Technical Support Document
for
Draft Air Emission Permit No. 13900010-106

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

Applicant/Address	**Stationary source/Address** (SIC Code: 4911 - Electric Services)
Xcel Energy 414 Nicollet Mall Minneapolis, Minnesota 55401-1927	Xcel Energy - Blue Lake 1200 70th St S Shakopee, MN 55379-2100
Contact: Hannah Mathers Phone: 763-647-4338	

1.2 Facility description

The facility is an electric generation peaking plant composed of two simple cycle stationary combustion turbine (CT) generators that combust natural gas. The CTs are rated at 174 Megawatts (Mwe) each, they were installed at the facility in 2004 and are equipped with dry low-NO_X combustors to inhibit NO_X formation. The Permittee also operates three dual-fuel engine generators rated at 9.37 MWe each, six emergency generators, two fuel oil tanks, and paved roads as a fugitive source.

The main pollutants are products of combustion such as nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), volatile organic compounds (VOC), particulates (PM/PM_{10}/$PM_{2.5}$)hazardous air pollutants (HAPs), and greenhouse gases (GHG or CO_2e).

1.3 Description of the activities allowed by this permit action

This permit action is a Part 70 Reissuance and authorizes operation of the facility. In addition, this permit action incorporates one permit reopening to document the Notice of Compliance (NOC) dated April 2, 2026, for the November 2025 performance testing of EQUIs 23–25 under the Permit No. 13900010-105. The NOC does not change the underlying emission limits; it confirms compliance and provides the site-specific operating values that the permit anticipated would be established after testing, see Attachment 5 of this TSD for details.

1.4 Facility emissions

Table 3. Notifications and applications included in this action

Date received	**Application/Notification type and description**
06/27/2024 with supplemental information received 02/24/2026 and 4/20/2026.	Part 70 Reissuance (IND20250001).

1.5 Facility emissions

Table 1. Total facility potential to emit summary

	PM (tpy)	**PM_{10}** (tpy)	**$PM_{2.5}$** (tpy)	**SO_2** (tpy)	**NO_x** (tpy)	**CO** (tpy)	**CO_2e** (tpy)	**VOC** (tpy)	**Single HAP**** (tpy)	**All HAPs** (tpy)
Total facility limited potential emissions	184	184	184	11.9	864	378	2,192,246	212	9.00	22.5
Total facility actual emissions (2023)	0.23	0.23	0.17	0.45	21.0	13.9	*	1.42	*	

*Not reported in Minnesota emission inventory.
**Formaldehyde.

Table 2. 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 does not authorize any 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 an operating permit. The following changes to the permit are made through this permit action:

- The permit has been updated to reflect current MPCA templates and standard citation formatting;
- Subject item details have been updated based on the equipment that was actually installed; Some requirements have been reordered or moved to help with clarity (i.e., similar requirements are grouped);
- CAM has been added as discussed in Table 3 of this TSD;
- CAM provisions have been updated to add standard Selective Catalytic Reduction (SCR) urea injection feedback monitoring (not previously included) and associated corrective language. See Section 3.4 of this TSD for details;
- Reinstatement and clarification of NSPS Subpart GG and related NO_X/SO_2 monitoring requirements;
- Added and updated monitoring and recordkeeping requirements for CO, NO_X, VOC, and Particulates to reflect how compliance is demonstrated and to address gaps in the previous permit action;
- Updated EQUI 1–4 as permanently non-operable due to removal of the control system, including a prohibition on operation and cleanup of obsolete requirements. See Section 3.6 of this TSD for details;
- Standardized definitions and permit language for startup, shutdown, and emergency to maintain internal consistency and to resolve internal inconsistencies in Permit No. 13900010-105; see Section 3.7 of this TSD for details; and
- The insignificant activities for the facility have been updated to reflect the current activities on site as well as to reflect changes to these rules since the last permit was issued.

2. Regulatory and/or statutory basis

2.1 New source review (NSR)

The facility is an existing major source under NSR regulations. No modifications are authorized by this permit.

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 Permittee has stated that New Source Performance Standards apply to the operations at this facility. The Permittee has stated that NSPS apply to specific operations at the facility, as described below.

40 CFR pt. 60, subp. GG – NSPS for Stationary Gas Turbines: EQUIs 7 and 8 are stationary gas turbines with a heat input at peak load greater than or equal to 10.7 gigajoules per hour (10 MMBtu/hr), based on the lower heating value of the fuel fired. The turbines commenced construction after October 3, 1977; therefore, they are subject to 40 CFR pt. 60, subp. GG (40 CFR § 60.330).

EQUIs 7 and 8 are not subject to 40 CFR pt. 60, subp. KKKK (NSPS for Stationary Combustion Turbines) because they commenced construction, modification, or reconstruction before February 18, 2005, the applicability date of Subpart KKKK (40 CFR § 60.4305(a)).

40 CFR pt. 60, subp. IIII – NSPS for Stationary Compression Ignition Internal Combustion Engines (CI ICE): this subpart applies to EQUIs 23–25 (Engine Generators 1–3) when operating under Alternative Operating Scenario 2 (AOS2) because they are CI ICE with a displacement of less than 30 liters per cylinder and a model year of 2007 or later (40 CFR § 60.4200(a)(1)(i)). EQUIs 26–29 and 43 (Emergency Engines 2–6) are also subject to NSPS IIII based on the applicability criteria outlined in the regulatory overview (see Table 8).

40 CFR pt. 60, subp. JJJJ – NSPS for Stationary Spark Ignition Internal Combustion Engines (SI ICE): this subpart applies to EQUIs 23–25 (Engine Generators 1–3) when operating under Alternative Operating Scenario 1 (AOS1), as they were constructed on or after July 1, 2007, and have a maximum engine power greater than or equal to 500 horsepower (40 CFR § 60.4230(a)(3)(i)).

The Permittee has stated that no other New Source Performance Standards apply to the operations at this facility at the time of permit issuance.

2.4 National emission standards for hazardous air pollutants (NESHAP)

The facility has accepted limits on HAP emissions such that it is an area source under 40 CFR pt. 63. Thus, no major source NESHAPs apply.

The area source NESHAP ZZZZ applies to EQUIs 23–25 (Engine Generators 1–3) and EQUIs 26–29 and 43 (Emergency Engines 2–6). These emission units are each new affected sources, as defined in 40 CFR pt. 63, subp. ZZZZ, and are located at an area source of HAPs (40 CFR § 63.6590(c)(1)). When operating under AOS2, EQUIs 23–25 (Engine Generators 1–3) meet the requirements of NESHAP ZZZZ by complying with the applicable provisions of NSPS IIII. When operating under AOS1, these same units meet the requirements of NESHAP ZZZZ by complying with the applicable provisions of NSPS JJJJ.

EQUIs 26–29 and 43 (Emergency Engines 2–6) meet the requirements of NEHSAP ZZZZ by complying with NSPS IIII.

The Permittee has stated that no other National Emission Standards for Hazardous Air Pollutants apply to the operations at this facility at the time of permit issuance.

2.5 Acid rain program

Xcel Energy - Blue Lakes is subject to the Acid Rain Program of 40 CFR pts. 72, 73, and 75. MPCA implements the Acid Rain Program based on direction from EPA.

The combustion turbines EQUIs 7 and 8 serve as generators rated above 25 MWe and produce electricity for sale; therefore, they are "utility units" under 40 CFR § 72.2. Since both units commenced operation after November 15, 1990, they are considered "new units" under 40 CFR § 72.6(a)(3)(i) and are not exempt under any provision of 40 CFR § 72.6(b). Consequently, EQUIs 7 and 8 are affected units subject to the requirements of the Acid Rain Program. As such, the Permittee is required to measure and maintain records of NO_X emissions and measure or calculate SO_2 emissions. The Acid Rain Permit Application is included as Appendix B of the permit.

2.6 Cross State Air Pollution Rule (CSAPR)

Xcel Energy - Blue Lake is subject to the CSAPR (also known as the Transport Rule or TR) because it has two combustion turbines that serve on or after January 1, 2005, generators with nameplate capacities or more than 25 MWe producing electricity for sale. Specifically, the facility is subject to the requirements of the TR NO_X Annual Program (40 CFR pt. 97, subp. AAAAA), and the TR SO_2 Group 2 Trading Program (40 CFR pt. 97, subp. DDDDD) because Minnesota is subject to the TR NO_X Annual Trading Program pursuant to 40 CFR § 52.38(a)(2)(i) and Minnesota is subject to the requirements of the TR SO_2 Group 2 Trading Program pursuant to 40 CFR § 52.39(c)(1).

This permit incorporates the requirements of 40 CFR pt. 97, subps. AAAAA and DDDDD into the permit, which are located at EQUIs 7 and 8, and Appendix G to the permit. EPA issued a memorandum on May 13, 2015 to provide guidance to the regions and the states on incorporating CSAPR requirements into Title V permits. The guidance includes a template to be used in permits. Applicable CSAPR requirements incorporated into this permit adhere to EPA's guidance and template, with one exception. The permit does not include the requirements from 40 CFR §§ 97.406(d) and 97.706(d), which address Title V permit revision requirements. These requirements were not included in the permit because they refer to the permit modifications procedures under 40 CFR pt. 70 that a Permittee may use to make changes to the monitoring provisions table in the permit. However, under Minnesota Rules, in order to make changes to the monitoring provisions table in the permit, the Permittee must follow Minn. R. 7007.1150-7007.1500.

2.7 Compliance assurance monitoring (CAM)

CAM refers to federal requirements under 40 CFR pt. 64, which ensure that control devices relied upon demonstrate compliance with emission limits are operating properly. CAM applies to emission units at Title V sources that (1) have emission limits for regulated pollutants, (2) use a control device to achieve compliance, and (3) have pre-controlled potential emissions exceeding the major source thresholds.

EQUIs 23, 24, and 25 were determined to be subject to CAM for NO_X and CO under Air Permit No. 10900102-001, based on their pre-controlled PTE. These units have enforceable limits for regulated pollutants that are achieved through add-on emission control devices.

Each engine generator is equipped with an oxidation catalyst (TREAs 1, 3, and 5) and a selective catalytic reduction (SCR) system to control CO and NO_X emissions, respectively. Therefore, CAM applies to both pollutants, consistent with the applicability criteria in 40 CFR pt. 64, for units using control devices with pre-controlled PTE above major source thresholds.

The table below lists the sources subject to CAM, the control equipment used, whether the source is a large or other pollutant specific emission unit (PSEU), and the pollutants triggering CAM.

Table 3. CAM summary

Unit	Control	CAM applicability	Pollutant	Emission Limitation Basis
EQUI 23	TREA 1, 2 oxidation catalyst & SCR	Other	CO & NO_X	BACT & PSD modeling
EQUI 24	TREA 3, 4 oxidation catalyst & SCR	Other	CO & NO_X	BACT & PSD modeling

Unit	Control	CAM applicability	Pollutant	Emission Limitation Basis
EQUI 25	TREA 5, 6 oxidation catalyst & SCR	Other	CO & NO_X	BACT & PSD modeling

See Attachment 3 to this document for the CAM Plan submitted by the Permittee.

2.8 Environmental review and air emissions risk analysis (AERA)

In 2007, Air Permit No. 13900010-004 established a CO emissions cap of 95 tpy, which was carried forward through the 2019 Part 70 reissuance. This limit was structured to constrain project-related emissions increases and support the permitting basis used at the time.

In 2024, through Major Permit Amendment No. 13900010-105, the CO cap was revised and replaced with a facility-accepted limit of 310.8 tpy (combined emissions from EQUIs 7 and 8 in COMG 2). This higher cap was supported by the updated project review, including the revised BACT analysis for the combustion turbines, and was accepted to ensure the project did not trigger state environmental review requirements. Specifically, the major amendment involved removal of EQUIs 1–4, revised utilization limits for EQUIs 7 and 8, and installation of new non-emergency and emergency RICE units. Without a CO cap, the post-project facility CO PTE increase would have exceeded the 250 tpy threshold associated with EAW review. The accepted CO cap was therefore established to constrain the net project-related CO emissions increase below that threshold by assigning the necessary reduction to COMG 2. See Air Permit No. 13900010-105 and the associated TSD for additional details.

2.9 Regulatory Overview

Table 4. Regulatory overview of facility

Subject item*	Applicable regulations	Rationale
COMG 2 - (NG-Fired GE 7FA Combustion Turbines)	Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B)	Limit to avoid EAW. The Permittee accepted a CO limit of 310.8 TPY (12-month rolling sum), as part of the Major Amendment Permit No. 13900010-105 under Minn. R. 4410.4300, subp. 15(A). This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act.
COMG 5 - (HAPs Limits)	Title I Condition: Avoid major source under 40 CFR 63.2	NESHAPs: Limits carried forward on individual and total HAPs to avoid major source classification under 40 CFR pt. 63.2.
EQUIs 1 to 4	Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold); Minn. R. 7007.0800, subp. 2(B)	Applicable regulatory requirements for EQUIs 1 to 4 are removed because the units are permanently non-operational due to removal of the control system; the permit instead includes prohibition on operation and requires the dismantlement notification when completed. See Section 3.6 of this TSD.
EQUI 5 - Emergency Engine/Generator	40 CFR pt. 63, subp. ZZZZ and Minn. R. 7011.8150	NESHAP for Stationary Reciprocating Internal Combustion Engines. Applicability criteria include: • Area source; • CI Engine; • Emergency/Black start; • No oxidation catalyst; and • Construction commenced before 6/12/2006.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines. Fuel limited to Distillate fuel only, by design. Sulfur content of fuel limited to 0.0015 percent by weight.

Subject item*	Applicable regulations	Rationale
	Title I Condition: Avoid major modification under 40 CFR § 52.21(b)(2)	Prevention of Significant Deterioration (PSD). Temporary replacement provisions for EQUI 5 are included to define the conditions under which a replacement engine may be installed and to preserve the PSD applicability basis for the facility.
EQUIs 7 & 8 - (NG Combustion Turbines)	Title I Condition: 40 CFR § 52.21(j)(BACT) and Minn. R. 7007.3000	PSD. In the Major Amendment (No. 13900010-105), the facility triggered PSD and became subject to Best Available Control Technology (BACT) for significant pollutants. Therefore, avoidance limits for NO_X, SO_2, CO, VOC, PM, and PM_{10} were removed and replaced with enforceable BACT limits under 40 CFR § 52.21(j). This reissuance carries forward these BACT limits. See TSD of Permit No. 13900010-105 for detailed information.
	Title I Condition: 40 CFR § 52.21(k)(modeling) and Minn. R. 7007.3000	PSD. The NO_X and $PM_{2.5}$ limits carry dual citations (BACT + modeling) because they serve both as control-based limits under 40 CFR § 52.21(j) and as the worst-case emission rates used in the refined NAAQS modeling under § 52.21(k), after SIL screening showed impacts above the thresholds for these pollutants. This reissuance carries forward these BACT limits. See TSD of Permit No. 13900010-105 for detailed information.
	40 CFR §§ 97.406 and 97.706	Cross-State Air Pollution Rule (CSAPR)/Transport Rule (TR). Applicability criteria include: •Units are combustion turbines; •Units serve, on or after January 1, 2005, generators with a nameplate capacity greater than 25 MWe producing energy for sale; and •Units are located in Minnesota.
	40 CFR pts. 72, 73, and 75	Acid Rain. The Permittee measures or calculates SO_2, NO_X, and CO_2. Applicability criteria for the EQUIs 7 and 8 include: • An affected unit under 40 CFR § 72.6(a); and • New unit (constructed after November 15, 1990) as defined in 40 CFR § 72.2.
	40 CFR pt. 60 subp. GG	NSPS for Stationary Gas Turbines. Determination of applicable limits for rule: • Heat input at peak load ≥ 10 MMBtu/hr; and • Constructed/modified/reconstructed after Oct 3, 1977 but before Feb 18, 2005.
EQUI 9 - NO_X CEMs for EQUI 7 EQUI 11 - NO_X CEMs for EQUI 8	Title I Condition: 40 CFR § 52.21(j)(BACT) and Minn. R. 7007.3000	Requirement to use CEMs to measure NO_X emissions to comply with BACT limits established in Permit No. 13900010-105.
EQUI 10 - CO CEMs for EQUI 7 EQUI 12 - CO CEMs for EQUI 8	Title I Condition: 40 CFR § 52.21(j)(BACT) and Minn. R. 7007.3000	Requirement to use CEMs to measure CO emissions to comply with BACT limits established in Permit No. 13900010-105.
EQUIs 23-25 (Engine Generators 1-3)	Title I Condition: 40 CFR § 52.21(j)(BACT) and Minn. R. 7007.3000	PSD: PM, PM_{10}, $PM_{2.5}$, NO_X, CO, VOC, CO_2, CO_2e and fuel type BACT limits.
	Title I Condition: 40 CFR § 52.21(k)(modeling) and Minn. R. 7007.3000	PSD: $PM_{2.5}$ and NO_X modeling limits.

Subject item*	Applicable regulations	Rationale
	Minn. R. 7007.0800, subp. 11	Alternative Operating Scenarios for operation in dual fuel and diesel modes. • Alternative Operating Scenario 1 (AOS 1): the units operate while firing natural gas with ultra-low sulfur diesel; and • Alternative Operating Scenario 2 (AOS 2): the units operate while firing ultra-low sulfur diesel.
	40 CFR pt 60, subp. JJJJ and Minn. R. 7011.2310	Under AOS 1 the units are subject to the NSPS for Stationary Spark Ignition Internal Combustion Engines. Applicability criteria include: • Engine will be manufactured on or after January 1, 2009 and constructed after June 12, 2006; • Certified engines; and • Natural gas engine greater than 3000 HP.
	40 CFR pt. 60, subp. IIII and Minn. R. 7011.2305	Under AOS 2 the units are subject to the NSPS for Stationary Compression Ignition Internal Combustion Engines. Applicability criteria include: • non-emergency engine (not a fire pump); • installed on or after January 1, 2016; • manufacture date after April 1, 2006; • engine output <= 3000 hp; and • displacement greater than or equal to 30 liters per cylinder.
	40 CFR pt. 63, subp. ZZZZ and Minn. R. 7011.8150	NESHAP for Stationary Reciprocating Internal Combustion Engines. EQUIs 18 and 19 are new affected source subject to 40 CFR pt. 63, subp. ZZZZ. Under 40 CFR § 63.6590(c) the engine complies with the requirements 40 CFR pt. 63, subp. ZZZZ by complying with the requirements of 40 CFR pt. 60, subp. JJJJ under AOS1 and IIII under AOS2 and no further requirements apply under 40 CFR pt. 63, subp. ZZZZ.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines. Fuel limited to Natural gas and Diesel only, by design. Sulfur content of fuel limited to 0.0015 percent by weight.
EQUIs 26-29, & 43 (Emergency Generators 2-6)	Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000	PSD: PM, PM_{10}, $PM_{2.5}$, CO, VOC, NMHC+NO_X, opacity, fuel type, and CO_2e BACT limits.
	40 CFR pt. 60, subp. IIII, Minn. R. 7011.2305	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, Applicability criteria include: • Emergency engine; • 2007 and later model year; • Less than 30 liters per cylinder displacement; and Output >750 and $\leq$3,000 hp.
	40 CFR pt. 63, subp. ZZZZ, Minn. R. 7011.8150	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, Applicability criteria include: • The facility is an area source of HAP emissions; • New emergency stationary RICE; and Meets requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines. Fuel limited to Natural gas and Diesel only, by design. Sulfur content of fuel limited to 0.0015 percent by weight.
EQUIs 32-33 (Diesel Storage Tanks)	Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000	PSD: Good tank design for storage tanks.
TREAs 1, 3, 5 - (Oxidation Catalysts)	Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000	PSD: CO, VOC control efficiencies, pressure drop and temperature inlet/outlet BACT limits.

Subject item*	Applicable regulations	Rationale
TREAs 2, 4, 6 - (SCRs)	Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000	PSD: NO_X control efficiency, pressure drop and temperature inlet/outlet BACT limits.
FUGI 1 (paved roads)	Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000	PSD: Comply with requirements, actions and recordkeeping specified in the Fugitive Dust Control Plan (Appendix H).

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

The language 'This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act' refers to permit requirements that are established only under state law and are not established under or required by the federal Clean Air Act. The language is to clarify the distinction between permit conditions that are required by federal law and those that are required only under state law. State law-only requirements are not enforceable by the EPA or by citizens under the federal Clean Air Act but are fully enforceable by the MPCA and citizens under provisions of state law.

3. Technical information

3.1 Calculations of potential to emit (PTE)

Attachment 1 to this TSD contains a summary of the PTE of the Facility as well as detailed spreadsheets and supporting information prepared by the MPCA and the Permittee.

Oil-fired turbines (EQUIs 1-4) are planned to be decommissioned at the facility; therefore, their PTE is not included in this permit action. See Section 3.6 of this TSD for details.

The existing diesel-fired emergency engine (EQUI 5) uses AP-42 methodology. PM and $PM_{2.5}$ emissions are assumed equal to PM_{10} emissions.

Emissions from the natural gas-fired turbines (EQUIs 7 and 8) were estimated using emission factors from AP-42 for PM, CO_2, and CH_4, with PM_{10} and $PM_{2.5}$ assumed equal to PM. The SO_2 emission factor was taken from AP-42 Table 1.4-2 (external combustion boilers) to represent sulfur contributions from natural gas due to mercaptan addition. VOC emission factors were derived from BACT concentration limits and include startup and shutdown emissions. CO and NO_X emission factors are based on worst-case performance test data. EQUIs 7 and 8 include separate BACT limits for normal and startup/shutdown operations. The PTE calculations for startup and shutdown emissions were based on 200 startup/shutdown events per year, and 48 hours of emergency operation per year, consistent with manufacturer data.

