFAC 1 (15300004)	1640	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.  Upon adoption of a new or amended federal applicable requirement, and if there are more than 3 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
TFAC 1 (15300004)	1660	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 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)
TFAC 1 (15300004)	1680	The Permittee shall submit a compliance certification : Due annually, by the 31st of January (for the previous calendar year). The Permittee shall submit this to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Minn. R. 7007.0800, subp. 6(C)
TFAC 1 (15300004)	1690	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000-7019.3100
TFAC 1 (15300004)	1700	Emission Fees: due 30 days after receipt of an MPCA bill.	Minn. R. 7002.0005-7002.0095
TFAC 1 (15300004)	1770	The Permittee shall submit an application for permit reissuance : Due 180 calendar days before Permit Expiration Date.	Minn. R. 7007.0400, subp. 2
EQUI 2 (EU005)	1	Hours <= 2150 hours per year 12-month rolling sum for EQUI 2 when EQUI 3, EQUI 4, EQUI 5, or EQUI 6 are also in operation, to be calculated by the last day of each month for the previous 12-month period as described later in this permit.	40 CFR pt. 50, Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9
EQUI 2 (EU005)	2	Daily Recordkeeping. On each day that the water jacket heater is operated, the Permittee shall record and maintain the following information:  1) The date that EQUI 2 is operating; 2) The start time for EQUI 2 if EQUI 3, EQUI 4, EQUI 5, or EQUI 6 is operating; 3) The start time for EQUI 3, EQUI 4, EQUI 5, or EQUI 6 if EQUI 2 is operating; 4) The stop time for EQUI 2 if EQUI 3, EQUI 4, EQUI 5, or EQUI 6 is operating; and 5) The stop time for EQUI 3, EQUI 4, EQUI 5, or EQUI 6 if EQUI 2 is operating.	40 CFR 50, Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9
EQUI 2 (EU005)	4	Monthly Recordkeeping. By the last day of the month, the Permittee shall calculate and record the following: 1) The total hours of operation for EQUI 2 while EQUI 3, EQUI 4, EQUI 5, or EQUI 6 is 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



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EQUI 2 (EU005)	3620	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
EQUI 2 (EU005)	3630	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
EQUI 2 (EU005)	3830	The affected source of 40 CFR pt. 63, subp. DDDDD is the collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory as defined in 40 CFR Section 63.7575. These units are part of the subcategory "units designed to burn gas 1 fuels".	40 CFR 63.7490, Minn. R. 7011.7050
EQUI 2 (EU005)	12250	The Permittee must meet each work practice standard in Table 3 to 40 CFR pt. 63, Subp. DDDDD that apply to this unit.	40 CFR 63.7500(a)(1), Table 3, Minn. R. 7011.7050
EQUI 2 (EU005)	12350	The Permittee must demonstrate continuous compliance with each work practice standard in Table 3 to 40 CFR pt. 63, Subp. DDDDD that applies to this unit.	40 CFR 63.7540(a)(1), Minn. R. 7011.7050
EQUI 2 (EU005)	12360	The Permittee must conduct each 5-year tune-up specified in 40 CFR Section 63.7540(a)(10) must be no more than 61 months after the previous tune-up.	40 CFR 63.7515(d), Minn. R. 7011.7050
EQUI 2 (EU005)	12370	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. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that 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 63.7500(a)(3), Minn. R. 7011.7050
EQUI 2 (EU005)	12380	The standards under 40 CFR Section 63.7500 apply at all times the affected unit is operating, except during periods of startup and shutdown during which time the Permittee must comply only with Table 3 to Subpart DDDDD of Part 63.	40 CFR 63.7500(f), Minn. R. 7011.7050
EQUI 2 (EU005)	12420	The Permittee must meet the requirements in paragraphs (a)(1) through (3) of 40 CFR Section 63.7500, except as provided in paragraphs (b), through (e) of 40 CFR Section 63.7500. The Permittee must meet these requirements at all times the affected unit is operating except for the periods noted in 40 CFR Section 63.7500(f).	40 CFR 63.7505(a), Minn. R. 7011.7050