The dual-fuel engines (EQUI 23–25) use manufacturer-provided emission guarantees expressed in grams per kilowatt-electric hour (g/kW·hr), which were converted to a heat input basis (lb/MMBtu) for consistency with permit limits. These converted factors represent the manufacturer's 100% load guarantees for each fuel type and are based on BACT engine specifications covering CO, NO_X, PM_{10}/$PM_{2.5}$, VOC, CO_2, and CH_4. PM emissions are assumed equal to PM_{10}, as well as $PM_{2.5}$. SO_2 emission factors were obtained from AP-42 Table 3.4-1, assuming 15 ppm sulfur for diesel and 6 ppm for natural gas, with a 95%/5% gas-to-diesel operating mix. Diesel operation includes startup and shutdown emissions, while natural gas operation uses diesel as a pilot fuel during startup. For the dual-fuel engines, the emissions estimates assumed 700 startup/shutdown events per year and 48 hours of emergency operation per year, consistent with manufacturer data and operating scenarios.

The Greenhouse Gas (GHG) emissions factors and global warming potentials (GWP) for all these units were estimated using methodology from 40 CFR pt. 98 Table C-1, Table C-2, and Equation A-1.

3.2 Dispersion modeling

As required under the Major Amendment Permit No. 13900010-105, the Permittee completed air dispersion modeling to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). The results of the modeling are summarized in Tables 8, 9, 10, and 11 of the TSD-MOD of Permit No. 13900010-105. Several operating restrictions were assumed when the modeling was conducted, and those restrictions have been incorporated as permit limits during the last Permit action.

The Permittee conducted a Significant Impact Level (SIL) screening analysis for all criteria pollutants. The screening results showed concentrations below the SIL for PM_{10}, CO, annual NO_2 and ozone, but above the SIL for 1-hour NO_2 and $PM_{2.5}$, requiring refined NAAQS modeling. Refined modeling incorporated nearby sources including Anchor Glass, CertainTeed, Koda Energy, and Rahr Malting. Results demonstrated compliance with the 1-hour NO_2, 24-hour $PM_{2.5}$, and annual $PM_{2.5}$ NAAQS, with modeled concentrations below 90% of the applicable standards. Increment modeling for $PM_{2.5}$ also showed results below the Class II increment standards, representing 41% (24-hour) and 10% (annual) of the allowable increment. There is not a 1-hour NO_2 Class II increment standard.

The worst-case emissions rates for NO_X and $PM_{2.5}$ used in the PSD modeling had been incorporated into the last permit action as enforceable limits. The modeled operating parameters are documented in Appendix J of this permit to provide a reference for future modeling evaluations. These parameters represent operation at maximum design capacity and do not require separate compliance demonstration. The Permit does not include new modeling requirements. For detailed information, see the TSD for Air Permit No. 13900010-105**.**

3.3 Ambient Air Boundary

As part of the air dispersion modeling completed for the major amendment (Air Permit No. 13900010-105), the Permittee omitted receptors on portions of the facility property. These portions of the atmosphere accessible on the facility property must be excluded from ambient air. The Permittee maintains security fencing along the entire facility perimeter and a controlled access gate. This fence line defines the ambient air boundary used for siting receptors in the air dispersion modeling analysis.

The MPCA previously determined that the existing security fencing is sufficient to establish an ambient air boundary, based on guidance contained in the 1980 letter from the U.S. Environmental Protection Agency (EPA) Administrator Douglas Costle to Senator Jennings Randolph and the March 28, 2017 MPCA Memorandum "Clarification of MPCA Working Practice to Evaluate the Federal Definition of Ambient Air in Air Quality Dispersion Modeling" (Appendix D to the MPCA Air Dispersion Modeling Practices Manual). This determination is also consistent with the U.S. EPA November 2018 memo "Revised Policy on Exclusions from 'Ambient Air'."

This Part 70 reissuance does not revise the ambient air boundary determination from Permit No. 13900010-105. The permit continues to require compliance with a General Public Preclusion Plan (GPPP), which must be maintained onsite. The Permittee must document any security breaches, identify any security deficiencies, and update the Plan accordingly to prevent future breaches. Appendix I to the permit includes a map depicting the ambient air boundary defined by the fence line.

3.4 Selective Catalytic Reduction (SCR) Monitoring Approach

The standard MPCA permit language establishes upper and lower urea flow limits expressed as gallons per hour on a 3-hour rolling average. However, this approach was not adopted for Xcel Energy – Blue Lake because it does not accurately represent the operation or control performance of the facility's SCR system for EQUIs 23, 24, and 25. According to the manufacturer and the facility's CAM Plan, the urea injection rate varies dynamically based on an internal NO_X feedback control loop designed to maintain optimal reduction efficiency and minimize ammonia slip. Therefore, the Permittee monitors the percentage difference between the actual and demand urea injection rates, with an acceptable operating range of ±10%, as calculated and recorded in the Data Acquisition System (DAS) on a one-minute basis. This alternative

monitoring approach provides a more direct and reliable indicator of SCR performance, consistent with the intent of 40 CFR Pt. 64 to ensure continuous and representative monitoring of control device operation**.**

3.5 Best Available Control Technology (BACT) Summary

The BACT determinations for this facility were originally developed as part of the major amendment Permit No. 13900010-105, which authorized construction of new emission units and removal of previous synthetic minor limits on EQUIs 7 and 8. That BACT analysis remains the technical basis for current permitting actions. For detailed discussion of control alternatives, cost evaluations, and emission limits, refer to Attachment 3 of the Technical Support Document (TSD) for Permit No. 13900010-105.

The BACT analysis evaluated technically feasible control options for CO, VOC, NO_X, PM, PM_{10} and $PM_{2.5}$ and GHG emissions from all affected units. For EQUIs 7 and 8, dry low-NO_X burners, clean fuels, and good combustion practices were determined to be BACT for NO_X, PM, and VOC. Add-on controls such as selective catalytic reduction (SCR) and oxidation catalysts were evaluated but found not economically feasible.

For the dual-fuel engines (EQUIs 23–25), BACT determinations included use of pipeline natural gas as the primary fuel, compliance with NSPS IIII limits, good combustion practices, and installation of oxidation catalysts. Diesel particulate filters (DPFs) were excluded due to technical infeasibility and high operational backpressure.

For the emergency diesel engines (EQUIs 26–29 and 43), BACT consists of emergency-use classification, use of ultra-low sulfur diesel, purchase of certified engines meeting NSPS IIII requirements, and good combustion practices. For GHGs, carbon capture and storage (CCS) was deemed economically infeasible; therefore, clean fuels, energy efficiency measures, and good combustion practices were selected.

BACT for diesel storage tanks (EQUIs 32–33) includes fixed roofs, submerged fill pipes, and conservation vents. Fugitive emissions from paved roads (FUGI 1) are managed per the facility's Fugitive Dust Control Plan (Appendix H).

3.6 Removal of EQUIs 1–4 from the Permit

The EQUIs 1–4 (oil-fired simple-cycle turbines installed in 1974) were originally included in Air Permit No. 13900010-105 as "to be decommissioned," and their shutdown was treated as an enforceable emission reduction in the NSR/PSD applicability analysis for that Major Amendment. During this Part 70 reissuance, Xcel Energy confirmed that the complete control system for EQUIs 1–4 has been permanently removed. As a result, the units are physically incapable of startup or operation without installing and commissioning a new control system. Therefore, this permit removes the regulatory requirements and unit-specific compliance obligations that would otherwise apply to EQUIs 1–4 and instead establishes an enforceable prohibition on operating the units under any circumstance. The Permittee still needs to complete final physical removal or dismantlement and submits the required equipment dismantlement notification.

3.7 Clarifications for Operating Modes and SCR and oxidation catalyst Pressure Drop Requirements

Air Emissions Permit No. 13900010-105 used two different descriptions of startup, shutdown, and emergency operating modes for EQUIs 23–25. To avoid confusion, Air Emissions Permit No. 13900010-106 clarifies the operating mode language to match the technical basis used for these units and the facility's CAM Plan approach. The Permittee must keep the manufacturer documentation and CAM Plan basis onsite showing the "target operating temperature" used to distinguish startup from normal operation and make it available upon request.

In the same way, the pressure drop (dP) requirements for the SCR/oxidation catalyst system were established under the prior major amendment and are tied to BACT compliance and performance testing conducted under steady-state conditions (100 percent load ± 10 percent). Because these requirements function as an operating indicator used to demonstrate continued control device performance, changes to

how dP is evaluated could be interpreted as changes to existing monitoring requirements. However, this permit action does not revise the numerical indicator range or the underlying BACT basis; it clarifies the averaging basis and applicable operating conditions consistent with the facility's CAM Plan and the original steady-state test framework (Normal operations that exclude startup, shutdown, or emergency operations). The dP indicator is not representative during startup, shutdown, or emergency operation, so the permit clarifies that the indicator applies during normal operation only and is evaluated as a 1-hour average. This clarification improves clarity and enforceability and does not change emission limits, test basis, emissions calculations, or the BACT analysis.

3.8 Temporary replacement provisions (EQUI 5)

This permit retains the temporary replacement engine provisions for EQUI 5. Replacement engine provisions for this unit were added in the Part 70 reissuance Air Emissions Permit No. 13900010-005 (issued September 26, 2013) for consistency across Xcel Energy permits. The Permittee indicated the provisions have not been used in at least the last five years but requested retaining this flexibility because the emergency generator is located within the on-site substation and supports critical substation control during blackout events if the permanent unit is unavailable for an extended period (e.g., maintenance or repair). This permit action Permit No. 13900010-106 also specifies that a permit amendment is required if the change is subject to a new applicable requirement or would require revisions to permit limits or monitoring/recordkeeping.

3.9 Performance testing history

Table 5 shows the performance tests for EQUIs 7 and 8 for criteria pollutants as well as performance tests for EQUIs 1 to 4 for opacity as conducted since the last permit reissuance in 2019. Please note that the April 21, 2020, testing for EQUIs 7 and 8 included test points conducted at different load levels to establish the load-to-emissions correlation curve required at that time under Permit No. 13900010-101. The results presented in Table 5 for reference should not be averaged across load conditions for comparison purposes. Please note that the load-to-emissions correlation-curve approach and the low mass emissions (LME) methodology for EQUIs 7 and 8 were removed in a later permit action (Permit No. 13900010-105) and are not part of the requirements written in this permit action (Permit No. 13900010-106).

Table 5. Performance Tests for emission units

ID#	Test Date	Parameter	Limit	Tests Results	Units	Status
EQUI 7	4/21/2020	NO_X	110	8.18	parts per million	Compliant
EQUI 7	4/21/2020	CO	N/A	0.12	parts per million	Verified
EQUI 7	4/21/2020	CO	N/A	0.25	parts per million	Verified
EQUI 7	4/21/2020	CO	N/A	0.36	parts per million	Verified
EQUI 7	4/21/2020	NO_X	110	8.34	parts per million	Verified
EQUI 7	4/21/2020	NO_X	110	8.53	parts per million	Verified
EQUI 7	4/21/2020	NO_X	110	8.98	parts per million	Verified
EQUI 8	4/21/2020	NO_X	110	9.13	parts per million	Compliant
EQUI 8	4/21/2020	CO	N/A	0.66	parts per million	Verified
EQUI 8	4/21/2020	CO	N/A	4.15	parts per million	Verified
EQUI 8	4/21/2020	CO	N/A	10.46	parts per million	Verified
EQUI 8	4/21/2020	CO	N/A	9.13	parts per million	Verified
EQUI 8	4/21/2020	NO_X	110	9.13	parts per million	Verified
EQUI 8	4/21/2020	NO_X	110	9.18	parts per million	Verified
EQUI 8	4/21/2020	NO_X	110	9.46	parts per million	Verified
EQUI 1	4/20/2020	Opacity	20	0.6	percent opacity	Compliant
EQUI 1	4/20/2020	Opacity	20	7.7	percent opacity	Compliant
EQUI 2	3/2/2021	Opacity	20	0	percent opacity	Compliant
EQUI 2	3/2/2021	Opacity	20	6.5	percent opacity	Compliant
EQUI 3	2/24/2022	Opacity	20	1	percent opacity	Compliant

ID#	Test Date	Parameter	Limit	Tests Results	Units	Status
EQUI 3	2/24/2022	Opacity	20	10.6	percent opacity	Compliant
EQUI 4	2/16/2023	Opacity	20	5.2	percent opacity	Compliant
EQUI 4	2/16/2023	Opacity	20	13.3	percent opacity	Compliant
EQUI 1	3/14/2024	Opacity	20	0	percent opacity	Compliant
EQUI 1	3/14/2024	Opacity	20	13.5	percent opacity	Compliant
EQUI 2	1/28/2025	Opacity	20	0	percent opacity	Compliant
EQUI 2	1/28/2025	Opacity	20	7.7	percent opacity	Compliant
EQUI 7	1/28/2025	PM	0.0066	0.0005	Lb/MMBtu heat input	Compliant
EQUI 7	1/28/2025	PM	13.48	0.83	Lb/hr	Compliant
EQUI 7	1/28/2025	$PM_{2.5}$	0.0066	0.0016	Lb/MMBtu heat input	Compliant
EQUI 7	1/28/2025	$PM_{2.5}$	13.48	2.46	Lb/hr	Compliant
EQUI 7	1/28/2025	PM_{10}	0.0066	0.0016	Lb/MMBtu heat input	Compliant
EQUI 7	1/28/2025	PM_{10}	13.48	2.46	Lb/hr	Compliant
EQUI 7	1/28/2025	VOC	4.6	0.6	parts per million	Compliant
EQUI 7	1/28/2025	VOC	10.03	1.11	Lb/hr	Compliant
EQUI 8	1/28/2025	PM	0.0066	0.0016	Lb/MMBtu heat input	Compliant
EQUI 8	1/28/2025	PM	13.48	2.93	Lb/hr	Compliant
EQUI 8	1/28/2025	$PM_{2.5}$	0.0066	0.004	Lb/MMBtu heat input	Compliant
EQUI 8	1/28/2025	$PM_{2.5}$	13.48	7.2	Lb/hr	Compliant
EQUI 8	1/28/2025	PM_{10}	0.0066	0.004	Lb/MMBtu heat input	Compliant
EQUI 8	1/28/2025	PM_{10}	13.48	7.2	Lb/hr	Compliant
EQUI 8	1/28/2025	VOC	4.6	0.65	parts per million	Compliant
EQUI 8	1/28/2025	VOC	10.03	1.36	Lb/hr	Compliant
EQUI 23 High load (AOS 1- Natural Gas)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 23	11/25/2025	NO_X	1.0	0.03	g/Hp-hr	Compliant
EQUI 23	11/25/2025	NO_X (≥ 75% load)	0.07	0.03	g/Hp-hr	Compliant
EQUI 23	11/25/2025	NO_X (normal mode)	1.65	0.76	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO	2.0	0.01	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO (≥ 75% load)	0.10	0.01	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO (normal mode)	2.51	0.21	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC	0.7	0.09	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (≥ 75% load)	0.13	0.07	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (normal mode)	3.26	1.98	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	2.01	0.114	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM_{10}, $PM_{2.5}$ (≥ 75% load)	0.07	0.004	g/Hp-hr	Compliant
EQUI 23 Low load (AOS 1- Natural Gas)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 23	11/25/2025	NO_X (< 75% load)	0.11	0.04	g/Hp-hr	Compliant
EQUI 23	11/25/2025	NO_X (normal mode)	1.65	0.48	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO (< 75% load)	2.0	0.00	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO (normal mode)	2.51	0.00	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (< 75% load)	0.22	0.03	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (normal mode)	3.26	0.37	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	2.01	0.252	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM_{10}, $PM_{2.5}$ (< 75% load)	0.12	0.023	g/Hp-hr	Compliant
EQUI 23 High load (AOS 2- Ultra-Low Sulfur Diesel)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 23	11/25/2025	NO_X (≥ 75% load)	0.39	0.15	g/Hp-hr	Compliant
EQUI 23	11/25/2025	NO_X (max speed of 720 rpm)	1.80	0.15	g/Hp-hr	Compliant
EQUI 23	11/25/2025	NO_X (Normal Mode)	10.86	4.25	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO (≥ 75% load)	0.14	0.00986	g/Hp-hr	Compliant

ID#	Test Date	Parameter	Limit	Tests Results	Units	Status
EQUI 23	11/25/2025	CO (normal mode)	3.78	0.27	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (≥ 75% load)	0.15	0.03	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (normal mode)	4.33	0.73	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM (≥ 75% load)	0.11	0.049	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	4.76	1.356	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM_{10}, $PM_{2.5}$ (≥ 75% load)	0.16	0.049	g/Hp-hr	Compliant
EQUI 23 Low load (AOS 2- Ultra-Low Sulfur Diesel)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 23	11/25/2025	NO_X (< 75% load)	0.49	0.06	g/Hp-hr	Compliant
EQUI 23	11/25/2025	NO_X (normal mode)	10.86	0.64	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO (< 75% load)	0.15	0.00273	g/Hp-hr	Compliant
EQUI 23	11/25/2025	CO (normal mode)	3.78	0.03	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (< 75% load)	0.17	0.03	g/Hp-hr	Compliant
EQUI 23	11/25/2025	VOC (normal mode)	4.33	0.32	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	4.76	1.261	g/Hp-hr	Compliant
EQUI 23	11/25/2025	PM_{10}, $PM_{2.5}$ (< 75% load)	0.24	0.114	g/Hp-hr	Compliant
EQUI 24 High load (AOS 1- Natural Gas)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 24	11/25/2025	NO_X	1.0	0.02	g/Hp-hr	Compliant
EQUI 24	11/25/2025	NO_X (≥ 75% load)	0.07	0.02	g/Hp-hr	Compliant
EQUI 24	11/25/2025	NO_X (normal mode)	1.65	0.62	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO	2.0	0.00	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (≥ 75% load)	0.10	0.00	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (normal mode)	2.51	0.00	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC	0.7	0.07	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (≥ 75% load)	0.13	0.06	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (normal mode)	3.26	1.63	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	2.01	0.079	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM_{10}, $PM_{2.5}$ (≥ 75% load)	0.07	0.0029	g/Hp-hr	Compliant
EQUI 24 Low load (AOS 1- Natural Gas)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 24	11/25/2025	NO_X (< 75% load)	0.11	0.03	g/Hp-hr	Compliant
EQUI 24	11/25/2025	NO_X (normal mode)	1.65	0.38	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (< 75% load)	0.11	0.00	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (normal mode)	2.51	0.00	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (< 75% load)	0.22	0.10	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (normal mode)	3.26	1.15	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	2.01	0.066	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM_{10}, $PM_{2.5}$ (< 75% load)	0.12	0.006	g/Hp-hr	Compliant
EQUI 24 High load (AOS 2- Ultra-Low Sulfur Diesel)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 24	11/25/2025	NO_X (≥ 75% load)	0.39	0.25	g/Hp-hr	Compliant
EQUI 24	11/25/2025	NO_X (max speed of 720 rpm)	1.80	0.25	g/Hp-hr	Compliant
EQUI 24	11/25/2025	NO_X (Normal Mode)	10.86	6.83	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (≥ 75% load)	0.14	0.01	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (normal mode)	3.78	0.29	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (≥ 75% load)	0.15	0.03	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (normal mode)	4.33	0.75	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM (≥ 75% load)	0.11	0.018	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal	4.76	0.507	g/Hp-hr	Compliant

ID#	Test Date	Parameter	Limit	Tests Results	Units	Status
		mode)				
EQUI 24	11/25/2025	PM_{10}, $PM_{2.5}$ (≥ 75% load)	0.16	0.018	g/Hp-hr	Compliant
EQUI 24 Low load (AOS 2- Ultra-Low Sulfur Diesel)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 24	11/25/2025	NO_X (< 75% load)	0.49	0.02	g/Hp-hr	Compliant
EQUI 24	11/25/2025	NO_X (normal mode)	10.86	0.19	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (< 75% load)	0.15	0.00406	g/Hp-hr	Compliant
EQUI 24	11/25/2025	CO (normal mode)	3.78	0.04	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (< 75% load)	0.17	0.03	g/Hp-hr	Compliant
EQUI 24	11/25/2025	VOC (normal mode)	4.33	0.29	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	4.76	0.741	g/Hp-hr	Compliant
EQUI 24	11/25/2025	PM_{10}, $PM_{2.5}$ (< 75% load)	0.24	0.067	g/Hp-hr	Compliant
EQUI 25 High load (AOS 1- Natural Gas)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 25	11/25/2025	NO_X	1.0	0.02	g/Hp-hr	Compliant
EQUI 25	11/25/2025	NO_X (≥ 75% load)	0.07	0.02	g/Hp-hr	Compliant
EQUI 25	11/25/2025	NO_X (normal mode)	1.65	0.65	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO	2.0	0.00772	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (≥ 75% load)	0.10	0.00772	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (normal mode)	2.51	0.21	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC	0.7	0.08	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (≥ 75% load)	0.13	0.08	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (normal mode)	3.26	1.93	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	2.01	0.298	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM_{10}, $PM_{2.5}$ (≥ 75% load)	0.07	0.011	g/Hp-hr	Compliant
EQUI 25 Low load (AOS 1- Natural Gas)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 25	11/25/2025	NO_X (< 75% load)	0.11	0.03	g/Hp-hr	Compliant
EQUI 25	11/25/2025	NO_X (normal mode)	1.65	0.38	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (< 75% load)	0.11	0.00132	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (normal mode)	2.51	0.01	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (< 75% load)	0.22	0.13	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (normal mode)	3.26	1.39	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	2.01	0.141	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM_{10}, $PM_{2.5}$ (< 75% load)	0.12	0.013	g/Hp-hr	Compliant
EQUI 25 High load (AOS 2- Ultra-Low Sulfur Diesel)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 25	11/25/2025	NO_X (≥ 75% load)	0.39	0.20	g/Hp-hr	Compliant
EQUI 25	11/25/2025	NO_X (max speed of 720 rpm)	1.80	0.20	g/Hp-hr	Compliant
EQUI 25	11/25/2025	NO_X (Normal Mode)	10.86	5.42	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (≥ 75% load)	0.14	0.00349	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (normal mode)	3.78	0.10	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (≥ 75% load)	0.15	0.0101	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (normal mode)	4.33	0.28	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM (≥ 75% load)	0.11	0.033	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	4.76	0.903	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM_{10}, $PM_{2.5}$ (≥ 75% load)	0.16	0.033	g/Hp-hr	Compliant
EQUI 25 Low load (AOS 2- Ultra-Low Sulfur Diesel)						
ID#	**Test Date**	**Parameter**	**Limit**	**Results**	**Units**	**Status**
EQUI 25	11/25/2025	NO_X (< 75% load)	0.49	0.08	g/Hp-hr	Compliant

ID#	Test Date	Parameter	Limit	Tests Results	Units	Status
EQUI 25	11/25/2025	NO_X (normal mode)	10.86	0.86	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (< 75% load)	0.15	0.00	g/Hp-hr	Compliant
EQUI 25	11/25/2025	CO (normal mode)	3.78	0.00	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (< 75% load)	0.17	0.0104	g/Hp-hr	Compliant
EQUI 25	11/25/2025	VOC (normal mode)	4.33	0.12	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM, PM_{10}, $PM_{2.5}$ (normal mode)	4.76	0.741	g/Hp-hr	Compliant
EQUI 25	11/25/2025	PM_{10}, $PM_{2.5}$ (< 75% load)	0.24	0.067	g/Hp-hr	Compliant

3.10 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.

The Table below summarizes the monitoring requirements.

Table 6. Monitoring

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
COMG 2 - (NG-Fired GE 7FA Combustion Turbines)	CO <= 310.8 tpy 12-month rolling sum. [Limit to avoid threshold]	Recordkeeping: Daily and monthly calculations of CO emissions from EQUIs 7 & 8.	The CO CEMS provides continuous and real-time data on CO concentrations, so the Permittee is able to use CEMS data to calculate hourly and 12-month rolling sum emissions through the facility's DAS, to show compliance with the 310.8 tpy state-only CO limit.
COMG 5 - (HAPs Limits)	HAPs - Total <= 22.5 TPY 12-month rolling sum. HAPs - Single <= 9.0 TPY 12-month rolling sum. [Limit to avoid NESHAP]	Recordkeeping: Daily and monthly records of fuel usage. Monthly recording of HAPs Total emissions for the previous calendar month, as well as total HAPs Total emissions for the previous 12-month period.	Records of fuel usage are generated on a daily basis. HAPs emissions are calculated using fuel usage records and emission factors. By recording the fuel usage on a daily basis, the Permittee is able to verify compliance status at any time. EQUI 5 and insignificant activities (IAs) HAP emissions are not tracked because the single and total HAP emissions from EQUI 5 and IAs are well below the (1.0 tpy/2.5 tpy) difference between the single/total HAP major source thresholds and the permit single/total HAP limits.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
EQUI 5-Emergency Engine/Generator	Non-resettable hour meter, minimizing startup times, oil and filter changes. [NESHAP ZZZZ]	Inspections, maintenance plan, and recordkeeping.	Monitoring required by 40 CFR pt. 63, subp. ZZZZ is adequate to demonstrate compliance with the requirements of the standard because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.
	SO_2 <= 0.0015 lb/MMBtu heat input. Opacity <= 20%. [Minn. R. 7011.2300]	Monthly recordkeeping of the type of fuel used.	This unit uses pipeline natural gas only; therefore, the likelihood of violating either of the limits is very small. The Permittee can demonstrate that the unit will continue to operate such that emissions meet the emission limits by only burning natural gas. PTE is 0.0015 lb of SO_2/MMBtu.
	None [Limit to avoid PSD]	On-site records for each temporary replacement engine	The required records document the replacement engine's capacity, operating limits, and calculated emissions, allowing verification that the temporary replacement remains within the permit criteria and does not trigger a permit amendment or PSD applicability. See section 3.8 for details.
EQUIs 7 & 8 - (NG Combustion Turbines)	<u>Normal operations – (24-hr rolling average)</u> NO_X <= 11 ppm (dry basis). CO <= 9 ppm (dry basis). NO_X <= 73.51 lb/hr (Modeling). CO <= 38.80 lb/hr. <u>SUSD (12-month rolling sum)</u> NO_X <= 6.76 TPY. CO <= 18.01 TPY. <u>Emergency operations – (12-month rolling sum)</u> NO_X <= 7.29 TPY. CO <= 11.47 TPY. [BACT limits]	NO_X & CO CEMS operation and maintenance. See EQUIs 9 -12 for monitoring of the NO_X & CO CEMS. Recordkeeping for SU/SD, emergency operation.	The NO_X & CO CEMs provides continuous and real-time data on NO_X & CO concentrations, so the Permittee is able to use CEMS data to calculate the hourly NO_X & CO emissions in lb/hr for each hour of operation, which demonstrates compliance with the NO_X & CO BACT limits established in the permit. Accordingly, the CEMS provide continuous assurance of compliance. For the purpose of these requirements, normal operation is defined as commencing upon initial attainment of Mode 6 operation, when all burner nozzles are firing in the low-NO_X configuration.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	3-hr rolling avg limits: PM <= 0.0066 lb/MMBtu. PM_{10} <= 0.0066 lb/MMBtu. $PM_{2.5}$<= 0.0066 lb/MMBtu. 3-hr avg limits: PM <= 13.48 lb/hr. PM_{10}<= 13.48 lb/hr. $PM_{2.5}$ <= 13.48 lb/hr (modeling). [BACT limits]	Good combustion practices, fuel type recordkeeping, and Performance test.	The BACT analysis for EQUIs 7 and 8 in Permit No. 13900010-105 determined that good combustion practices and the use of natural gas as a clean fuel are technically feasible and adequate to minimize particulate emissions ($PM/PM_{10}/PM_{2.5}$). To ensure compliance with the BACT limits, the permit requires performance tests. Testing frequencies for emission factors (e.g., lb/MMBtu, lb/hr) used in calculating potential to emit are determined on a case-by-case basis. Testing frequencies are typically set at 12, 36, or 60-month increments. Past test results, applicable rules, potential emissions, location of source, and past compliance history play a factor in setting the testing frequency for emission factors. This permit requires performance tests every 60 months because results demonstrated compliance with all applicable limits, and it is consistent with the compliance demonstration established in the prior BACT analysis. The performance test results establish particulate emission factors (lb/MMBtu), which are incorporated into the facility's DAS to calculate continuous 3-hour rolling average emission rates (lb/MMBtu and lb/hr) based on measured fuel flow.
	VOC <= 4.6 ppm (dry basis) at actual O_2 (as methane) 3-hr block avg. VOC <= 10.03 lb/hr 3-hr avg (as methane) normal operation. VOC <= 8.64 TPY 12-month rolling sum (as methane) SUSD. VOC <= 24.95 TPY 12-month rolling sum (as methane) emergency operation. [BACT limits]	Good combustion practices, fuel type recordkeeping, Performance test, and Recordkeeping for SUSD, and emergency operations.	The BACT analysis for EQUI 7 and 8 in Permit No. 13900010-105 determined that good combustion practices are technically feasible and adequate to minimize VOC emissions from natural gas combustion. Performance testing is required to establish VOC emission factors (lb/MMBtu), which are programmed into the DAS. Using measured fuel heat input from the certified fuel flow sensor, the DAS continuously calculates 3-hour block average VOC emissions in ppm and lb/hr during normal operation. For SUSD and emergency operation, VOC emissions are calculated from the same emission factors and recorded hours of operation. This approach provides reasonable assurance of compliance with the VOC BACT limits.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	SUSD <= 200 Events per year 12-month rolling sum. Emergency hours of operations <= 48 hr/year. [BACT limits]	Monthly records of SUSD events and emergency hours of operation, 12-month rolling sum.	For each emission unit the Permittee is able to use records of emergency hours of operation as well as records of SUSD events to calculate monthly and 12-month rolling sum to show compliance with the limit. Because these emission units are not likely to operate uniformly throughout the year, with some months having very limited operations, a 12-month rolling sum is adequate to ensure compliance with the BACT limits.
	Fuel use: Pipeline natural gas. [BACT limits]	Monthly records of fuel type and usage, fuel supplier certification.	Fuel supplier certifications for each fuel purchase should comply with the SO_2 limit of 0.0015 lb/MMBtu.
	CO_2 <= 110 lb/MMBtu heat input 3-hr rolling avg CO_2e <= 986,539 TPY 12-month rolling sum. [BACT limits]	Recordkeeping: Monthly records of fuel burned (in MMBtu) and monthly calculations to calculate 12-month rolling sum of CO_2e emissions.	The Permittee is able to use records of fuel burned (in MMBtu) to calculate monthly and 12-month rolling sum CO_2e emissions. 12-month rolling sum is adequate to ensure the CO_2e emissions stay below the BACT limit.
	NO_X <= 110 ppm 4-hour rolling average at 15% O_2 SO_2 <= 0.015% by volume at 15% O_2 Fuel Type: Natural Gas. [NSPS GG]	NO_X CEMS operation and maintenance. See EQUIs 9 -12 for monitoring of the NO_X CEMS.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS contain adequate monitoring requirements.
	Measure and calculate SO_2, NO_X, and CO_2 emissions. [40 CFR pts. 72, 73, and 75]	NO_X and CO_2 monitoring, recertification, QA/QC procedures, daily CE testing, RATA, linearity test, quarterly reports. SO_2 monitoring, fuel usage, quarterly reports.	Per the Acid Rain Rules and Acid Rain Permit Application, the Permittee uses CEMS to comply with the Acid Rain NO_X and CO_2 Permit requirements. Also, the Permittee uses natural gas fuel usage and procedures in 40 CFR part 75, Appendix D, to comply with the SO_2 Permit requirements. Monitoring required by the Acid Rain Program provides adequate assurance of compliance.
EQUIs 23-25 - (Engine Generators 1-3)	<u>Operating Hours (OP) - 12-month rolling sum</u> OP <= 241 hr/yr burn-in OP <= 8109 hr/yr normal. [BACT limits]	Daily and Monthly Recordkeeping of hours of operation.	Daily and monthly recordkeeping of the hours of operation of the units is sufficient to show compliance with the hours of operation in burn-in and normal operation of the units. These limits expire 366 days after initial startup of EQUIs 23-25.
	<u>AOS 1- Natural Gas with ultra-low sulfur diesel</u> NO_X <= 1.0 g/hp-hr or 82 ppmvd @ 15% O_2. CO<= 2.0 g/hp-hr or 270 ppmvd @ 15% O_2. VOC <= 0.7 g/hp-hr or 60 ppmvd @ 15% O_2. [NSPS JJJJ]	Certified SI engine, maintenance plan, recordkeeping.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	<u>AOS 1- Natural Gas with ultra-low sulfur diesel</u> <u>Normal Operation - 3-hr avg</u> NO_X <= 1.65 lb/hr. PM <= 2.01 lb/hr. PM_{10}<= 2.01 lb/hr. $PM_{2.5}$ <= 2.01 lb/hr. CO <= 2.51 lb/hr. VOC<= 3.26 lb/hr. <u>AOS 1 >= 75% load - 24-hr rolling avg</u> NO_X <= 0.07 g/hp-hr. PM_{10} <= 0.07 g/hp-hr. $PM_{2.5}$ <= 0.07 g/hp-hr. CO <= 0.10 g/hp-hr. VOC <= 0.13 g/hp-hr. <u>AOS 1 < 75% load - 24-hr rolling avg</u> NO_X <= 0.11 g/hp-hr. PM_{10} <= 0.12 g/hp-hr. $PM_{2.5}$ <= 0.12 g/hp-hr. CO <= 0.11 g/hp-hr. VOC<= 0.22 g/hp-hr. [BACT limits]	Performance test and Recordkeeping for AOS1. See additional monitoring for NO_X at TREAs 2, 4 & 6.	Testing frequencies are typically set at 12, 36, or 60-month increments. Past test results, applicable rules, potential emissions, location of source, and past compliance history play a factor in setting the testing frequency. This permit requires performance tests every 12 months for PM and NO_X because November 2025 tests demonstrated compliance, with maximum results at 15% of the PM limit and 46% of the NO_X limit. Also, this permit requires performance tests every 60 months for $PM_{2.5}$, PM_{10}, CO and VOC based on the November 2025 compliant test results (19% PM_{10} and $PM_{2.5}$, 10% CO, and 62% VOC limits). Also, please note that testing is consistent with the compliance demonstration established in the prior BACT analysis. All normal operation limits (excluding SUSD and emergency operation) apply after 241 hours of burn-in operation or upon commencement of normal operation of EQUIs 23-25, whichever comes first. SUSD are based on 700 events per year. Emergency operations are limited to 48 hours per year.
	<u>AOS 2 - ultra-low sulfur diesel</u> Sulfur Content of Fuel <= 1000 ppm/gal of diesel. [NSPS IIII]	Fuel Supplier Certification for each shipment of diesel fuel, and recordkeeping. Purchase certified engine and: 1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; 2) Change only those emission-related settings that are permitted by the manufacturer; and 3) Meet the requirements of 40 CFR parts 1039, 1042, and 1068 as they apply.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	<u>AOS 2 - ultra-low sulfur diesel</u> <u>Normal Operation - 3-hr avg</u> NO_X <= 10.86 lb/hr (modeled). PM <= 4.76 lb/hr. PM_{10} <= 4.76 lb/hr. $PM_{2.5}$ <= 4.76 lb/hr. (modeled). CO<= 3.78 g/hp-hr. VOC <= 4.33 g/hp-hr. <u>AOS 2 >= 75% load - 24-hr rolling avg</u> NO_X<= 0.39 g/hp-hr. PM <= 0.11 lb/hr. PM_{10} <= 0.16 g/hp-hr. $PM_{2.5}$ <= 0.16 g/hp-hr. CO<= 0.14 g/hp-hr. VOC <= 0.15 g/hp-hr. <u>AOS 2 < 75% load - 24-hr rolling avg</u> NO_X <= 0.49 g/hp-hr. PM_{10} <= 0.24 g/hp-hr. $PM_{2.5}$ <= 0.24 g/hp-hr. CO<= 0.15 g/hp-hr. VOC <= 0.17 g/hp-hr. [BACT limits]	Performance Test Recordkeeping for SUSD and emergency operations.	Testing frequencies are typically set at 12, 36, or 60-month increments. Past test results, applicable rules, potential emissions, location of source, and past compliance history play a factor in setting the testing frequency. This permit requires performance tests every 12 months for PM and NO_X because November 2025 tests demonstrated compliance, with maximum results at 45% of the PM limit and 64% of the NO_X limit. Also, this permit requires performance tests every 60 months for $PM_{2.5}$, PM_{10}, CO and VOC based on the November 2025 compliant test results (48% PM_{10} and $PM_{2.5}$, 8% CO, and 20% VOC limits). Also, please note that testing is consistent with the compliance demonstration established in the prior BACT analysis. All normal operation limits (excluding SUSD and emergency operation) apply after 241 hours of burn-in operation or upon commencement of normal operation of EQUIs 23-25, whichever comes first. SUSD are based on 700 events per year. Emergency operations are based on 48 hours per year.
	<u>SUSD - 12-month rolling sum</u> NO_X <= 15.82 tpy. PM <= 1.77 tpy. PM_{10} <= 1.77 tpy. $PM_{2.5}$ <= 1.77 tpy. CO <= 3.71 tpy. VOC <= 1.16 tpy. <u>Emergency - 12-month rolling sum</u> NO_X <= 2.16 tpy. PM <= 0.24 tpy. PM_{10} <= 0.24 tpy. $PM_{2.5}$ <= 0.24 tpy. CO <= 0.50 tpy. VOC <= 0.15 tpy. [BACT limits]	Monthly records of SUSD events and emergency hours of operation, 12-month rolling sum.	For each emission unit, the Permittee is able to use records of SUSD events and emergency operating hours to calculate monthly and 12-month rolling emissions and demonstrate compliance with the applicable BACT limits. Because these emission units are not expected to operate in SUSD or emergency mode uniformly throughout the year, monthly recordkeeping and 12-month rolling calculations are adequate to ensure compliance with the BACT limits.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	SUSD <= 200 Events per year 12-month rolling sum. Emergency hours of operations <= 48 hr/year. [BACT limits]	Monthly records of SUSD events and emergency hours of operation, 12-month rolling sum.	For each emission unit the Permittee is able to use records of emergency hours of operation as well as records of SUSD events to calculate monthly and 12-month rolling sum to show compliance with the limit. Because these emission units are not likely to operate in SUSD or emergency mode uniformly throughout the year, with some months having very limited operations, a 12-month rolling sum is adequate to ensure compliance with the BACT limits.
	CO_2 <= 377 g/hp-hr (24-hr rolling avg). CO_2 <= 494 g/hp-hr (24-hr rolling avg). CO_2e <= 72,583 tpy 12-month rolling sum. [BACT limits]	Monthly records of fuel combusted (MMBtu) and calculate CO_2e emissions on a monthly and 12-month rolling sum basis for each operating scenario (AOS 1 and AOS 2).	The Permittee is able to use records of fuel combusted (in MMBtu) to calculate monthly and 12-month rolling sum CO_2e emissions. This approach provides ensures emissions remain below the applicable BACT limits. Daily recording of the active operating scenario (AOS1 or AOS2), ensures the correct emission factors are applied to each mode of operation.
	SO_2 <= 0.0015 lb/MMBtu heat input. Opacity <= 20%. [Minn. R. 7011.2300]	Monthly recordkeeping of the type and amount of fuel used.	The engine generators (EQUIs 23-25) use natural gas and diesel only; therefore, the likelihood of violating either of the limits is very small. Design based PTE, using AP-42 is 0.0015 lb/MMBtu of SO_2 compared to the rule limit.
	Fuel use: Natural gas & diesel only. [BACT Limits]	Monthly records of fuel type and usage, fuel supplier certification.	Fuel supplier certifications for each fuel purchase should comply with the SO_2 limit of 0.0015 lb/MMBtu.
EQUIs 26-29 and 43 - (Emergency Generators 2-6)	NMHC+NO_X <= 6.6 g/hp-hr. PM <= 0.15 g/hp-hr. CO <= 2.6 g/hp-hr. Limits are in 24-hr rolling avg. Opacity <= 20% in acceleration mode. Opacity <= 15% in lugging mode. Opacity <= 50% in peaks of either acceleration or lugging modes. [BACT limits and NESHAP ZZZZ]	Purchase certified engine, operation according to mfr's emissions related instructions, records of maintenance.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring. EQUIs 26-29, 43 are new affected sources as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	PM_{10} <= 0.16 g/hp-hr. $PM_{2.5}$ <= 0.16 g/hp-hr. VOC <= 4.8 g/hp-hr. Limits are in 24-hr rolling avg. [BACT limits]	Purchase certified engine, operation according to mfr's emissions related instructions, records of maintenance.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring. EQUIs 26-29, 43 are new affected sources as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR § 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII.
	SO_2 <= 0.0015 lb/MMBtu heat input. Opacity <= 20%. [Minn. R. 7011.2300]	Monthly recordkeeping of the type and amount of fuel used.	The emergency generators (EQUIs 26-29) use diesel only; therefore, the likelihood of violating either of the limits is very small. Design based PTE, using AP-42 is 0.0015 lb/MMBtu of SO_2 compared to the rule limit.
	Fuel type: diesel only, by design [BACT limits]	Monthly records of fuel type and usage, fuel supplier certification.	Fuel supplier certifications for each fuel purchase should comply with the SO_2 limit of 0.0015 lb/mmBtu.
EQUIs 26-28 - (Emergency Generators 2-4)	$NMHC+NO_X$ <= 11.03 lb/hr. PM <= 0.35 lb/hr. PM_{10} <= 0.39 lb/hr. $PM_{2.5}$ <= 0.39 lb/hr. CO <= 6.03 lb/hr. VOC <= 11.03 lb/hr. Limits are in 3-hr avg. [BACT limits]	Purchase certified engine, operation according to mfr's emissions related instructions, records of maintenance.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring.
	CO_2e <= 314 tons per year 12-month rolling sum. [BACT limits]	Recordkeeping: Monthly records of fuel burned (in MMBtu) and monthly calculations to calculate 12-month rolling sum of CO_2e emissions.	The Permittee is able to use records of fuel combusted (in MMBtu) to calculate monthly and 12-month rolling sum CO_2e emissions. 12-month rolling sum is adequate to ensure the CO_2e emissions stay below the BACT limit.
EQUIs 29 & 43 - (Emergency Generators 5-6)	$NMHC+NO_X$ <= 8.12 lb/hr 3-hr avg. PM <= 0.25 lb/hr 3-hr avg. PM_{10} <= 0.29 lb/hr 3-hr avg. $PM_{2.5}$ <= 0.29 lb/hr 3-hr avg. CO <= 4.44 lb/hr 3-hr avg. VOC <= 8.12 lb/hr 3-hr avg. [BACT limits]	Purchase certified engine, operation according to mfr's emissions related instructions, records of maintenance.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring.
	CO_2e <= 231 tpy 12-month rolling sum. [BACT limits]	Recordkeeping: Monthly records of fuel burned (in MMBtu) and monthly calculations to calculate 12-month rolling sum of CO_2e emissions.	The Permittee is able to use records of fuel combusted (in MMBtu) to calculate monthly and 12-month rolling sum CO_2e emissions. 12-month rolling sum is adequate to ensure the CO_2e emissions stay below the BACT limit.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
EQUIs 32-33 - (Diesel Storage Tanks)	Fixed roof, pressure relief valve, submerged fill pipe, light tank color. [BACT limits]	None.	Each 100,000 gallon diesel storage tank shall be constructed with a fixed roof, pressure relief valve (conservation vent), a submerged fill pipe and have a light tank color.
FUGI 1 - (Paved Roads)	Comply with Fugitive Emission Control Plan in Appendix H. [BACT limits]	Daily visible emission checks, monitoring, recordkeeping, training, corrective actions.	The Permittee shall follow the procedures outlined in the fugitive emission control plan to ensure compliance with Minn. R. 7011.0150 and the contents of the control plan. The fugitive emission control plan is contained in Appendix H of the permit.
TREAs 1, 3, 5 - (Oxidation Catalyst)	CO >= 90% Control Efficiency (CE). VOC >= 90% CE. ΔP <= +/- 2.0 in of H_2O at steady-state (Normal Operations) from the most recent performance test. T >= 484 & <= 1350 °F. [BACT limits]	Continuous Temperature monitoring, Recordkeeping, O & M, inspections.	Operating the control within the specified temperature, reagent Urea feedback, and pressure drop ranges, as well as inspections, O & M, and corrective actions provide a reasonable assurance of compliance.
TREAs 2, 4, 6 - (SCR)	NO_X >= 90% CE. ΔP <= +/- 2.0 in of H_2O at steady-state (Normal Operations) from the most recent performance test. Urea feedback monitoring <= +/- 10%. T >= 484 & <= 1350 °F. [BACT limits]	Urea feedback monitoring, temperature monitoring, periodic pressure drop monitoring, recordkeeping, inspections, O & M, and corrective actions.	Operating the control within the specified temperature, reagent Urea feedback, and pressure drop ranges, as well as inspections, O & M, and corrective actions provide a reasonable assurance of compliance.