EQUI 2 (EU005)	12430	The Permittee must conduct a tune-up of the boiler or process heater every 5 years as specified in 40 CFR Section 63.7540(a)(10) to demonstrate continuous compliance, including: (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;  (ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available; (iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown);  (iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOX requirement to which this unit is subject;  (v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and	40 CFR 63.7540(a)(10), 40 CFR 63.7540(a)(12), Minn. R. 7011.7050
EQUI 2 (EU005)	12430	(vi) Maintain on-site and submit, if requested by the Commissioner or Administrator, an annual report containing: - The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater; - A description of any corrective actions taken as a part of the tune-up; and - The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.	40 CFR 63.7540(a)(10), 40 CFR 63.7540(a)(12), Minn. R. 7011.7050
EQUI 2 (EU005)	12480	If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.	40 CFR 63.7540(a)(13), Minn. R. 7011.7050
EQUI 2 (EU005)	12560	The Permittee must submit each report in Table 9 of 40 CFR pt. 63, subp. DDDDD that applies.	40 CFR 63.7550(a), Minn. R. 7011.7050

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EQUI 2 (EU005)	12570	<p>Compliance Report:</p> <p>The Permittee shall submit a 5-year compliance report. The first compliance report must cover the period beginning January 31, 2016 and ending on December 31, 2020. The first 5-year compliance report must be postmarked or submitted no later than January 31, 2021. Each subsequent compliance report must cover the applicable 5-year periods from January 1 to December 31.</p> <p>Each subsequent compliance report must be postmarked or submitted no later than January 31.</p>	40 CFR 63.7550(b), 40 CFR pt. 63, subp. DDDDD (Table 9), Minn. R. 7011.7050
EQUI 2 (EU005)	12580	<p>A Compliance Report must contain the following:</p> <ol style="list-style-type: none"> <li>1. Information required in 40 CFR Section 63.7550(c)(1) through (5);</li> <li>2. If there were no deviations from the requirements for work practice standards in Table 3 of 40 CFR pt. 63, subp. DDDDD that apply, a statement that there were no deviations from the work practice standards during the reporting period; and</li> <li>3. If there was a deviation from a work practice standard during the reporting period, the report must contain the information in 40 CFR Section 63.7550(d).</li> </ol>	40 CFR 63.7550(b), 40 CFR 63.7550(a), Table 9, Minn. R. 7011.7050
EQUI 2 (EU005)	12600	<p>A compliance report must contain the following information:</p> <ol style="list-style-type: none"> <li>1. Company and Facility name and address.</li> <li>2. Process unit information, emissions limitations, and operating parameter limitations.</li> <li>3. Date of report and beginning and ending dates of the reporting period.</li> <li>4. The total operating time during the reporting period.</li> <li>5. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct a 5-year tune-up. Include the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.</li> </ol>	40 CFR 63.7550(c), Minn. R. 7011.7050
EQUI 2 (EU005)	12610	<p>The Permittee must submit all reports required by 40 CFR pt. 63, subp. DDDDD, Table 9 electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (<a href="http://www.epa.gov/cdx">www.epa.gov/cdx</a>). However, if the reporting form specific to 40 CFR pt. 63, subp. DDDDD is not available in CEDRI at the time that the report is due, the Permittee must submit the report to the Administrator at the appropriate address listed in 40 CFR Section 63.13. At the discretion of the Administrator, you must also submit these reports, to the Administrator in the format specified by the Administrator.</p>	40 CFR 63.7550(h)(3), Minn. R. 7011.7050