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

3.11 Insignificant activities

Xcel Energy - Blue Lake 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 7. Insignificant activities

Insignificant activity	General applicable emission limit	Discussion
Fuel Use: space heaters fueled by propane, total less than 420,000 Btu/hr.	Filterable PM <= 0.4 lb/MMBtu heat input. Opacity <= 20% except for one six-minute period per hour of not more than 27% opacity. Fuel type: natural gas only. (Minn. R. 7011.0515)	The Permittee operates two propane-fired space heaters rated at 80,000 Btu/hr and 125,000 Btu/hr. These units qualify as insignificant activities under Minn. R. 7007.1300, subp. 3(A), because they are fueled by propane and with a combined total heat input capacity of 205,000 Btu/hr which is less than 420,000 Btu/hr; a space heater is a heating unit that is not connected to piping or ducting to distribute the heat. In addition, these types of units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.

Insignificant activity	General applicable emission limit	Discussion
Brazing, soldering, torch-cutting, or welding equipment.	PM, variable depending on airflow. Opacity <= 20%. (Minn. R. 7011.0715)	These units are used for facility maintenance and are not for production purposes. For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Individual units with potential or actual emissions meeting the criteria in Minn. R. 7007.1300, subp. 4(A)-(D).	PM, variable depending on airflow. Opacity <= 20%. (Minn. R. 7011.0715)	The Permittee operates distillate oil pumps, valves and flanges with fugitive VOC emissions. Therefore; PM emissions and opacity are not expected from these activities.
	Permanent submerged fill pipe added to the storage vessel. (Minn. R. 7011.1505 subp. 3(B))	Tank 35 (distillate storage) is carried forward consistently with prior permitting actions. VOC emissions were estimated using the MPCA tank emissions spreadsheet; calculated potential VOC emissions are approximately 0.05 tpy (approximately 100 lb/yr). PM emissions and opacity are not anticipated from this storage activity, and stack testing for PM/opacity is not feasible for passive tank breathing and working losses.
Total facility coating and cleaning usage at the stationary source that meets the requirements of Minn. R. 7008.4100 (1,000 gallons or 10,000 lbs VOC and 8,000 lbs of particulates).	PM, variable depending on airflow. Opacity <= 20%. (Minn. R. 7011.0715)	Xcel operates a parts washer using a VOC-containing solvent. This activity qualifies as a conditionally insignificant activity under Minn. R. 7008.4100 (material usage in coating and solvent cleaning operations). Based on a solvent capacity of 35 gallons, 100 percent VOC content, and a density of 6.59 lb/gal, the estimated uncontrolled VOC emissions are 231 lb VOC per year, which is below the 10,000 lb/yr threshold in Minn. R. 7008.4100, subp. 2(A) (calculated per subp. 4). PM emissions are not anticipated from this solvent cleaning activity.
All finishing operations at a stationary source that emit only particulate matter that meet the requirements of Minn. R. 7008.4110 (10,000 lbs of particulate; installation, O & M of control equipment).	PM, variable depending on airflow. Opacity <= 20%. (Minn. R. 7011.0715)	The Permittee operates an abrasive blasting cabinet vented to a fabric filter. This unit qualifies as a conditionally insignificant activity under Minn. R. 7008.4110, provided that the mechanical finishing operations at the stationary source emit only particulate matter and lead is not a component of any mechanical finishing operation. Based on available information and prior permit documentation, this activity is treated as meeting the criteria in Minn. R. 7008.4110; if lead is present in blasted materials, the conditionally insignificant classification would need to be re-evaluated. Based on design parameters (0.03 gr/scf, 282 scfm, and 8,760 hr/yr of operation), controlled PM emissions are estimated at 635 lb/yr (0.318 ton/yr), which is below the 10,000 lb/yr threshold in Minn. R. 7008.4110, subp. 2 (calculated per subp. 4). The filtration system is a total enclosure; for CAM screening purposes, assuming 99% PM control efficiency for a fabric filter consistent with Minn. R. 7011.0070, Table A, the estimated potential pre-control PM emissions are 31.7 tpy; therefore, CAM does not apply to this emissions unit.

3.12 Permit organization and standard language

This permit meets the MPCA Tempo Guidance for ordering and grouping of requirements as well as the use of permit appendices.

When amending or reissuing an air permit, MPCA staff evaluate standard permit language in the permit. If the standard language has been changed in the Tempo database since the last permit was issued, staff need to decide how to proceed for each revised condition. See Attachment 4, Table A4-1. Standard language evaluation to this TSD for documentation on how the standard language was evaluated and if any updates were made.

3.13 Comments received

This section will be completed after the referenced review periods.

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

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.

Conclusion

Based on the information provided by Xcel Energy - Blue Lake the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 13900010-106 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff members on permit team: Alfredo Rincon-Gonzalez (permit engineer)
Jeffrey Hedman (peer reviewer)
Patrick Hecht (compliance & enforcement)
Rebecca Settle (stack testing)
Leah Waller (data coordinator)
Beckie Olson (permit writing assistant)
Ryan Decker (administrative support)

Tempo Activities: Part 70 Reissuance (IND20240001)

Attachments:
1. PTE summary and calculation spreadsheets
2. Subject item inventory and facility requirements
3. CAM plan
4. Standard language evaluation
5. Notices of Compliance

Xcel Energy - Blue Lake
Permit Number 13900010-106
Technical Support Document

Attachment 1
Calculations spreadsheet

Xcel Energy - Blue Lake - 13900010

Emissions by Source Table

	EQUI 5		
Pollutant Name	**lbs per Hr**	**tpy un-restricted**	**tpy limited**
PM	0.34	1.49	0.09
PM_{10}	0.34	1.49	0.09
$PM_{2.5}$	0.34	1.49	0.09
SO_2	0.32	1.40	0.08
NO_x	4.85	21.25	1.21
VOC	0.39	1.69	0.10
CO	1.05	4.58	0.26
Total HAPs	5.18E-03	0.02	0.02
CO_2	179.36	785.59	44.84
CH_4	7.28E-03	0.03	1.82E-03
N_2O	1.46E-03	6.37E-03	3.64E-04
CO_2e	179.97	788.29	44.99
1,3-Butadiene	4.30E-05	1.88E-04	1.08E-05
1,1,2,2-Tetrachloroethane	-	-	-
1,1,2-Trichloroethane	-	-	-
1,3-Dichloropropene	-	-	-
2-Methylnaphthalene	-	-	-
2,2,4-Trimethylpentane	-	-	-
Acenaphthene	-	-	-
Acenaphthylene	-	-	-
Acetaldehyde	8.44E-04	3.70E-03	3.70E-03
Acrolein	1.02E-03	4.46E-03	2.54E-04
Arsenic	-	-	-
Benzene	1.03E-03	4.50E-03	2.57E-04
Benzo(b)fluoranthene	-	-	-
Benzo(e)pyrene	-	-	-
Benzo(g,h,i)perylene	-	-	-
Beryllium	-	-	-
Cadmium	-	-	-
Carbon Tetrachloride	-	-	-
Chlorobenzene	-	-	-
Chloroform	-	-	-
Chrysene	-	-	-
Chromium	-	-	-
Cobalt	-	-	-
Ethylbenzene	-	-	-
Ethylene Dibromide	-	-	-
Fluoranthene	-	-	-
Fluorene	-	-	-
Formaldehyde	1.30E-03	5.69E-03	
Lead	0.00E+00	0.00E+00	0.00E+00
Manganese	-	-	-
Mercury	-	-	-
Methanol	-	-	-
Methylene Chloride	-	-	-
Naphthalene	-	-	-
n-Hexane	-	-	-
Nickel	-	-	-
Phenanthrene	-	-	-
Phenol	-	-	-
Propylene Oxide	-	-	-
Pyrene	-	-	-
Selenium	-	-	-
Styrene	-	-	-
Perchloroethylene	-	-	-
POM	-	-	-
Toluene	4.50E-04	1.97E-03	1.12E-04
Vinyl Chloride	-	-	-
Xylenes	3.14E-04	1.37E-03	7.84E-05

Xcel Energy - Blue Lake - 13900010

Emissions by Source Table

	EQUI 7			EQUI 8			EQUI 23			EQUI 24			EQUI 25		
Pollutant Name	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**
PM	13.48	59.04	59.04	13.48	59.04	59.04	4.76	148.42	21.87	4.76	148.42	21.87	4.76	148.42	21.87
PM_{10}	13.48	59.04	59.04	13.48	59.04	59.04	4.76	148.42	21.87	4.76	148.42	21.87	4.76	148.42	21.87
$PM_{2.5}$	13.48	59.04	59.04	13.48	59.04	59.04	4.76	148.42	21.87	4.76	148.42	21.87	4.76	148.42	21.87
SO_2	1.17	5.11	5.11	1.17	5.11	5.11	0.12	0.53	0.53	0.12	0.53	0.53	0.12	0.53	0.53
NO_X	73.51	2,175	330.10	73.51	2,175	330.10	10.86	824.95	63.32	10.86	824.95	63.32	10.86	824.95	63.32
VOC	10.03	5,266	76.72	10.00	5,266	76.59	4.33	75.32	19.40	4.33	75.32	19.40	4.33	75.32	19.40
CO	38.80	3,655		38.80	3,655		3.78	198.40	20.00	3.78	198.40	20.00	3.78	198.40	20.00
Total HAPs	1.47	6.42		1.47	6.42		5.66	24.78		5.66	24.78		5.66	24.78	
CO_2	224,664	984,028	984,028	224,664	984,028	984,028	16,540	72,445	72,445	16,540	72,445	72,445	16,540	72,445	72,445
CH_4	17.56	76.93	76.93	17.56	76.93	76.93	0.53	2.31	2.31	0.53	2.31	2.31	0.53	2.31	2.31
N_2O	0.45	1.97	1.97	0.45	1.97	1.97	0.05	0.23	0.23	0.05	0.23	0.23	0.05	0.23	0.23
CO_2e	225,237	986,539	986,539	225,237	986,539	986,539	16,569	72,572	72,572	16,569	72,572	72,572	16,569	72,572	72,572
1,3-Butadiene	8.78E-04	3.85E-03	3.85E-03	8.78E-04	3.85E-03	3.85E-03	0.02	0.09	0.09	0.02	0.09	0.09	0.02	0.09	0.09
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	3.11E-03	0.01	0.01	3.11E-03	0.01	0.01	3.11E-03	0.01	0.01
1,1,2-Trichloroethane	-	-	-	-	-	-	2.47E-03	0.01	0.01	2.47E-03	0.01	0.01	2.47E-03	0.01	0.01
1,3-Dichloropropene	-	-	-	-	-	-	2.05E-03	8.98E-03	8.98E-03	2.05E-03	8.98E-03	8.98E-03	2.05E-03	8.98E-03	8.98E-03
2-Methylnaphthalene	-	-	-	-	-	-	2.58E-03	0.01	0.01	2.58E-03	0.01	0.01	2.58E-03	0.01	0.01
2,2,4-Trimethylpentane	-	-	-	-	-	-	0.02	0.09	0.09	0.02	0.09	0.09	0.02	0.09	0.09
Acenaphthene	-	-	-	-	-	-	9.71E-05	4.25E-04	4.25E-04	9.71E-05	4.25E-04	4.25E-04	9.71E-05	4.25E-04	4.25E-04
Acenaphthylene	-	-	-	-	-	-	4.30E-04	1.88E-03	1.88E-03	4.30E-04	1.88E-03	1.88E-03	4.30E-04	1.88E-03	1.88E-03
Acetaldehyde	0.08	0.36	0.36	0.08	0.36	0.36	0.65	2.85	2.85	0.65	2.85	2.85	0.65	2.85	2.85
Acrolein	0.01	0.06	0.06	0.01	0.06	0.06	0.40	1.75	1.75	0.40	1.75	1.75	0.40	1.75	1.75
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	0.02	0.11	0.11	0.02	0.11	0.11	0.06	0.27	0.26	0.06	0.27	0.26	0.06	0.27	0.26
Benzo(b)fluoranthene	-	-	-	-	-	-	1.29E-05	5.65E-05	5.65E-05	1.29E-05	5.65E-05	5.65E-05	1.29E-05	5.65E-05	5.65E-05
Benzo(e)pyrene	-	-	-	-	-	-	3.22E-05	1.41E-04	1.41E-04	3.22E-05	1.41E-04	1.41E-04	3.22E-05	1.41E-04	1.41E-04
Benzo(g,h,i)perylene	-	-	-	-	-	-	3.22E-05	1.41E-04	1.41E-04	3.22E-05	1.41E-04	1.41E-04	3.22E-05	1.41E-04	1.41E-04
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	-	-	-	-	-	-	2.85E-03	0.01	0.01	2.85E-03	0.01	0.01	2.85E-03	0.01	0.01
Chlorobenzene	-	-	-	-	-	-	2.36E-03	0.01	0.01	2.36E-03	0.01	0.01	2.36E-03	0.01	0.01
Chloroform	-	-	-	-	-	-	2.21E-03	9.70E-03	9.70E-03	2.21E-03	9.70E-03	9.70E-03	2.21E-03	9.70E-03	9.70E-03
Chrysene	-	-	-	-	-	-	5.38E-05	2.36E-04	2.36E-04	5.38E-05	2.36E-04	2.36E-04	5.38E-05	2.36E-04	2.36E-04
Chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	0.07	0.29	0.29	0.07	0.29	0.29	3.08E-03	0.01	0.01	3.08E-03	0.01	0.01	3.08E-03	0.01	0.01
Ethylene Dibromide	-	-	-	-	-	-	3.44E-03	0.02	0.02	3.44E-03	0.02	0.02	3.44E-03	0.02	0.02
Fluoranthene	-	-	-	-	-	-	8.62E-05	3.78E-04	3.78E-04	8.62E-05	3.78E-04	3.78E-04	8.62E-05	3.78E-04	3.78E-04
Fluorene	-	-	-	-	-	-	4.41E-04	1.93E-03	1.93E-03	4.41E-04	1.93E-03	1.93E-03	4.41E-04	1.93E-03	1.93E-03
Formaldehyde	0.82	3.58		0.82	3.58		4.10	17.97		4.10	17.97		4.10	17.97	
Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methanol	-	-	-	-	-	-	0.19	0.85	0.85	0.19	0.85	0.85	0.19	0.85	0.85
Methylene Chloride	-	-	-	-	-	-	1.55E-03	6.81E-03	6.81E-03	1.55E-03	6.81E-03	6.81E-03	1.55E-03	6.81E-03	6.81E-03
Naphthalene	2.66E-03	0.01	0.01	2.66E-03	0.01	0.01	0.01	0.05	0.04	0.01	0.05	0.04	0.01	0.05	0.04
n-Hexane	-	-	-	-	-	-	0.09	0.38	0.38	0.09	0.38	0.38	0.09	0.38	0.38
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	8.08E-04	3.54E-03	3.54E-03	8.08E-04	3.54E-03	3.54E-03	8.08E-04	3.54E-03	3.54E-03
Phenol	-	-	-	-	-	-	1.86E-03	8.17E-03	8.17E-03	1.86E-03	8.17E-03	8.17E-03	1.86E-03	8.17E-03	8.17E-03
Propylene Oxide	0.06	0.26	0.26	0.06	0.26	0.26	-	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	1.06E-04	4.63E-04	4.63E-04	1.06E-04	4.63E-04	4.63E-04	1.06E-04	4.63E-04	4.63E-04
Selenium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	-	-	-	-	-	-	1.83E-03	8.03E-03	8.03E-03	1.83E-03	8.03E-03	8.03E-03	1.83E-03	8.03E-03	8.03E-03
Perchloroethylene	-	-	-	-	-	-	1.93E-04	8.44E-04	8.44E-04	1.93E-04	8.44E-04	8.44E-04	1.93E-04	8.44E-04	8.44E-04
POM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	0.27	1.16	1.16	0.27	1.16	1.16	0.03	0.14	0.14	0.03	0.14	0.14	0.03	0.14	0.14
Vinyl Chloride	-	-	-	-	-	-	1.16E-03	5.07E-03	5.07E-03	1.16E-03	5.07E-03	5.07E-03	1.16E-03	5.07E-03	5.07E-03
Xylenes	0.13	0.57	0.57	0.13	0.57	0.57	0.02	0.07	0.06	0.02	0.07	0.06	0.02	0.07	0.06

Xcel Energy - Blue Lake - 13900010

Emissions by Source Table

	EQUI 26			EQUI 27			EQUI 28			EQUI 29			EQUI 43		
Pollutant Name	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**
PM	0.34	1.51	0.09	0.34	1.51	0.09	0.34	1.51	0.09	0.25	1.11	0.06	0.25	1.11	0.06
PM_{10}	0.39	1.70	0.10	0.39	1.70	0.10	0.39	1.70	0.10	0.29	1.25	0.07	0.29	1.25	0.07
$PM_{2.5}$	0.39	1.70	0.10	0.39	1.70	0.10	0.39	1.70	0.10	0.29	1.25	0.07	0.29	1.25	0.07
SO_2	0.01	0.05	2.89E-03	0.01	0.05	2.89E-03	0.01	0.05	2.89E-03	8.51E-03	0.04	2.13E-03	8.51E-03	0.04	2.13E-03
NO_X	11.01	48.23	2.75	11.01	48.23	2.75	11.01	48.23	2.75	8.10	35.50	2.03	8.10	35.50	2.03
VOC	0.68	3.00	0.17	0.68	3.00	0.17	0.68	3.00	0.17	0.50	2.21	0.13	0.50	2.21	0.13
CO	6.03	26.41	1.51	6.03	26.41	1.51	6.03	26.41	1.51	4.44	19.44	1.11	4.44	19.44	1.11
Total HAPs	8.04E-03	0.04		8.04E-03	0.04		8.04E-03	0.04		5.92E-03	0.03		5.92E-03	0.03	
CO_2	1,254	5,493	313.50	1,254	5,493	313.50	1,254	5,493	313.50	924.00	4,047	231.00	924.00	4,047	231.00
CH_4	0.05	0.22	0.01	0.05	0.22	0.01	0.05	0.22	0.01	0.04	0.16	9.26E-03	0.04	0.16	9.26E-03
N_2O	0.01	0.04	2.51E-03	0.01	0.04	2.51E-03	0.01	0.04	2.51E-03	7.41E-03	0.03	1.85E-03	7.41E-03	0.03	1.85E-03
CO_2e	1,258	5,511	314.56	1,258	5,511	314.56	1,258	5,511	314.56	927.13	4,061	231.78	927.13	4,061	231.78
1,3-Butadiene	9.88E-04	4.33E-03	2.47E-04	9.88E-04	4.33E-03	2.47E-04	9.88E-04	4.33E-03	2.47E-04	7.28E-04	3.19E-03	1.82E-04	7.28E-04	3.19E-03	1.82E-04
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2,4-Trimethylpentane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetaldehyde	1.92E-04	8.39E-04	8.39E-04	1.92E-04	8.39E-04	8.39E-04	1.92E-04	8.39E-04	8.39E-04	1.41E-04	6.18E-04	6.18E-04	1.41E-04	6.18E-04	6.18E-04
Acrolein	5.99E-05	2.62E-04	1.50E-05	5.99E-05	2.62E-04	1.50E-05	5.99E-05	2.62E-04	1.50E-05	4.41E-05	1.93E-04	1.10E-05	4.41E-05	1.93E-04	1.10E-05
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(e)pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylene Dibromide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Formaldehyde	6.00E-04	2.63E-03		6.00E-04	2.63E-03		6.00E-04	2.63E-03		4.42E-04	1.94E-03		4.42E-04	1.94E-03	
Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	9.88E-04	4.33E-03	2.47E-04	9.88E-04	4.33E-03	2.47E-04	9.88E-04	4.33E-03	2.47E-04	7.28E-04	3.19E-03	1.82E-04	7.28E-04	3.19E-03	1.82E-04
n-Hexane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propylene Oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perchloroethylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	2.14E-03	9.35E-03	5.34E-04	2.14E-03	9.35E-03	5.34E-04	2.14E-03	9.35E-03	5.34E-04	1.57E-03	6.89E-03	3.93E-04	1.57E-03	6.89E-03	3.93E-04
Vinyl Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes	1.47E-03	6.42E-03	3.67E-04	1.47E-03	6.42E-03	3.67E-04	1.47E-03	6.42E-03	3.67E-04	1.08E-03	4.73E-03	2.70E-04	1.08E-03	4.73E-03	2.70E-04

Xcel Energy - Blue Lake - 13900010

Emissions by Source Table

	EQUI 32			EQUI 33			IA 1			IA 2			IA 3		
Pollutant Name	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**	**lbs per Hr**	**tpy un-restricted**	**tpy limited**
PM	-	-	-	-	-	-	7.24	31.73	0.32	-	-	-	6.12E-04	2.68E-03	2.68E-03
PM_{10}	-	-	-	-	-	-	7.24	31.73	0.32	-	-	-	6.12E-04	2.68E-03	2.68E-03
$PM_{2.5}$	-	-	-	-	-	-	-	-	-	-	-	-	6.12E-04	2.68E-03	2.68E-03
SO_2	-	-	-	-	-	-	-	-	-	-	-	-	1.08E-06	4.71E-06	4.71E-06
NO_X	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.05	0.05
VOC	7.90E-03	0.03	0.03	7.90E-03	0.03	0.03	-	-	-	230.74	0.12	0.12	8.74E-04	3.83E-03	3.83E-03
CO	-	-	-	-	-	-	-	-	-	-	-	-	6.56E-03	0.03	0.03
Total HAPs	-	-	-	-	-	-	-	-	-	-	-	-	1.65E-03	7.23E-03	7.23E-03
CO_2	-	-	-	-	-	-	-	-	-	-	-	-	11.09	48.57	48.57
CH_4	-	-	-	-	-	-	-	-	-	-	-	-	5.29E-04	2.32E-03	2.32E-03
N_2O	-	-	-	-	-	-	-	-	-	-	-	-	1.06E-04	4.63E-04	4.63E-04
CO_2e	-	-	-	-	-	-	-	-	-	-	-	-	11.13	48.76	48.76
1,3-Butadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	3.77E-08	1.65E-07	1.65E-07
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2,4-Trimethylpentane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetaldehyde	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrolein	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	6.29E-09	2.75E-08	2.75E-08
Benzene	-	-	-	-	-	-	-	-	-	-	-	-	6.60E-08	2.89E-07	2.89E-07
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(e)pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	3.77E-10	1.65E-09	1.65E-09
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	3.46E-08	1.52E-07	1.52E-07
Carbon Tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-	-	4.40E-08	1.93E-07	1.93E-07
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	2.64E-09	1.16E-08	1.16E-08
Ethylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylene Dibromide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Formaldehyde	-	-	-	-	-	-	-	-	-	-	-	-	2.36E-06	1.03E-05	1.03E-05
Lead	-	-	-	-	-	-	-	-	-	-	-	-	4.37E-06	1.91E-05	1.91E-05
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	1.20E-08	5.23E-08	5.23E-08
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	8.18E-09	3.58E-08	3.58E-08
Methanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	1.92E-08	8.40E-08	8.40E-08
n-Hexane	-	-	-	-	-	-	-	-	-	-	-	-	5.66E-05	2.48E-04	2.48E-04
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	6.60E-08	2.89E-07	2.89E-07
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propylene Oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-	-	7.55E-10	3.31E-09	3.31E-09
Styrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perchloroethylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POM	-	-	-	-	-	-	-	-	-	-	-	-	2.20E-08	9.62E-08	9.62E-08
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	1.07E-07	4.68E-07	4.68E-07
Vinyl Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Xcel Energy - Blue Lake - 13900010

Emissions by Source Table

	IA 4			IA7			COMG 2 -CO limit			COMG 5 HAP Pre-CAP			Total W/ IAs			Total W/O IAs		
Pollutant Name	lbs per Hr	tpy un-restricted	tpy limited	lbs per Hr	tpy un-restricted	tpy limited	lbs per Hr	tpy un-restricted	tpy limited	lbs per Hr	tpy un-restricted	tpy limited	Potential (lbs/hr)	Unrestricted	Limited	Potential (lbs/hr)	Unrestricted	Limited
PM	9.56E-04	4.19E-03	4.19E-03	-	-	-							50.36	603.35	184.50	43.12	571.61	184.17
PM_{10}	9.56E-04	4.19E-03	4.19E-03	-	-	-							50.56	604.19	184.54	43.31	572.45	184.22
$PM_{2.5}$	9.56E-04	4.19E-03	4.19E-03	-	-	-							43.31	572.46	184.23	43.31	572.45	184.22
SO_2	1.68E-06	7.36E-06	7.36E-06	-	-	-							3.07	13.44	11.91	3.07	13.44	11.91
NO_X	0.02	0.08	0.08	-	-	-							233.72	7,062	863.83	233.70	7,062	863.70
VOC	1.37E-03	5.98E-03	5.98E-03	0.01	0.05	0.05							267.23	10,773	212.60	36.47	10,773	212.35
CO	0.01	0.04	0.04	-	-	-			310.80				116.97	8,028	67.06	116.95	8,028	377.79
Total HAPs	2.58E-03	0.01	0.01	-	-	-						22.50	19.95	87.37	22.54	19.94	87.35	22.52
CO_2	17.33	75.89	75.89	-	-	-							504,766	2,210,874	2,186,964	504,737	2,210,750	2,186,840
CH_4	8.27E-04	3.62E-03	3.62E-03	-	-	-							36.94	161.81	160.85	36.94	161.80	160.84
N_2O	1.65E-04	7.24E-04	7.24E-04	-	-	-							1.11	4.84	4.65	1.10	4.84	4.65
CO_2e	17.40	76.19	76.19	-	-	-							506,019	2,216,362	2,192,371	505,990	2,216,237	2,192,246
1,3-Butadiene	-	-	-	-	-	-							0.07	0.30	0.28	0.07	0.30	0.28
1,1,2,2-Tetrachloroethane	5.90E-08	2.58E-07	2.58E-07	-	-	-							9.32E-03	0.04	0.04	9.32E-03	0.04	0.04
1,1,2-Trichloroethane	-	-	-	-	-	-							7.41E-03	0.03	0.03	7.41E-03	0.03	0.03
1,3-Dichloropropene	-	-	-	-	-	-							6.15E-03	0.03	0.03	6.15E-03	0.03	0.03
2-Methylnaphthalene	-	-	-	-	-	-							7.74E-03	0.03	0.03	7.74E-03	0.03	0.03
2,2,4-Trimethylpentane	-	-	-	-	-	-							0.06	0.26	0.26	0.06	0.26	0.26
Acenaphthene	-	-	-	-	-	-							2.91E-04	1.28E-03	1.28E-03	2.91E-04	1.28E-03	1.28E-03
Acenaphthylene	-	-	-	-	-	-							1.29E-03	5.65E-03	5.65E-03	1.29E-03	5.65E-03	5.65E-03
Acetaldehyde	-	-	-	-	-	-							2.11	9.26	9.26	2.11	9.26	9.26
Acrolein	-	-	-	-	-	-							1.23	5.37	5.36	1.23	5.37	5.36
Arsenic	9.83E-09	4.30E-08	4.30E-08	-	-	-							1.61E-08	7.06E-08	7.06E-08	0.00E+00	0.00E+00	0.00E+00
Benzene	1.03E-07	4.52E-07	4.52E-07	-	-	-							0.24	1.03	0.99	0.24	1.03	0.99
Benzo(b)fluoranthene	-	-	-	-	-	-							3.87E-05	1.69E-04	1.69E-04	3.87E-05	1.69E-04	1.69E-04
Benzo(e)pyrene	-	-	-	-	-	-							9.67E-05	4.24E-04	4.24E-04	9.67E-05	4.24E-04	4.24E-04
Benzo(g,h,i)perylene	-	-	-	-	-	-							9.65E-05	4.23E-04	4.23E-04	9.65E-05	4.23E-04	4.23E-04
Beryllium	5.90E-10	2.58E-09	2.58E-09	-	-	-							9.67E-10	4.24E-09	4.24E-09	0.00E+00	0.00E+00	0.00E+00
Cadmium	5.41E-08	2.37E-07	2.37E-07	-	-	-							8.86E-08	3.88E-07	3.88E-07	0.00E+00	0.00E+00	0.00E+00
Carbon Tetrachloride	-	-	-	-	-	-							8.55E-03	0.04	0.04	8.55E-03	0.04	0.04
Chlorobenzene	-	-	-	-	-	-							7.09E-03	0.03	0.03	7.09E-03	0.03	0.03
Chloroform	-	-	-	-	-	-							6.64E-03	0.03	0.03	6.64E-03	0.03	0.03
Chrysene	-	-	-	-	-	-							1.62E-04	7.08E-04	7.08E-04	1.62E-04	7.08E-04	7.08E-04
Chromium	6.88E-08	3.01E-07	3.01E-07	-	-	-							1.13E-07	4.94E-07	4.94E-07	0.00E+00	0.00E+00	0.00E+00
Cobalt	4.13E-09	1.81E-08	1.81E-08	-	-	-							6.77E-09	2.97E-08	2.97E-08	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene	-	-	-	-	-	-							0.14	0.61	0.61	0.14	0.61	0.61
Ethylene Dibromide	-	-	-	-	-	-							0.01	0.05	0.05	0.01	0.05	0.05
Fluoranthene	-	-	-	-	-	-							2.59E-04	1.13E-03	1.13E-03	2.59E-04	1.13E-03	1.13E-03
Fluorene	-	-	-	-	-	-							1.32E-03	5.79E-03	5.79E-03	1.32E-03	5.79E-03	5.79E-03
Formaldehyde	3.69E-06	1.61E-05	1.61E-05	-	-	-						9.00	13.95	61.08	9.00	13.95	61.08	9.00
Lead	6.83E-06	2.99E-05	2.99E-05	-	-	-							1.12E-05	4.91E-05	4.91E-05	0.00E+00	0.00E+00	0.00E+00
Manganese	1.87E-08	8.18E-08	8.18E-08	-	-	-							3.06E-08	1.34E-07	1.34E-07	0.00E+00	0.00E+00	0.00E+00
Mercury	1.28E-08	5.60E-08	5.60E-08	-	-	-							2.10E-08	9.18E-08	9.18E-08	0.00E+00	0.00E+00	0.00E+00
Methanol	-	-	-	-	-	-							0.58	2.55	2.55	0.58	2.55	2.55
Methylene Chloride	-	-	-	-	-	-							4.66E-03	0.02	0.02	4.66E-03	0.02	0.02
Naphthalene	3.00E-08	1.31E-07	1.31E-07	-	-	-							0.04	0.18	0.15	0.04	0.18	0.15
n-Hexane	8.85E-05	3.87E-04	3.87E-04	-	-	-							0.26	1.13	1.13	0.26	1.13	1.13
Nickel	1.03E-07	4.52E-07	4.52E-07	-	-	-							1.69E-07	7.41E-07	7.41E-07	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	-	-	-	-	-	-							2.42E-03	0.01	0.01	2.42E-03	0.01	0.01
Phenol	-	-	-	-	-	-							5.59E-03	0.02	0.02	5.59E-03	0.02	0.02
Propylene Oxide	-	-	-	-	-	-							0.12	0.52	0.52	0.12	0.52	0.52
Pyrene	-	-	-	-	-	-							3.17E-04	1.39E-03	1.39E-03	3.17E-04	1.39E-03	1.39E-03
Selenium	1.18E-09	5.17E-09	5.17E-09	-	-	-							1.93E-09	8.47E-09	8.47E-09	0.00E+00	0.00E+00	0.00E+00
Styrene	-	-	-	-	-	-							5.50E-03	0.02	0.02	5.50E-03	0.02	0.02
Perchloroethylene	-	-	-	-	-	-							5.78E-04	2.53E-03	2.53E-03	5.78E-04	2.53E-03	2.53E-03
POM	3.43E-08	1.50E-07	1.50E-07	-	-	-							5.63E-08	2.46E-07	2.46E-07	0.00E+00	0.00E+00	0.00E+00
Toluene	1.67E-07	7.32E-07	7.32E-07	-	-	-							0.64	2.79	2.74	0.64	2.79	2.74
Vinyl Chloride	-	-	-	-	-	-							3.47E-03	0.02	0.02	3.47E-03	0.02	0.02
Xylenes	-	-	-	-	-	-							0.31	1.38	1.34	0.31	1.38	1.34

Xcel Energy - Blue Lake
Emergency Engine/Generator
EQUI 5

Unit Information		
Description:	EEG 1	
Unit ID:	EQUI 5	
Stack ID:	STRU 14	
Control Equipment ID:	None	
Fuel	Fuel Oil	
Heat Input Capacity	1.1	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited	500	hours/yr

Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
PM	0.31	-	0.34	1.49	0.09	AP-42 Table 3.3-1, Uncontrolled
PM_{10}	0.31	-	0.34	1.49	0.09	Assumed equal to PM
$PM_{2.5}$	0.31	-	0.34	1.49	0.09	Assumed equal to PM
SO_2	0.29	-	0.32	1.40	0.08	AP-42 Table 3.3-1, Uncontrolled
NO_x	4.41	-	4.85	21.25	1.21	AP-42 Table 3.3-1, Uncontrolled
VOC	0.35	-	0.39	1.69	0.10	AP-42 Table 3.3-1, Uncontrolled
CO	0.95	-	1.05	4.58	0.26	AP-42 Table 3.3-1, Uncontrolled
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
1,3-Butadiene	3.91E-05	-	4.30E-05	1.88E-04	1.08E-05	AP-42 Table 3.1-4, Uncontrolled
Acetaldehyde	7.67E-04	-	8.44E-04	3.70E-03	2.11E-04	AP-42 Table 3.1-4, Uncontrolled
Acrolein	9.25E-04	-	1.02E-03	4.46E-03	2.54E-04	AP-42 Table 3.1-4, Uncontrolled
Benzene	9.33E-04	-	1.03E-03	4.50E-03	2.57E-04	AP-42 Table 3.1-4, Uncontrolled
Formaldehyde	1.18E-03	-	1.30E-03	0.01	3.25E-04	AP-42 Table 3.1-4, Uncontrolled
Total PAH	1.68E-04	-	1.85E-04	8.09E-04	4.62E-05	AP-42 Table 3.1-5, Uncontrolled
Toluene	4.09E-04	-	4.50E-04	1.97E-03	1.12E-04	AP-42 Table 3.1-5, Uncontrolled
Xylenes	2.85E-04	-	3.14E-04	1.37E-03	7.84E-05	AP-42 Table 3.1-5, Uncontrolled
Total HAPs	**-**	**-**	**0.01**	**0.02**	**1.29E-03**	

Greenhouse Gas Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	163.05	-	179.36	785.59	44.84	40 CFR 98, Subpart C, Table C-1	1
CH_4	0.01	-	0.01	0.03	1.82E-03	40 CFR 98, Subpart C, Table C-2	25
N_2O	1.32E-03	-	1.46E-03	0.01	3.64E-04	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	179.97	788.29	44.99	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Combustion Turbine 7
EQUI 7

Unit Information		
Description:	CT 7	
Unit ID:	EQUI 7	
Stack ID:	STRU 12	
Control Equipment ID:	None	
Fuel	Natural Gas	
Heat Input Capacity	2,042.4	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC)	8,599	hours/yr

Worste Case Scenario Information for Potential to Emit

Worst case annual emissions for NOx, CO and VOC are reported as the sum of the Normal Operating emissions and the SUSDEM emissions. The lb/mmbtu and lb/hr are based on Normal Operation only. All other pollutants have the same hourly and annual emission rates for normal operation and SUSDEM.

Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.01	-	13.48	59.04	59.04	AP-42 Table 3.1-2a
PM_{10}	0.01	-	13.48	59.04	59.04	Assumed equal to PM
$PM_{2.5}$	0.01	-	13.48	59.04	59.04	Assumed equal to PM
SO_2	5.71E-04	-	1.17	5.11	5.11	AP-42 Table 1.4-2; only sulfur due to added mercaptan
NO_x	0.04	-	73.51	2,175.13	330.10	Maximum measured NOx from Stack Test; Annual includes SUSDEM
VOC	4.91E-03	-	10.03	5,265.87	76.72	Calculated from BACT ppm concentrations; Annual includes SUSDEM
CO	0.02	-	38.80	3,655.19	196.29	Maximum measured CO from Stack Tests; Annual includes SUSDEM
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	
1,3-Butadiene	4.30E-07	-	8.78E-04	3.85E-03	3.85E-03	AP-42 Table 3.1-3, Uncontrolled	
Acetaldehyde	4.00E-05	-	0.08	0.36	0.36	AP-42 Table 3.1-3, Uncontrolled	
Acrolein	6.40E-06	-	0.01	0.06	0.06	AP-42 Table 3.1-3, Uncontrolled	
Benzene	1.20E-05	-	0.02	0.11	0.11	AP-42 Table 3.1-3, Uncontrolled	
Ethylbenzene	3.20E-05	-	0.07	0.29	0.29	AP-42 Table 3.1-3, Uncontrolled	
Formaldehyde	4.00E-04	-	0.82	3.58	3.58	Like kind unit stack test	
Naphthalene	1.30E-06	-	2.66E-03	0.01	0.01	AP-42 Table 3.1-3, Uncontrolled	
Total PAH	2.20E-06	-	4.49E-03	0.02	0.02	AP-42 Table 3.1-3, Uncontrolled	
Propylene Oxide	2.90E-05	-	0.06	0.26	0.26	AP-42 Table 3.1-3, Uncontrolled	
Toluene	1.30E-04	-	0.27	1.16	1.16	AP-42 Table 3.1-3, Uncontrolled	
Xylenes	6.40E-05	-	0.13	0.57	0.57	AP-42 Table 3.1-3, Uncontrolled	
Total HAPs	-	-	1.47	6.42	6.42		

Greenhouse Gas Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	110.00	-	224,664.00	984,028.32	984,028.32	AP-42 Table 3.1-2a	1.00
CH_4	0.01	-	17.56	76.93	76.93	AP-42 Table 3.1-2a	25.00
N_2O	2.20E-04	-	0.45	1.97	1.97	40 CFR 98, Subpart C, Table C-2	298.00
CO_2e	-	-	225,237.30	986,539.36	986,539.36	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Combustion Turbine 7
EQUI 7

Unit Information		
Description:	CT 7	
Unit ID:	EQUI 7	
Stack ID:	STRU 12	
Control Equipment ID:	None	
Fuel	Natural Gas	
Heat Input Capacity	2,042.4	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC)	8,599	hours/yr

Criteria Pollutant Emissions - Normal Operation

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.01	-	13.48	59.04	59.04	BACT limit at 0.0066lb/MMBtu approved in permit 13900010-105
PM_{10}	0.01	-	13.48	59.04	59.04	BACT limit at 0.0066lb/MMBtu approved in permit 13900010-105
$PM_{2.5}$	0.01	-	13.48	59.04	59.04	BACT limit at 0.0066lb/MMBtu approved in permit 13900010-105
SO_2	5.71E-04	-	1.17	5.11	5.11	AP-42 Table 1.4-2; only sulfur due to added mercaptan
NO_x	0.04	-	73.51	321.98	316.05	BACT and model limit approbed in permit 13900010-105
VOC	4.91E-03	-	10.03	43.93	43.12	Calculated from BACT ppm concentrations limit approved in permit 13900010-105
CO	0.02	-	38.80	169.94	166.81	BACT limit approbed in permit 13900010-105
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	
1,3-Butadiene	4.30E-07	-	8.78E-04	3.85E-03	3.85E-03	AP-42 Table 3.1-3, Uncontrolled	
Acetaldehyde	4.00E-05	-	0.08	0.36	0.36	AP-42 Table 3.1-3, Uncontrolled	
Acrolein	6.40E-06	-	0.01	0.06	0.06	AP-42 Table 3.1-3, Uncontrolled	
Benzene	1.20E-05	-	0.02	0.11	0.11	AP-42 Table 3.1-3, Uncontrolled	
Ethylbenzene	3.20E-05	-	0.07	0.29	0.29	AP-42 Table 3.1-3, Uncontrolled	
Formaldehyde	4.00E-04	-	0.82	3.58	3.58	Like kind unit stack test	
Naphthalene	1.30E-06	-	2.66E-03	0.01	0.01	AP-42 Table 3.1-3, Uncontrolled	
Total PAH	2.20E-06	-	4.49E-03	0.02	0.02	AP-42 Table 3.1-3, Uncontrolled	
Propylene Oxide	2.90E-05	-	0.06	0.26	0.26	AP-42 Table 3.1-3, Uncontrolled	
Toluene	1.30E-04	-	0.27	1.16	1.16	AP-42 Table 3.1-3, Uncontrolled	
Xylenes	6.40E-05	-	0.13	0.57	0.57	AP-42 Table 3.1-3, Uncontrolled	
Total HAPs	**-**	**-**	**1.47**	**6.42**	**6.42**		