EQUI 2 (EU005)	12620	<p>The Permittee must keep records according to 40 CFR Section 63.7555(a)(1), including:</p> <ol style="list-style-type: none"> <li>1. A copy of each notification and report that the Permittee submitted to comply with 40 CFR pt. 63, subp. DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or compliance report that the Permittee submitted, according to the requirements in 40 CFR Section 63.10(b)(2)(xiv).</li> <li>2. Records of performance tests, fuel analyses, or other compliance demonstrations and perform evaluations as required in 40 CFR Section 63.10(b)(2)(viii).</li> </ol>	40 CFR 63.7555(a), Minn. R. 7011.7050
EQUI 2 (EU005)	12630	The Permittee must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.	40 CFR 63.7555(i), Minn. R. 7011.7050
EQUI 2 (EU005)	12640	The Permittee must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.	40 CFR 63.7555(j), Minn. R. 7011.7050
EQUI 2 (EU005)	12650	Records must be in a form suitable and readily available for expeditious review.	40 CFR 63.10(b)(1), 40 CFR 63.7560(a), Minn. R. 7011.7050, Minn. R. 7019.0100
EQUI 2 (EU005)	12660	The Permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.	40 CFR 63.10(b)(1), 40 CFR 63.7560(b), Minn. R. 7011.7050, Minn. R. 7019.0100
EQUI 2 (EU005)	12661	The Permittee must keep each record on site, or they must be accessible from onsite (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee can keep the records offsite for the remaining 3 years.	40 CFR 63.10(b)(1), 40 CFR 63.7560(c), Minn. R. 7011.7050, Minn. R. 7019.0100
EQUI 2 (EU005)	12662	The Permittee shall comply with the applicable parts of the General Provisions in 40 CFR Sections 63.1 through 63.15 as indicated in Table 10 of 40 CFR pt. 63, subp. DDDDD.	40 CFR 63.7565, Minn. R. 7011.7050

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EQUI 3 (EU006)	1	<p>Gas Turbine Replacement and Reconstruction: The gas turbine is composed of four main components: an axial compressor, combustor, high pressure turbine (provides mechanical power to drive the axial compressor), and the power turbine (converts thermal to mechanical energy to drive the pipeline compressor). The axial compressor, combustor and high pressure turbine are also known as a gas generator. The gas generator and the power turbine are manufactured by Solar.</p> <p>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. In addition, replacement of components meeting the definition of "reconstruction" as defined at 40 CFR Section 63.2, may trigger requirements of 40 CFR pt. 63, subp. YYY for reconstructed affected sources.</p> <p>If 40 CFR pt. 60, subp. KKKK (subp. KKKK) requirements are triggered due to reconstruction, the Permittee is no longer subject to 40 CFR pt. 60, subp. GG (subp. GG), and shall meet the subp. KKKK requirements in this subject item. Requirements for EQUI 3 specific to 40 CFR pt. 60, subp. GG include the phrase 'Subp. GG No Reconstruction Unit'. Requirements specified to 40 CFR pt. 60, subp. KKKK include the phrase 'Subp. KKKK Reconstruction Unit'. EQUI 3 requirements that are silent regarding reconstruction apply regardless if there is reconstruction.</p>	Minn. R. 7007.0800, subp. 2
EQUI 3 (EU006)	4	<p>EQUI 3 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 3 as a reconstructed facility for purposes of 40 CFR pt. 60, subp. KKKK, the Permittee shall follow the applicable 40 CFR pt. 60, subp. KKKK requirements in this subject item instead of the 40 CFR pt. 60, subp. GG requirements. If the turbine axial compressor, the combustor, the high pressure turbine, or entire gas generator is replaced, the Permittee shall furnish notifications and reports and conduct a NOx test in the required timeframe according to 40 CFR pt. 60, subp. A, subp. GG or KKKK (whichever is applicable), and Minn. R. ch. 7017.</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 3 regardless if these components have been replaced, and the gas turbine shall continue to be subject to all applicable requirements listed under subject item EQUI 3.</p>	Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000
EQUI 3 (EU006)	21	Subp. GG No Reconstruction Unit: Fuel Type: Limited to pipeline natural gas meeting the definition in 40 CFR Section 60.331(u).	Minn. R. 7005.0100, subp. 35(a), Minn. R. 7007.0800, subp. 2
EQUI 3 (EU006)	33	The Permittee shall keep records of fuel type and usage on a monthly basis.	Minn. R. 7007.0800, subp. 5
EQUI 3 (EU006)	34	Opacity <= 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
EQUI 3 (EU006)	3530	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.000610 lb/MMBtu due to equipment design and allowable fuels.	Minn. R. 7011.2300, subp. 2(B)
EQUI 3 (EU006)	3535	Subp. GG No Reconstruction Unit: Sulfur Content of Fuel <= 0.8 percent by weight.	40 CFR 60.333, Minn. R. 7011.2350

Subject Item ID	Seq. #	Requirement	Citation
EQUI 3 (EU006)	3540	Subp. GG No Reconstruction Unit: 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).  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
EQUI 3 (EU006)	3550	Subp. GG No Reconstruction Unit: 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 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
EQUI 3 (EU006)	3560	Subp. GG No Reconstruction Unit: Recordkeeping: The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including; 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
EQUI 3 (EU006)	3565	Subp. KKKK Reconstructed Units: The Permittee shall 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 3 which contains total potential sulfur emissions in excess of 26 ng SO <sub>2</sub> /J (0.060 lb SO <sub>2</sub> /MMBtu) heat input.	40 CFR 60.4330(a), Minn. R. 7011.2375
EQUI 3 (EU006)	4550	Subp. KKKK Reconstructed Units: The Permittee shall limit emissions of Nitrogen Oxides $\leq$ 42 parts per million at 15 percent O <sub>2</sub> 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
EQUI 3 (EU006)	4560	Subp. KKKK Reconstructed Units: The Permittee shall limit emissions of Nitrogen Oxides $\leq$ 150 parts per million at 15 percent O <sub>2</sub> 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 3 (EU006)	4580	Subp. KKKK Reconstructed Units: The Permittee must operate and maintain the turbine EQUI 3, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including startup, shutdown, and malfunction.	40 CFR 60.4333(a), Minn. R. 7011.2375
EQUI 3 (EU006)	4590	Subp. KKKK Reconstructed Units: The Permittee shall perform annual performance tests in accordance with 40 CFR Section 60.4400 to demonstrate continuous compliance. If the NO <sub>x</sub> emission result from the performance test is less than or equal to 75 percent of the NO <sub>x</sub> emission limit in 40 CFR 60.4320(a) for the turbine, the Permittee may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO <sub>x</sub> emission limit for the turbine, the Permittee must resume annual performance tests.	40 CFR 60.4340(a), Minn. R. 7011.2375
EQUI 3 (EU006)	4600	Subp. KKKK Reconstructed Units: As an alternative to 40 CFR Section 60.4340(a) performance testing requirements, the Permittee may install, calibrate, maintain and operate one of the following continuous monitoring systems: (1) Continuous emission monitoring as described in Sections 60.4335(b) and 60.4345, or (2) Continuous parameter monitoring as follows: (ii) For any lean premix stationary combustion turbine, the Permittee must continuously monitor the appropriate parameters to determine whether the unit is operating in low-NO <sub>x</sub> mode. If any of these options are chosen, the Permittee shall comply with all applicable portions of 40 CFR pt. 60, subp. KKKK, and the Permittee shall apply for a permit amendment as applicable to incorporate such requirements.	40 CFR 60.4340(b), Minn. R. 7011.2375
EQUI 3 (EU006)	6380	Subp. KKKK Reconstructed Units: Initial Performance Test: due 180 days after Initial Startup and reconstruction of EQUI 3, for NO <sub>x</sub> in accordance with 40 CFR Sections 60.8 and 60.4400.	40 CFR 60.4400, 40 CFR 60.8(a), Minn. R. 7011.2375, Minn. R. 7017.2020, subp. 1