Greenhouse Gas Emissions - Normal Operation

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	110.00	-	224,664.00	984,028.32	984,028.32	AP-42 Table 3.1-2a	1
CH_4	0.01	-	17.56	76.93	76.93	AP-42 Table 3.1-2a	25
N_2O	2.20E-04	-	0.45	1.97	1.97	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	225,237.30	986,539.36	986,539.36	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Combustion Turbine 7
EQUI 7

Unit Information					
Description:	CT 7		**Startup Event Duration**	23	minutes/startup
Unit ID:	EQUI 7				
Stack ID:	STRU 12		**Shutdown Event Duration**	11	minutes/shutdown
Control Equipment ID:	None				
Fuel	Natural Gas		**Combined SUSD Event Duration**	34	minutes/SUSD event
Heat Input Capacity	2,042.4	MMBtu/hr			
Max Number of Startup/shutdown	200	SUSD events/yr	**Unlimited Hours**	8,760	hr/yr
Max hours Emergency	48.00	hours/yr			

Criteria Pollutant Emissions - SUSD						
Pollutant	**Emission Factor (lb/SUSD Event)**	**Control Efficiency**	**Emission Rate (lb/hr)**	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions [1] (tpy)**	**Reference**
NO_x	67.61	-	119.31	522.58	6.76	average lb/hr from 40% to 0% load * shutdown duration + average lb/hr 0% to 40% load * startup duration; emission data from turbine manufacturer
CO	180.07	-	317.76	1,391.81	18.01	average lb/hr from 40% to 0% load * shutdown duration + average lb/hr 0% to 40% load * startup duration; emission data from turbine manufacturer
VOC	86.42	-	152.50	667.95	8.64	average lb/hr from 40% to 0% load * shutdown duration + average lb/hr 0% to 40% load * startup duration; emission data from turbine manufacturer

Criteria Pollutant Emissions - Emergency						
Pollutant	**Emission Factor (lb/hr)**	**Control Efficiency**	**Emission Rate (lb/hr)**	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions [1] (tpy)**	**Reference**
NO_x	303.78	-	303.78	1,330.57	7.29	Maximum calculated lb/hr; emission data from manufactuer
CO	477.95	-	477.95	2,093.43	11.47	Average for 5% - 20% load; emission data from turbine manufacturer
VOC	1,039.72	-	1,039.72	4,553.99	24.95	Maximum calculated lb/hr; emission data from manufactuer

Criteria Pollutant Emissions - Annual SUSD and EM Max			
Pollutant	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**
NO_x	1,853.15	14.05	Combined annual emissions from SUSD and Em operation
CO	3,485.24	29.48	Combined annual emissions from SUSD and Em operation
VOC	5,221.94	33.60	Combined annual emissions from SUSD and Em operation

Footote

[1.] The limited controlled emissions expressed in TPY for startup/shutdown (SU/SD) and emergency operations constitute the enforceable limits currently authorized under Permit No. 139000 105.

Xcel Energy - Blue Lake
Combustion Turbine 8
EQUI 8

Unit Information		
Description:	CT 8	
Unit ID:	EQUI 8	
Stack ID:	STRU 13	
Control Equipment ID:	None	
Fuel	Natural Gas	
Heat Input Capacity	2,042.4	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC)	8,599	hours/yr

Worste Case Scenario Information for Potential to Emit

Worst case annual emissions for NOx, CO and VOC are reported as the sum of the Normal Operating emissions and the SUSDEM emissions. The lb/mmbtu and lb/hr are based on Normal Operation only. All other pollutants have the same hourly and annual emission rates for normal operation and SUSDEM.

Criteria Pollutant Emissions - Normal Operation

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.01	-	13.48	59.04	59.04	AP-42 Table 3.1-2a
PM_{10}	0.01	-	13.48	59.04	59.04	Assumed equal to PM
$PM_{2.5}$	0.01	-	13.48	59.04	59.04	Assumed equal to PM
SO_2	5.71E-04	-	1.17	5.11	5.11	AP-42 Table 1.4-2; only sulfur due to added mercaptan
NO_x	0.04	-	73.51	2,175.13	330.10	Maximum measured NOx from Stack Test; Annual includes SUSDEM
VOC	4.90E-03	-	10.00	5,265.74	76.59	Calculated from BACT ppm concentrations; Annual includes SUSDEM
CO	0.02	-	38.80	3,655.18	196.28	Maximum measured CO from Stack Tests; Annual includes SUSDEM
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,3-Butadiene	4.30E-07	-	8.78E-04	3.85E-03	3.85E-03	AP-42 Table 3.1-3, Uncontrolled
Acetaldehyde	4.00E-05	-	0.08	0.36	0.36	AP-42 Table 3.1-3, Uncontrolled
Acrolein	6.40E-06	-	0.01	0.06	0.06	AP-42 Table 3.1-3, Uncontrolled
Benzene	1.20E-05	-	0.02	0.11	0.11	AP-42 Table 3.1-3, Uncontrolled
Ethylbenzene	3.20E-05	-	0.07	0.29	0.29	AP-42 Table 3.1-3, Uncontrolled
Formaldehyde	4.00E-04	-	0.82	3.58	3.58	Like kind unit stack test
Naphthalene	1.30E-06	-	2.66E-03	0.01	0.01	AP-42 Table 3.1-3, Uncontrolled
Total PAH	2.20E-06	-	4.49E-03	0.02	0.02	AP-42 Table 3.1-3, Uncontrolled
Propylene Oxide	2.90E-05	-	0.06	0.26	0.26	AP-42 Table 3.1-3, Uncontrolled
Toluene	1.30E-04	-	0.27	1.16	1.16	AP-42 Table 3.1-3, Uncontrolled
Xylenes	6.40E-05	-	0.13	0.57	0.57	AP-42 Table 3.1-3, Uncontrolled
Total HAPs	-	-	1.47	6.42	6.42	

Greenhouse Gas Emissions - Normal Operation

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	110.00	-	224,664.00	984,028.32	984,028.32	AP-42 Table 3.1-2a	1.00
CH_4	0.01	-	17.56	76.93	76.93	AP-42 Table 3.1-2a	25.00
N_2O	2.20E-04	-	0.45	1.97	1.97	40 CFR 98, Subpart C, Table C-2	298.00
CO_2e	-	-	225,237.30	986,539.36	986,539.36	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Combustion Turbine 8
EQUI 8

Unit Information		
Description:	CT 8	
Unit ID:	EQUI 8	
Stack ID:	STRU 13	
Control Equipment ID:	None	
Fuel	Natural Gas	
Heat Input Capacity	2,042.4	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC)	8,599	hours/yr

Criteria Pollutant Emissions - Normal Operation

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.01	-	13.48	59.04	59.04	BACT limit at 0.0066lb/MMBtu approved in permit 13900010-105
PM_{10}	0.01	-	13.48	59.04	59.04	BACT limit at 0.0066lb/MMBtu approved in permit 13900010-105
$PM_{2.5}$	0.01	-	13.48	59.04	59.04	BACT limit at 0.0066lb/MMBtu approved in permit 13900010-105
SO_2	5.71E-04	-	1.17	5.11	5.11	AP-42 Table 1.4-2; only sulfur due to added mercaptan
NO_x	0.04	-	73.51	321.98	316.05	BACT and model limit approbed in permit 13900010-105
VOC	4.90E-03	-	10.00	43.80	42.99	Calculated from BACT ppm concentrations limit approved in permit
CO	0.02	-	38.80	169.94	166.81	BACT limit approbed in permit 13900010-105
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,3-Butadiene	4.30E-07	-	8.78E-04	3.85E-03	3.85E-03	AP-42 Table 3.1-3, Uncontrolled
Acetaldehyde	4.00E-05	-	0.08	0.36	0.36	AP-42 Table 3.1-3, Uncontrolled
Acrolein	6.40E-06	-	0.01	0.06	0.06	AP-42 Table 3.1-3, Uncontrolled
Benzene	1.20E-05	-	0.02	0.11	0.11	AP-42 Table 3.1-3, Uncontrolled
Ethylbenzene	3.20E-05	-	0.07	0.29	0.29	AP-42 Table 3.1-3, Uncontrolled
Formaldehyde	4.00E-04	-	0.82	3.58	3.58	Like kind unit stack test
Naphthalene	1.30E-06	-	2.66E-03	0.01	0.01	AP-42 Table 3.1-3, Uncontrolled
Total PAH	2.20E-06	-	4.49E-03	0.02	0.02	AP-42 Table 3.1-3, Uncontrolled
Propylene Oxide	2.90E-05	-	0.06	0.26	0.26	AP-42 Table 3.1-3, Uncontrolled
Toluene	1.30E-04	-	0.27	1.16	1.16	AP-42 Table 3.1-3, Uncontrolled
Xylenes	6.40E-05	-	0.13	0.57	0.57	AP-42 Table 3.1-3, Uncontrolled
Total HAPs	**-**	**-**	**1.47**	**6.42**	**6.42**	

Greenhouse Gas Emissions - Normal Operation

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	110.00	-	224,664.00	984,028.32	984,028.32	AP-42 Table 3.1-2a	1
CH_4	0.01	-	17.56	76.93	76.93	AP-42 Table 3.1-2a	25
N_2O	2.20E-04	-	0.45	1.97	1.97	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	225,237.30	986,539.36	986,539.36	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Combustion Turbine
EQUI 8

Unit Information				
Description:	CT 8		Startup Event Duration	23
Unit ID:	EQUI 8			
Stack ID:	STRU 13		Shutdown Event Duration	11
Control Equipment ID:	None			
Fuel	Natural Gas		Combined SUSD Event Duration	34
Heat Input Capacity	2,042.4	MMBtu/hr		
Max hours SUSD	200	SUSD events/yr	Unlimited Hours	8,760
Max hours EM	48.00	hours/yr		

Criteria Pollutant Emissions - SUSD					
Pollutant	Emission Factor (lb/SUSD Event)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions [1] (tpy)
NO_x	67.61	-	119.31	522.58	6.76
CO	180.07	-	317.76	1,391.81	18.01
VOC	86.42	-	152.50	667.95	8.64

Criteria Pollutant Emissions - Emergency					
Pollutant	Emission Factor (lb/hr)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions [1] (tpy)
NO_x	303.78	-	303.78	1,330.57	7.29
CO	477.95	-	477.95	2,093.43	11.47
VOC	1,039.72	-	1,039.72	4,553.99	24.95

Criteria Pollutant Emissions - Annual SUSD and EM Max			
Pollutant	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
NO_x	1,853.15	14.05	Combined annual emissions from SUSD and Em operation
CO	3,485.24	29.48	Combined annual emissions from SUSD and Em operation
VOC	5,221.94	33.60	Combined annual emissions from SUSD and Em operation

[1.] The limited controlled emissions expressed in TPY for startup/shutdown (SU/SD) and emergency operations const 13900010-105.

minutes/startup
minutes/shutdown
minutes/SUSD event
hr/yr

Reference
average lb/hr from 40% to 0% load * shutdown duration + average lb/hr 0% to 40% load * startup duration; emission data from turbine manufacturer
average lb/hr from 40% to 0% load * shutdown duration + average lb/hr 0% to 40% load * startup duration; emission data from turbine manufacturer
average lb/hr from 40% to 0% load * shutdown duration + average lb/hr 0% to 40% load * startup duration; emission data from turbine manufacturer

Reference
Maximum calculated lb/hr; emission data from manufactuer
Average for 5% - 20% load; emission data from turbine manufacturer
Maximum calculated lb/hr; emission data from manufactuer

:itute the enforceable limits currently authorized under Permit No.

Xcel Blue Lake
Turbine SU/SD/Emergency Estimates

BLL Turbine Exhaust flow 2388000
Assumed O2 concentration 14%
Moisture % 8.1

Airflow		Turbine 7/8 Temp 2020	airflow	GE 7FA.05 Gas Turbine Estimated Emissions vs. Gas Turbine Load						
				Load	GT Nox	GT CO	GT VOC	GT Nox	GT CO	GT VOC
acfm	dacfm	F	dscfm	%	ppmvd 15% O2	ppmvd	ppmvd	ppm raw	ppm raw	ppm raw
23880	21946	600	10931	0	127	917	370	127	917	370
119400	109729	600	54657	5	157	887	205	157	887	205
238800	219457	600	109315	10	193	808	122	193	808	122
358200	329186	806	137264	15	122	455	124	122	455	124
477600	438914	1075	150946	20	49	1580	947	49	1581	948
597000	548643	1075	188682	25	9	743	48	9	743	48
716400	658372	1075	226418	30	9	200	9	9	200	9
835800	768100	1075	264155	35	9	60	2	9	60	2
955200	877829	1075	301891	40	9	19	1.4	9	19	1
1074600	987557	1204	313419	45	9	9	1.4	9	9	1
1194000	1097286	1192	350602	50	9	9	1.4	9	9	1
1313400	1207015	1192	385662	55	9	9	1.4	9	9	1
1432800	1316743	1192	420722	60	9	9	1.4	9	9	1
1552200	1426472	1181	458891	65	9	9	1.4	9	9	1
1671600	1536200	1163	499916	70	9	9	1.4	9	9	1
1791000	1645929	1163	535624	75	9	9	1.4	9	9	1
1910400	1755658	1163	571333	80	9	9	1.4	9	9	1
2029800	1865386	1144	614157	85	9	9	1.4	9	9	1
2149200	1975115	1123	658996	90	9	9	1.4	9	9	1
2268600	2084843	1123	695607	95	9	9	1.4	9	9	1
2388000	2194572	1101	742160	100	9	9	1.4	9	9	1

From 2020 Stack test reports

Test	Unit 7 load MW	Avg. MW	Temp F	Avg. F	Unit 8 Load MW	Avg. MW	Temp F	Avg
	173.4		1093.1		80		1206.8	
	172.5		1097.3		80		1205.6	
1	172.0	172.6	1100.3	1096.9	81	80.3	1206.1	1206.2
	144.5		1137.1		112		1179.1	
	144.7		1137.7		113		1180.5	
2	144.4	144.5	1142.6	1139.1	112	112.3	1184.8	1181.5
	112.3		1181.1		145		1148.2	
	112.2		1181.1		145		1148.7	
3	112.2	112.2	1181.2	1181.1	144	144.7	1147.9	1148.3
	80.3		1201.3		173		1100.7	
	80.1		1200.8		171		1104.7	
4	80.1	80.2	1201.5	1201.2	170	171.3	1111.7	1105.7

Assumed full load 174 MW

	Unit 7	
Test	Load %	Temp F
1	99%	1096.9
2	83%	1139.1
3	65%	1181.1
4	46%	1201.2

Unit 8	
Load %	Temp F
46%	1206.2
65%	1181.5
83%	1148.3
98%	1105.7

Nominal Load %	Avg. Temp
100	1101.3
85	1143.7
65	1181.3
45	1203.7

In 2015 tested at 40 MW

Unit 7			Unit 8			
Load MW	%	Avg Temp	Load MW	%	Avg Temp	Avg T 7/8
40	23%	1097.6	40	23%	1053.0	1075.3

acfm
>>> See RATA test

Molecular weights (lb/lbmole)
46 28.01 16.04

SU Timeline: 23 minutes SD Timeline: 11 minutes

GE Original Estimate LB/HR			BLUE LAKE LB/HR ESTIMATE		
GT NOx Flowrate lb/hr	GT CO Flowrate lb/hr	GT VOC Flowrate lb/hr	GT NOx Flowrate lb/hr	GT CO Flowrate lb/hr	GT VOC Flowrate lb/hr
195	1538	419	20	44	20
314	1747	231	124	212	56
468	1584	137	304	386	67
343	888	138	288	273	102
157	3067	1052	154	1042	1040
32	1478	55	35	612	67
34	421	10	42	198	14
37	134	2	50	69	4
40	44	1.9	57	25	3
43	22	1.9	64	12	3
47	22	1.9	71	14	4
50	23	2.0	78	15	4
53	23	2.1	85	17	5
56	25	2.2	92	18	5
58	26	2.3	99	20	5
61	27	2.4	106	21	6
64	29	2.6	113	22	6
67	30	2.7	120	24	7
70	32	2.8	127	26	7
74	34	3.0	135	27	7
79	34	3.0	142	29	8

SU (lb/event)		
NOx	CO	VOC
45.74	121.81	58.46

SU (lb/hr version)		
119	318	153

Emergency (lb/hr)		
303.8	478.0	1039.7

Emergency TPY		
7.3	6.7	25.0

Riverside Limits (lb/hr)		
112.2	685.3	101

SU/SDs per Year		
200	200	200

SU/SD TPY		
NOx	CO	VOC
13.52	36.01	17.28

Emergency TPY		
NOx	CO	VOC
14.58	22.94	49.91

Combined SU/SD/EM TPY		
NOx	CO	VOC
28.10	58.96	67.19

SU/SD/Em Total Hours		
SU/SD	BS	Total
113.33	48.00	161.33

Annual Emision Calculations (per turbine)

	NOx	CO	VOC
Annual SU/SD/EM Emissions (TPY)	14.05	29.48	33.60

SD (lb/event)		
NOx	CO	VOC
21.87	58.26	27.96

SD (lb/hr version)		
119	318	153

>>>Average lb/hr to 40% load

lb/hr CO
5%-20%
478

>>> Average calculated lb/hr

>>> for comparison purposes only

23 minute startup and 11 minute shutdown

48 hours total per year

Per turbine

NOx	CO	VOC
6.76	18.01	8.64

Per turbine

NOx	CO	VOC
7.29	11.47	24.95

Per turbine

NOx	CO	VOC
14.05	29.48	33.60

Interpolation of low load temperatures

	0	0
	1075	20
slope	53.75	1075

Minimum temperature is 600 F
If calculated temp <600 use 600.

Xcel Energy - Blue Lake
Engine Generator 1
EQUI 23

Unit Information		
Description:	EG 1	
Unit ID:	EQUI 23	
Stack ID:	STRU 24	
Control Equipment ID:	SCR & OxCat	
Fuel	Dual Fuel	PNG & Diesel
Heat Input Diesel	79.6	MMBtu/hr
Heat Input PNG	77.7	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC, PM)	8,350	hours/yr

Worste Case Scenario Information for Potential to Emit

Worst case annual emissions for NOx, CO, VOC and PM are reported as the sum of the Normal Operating emissions and the SUSDEM emissions. The lb/mmbtu and lb/hr are based on Normal Operation only. All other pollutants have the same hourly and annual emission rates for normal operation and SUSDEM.