EQUI 3 (EU006)	6390	Subp. KKKK Reconstructed Units: Annual Performance Test: due 425 days after Initial Performance Test (for NO <sub>x</sub> ) or most recent performance test of EQUI 3, as required in 40 CFR Section 60.8 and in accordance with 40 CFR Section 60.4400. The Permittee shall conduct testing on an annual basis (no more than 14 calendar months following the previous performance test).	40 CFR 60.4400, 40 CFR 60.8(a), Minn. R. 7011.2375, Minn. R. 7017.2020, subp. 1

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EQUI 3 (EU006)	6400	Subp. KKKK Reconstructed Units: NOx Performance Test Report: In addition to the other notifications and submittals required by Minn. R. ch. 7017, the Permittee shall submit a written report of the results of each NOx performance test before the close of business on the 60th day following completion of the performance test.	40 CFR 60.4375(b), Minn. R. 7011.2375
EQUI 3 (EU006)	6410	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.	40 CFR 60.7(a)(1), Minn. R. 7011.2375, Minn. R. 7019.0100, subp. 1
EQUI 3 (EU006)	6420	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.	40 CFR 60.7(a)(3), Minn. R. 7011.2375, Minn. R. 7019.0100, subp. 1
EQUI 3 (EU006)	6425	Subp. YYYY Reconstruction Unit: Stay of standards for gas-fired subcategories. If you start up a new or reconstructed stationary combustion turbine that is a lean premix gas-fired stationary combustion turbine, the Permittee must comply with the Initial Notification requirements set forth in 40 CFR Section 63.6145 but need not comply with any other requirement of 40 CFR pt. 60, subp. YYYY until EPA takes final action to require compliance and publishes a document in the FEDERAL REGISTER. The Permittee must submit a notification of the actual date of initial startup : Due 180 calendar days after Initial Startup Date.	40 CFR 63.6095(d)
EQUI 3 (EU006)	6430	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).	40 CFR 60.15(d), Minn. R. 7011.0050, Minn. R. 7011.2375
EQUI 3 (EU006)	6440	Subp. KKKK Reconstructed Unit: Fuel Sulfur Content: The Permittee shall maintain a current valid purchase contract, tariff sheet, or transportation contract for the fuel, specifying the maximum total sulfur content for natural gas is 20 grains of sulfur or less per 100 standard cubic feet.	40 CFR 60.4365(a), Minn. R. 7011.2375
EQUI 3 (EU006)	6450	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
EQUI 3 (EU006)	6460	Recordkeeping: The Permittee shall maintain a file of all measurements, maintenance, reports and records for at least five years. This requirement is more stringent than 40 CFR Section 60.7(f), which specifies two years.	40 CFR 60.7(f), Minn. R. 7007.0800, subp. 5(C), Minn. R. 7019.0100, subp. 1
EQUI 3 (EU006)	18990	The Permittee shall submit a notification of any physical or operational change which increases emission rate: due 60 days (or as soon as practical) before the change is commenced.	40 CFR 60.7(a)(4), Minn. R. 7019.0100, subp. 1
EQUI 3 (EU006)	19000	The Permittee shall submit a notification of anticipated date for conducting opacity observations: Due 30 calendar days before Opacity Observation Date.	40 CFR 60.7(a)(6), Minn. R. 7019.0100, subp. 1
EQUI 3 (EU006)	19010	Opacity Compliance: The Permittee shall demonstrate compliance with opacity standards using Reference Method 9.	40 CFR 60.11, Minn. R. 7017.2015
EQUI 3 (EU006)	19020	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
EQUI 3 (EU006)	19070	Turbine Component Replacement Recordkeeping: The Permittee shall record the date and nature of each component replacement no later than 5 business days after completion of each replacement.  The Permittee shall also record the total cost of the component replacement compared to the cost of an entirely new stationary gas turbine (as defined at 40 CFR Section 60.4420). This record shall be made at least 30 days before a NOx test is conducted on the gas turbine (as a result of the component replacement), but no later than 180 days after each component replacement.	Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5
EQUI 4 (EU001)	3520	Opacity <= 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