Criteria Pollutant Emissions - Worst Case

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	148.42	21.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	148.42	21.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	148.42	21.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	824.95	63.32	BACT Engine Specification
VOC	0.05	-	4.33	75.32	19.40	BACT Engine Specification
CO	0.05	-	3.78	198.40	20.00	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Worst Case						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05	-	2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07	-	5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Ethylene Dibromide	4.43E-05	-	3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled
Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06	-	1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06	-	1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	-	-	5.66	24.78	24.76	

Greenhouse Gas Emissions - Worst Case							
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Engine Generator 1
EQUI 23

Unit Information		
Description:	EG 1	
Unit ID:	EQUI 23	
Stack ID:	STRU 24	
Control Equipment ID:	SCR & OxCat	
Fuel	Dual Fuel	PNG & Diesel
Heat Input Diesel	79.6	MMBtu/hr
Heat Input PNG	77.7	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC, PM)	8,350	hours/yr

Criteria Pollutant Emissions - Normal Operation (Maximum)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	20.84	19.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	20.84	19.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	20.84	19.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	47.57	45.34	BACT Engine Specification
VOC	0.05	-	4.33	18.97	18.08	BACT Engine Specification
CO	0.05	-	3.78	16.56	15.78	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (Maximum)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05	-	2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07	-	5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled

Criteria Pollutant Emissions - Normal Operation (Diesel)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	20.84	19.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	20.84	19.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	20.84	19.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	47.57	45.34	BACT Engine Specification
VOC	0.05	-	4.33	18.97	18.08	BACT Engine Specification
CO	0.05	-	3.78	16.56	15.78	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (Diesel)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
Acetaldehyde	2.52E-05	-	2.01E-03	0.01	0.01	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	6.27E-04	2.75E-03	2.62E-03	AP-42 Table 3.4-3, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	0.01	0.03	0.03	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	0.02	0.10	0.09	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**0.14**	**0.59**	**0.57**	

Greenhouse Gas Emissions - Normal Operation (Diesel)							
Pollutant	(lb/MMBtu)	Efficiency	(lb/hr)	Emissions	Controlled	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Criteria Pollutant Emissions - Normal Operation (PNG)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.03	-	2.01	8.80	8.39	Assumed equal to PM10
PM_{10}	0.03	-	2.01	8.80	8.39	BACT Engine Specification
$PM_{2.5}$	0.03	-	2.01	8.80	8.39	BACT Engine Specification
SO_2	6.12E-04	-	0.05	0.21	0.21	AP-42 Table 3.4-1
NO_x	0.02	-	1.65	7.23	6.89	BACT Engine Specification
VOC	0.04	-	3.26	14.28	13.61	BACT Engine Specification
CO	0.03	-	2.51	10.99	10.48	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (PNG)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05		2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	4.40E-04	-	0.03	0.15	0.15	AP-42 Table 3.2-2, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07		5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled

Ethylene Dibromide	4.43E-05	-	3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled
Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06	-	1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06	-	1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**5.66**	**24.78**	**24.76**	

Greenhouse Gas Emissions - Normal Operation (Maximum)

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 (	-

Ethylene Dibromide	4.43E-05		3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled
Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	7.44E-05	-	0.01	0.03	0.03	AP-42 Table 3.2-2, Uncontrolled
Total PAH	2.69E-05	-	2.09E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06		1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06		1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.84E-04	-	0.01	0.06	0.06	AP-42 Table 3.2-2, Uncontrolled
Total HAPS	-	-	5.61	24.57	24.57	-

Greenhouse Gas Emissions - Normal Operation (PNG)

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	GWP
CO_2	172.97	-	13,440.00	58,867.20	58,867.20	1
CH_4	2.20E-03	-	0.17	0.75	0.75	25
N_2O	2.20E-04	-	0.02	0.08	0.08	298
CO_2e	-	-	13,449.39	58,908.32	58,908.32	-

Xcel Energy - Blue Lake
Engine Generator 1
EQUI 23

Unit Information					
Description:	EG 1		**Startup Event Duration**	30	minutes/startup
Unit ID:	EQUI 23				
Stack ID:	STRU 24		**Shutdown Event Duration**	1	minutes/shutdown
Control Equipment ID:	SCR-Ox Cad				
Fuel	Dual Fuel (PNG & Diesel)		**Combined SUSD Event Duration**	31	minutes/SUSD event
Heat Input Capacity	2,042.4	MMBtu/hr			
Max hours SUSD	700	SUSD events/yr	**Unlimited Hours**	8,760	hr/yr
Max hours EM	48.00	hours/yr			

Criteria Pollutant Emissions - SUSD						
Pollutant	**Emission Factor (lb/SUSD Event)**	**Control Efficiency**	**Emission Rate (lb/hr)**	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**
NO_x	45.20	-	87.48	383.18	15.82	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
CO	10.60	-	20.52	89.86	3.71	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
VOC as CH4	3.32	-	6.43	28.15	1.16	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
PM10	5.05	-	9.77	42.81	1.77	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
PM 2.5	5.05	-	9.77	42.81	1.77	lb/startup, lb/shutdown and time for SUSD provided by manufacturer

Criteria Pollutant Emissions - Emergency						
Pollutant	**Emission Factor (lb/hr)**	**Control Efficiency**	**Emission Rate (lb/hr)**	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**
NO_x	90.00	-	90.00	394.20	2.16	Maximum calculated lb/hr; emission data from manufactuer
CO	21.00	-	21.00	91.98	0.50	Maximum calculated lb/hr; emission data from manufactuer
VOC	6.44	-	6.44	28.21	0.15	Maximum calculated lb/hr; emission data from manufactuer
PM10	10.00	-	19.35	84.77	0.24	Maximum calculated lb/hr; emission data from manufactuer
PM 2.5	10.00	-	19.35	84.77	0.24	Maximum calculated lb/hr; emission data from manufactuer

Criteria Pollutant Emissions - Annual SUSD and EM Max			
Pollutant	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**
NO_x	777.38	17.98	Combined annual emissions from SUSD and Em operation
CO	181.84	4.21	Combined annual emissions from SUSD and Em operation
VOC	56.35	1.32	Combined annual emissions from SUSD and Em operation
PM10	127.59	2.01	Combined annual emissions from SUSD and Em operation
PM2.5	127.59	2.01	Combined annual emissions from SUSD and Em operation

Xcel Energy - Blue Lake
Engine Generator 2
EQUI 24

Unit Information		
Description:	EG 2	
Unit ID:	EQUI 24	
Stack ID:	STRU 25	
Control Equipment ID:	SCR & OxCat	
Fuel	Dual Fuel	PNG & Diesel
Heat Input Diesel	79.6	MMBtu/hr
Heat Input PNG	77.7	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC, PM)	8,350	hours/yr

Worste Case Scenario Information for Potential to Emit
Worst case annual emissions for NOx, CO, VOC and PM are reported as the sum of the Normal Operating emissions and the SUSDEM emissions. The lb/mmbtu and lb/hr are based on Normal Operation only. All other pollutants have the same hourly and annual emission rates for normal operation and SUSDEM.

Criteria Pollutant Emissions - Worst Case

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	148.42	21.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	148.42	21.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	148.42	21.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	824.95	63.32	BACT Engine Specification
VOC	0.05	-	4.33	75.32	19.40	BACT Engine Specification
CO	0.05	-	3.78	198.40	20.00	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Worst Case						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05	-	2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07	-	5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Ethylene Dibromide	4.43E-05	-	3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled
Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06	-	1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06	-	1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	-	-	5.66	24.78	24.76	

Greenhouse Gas Emissions - Worst Case							
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1.00
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25.00
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298.00
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Engine Generator 2
EQUI 24

Unit Information		
Description:	EG 2	
Unit ID:	EQUI 24	
Stack ID:	STRU 25	
Control Equipment ID:	SCR & OxCat	
Fuel	Dual Fuel	PNG & Diesel
Heat Input Diesel	79.6	MMBtu/hr
Heat Input PNG	77.7	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC, PM)	8,350	hours/yr

Criteria Pollutant Emissions - Normal Operation (Maximum)

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	20.84	19.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	20.84	19.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	20.84	19.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	47.57	45.34	BACT Engine Specification
VOC	0.05	-	4.33	18.97	18.08	BACT Engine Specification
CO	0.05	-	3.78	16.56	15.78	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (Maximum)

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05	-	2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07	-	5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Ethylene Dibromide	4.43E-05	-	3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled

Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06	-	1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06	-	1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**5.66**	**24.78**	**24.76**	

Greenhouse Gas Emissions - Normal Operation (Maximum)

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Criteria Pollutant Emissions - Normal Operation (Diesel)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	20.84	19.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	20.84	19.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	20.84	19.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	47.57	45.34	BACT Engine Specification
VOC	0.05	-	4.33	18.97	18.08	BACT Engine Specification
CO	0.05	-	3.78	16.56	15.78	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (Diesel)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
Acetaldehyde	2.52E-05	-	2.01E-03	0.01	0.01	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	6.27E-04	2.75E-03	2.62E-03	AP-42 Table 3.4-3, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	0.01	0.03	0.03	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	0.02	0.10	0.09	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	-	-	**0.14**	**0.59**	**0.57**	

Greenhouse Gas Emissions - Normal Operation (Diesel)							
Pollutant	(lb/MMBtu)	Efficiency	(lb/hr)	Emissions	Controlled	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CF	-

Criteria Pollutant Emissions - Normal Operation (PNG)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.03	-	2.01	8.80	8.39	Assumed equal to PM10
PM_{10}	0.03	-	2.01	8.80	8.39	BACT Engine Specification
$PM_{2.5}$	0.03	-	2.01	8.80	8.39	BACT Engine Specification
SO_2	6.12E-04	-	0.05	0.21	0.21	AP-42 Table 3.4-1
NO_x	0.02	-	1.65	7.23	6.89	BACT Engine Specification
VOC	0.04	-	3.26	14.28	13.61	BACT Engine Specification
CO	0.03	-	2.51	10.99	10.48	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (PNG)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05		2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	4.40E-04	-	0.03	0.15	0.15	AP-42 Table 3.2-2, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07		5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Ethylene Dibromide	4.43E-05		3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled

Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	7.44E-05	-	0.01	0.03	0.03	AP-42 Table 3.2-2, Uncontrolled
Total PAH	2.69E-05	-	2.09E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06		1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06		1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.84E-04	-	0.01	0.06	0.06	AP-42 Table 3.2-2, Uncontrolled
Total HAPS	-	-	5.61	24.57	24.57	-

Greenhouse Gas Emissions - Normal Operation (PNG)

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	GWP
CO_2	172.97	-	13,440.00	58,867.20	58,867.20	1
CH_4	2.20E-03	-	0.17	0.75	0.75	25
N_2O	2.20E-04	-	0.02	0.08	0.08	298
CO_2e	-	-	13,449.39	58,908.32	58,908.32	-

Xcel Energy - Blue Lake
Engine Generator 2
EQUI 24

Unit Information					
Description:	EG 2		**Startup Event Duration**	30	minutes/startup
Unit ID:	EQUI 24				
Stack ID:	STRU 25		**Shutdown Event Duration**	1	minutes/shutdown
Control Equipment ID:	SCR-Ox Cad				
Fuel	Dual Fuel (PNG & Diesel)		**Combined SUSD Event Duration**	31	minutes/SUSD event
Heat Input Capacity	2,042.4	MMBtu/hr			
Max hours SUSD	700	SUSD events/yr	**Unlimited Hours**	8,760	hr/yr
Max hours EM	48.00	hours/yr			

Criteria Pollutant Emissions - SUSD						
Pollutant	**Emission Factor (lb/SUSD Event)**	**Control Efficiency**	**Emission Rate (lb/hr)**	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**
NO_x	45.20	-	87.48	383.18	15.82	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
CO	10.60	-	20.52	89.86	3.71	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
VOC as CH4	3.32	-	6.43	28.15	1.16	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
PM10	5.05	-	9.77	42.81	1.77	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
PM 2.5	5.05	-	9.77	42.81	1.77	lb/startup, lb/shutdown and time for SUSD provided by manufacturer

Criteria Pollutant Emissions - Emergency						
Pollutant	**Emission Factor (lb/hr)**	**Control Efficiency**	**Emission Rate (lb/hr)**	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**
NO_x	90.00	-	90.00	394.20	2.16	Maximum calculated lb/hr; emission data from manufactuer
CO	21.00	-	21.00	91.98	0.50	Maximum calculated lb/hr; emission data from manufactuer
VOC	6.44	-	6.44	28.21	0.15	Maximum calculated lb/hr; emission data from manufactuer
PM10	10.00	-	19.35	84.77	0.24	Maximum calculated lb/hr; emission data from manufactuer
PM 2.5	10.00	-	19.35	84.77	0.24	Maximum calculated lb/hr; emission data from manufactuer

Criteria Pollutant Emissions - Annual SUSD and EM Max			
Pollutant	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**
NO_x	777.38	17.98	Combined annual emissions from SUSD and Em operation
CO	181.84	4.21	Combined annual emissions from SUSD and Em operation
VOC	56.35	1.32	Combined annual emissions from SUSD and Em operation
PM10	127.59	2.01	Combined annual emissions from SUSD and Em operation
PM2.5	127.59	2.01	Combined annual emissions from SUSD and Em operation

Xcel Energy - Blue Lake
Engine Generator 3
EQUI 25

Unit Information		
Description:	EG 3	
Unit ID:	EQUI 25	
Stack ID:	STRU 26	
Control Equipment ID:	SCR & OxCat	
Fuel	Dual Fuel	PNG & Diesel
Heat Input Diesel	79.6	MMBtu/hr
Heat Input PNG	77.7	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC, PM)	8,350	hours/yr

Worste Case Scenario Information for Potential to Emit
Worst case annual emissions for NOx, CO, VOC and PM are reported as the sum of the Normal Operating emissions and the SUSDEM emissions. The lb/mmbtu and lb/hr are based on Normal Operation only. All other pollutants have the same hourly and annual emission rates for normal operation and SUSDEM.

Criteria Pollutant Emissions - Worst Case

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	148.42	21.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	148.42	21.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	148.42	21.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	824.95	63.32	BACT Engine Specification
VOC	0.05	-	4.33	75.32	19.40	BACT Engine Specification
CO	0.05	-	3.78	198.40	20.00	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Worst Case						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05	-	2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07	-	5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Ethylene Dibromide	4.43E-05	-	3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled
Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06	-	1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06	-	1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	-	-	5.66	24.78	24.76	

Greenhouse Gas Emissions - Worst Case							
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Engine Generator 3
EQUI 25

Unit Information		
Description:	EG 3	
Unit ID:	EQUI 25	
Stack ID:	STRU 26	
Control Equipment ID:	SCR & OxCat	
Fuel	Dual Fuel	PNG & Diesel
Heat Input Diesel	79.6	MMBtu/hr
Heat Input PNG	77.7	MMBtu/hr
Hours Unlimited	8,760	hours/yr
Hours Limited (CO, NOx, VOC, PM)	8,350	hours/yr

Criteria Pollutant Emissions - Normal Operation (Maximum)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	20.84	19.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	20.84	19.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	20.84	19.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	47.57	45.34	BACT Engine Specification
VOC	0.05	-	4.33	18.97	18.08	BACT Engine Specification
CO	0.05	-	3.78	16.56	15.78	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (Maximum)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05	-	2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07	-	5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Ethylene Dibromide	4.43E-05	-	3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled

Criteria Pollutant Emissions - Normal Operation (Diesel)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.06	-	4.76	20.84	19.87	Assumed equal to PM10
PM_{10}	0.06	-	4.76	20.84	19.87	BACT Engine Specification
$PM_{2.5}$	0.06	-	4.76	20.84	19.87	BACT Engine Specification
SO_2	1.52E-03	-	0.12	0.53	0.53	AP-42 Table 3.4-1
NO_x	0.14	-	10.86	47.57	45.34	BACT Engine Specification
VOC	0.05	-	4.33	18.97	18.08	BACT Engine Specification
CO	0.05	-	3.78	16.56	15.78	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (Diesel)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
Acetaldehyde	2.52E-05	-	2.01E-03	0.01	0.01	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	6.27E-04	2.75E-03	2.62E-03	AP-42 Table 3.4-3, Uncontrolled
Benzene	7.76E-04	-	0.06	0.27	0.26	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	0.01	0.03	0.03	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	0.02	0.10	0.09	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	-	-	**0.14**	**0.59**	**0.57**	

Greenhouse Gas Emissions - Normal Operation (Diesel)							
Pollutant	(lb/MMBtu)	Efficiency	(lb/hr)	Emissions	Controlled	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Criteria Pollutant Emissions - Normal Operation (PNG)						
Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
PM	0.03	-	2.01	8.80	8.39	Assumed equal to PM10
PM_{10}	0.03	-	2.01	8.80	8.39	BACT Engine Specification
$PM_{2.5}$	0.03	-	2.01	8.80	8.39	BACT Engine Specification
SO_2	6.12E-04	-	0.05	0.21	0.21	AP-42 Table 3.4-1
NO_x	0.02	-	1.65	7.23	6.89	BACT Engine Specification
VOC	0.04	-	3.26	14.28	13.61	BACT Engine Specification
CO	0.03	-	2.51	10.99	10.48	BACT Engine Specification
Lead	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions - Normal Operation (PNG)						
Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency[1]	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
1,1,2,2-Tetrachloroethane	4.00E-05	-	3.11E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,1,2-Trichloroethane	3.18E-05	-	2.47E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
1,3-Butadiene	2.67E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
1,3-Dichloropropene	2.64E-05	-	2.05E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2-Methylnaphthalene	3.32E-05		2.58E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
2,2,4-Trimethylpentane	2.50E-04	-	0.02	0.09	0.09	AP-42 Table 3.2-2, Uncontrolled
Acenaphthene	1.25E-06	-	9.71E-05	4.25E-04	4.25E-04	AP-42 Table 3.2-2, Uncontrolled
Acenaphthylene	5.53E-06	-	4.30E-04	1.88E-03	1.88E-03	AP-42 Table 3.2-2, Uncontrolled
Acetaldehyde	0.01	-	0.65	2.85	2.85	AP-42 Table 3.2-2, Uncontrolled
Acrolein	0.01	-	0.40	1.75	1.75	AP-42 Table 3.2-2, Uncontrolled
Benzene	4.40E-04	-	0.03	0.15	0.15	AP-42 Table 3.2-2, Uncontrolled
Benzo(b)fluoranthene	1.66E-07	-	1.29E-05	5.65E-05	5.65E-05	AP-42 Table 3.2-2, Uncontrolled
Benzo(e)pyrene	4.15E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Benzo(g,h,i)perylene	4.14E-07	-	3.22E-05	1.41E-04	1.41E-04	AP-42 Table 3.2-2, Uncontrolled
Biphenyl	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.2-2, Uncontrolled
Carbon Tetrachloride	3.67E-05	-	2.85E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chlorobenzene	3.04E-05	-	2.36E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chloroform	2.85E-05	-	2.21E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Chrysene	6.93E-07		5.38E-05	2.36E-04	2.36E-04	AP-42 Table 3.2-2, Uncontrolled
Ethylbenzene	3.97E-05	-	3.08E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Ethylene Dibromide	4.43E-05		3.44E-03	0.02	0.02	AP-42 Table 3.2-2, Uncontrolled

Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	1.30E-04	-	0.01	0.05	0.04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	0.02	0.07	0.07	AP-42 Table 3.4-4, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06	-	1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06	-	1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.93E-04	-	0.02	0.07	0.06	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**5.66**	**24.78**	**24.76**	

Greenhouse Gas Emissions - Normal Operation (Maximum)

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	207.79	-	16,540.00	72,445.20	72,445.20	BACT Engine Specification	1
CH_4	0.01	-	0.53	2.31	2.31	40 CFR 98, Subpart C, Table C-2	25
N_2O	6.61E-04	-	0.05	0.23	0.23	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	16,568.85	72,571.56	72,571.56	Global Warming Potential (Table A-1 40 CFR pt. 98,	-

Fluoranthene	1.11E-06	-	8.62E-05	3.78E-04	3.78E-04	AP-42 Table 3.2-2, Uncontrolled
Fluorene	5.67E-06	-	4.41E-04	1.93E-03	1.93E-03	AP-42 Table 3.2-2, Uncontrolled
Formaldehyde	0.05	-	4.10	17.97	17.97	AP-42 Table 3.2-2, Uncontrolled
Methanol	2.50E-03	-	0.19	0.85	0.85	AP-42 Table 3.2-2, Uncontrolled
Methylene Chloride	2.00E-05	-	1.55E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
n-Hexane	1.11E-03	-	0.09	0.38	0.38	AP-42 Table 3.2-2, Uncontrolled
Naphthalene	7.44E-05	-	0.01	0.03	0.03	AP-42 Table 3.2-2, Uncontrolled
Total PAH	2.69E-05	-	2.09E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Phenanthrene	1.04E-05	-	8.08E-04	3.54E-03	3.54E-03	AP-42 Table 3.2-2, Uncontrolled
Phenol	2.40E-05	-	1.86E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Pyrene	1.36E-06		1.06E-04	4.63E-04	4.63E-04	AP-42 Table 3.2-2, Uncontrolled
Styrene	2.36E-05	-	1.83E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Perchloroethylene	2.48E-06		1.93E-04	8.44E-04	8.44E-04	AP-42 Table 3.2-2, Uncontrolled
Toluene	4.08E-04	-	0.03	0.14	0.14	AP-42 Table 3.2-2, Uncontrolled
Vinyl Chloride	1.49E-05	-	1.16E-03	0.01	0.01	AP-42 Table 3.2-2, Uncontrolled
Xylenes	1.84E-04	-	0.01	0.06	0.06	AP-42 Table 3.2-2, Uncontrolled
Total HAPS	-	-	5.61	24.57	24.57	-

Greenhouse Gas Emissions - Normal Operation (PNG)							
Pollutant	**Emission Factor (lb/MMBtu)**	**Control Efficiency**	**Emission Rate (lb/hr)**	**Uncontrolled Emissions (tpy)**	**Limited Controlled Emissions (tpy)**	**Reference**	**GWP**
CO_2	172.97	-	13,440.00	58,867.20	58,867.20	BACT Engine Specification	1
CH_4	2.20E-03	-	0.17	0.75	0.75	40 CFR 98, Subpart C, Table C-2	25
N_2O	2.20E-04	-	0.02	0.08	0.08	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	13,449.39	58,908.32	58,908.32	Global Warming Potential (Table A-1 40 (	-

Xcel Energy - Blue Lake
Engine Generator 3
EQUI 25

Unit Information					
Description:	EG 2		**Startup Event Duration**	30	minutes/startup
Unit ID:	EQUI 25				
Stack ID:	STRU 26		**Shutdown Event Duration**	1	minutes/shutdown
Control Equipment ID:	SCR-Ox Cad				
Fuel	Dual Fuel (PNG & Diesel)		**Combined SUSD Event Duration**	31	minutes/SUSD event
Heat Input Capacity	2,042.4	MMBtu/hr			
Max hours SUSD	700	SUSD events/yr	**Unlimited Hours**	8,760	hr/yr
Max hours EM	48.00	hours/yr			

Criteria Pollutant Emissions - SUSD

Pollutant	Emission Factor (lb/SUSD Event)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
NO_x	45.20	-	87.48	383.18	15.82	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
CO	10.60	-	20.52	89.86	3.71	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
VOC as CH4	3.32	-	6.43	28.15	1.16	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
PM10	5.05	-	9.77	42.81	1.77	lb/startup, lb/shutdown and time for SUSD provided by manufacturer
PM 2.5	5.05	-	9.77	42.81	1.77	lb/startup, lb/shutdown and time for SUSD provided by manufacturer

Criteria Pollutant Emissions - Emergency

Pollutant	Emission Factor (lb/hr)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
NO_x	90.00	-	90.00	394.20	2.16	Maximum calculated lb/hr; emission data from manufactuer
CO	21.00	-	21.00	91.98	0.50	Maximum calculated lb/hr; emission data from manufactuer
VOC	6.44	-	6.44	28.21	0.15	Maximum calculated lb/hr; emission data from manufactuer
PM10	10.00	-	19.35	84.77	0.24	Maximum calculated lb/hr; emission data from manufactuer
PM 2.5	10.00	-	19.35	84.77	0.24	Maximum calculated lb/hr; emission data from manufactuer