EQUI 4 (EU001)	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb SO2 per million Btu due to equipment design and allowable fuels.	Minn. R. 7011.2300, subp. 2(B)
EQUI 4 (EU001)	3540	Fuel type: Natural gas only by design.	Minn. R. 7005.0100, subp. 35a

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EQUI 4 (EU001)	19510	At the time of permit issuance, EQUI 4 is considered an existing affected source under 40 CFR pt. 63, subp. ZZZZ as defined at 40 CFR Section 63.6590(a)(1)(i). However, these units meet the criteria in 40 CFR Section 63.6590(b)(3), so no limits, recordkeeping, or notifications from 40 CFR pt, 63, subp. ZZZZ apply to these units.	40 CFR 63.6590(a)(1)(i) and (b)(3), Minn. R. 7011.8150
EQUI 5 (EU002)	3520	Opacity <= 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
EQUI 5 (EU002)	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb SO2 per million Btu due to equipment design and allowable fuels.	Minn. R. 7011.2300, subp. 2(B)
EQUI 5 (EU002)	3540	Fuel type: Natural gas only by design.	Minn. R. 7005.0100, subp. 35a
EQUI 5 (EU002)	19510	At the time of permit issuance, EQUI 5 is considered an existing affected source under 40 CFR pt. 63, subp. ZZZZ as defined at 40 CFR Section 63.6590(a)(1)(i). However, these units meet the criteria in 40 CFR Section 63.6590(b)(3), so no limits, recordkeeping, or notifications from 40 CFR pt, 63, subp. ZZZZ apply to these units.	40 CFR 63.6590(a)(1)(i) and (b)(3), Minn. R. 7011.8150
EQUI 6 (EU003)	3520	Opacity <= 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
EQUI 6 (EU003)	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb SO2 per million Btu due to equipment design and allowable fuels.	Minn. R. 7011.2300, subp. 2(B)
EQUI 6 (EU003)	3540	Fuel type: Natural gas only by design.	Minn. R. 7005.0100, subp. 35a
EQUI 6 (EU003)	19510	At the time of permit issuance, EQUI 6 is considered an existing affected source under 40 CFR pt. 63, subp. ZZZZ as defined at 40 CFR Section 63.6590(a)(1)(i). However, these units meet the criteria in 40 CFR Section 63.6590(b)(3), so no limits, recordkeeping, or notifications from 40 CFR pt, 63, subp. ZZZZ apply to these units.	40 CFR 63.6590(a)(1)(i) and (b)(3), Minn. R. 7011.8150
EQUI 7	1	Opacity <= 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
EQUI 7	3520	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00159 lb SO2 per MMBtu due to equipment design and allowable fuels.	Minn. R. 7011.2300, subp. 2(B)
EQUI 7	3530	Hours <= 500 hours per year 12-month rolling sum to be calculated by the last day of each month for the previous 12-month period as described later in this permit.	Title I Condition: Avoid major modification under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000
EQUI 7	3550	Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year.	Minn. R. 7007.0800, subps. 4-5
EQUI 7	3560	Fuel type: Diesel fuel meeting the requirements of 40 CFR Section 80.510(c) only by design.	Minn. R. 7005.0100, subp. 35a
EQUI 7	3565	Sulfur Content of Fuel <= 0.0015 percent by weight.	Minn. R. 7007.0800, subps. 4-5
EQUI 7	3830	The Permittee shall keep records of fuel type and usage on a monthly basis.	Minn. R. 7007.0800, subp. 5
EQUI 7	3840	Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of diesel fuel oil, certifying that the sulfur content does not exceed 0.0015 percent by weight.	Minn. R. 7007.0800, subps. 4-5
EQUI 7	3850	Daily Recordkeeping. On each day that the emergency generator is operated, the Permittee shall record and maintain the following information: 1) The date; 2) The start time for EQUI 7 if EQUI 3, EQUI 4, EQUI 5 or EQUI 6 is operating; 3) The start time for EQUI 3, EQUI 4, EQUI 5, or EQUI 6 if EQUI 7 is operating; 4) The stop time for EQUI 7 if EQUI 3, EQUI 4, EQUI 5, or EQUI 6 is operating; 5) The stop time for EQUI 3, EQUI 4, EQUI 5, or EQUI 6 if EQUI 7 is operating.	40 CFR 50, Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000
EQUI 7	3851	Monthly Recordkeeping. By the last day of the month, the Permittee shall calculate and record the following: 1) The total hours of operation for EQUI 7 while EQUI 3, EQUI 4, EQUI 5, or EQUI 6 is 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

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EQUI 7	4600	<p>The Permittee must comply with all applicable requirements of 40 CFR pt. 60, Subpart IIII, as follows:</p> <p>40 CFR 60.4200(a)(2)(i); 40 CFR 60.4200(a)(4); 40 CFR 60.4202(a)(2); 40 CFR 60.4205(b); 40 CFR 60.4205(e) ; 40 CFR 60.4206; 40 CFR 60.4207(b); 40 CFR 60.4209; 40 CFR 60.4209(a); 40 CFR 60.4211(a)(1); 40 CFR 60.4211(a)(2); 40 CFR 60.4211(a)(3); 40 CFR 60.4211(c); 40 CFR 60.4211(f); 40 CFR 60.4211(f)(1); 40 CFR 60.4211(f)(2)(i); 40 CFR 60.4211(f)(3)(i)(A)-(E); 40 CFR 60.4211(g)(2); 40 CFR 60.4212; 40 CFR 60.4212(a)-(c); 40 CFR 60.4212(e); 40 CFR 60.4214(b); 40 CFR 60.4214(d)(1)-(3); 40 CFR 60.4218; 40 CFR 60.4219; and 40 CFR 60, subp. IIII, Table 8</p> <p>A copy of 40 CFR pt. 60, Subpart IIII is in Appendix B.</p> <p>If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than 3 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.</p>	<p>40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-1500, Minn. R. 7011.8150, Minn. R. 7017.1010 &amp; 7017.2025</p>
EQUI 7	19530	<p>The Permittee must comply with all applicable requirements of 40 CFR pt. 60, Subpart A as follows:</p> <p>40 CFR 60.1(a)-(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4; 40 CFR 60.5(a)-(b); 40 CFR 60.6(a)-(b); 40 CFR 60.9; 40 CFR 60.10(a)-(b); 40 CFR 60.12; 40 CFR 60.14(a)-(c); 40 CFR 60.14(e)-(l); 40 CFR 60.15(a)-(g); 40 CFR 60.17; 40 CFR 60.19(a)-(e); and 40 CFR 60.19(f)(1)-(4);</p> <p>A copy of 40 CFR pt. 60, Subpart A is included in Appendix C.</p> <p>If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than 3 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.</p>	<p>40 CFR 63.6590(c), 40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-1500, Minn. R. 7011.0050, Minn. R. 7011.8150, Minn. R. 7017.1010 &amp; 7017.2025, Minn. R. 7019.0100</p>
EQUI 7	19531	<p>EQUI 7 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is a major source as defined at 40 CFR Section 63.2, and EQUI 7 is a CI RICE with a site rating of less than 500 brake HP. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EQUI 7.</p>	<p>40 CFR 63.6590(c)(7), Minn. R. 7011.8150</p>
EQUI 7	19532	<p>If the engine operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 60.211(f)(2)(ii) and (iii), or operates for the purposes specified in 40.4211(f)(3)(i), the Permittee must submit an annual report according to the following requirements:</p> <ol style="list-style-type: none"> <li>1. The Permittee shall include the following information in the report: <ol style="list-style-type: none"> <li>a. Company name and address where the engine is located.</li> <li>b. Date of the report and beginning and ending dates of the reporting period.</li> <li>c. Engine site rating and model year.</li> <li>d. Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.</li> <li>e. Hours operated for the purposes specified in 40 CFR Section 60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR Section 60.4211(f)(2)(ii) and (iii).</li> <li>f. Number of hours the engine is contractually obligated to be available for the purposes specified in 40 CFR Section 60.4211(f)(2)(ii) and (iii).</li> <li>g. Hours spent for operation for the purposes specified in Section 60.4211(f)(3)(i), including the date, start time, and end time for engine operation. The report must identify the entity that dispatched the engine and the situation that necessitated the dispatch.</li> </ol> </li> <li>2. The first annual report shall cover the calendar year 2015 and shall be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year shall be submitted no later than March 31 of the following calendar year.</li> <li>3. The Permittee shall submit the report electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (<a href="http://www.epa.gov/cdx">www.epa.gov/cdx</a>). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR Section 60.4.</li> </ol>	<p>40 CFR 60.4214(d), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150</p>