Criteria Pollutant Emissions - Annual SUSD and EM Max

Pollutant	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference
NO_x	777.38	17.98	Combined annual emissions from SUSD and Em operation
CO	181.84	4.21	Combined annual emissions from SUSD and Em operation
VOC	56.35	1.32	Combined annual emissions from SUSD and Em operation
PM10	127.59	2.01	Combined annual emissions from SUSD and Em operation
PM2.5	127.59	2.01	Combined annual emissions from SUSD and Em operation

EQUI	Pollutant	TREA	Uncontrolled emission rate (lb/hr)	Max Uncontrolled emission (tpy)	Limited emission rate (lb/hr)	limited emission (tpy)	Potenital limited emission threshold for Large classification	subject to CAM	Large or other PSEU
23	CO	TREA 1, 2 oxidation catalyst & SCR	3.78	198.40	4.57	20.00	100 tpy	Yes	Other
	NOx		10.86	824.95	14.46	63.32	100 tpy	Yes	Other
24	CO	TREA 3, 4 oxidation catalyst & SCR	3.78	198.40	4.57	20.00	100 tpy	Yes	Other
	NOx		10.86	824.95	14.46	63.32	100 tpy	Yes	Other
25	CO	TREA 5, 6 oxidation catalyst & SCR	3.78	198.40	4.57	20.00	100 tpy	Yes	Other
	NOx		10.86	824.95	14.46	63.32	100 tpy	Yes	Other

Xcel Energy - Blue Lake
Emergency Generator 2
EQUI 26

Unit Information		
Description:	EEG 2	
Unit ID:	EQUI 26	
Stack ID:	STRU 27	
Control Equipment ID:	None	
Fuel	Diesel	
Heat Input Capacity	7.6	MMBtu/hr
Horsepower	1,048.6	hp-hr
Hours Unlimited	8,760	hours/yr
Hours Limited	500	hours/yr

Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/hp-hr)	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
PM		3.29E-04	0.34	1.51	0.09	NSPS IIII; Certified Engine
PM_{10}		3.70E-04	0.39	1.70	0.10	NSPS IIII filterable with AP-42 PM-COND; Certified Engine
$PM_{2.5}$		3.70E-04	0.39	1.70	0.10	NSPS IIII assumed equal to PM10; Certified Engine
SO_2	1.52E-03		0.01	0.05	2.89E-03	AP-42 Table 3.4-1, Diesel, Uncontrolled
NO_x		1.05E-02	11.01	48.23	2.75	NSPS IIII; Certified Engine
VOC	0.09		0.68	3.00	0.17	AP-42 Table 3.4-1, Diesel, Uncontrolled TOC
CO		5.75E-03	6.03	26.41	1.51	NSPS IIII; Certified Engine
Lead	0.00E+00		0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
1,3-Butadiene	1.30E-04	-	9.88E-04	4.33E-03	2.47E-04	AP-42 Table 3.4-3, Uncontrolled
Acetaldehyde	2.52E-05	-	1.92E-04	8.39E-04	4.79E-05	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	5.99E-05	2.62E-04	1.50E-05	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	6.00E-04	2.63E-03	1.50E-04	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	9.88E-04	4.33E-03	2.47E-04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	1.61E-03	0.01	4.03E-04	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	2.14E-03	0.01	5.34E-04	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	1.47E-03	0.01	3.67E-04	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**0.01**	**0.04**	**2.01E-03**	

Greenhouse Gas Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	165.00	-	1,254.00	5,492.52	313.50	AP-42 Table 3.4-1, Diesel, Uncontrolled	1
CH_4	0.01	-	0.05	0.22	0.01	40 CFR 98, Subpart C, Table C-2	25
N_2O	1.32E-03	-	0.01	0.04	2.51E-03	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	1,258.25	5,511.15	314.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Emergency Generator 3
EQUI 27

Unit Information		
Description:	EEG 3	
Unit ID:	EQUI 27	
Stack ID:	STRU 28	
Control Equipment ID:	None	
Fuel	Diesel	
Heat Input Capacity	7.6	MMBtu/hr
Horsepower	1,048.6	hp-hr
Hours Unlimited	8,760	hours/yr
Hours Limited	500	hours/yr

Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/hp-hr)	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
PM		3.29E-04	0.34	1.51	0.09	NSPS IIII; Certified Engine
PM_{10}		3.70E-04	0.39	1.70	0.10	NSPS IIII filterable with AP-42 PM-COND; Certified Engine
$PM_{2.5}$		3.70E-04	0.39	1.70	0.10	NSPS IIII assumed equal to PM10; Certified Engine
SO_2	1.52E-03		0.01	0.05	2.89E-03	AP-42 Table 3.4-1, Diesel, Uncontrolled
NO_x		1.05E-02	11.01	48.23	2.75	NSPS IIII; Certified Engine
VOC	0.09		0.68	3.00	0.17	AP-42 Table 3.4-1, Diesel, Uncontrolled TOC
CO		5.75E-03	6.03	26.41	1.51	NSPS IIII; Certified Engine
Lead	0.00E+00		0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
1,3-Butadiene	1.30E-04	-	9.88E-04	4.33E-03	2.47E-04	AP-42 Table 3.4-3, Uncontrolled
Acetaldehyde	2.52E-05	-	1.92E-04	8.39E-04	4.79E-05	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	5.99E-05	2.62E-04	1.50E-05	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	6.00E-04	2.63E-03	1.50E-04	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	9.88E-04	4.33E-03	2.47E-04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	1.61E-03	0.01	4.03E-04	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	2.14E-03	0.01	5.34E-04	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	1.47E-03	0.01	3.67E-04	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**0.01**	**0.04**	**2.01E-03**	

Greenhouse Gas Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	165.00	-	1,254.00	5,492.52	313.50	AP-42 Table 3.4-1, Diesel, Uncontrolled	1
CH_4	0.01	-	0.05	0.22	0.01	40 CFR 98, Subpart C, Table C-2	25
N_2O	1.32E-03	-	0.01	0.04	2.51E-03	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	1,258.25	5,511.15	314.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Emergency Generator 4
EQUI 28

Unit Information		
Description:	EEG 4	
Unit ID:	EQUI 28	
Stack ID:	STRU 29	
Control Equipment ID:	None	
Fuel	Diesel	
Heat Input Capacity	7.6	MMBtu/hr
Horsepower	1,048.6	hp-hr
Hours Unlimited	8,760	hours/yr
Hours Limited	500	hours/yr

Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/hp-hr)	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
PM		3.29E-04	0.34	1.51	0.09	NSPS IIII; Certified Engine
PM_{10}		3.70E-04	0.39	1.70	0.10	NSPS IIII filterable with AP-42 PM-COND; Certified Engine
$PM_{2.5}$		3.70E-04	0.39	1.70	0.10	NSPS IIII assumed equal to PM10; Certified Engine
SO_2	1.52E-03		0.01	0.05	2.89E-03	AP-42 Table 3.4-1, Diesel, Uncontrolled
NO_x		1.05E-02	11.01	48.23	2.75	NSPS IIII; Certified Engine
VOC	0.09		0.68	3.00	0.17	AP-42 Table 3.4-1, Diesel, Uncontrolled TOC
CO		5.75E-03	6.03	26.41	1.51	NSPS IIII; Certified Engine
Lead	0.00E+00		0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
1,3-Butadiene	1.30E-04	-	9.88E-04	4.33E-03	2.47E-04	AP-42 Table 3.4-3, Uncontrolled
Acetaldehyde	2.52E-05	-	1.92E-04	8.39E-04	4.79E-05	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	5.99E-05	2.62E-04	1.50E-05	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	6.00E-04	2.63E-03	1.50E-04	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	9.88E-04	4.33E-03	2.47E-04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	1.61E-03	0.01	4.03E-04	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	2.14E-03	0.01	5.34E-04	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	1.47E-03	0.01	3.67E-04	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	-	-	**0.01**	**0.04**	**2.01E-03**	

Greenhouse Gas Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	165.00	-	1,254.00	5,492.52	313.50	AP-42 Table 3.4-1, Diesel, Uncontrolled	1
CH_4	0.01	-	0.05	0.22	0.01	40 CFR 98, Subpart C, Table C-2	25
N_2O	1.32E-03	-	0.01	0.04	2.51E-03	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	1,258.25	5,511.15	314.56	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Emergency Generator 5
EQUI 29

Unit Information		
Description:	EEG 5	
Unit ID:	EQUI 29	
Stack ID:	STRU 30	
Control Equipment ID:	None	
Fuel	Diesel	
Heat Input Capacity	5.6	MMBtu/hr
Horsepower	771.9	hp-hr
Hours Unlimited	8,760	hours/yr
Hours Limited	500	hours/yr

Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/hp-hr)	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
PM		3.29E-04	0.25	1.11	0.06	NSPS IIII; Certified Engine
PM_{10}		3.70E-04	0.29	1.25	0.07	NSPS IIII filterable with AP-42 PM-COND; Certified Engine
$PM_{2.5}$		3.70E-04	0.29	1.25	0.07	NSPS IIII assumed equal to PM10; Certified Engine
SO_2	1.52E-03		0.01	0.04	2.13E-03	AP-42 Table 3.4-1, Diesel, Uncontrolled
NO_x		1.05E-02	8.10	35.50	2.03	NSPS IIII; Certified Engine
VOC	0.09		0.50	2.21	0.13	AP-42 Table 3.4-1, Diesel, Uncontrolled TOC
CO		5.75E-03	4.44	19.44	1.11	NSPS IIII; Certified Engine
Lead	0.00E+00		0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
1,3-Butadiene	1.30E-04	-	7.28E-04	3.19E-03	1.82E-04	AP-42 Table 3.4-3, Uncontrolled
Acetaldehyde	2.52E-05	-	1.41E-04	6.18E-04	3.53E-05	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	4.41E-05	1.93E-04	1.10E-05	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	4.42E-04	1.94E-03	1.10E-04	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	7.28E-04	3.19E-03	1.82E-04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	1.19E-03	0.01	2.97E-04	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	1.57E-03	0.01	3.93E-04	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	1.08E-03	4.73E-03	2.70E-04	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**0.01**	**0.03**	**1.48E-03**	

Greenhouse Gas Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	165.00	-	924.00	4,047.12	231.00	AP-42 Table 3.4-1, Diesel, Uncontrolled	1
CH_4	0.01	-	0.04	0.16	0.01	40 CFR 98, Subpart C, Table C-2	25
N_2O	1.32E-03	-	0.01	0.03	1.85E-03	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	927.13	4,060.84	231.78	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

Xcel Energy - Blue Lake
Emergency Generator 6
EQUI 43

Unit Information		
Description:	EEG 6	
Unit ID:	EQUI 43	
Stack ID:	STRU 38	
Control Equipment ID:	None	
Fuel	Diesel	
Heat Input Capacity	5.6	MMBtu/hr
Horsepower	771.9	hp-hr
Hours Unlimited	8,760	hours/yr
Hours Limited	500	hours/yr

Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/hp-hr)	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
PM		3.29E-04	0.25	1.11	0.06	NSPS IIII; Certified Engine
PM_{10}		3.70E-04	0.29	1.25	0.07	NSPS IIII filterable with AP-42 PM-COND; Certified Engine
$PM_{2.5}$		3.70E-04	0.29	1.25	0.07	NSPS IIII assumed equal to PM10; Certified Engine
SO_2	1.52E-03		0.01	0.04	2.13E-03	AP-42 Table 3.4-1, Diesel, Uncontrolled
NO_x		1.05E-02	8.10	35.50	2.03	NSPS IIII; Certified Engine
VOC	0.09		0.50	2.21	0.13	AP-42 Table 3.4-1, Diesel, Uncontrolled TOC
CO		5.75E-03	4.44	19.44	1.11	NSPS IIII; Certified Engine
Lead	0.00E+00		0.00E+00	0.00E+00	0.00E+00	

Hazardous Air Pollutant Emissions

Pollutant	Emission Factor (lb/mmbtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions[2] (tpy)	Reference
1,3-Butadiene	1.30E-04	-	7.28E-04	3.19E-03	1.82E-04	AP-42 Table 3.4-3, Uncontrolled
Acetaldehyde	2.52E-05	-	1.41E-04	6.18E-04	3.53E-05	AP-42 Table 3.4-3, Uncontrolled
Acrolein	7.88E-06	-	4.41E-05	1.93E-04	1.10E-05	AP-42 Table 3.4-3, Uncontrolled
Formaldehyde	7.89E-05	-	4.42E-04	1.94E-03	1.10E-04	AP-42 Table 3.4-3, Uncontrolled
Naphthalene	1.30E-04	-	7.28E-04	3.19E-03	1.82E-04	AP-42 Table 3.4-4, Uncontrolled
Total PAH	2.12E-04	-	1.19E-03	0.01	2.97E-04	AP-42 Table 3.4-4, Uncontrolled
Toluene	2.81E-04	-	1.57E-03	0.01	3.93E-04	AP-42 Table 3.4-3, Uncontrolled
Xylenes	1.93E-04	-	1.08E-03	4.73E-03	2.70E-04	AP-42 Table 3.4-3, Uncontrolled
Total HAPs	**-**	**-**	**0.01**	**0.03**	**1.48E-03**	

Greenhouse Gas Emissions

Pollutant	Emission Factor (lb/MMBtu)	Control Efficiency	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Limited Controlled Emissions (tpy)	Reference	GWP
CO_2	165.00	-	924.00	4,047.12	231.00	AP-42 Table 3.4-1, Diesel, Uncontrolled	1
CH_4	0.01	-	0.04	0.16	0.01	40 CFR 98, Subpart C, Table C-2	25
N_2O	1.32E-03	-	0.01	0.03	1.85E-03	40 CFR 98, Subpart C, Table C-2	298
CO_2e	-	-	927.13	4,060.84	231.78	Global Warming Potential (Table A-1 40 CFR pt. 98, subp. A)	-

VOC emissions from vertical, fixed roof tank #1

Enter tank specific information in all blue cells.

Tank information

Tank identification	Diesel Tank #1
Description	Diesel Tank #1
Location (city)	Shakopee, MN

Property	Value	Units	Description
Fuel type	Diesel	select one	Type of fuel stored in the tank.
Type of roof	Dome	select one	Fixed roof structure.
Actual throughput	7,500,582	gal/yr	Gallons stored in his tank over the period of 12 consecutive months.
Actual hours operated	8760	hours/year	Number of hours the tank is being used.
Potential throughput	9,750,757	gal/yr	Calculated based on actual tank throughput divided by the hours operated and multiplied by 8760 hours/day.
VOC actual emissions	**0.03**	ton/yr	Amount of VOC actually released over the 12-month period.
VOC potential emissions	**0.03**	ton/yr	Amount of VOCs potentially released over a 12-month period.

Physical properties of the tank

Property		Value	Units	Description
Shell height	H_S	40	feet	This is actual length of the tank.
Shell diameter	D	21	feet	This is the width of the cylindrical shell.
Shell radius	R_S	10.5	feet	Calculated radius
Maximum liquid height	H_{LX}	37	feet	Maximum height of the liquid within the tank shell.
Average liquid height	H_L	18.5	feet	Average height of the liquid within the tank shell.
Working volume		95858.8	gallons	Calculated volume
Turnovers per year (actual)	N	78.2	dimensionless	Calculated number the tank is emptied and refilled, annually.
Turnovers per year (potential)	N	101.7	dimensionless	Calculated number the tank could be emptied and refilled, annually.
Shell color/shade		White/NA	select one	Tank shell color and shade are used to identify **paint solar absorptance**.
Shell condition		Average	select one	Tank condition is used to identify **paint solar absorptance**.
Paint solar absorptance	α	0.25	dimensionless	**Insert value from table 7.1-6.** Paint effectiveness in absorbing radiant energy.
Roof height	H_R	3.69	feet	Calculated roof height.
Dome roof radius	R_R	16.80	feet	Calculated radius. Only applies to a "Dome" roof.
Cone roof slope	S_R	--	ft/ft	If unknown = 0.0625. If known, insert value. Only applies to a "Cone" roof.
Vacuum setting	P_{BV}	-0.03	psig	Vacuum setting is a value set for the tank at the facility.
Pressure setting	P_{BP}	0.03	psig	Breather vent pressure is a reading from the tank monitoring system.

VOC emissions from vertical, fixed roof tank #1

Weather data

Property		Value	Units	Description
Nearest major city		Minneapolis - St. Paul	Select one	Nearest major city to the tank location.
Average annual maximum temperature	T_{AX}	54.2	°F	Average over a calendar year.
Average annual minimum temperature	T_{AN}	35.2	°F	Average over a calendar year.
Atmospheric pressure	P_A	14.26	psia	Average for the location.
Solar insolation	I	1170.00	Btu/(ft^2·day)	Total for a horizontal surface.

Calculation of VOC Emission = Total Losses (L_T)

Variable		Calculated value		Notes (equations are from AP-42, Chapter 7)
Total losses (VOC actual emissions)	L_T	**64.26**	lb/yr	Equation 1-1
Total losses (VOC potential emissions)	L_T	**69.21**	lb/yr	Equation 1-1
Standing storage losses	L_S	9.80	lb/yr	Equation 1-2
Working losses (actual)	L_W	54.46	lb/yr	Equation 1-35
Working losses (potential)	L_W	59.41	lb/yr	Equation 1-35
Annual net throughput (actual)	Q	178585.29	bbl/yr	Based on actual throughput entered by user (gal/year) / 42 bbl/gal
Annual net throughput (potential)	Q	232160.87	bbl/yr	Based on calculated potential throughput (gal/year) / 42 bbl/gal
Working loss turnover factor (actual)	K_N	0.55	dimensionless	Saturation; turnovers >36 = (180 + N) / 6 * N; turnovers at 36 or lower = 1; Equation 1
Working loss turnover factor (potential)	K_N	0.46	dimensionless	Saturation; turnovers >36 = (180 + N) / 6 * N; turnovers at 36 or lower = 1
Stock vapor density	W_V	0.00	lb/ft^3	Equation 1-22
Vapor Molecular Weight at 60 °F	M_V	130	lb/lb-mole	Table 7.1-2
Vapor pressure at 60 °F	P_{VA}	0.004135096	psia	Equation 1-25, P_{VA} based on T_{LA}
Vapor space volume	V_V	8111.22	ft^3	Equation 1-3
Vapor space roof outage	H_{RO}	1.92	feet	Equation 1-17 Cone; Equation 1-19 Dome
Vapor space tank outage	H_{VO}	23.42	feet	Equation 1-16, vertical
Vapor space expansion factor	K_E	0.03		Equation 1-5
Vented vapor saturation factor	K_S	0.99	dimensionless	Equation 1-21
Working loss product factor	K_P	1	dimensionless	Assume value of 1 for gasoline or diesel.
Ideal gas constant	R	10.731	psia*ft^3/lb-mole*°R	Constant, Equation 1-22
Average vapor temperature	T_V	507.30	°R	Equation 1-33
Daily average liquid surface temperature	T_{LA}	506.39	°R	Equation 1-28
Daily vapor temperature range	ΔT_V	19.15	°R	Equation 1-7
Daily ambient temperature range	ΔT_A	19.00	°R	Equation 1-11
Daily maximum ambient temperature	T_{AX}	513.90	°R	Table 7-1-7. Conversion factor: Rankine = Fahrenheit + 459.7
Daily minimum ambient temperature	T_{AN}	494.90	°R	Table 7-1-7. Conversion factor: Rankine = Fahrenheit + 459.7
Daily average ambient temperature	T_{AA}	504.40	°R	Equation 1-30
Liquid bulk temperature	T_B	505.28	°R	Equation 1-31
Daily vapor pressure range	ΔP_V	0.00	psia	Equation 1-9
Breather vent pressure setting range	ΔP_B	0.06	psi	Equation 1-10
Vapor pressure equation constant	A	12.101	dimensionless	Table 7.1-2
Vapor pressure equation constant	B	8907	°R	Table 7.1-2
Vapor pressure at T_{LX}	P_{VX}	0.00	psia	Equation 1-9, note 5
Vapor pressure at T_{LN}	P_{VN}	0.00	psia	Equation 1-9, note 5
Maximum T_{LA}	T_{LX}	511.18	°R	Equation 1-9, note to Figure 7.1-17
Minimum T_{LA}	T_{LN}	501.60	°R	Equation 1-9, note to Figure 7.1-17

VOC emissions from vertical, fixed roof tank #2

Enter tank specific information in all blue cells.

Tank information

Tank identification	Diesel Tank #2
Description	Diesel Tank #2
Location (city)	Shakopee, MN

Property	Value	Units	Description
Fuel type	Diesel	select one	Type of fuel stored in the tank.
Type of roof	Dome	select one	Fixed roof structure.
Actual throughput	7,500,582	gal/yr	Gallons stored in his tank over the period of 12 consecutive months.
Actual hours operated	8760	hours/year	Number of hours the tank is being used.
Potential throughput	9,750,757	gal/yr	Calculated based on actual tank throughput divided by the hours operated and multiplied by 8760 hours/day.
VOC actual emissions	**0.03**	ton/yr	Amount of VOC actually released over the 12-month period.
VOC potential emissions	**0.03**	ton/yr	Amount of VOCs potentially released over a 12-month period.

Physical properties of the tank

Property		Value	Units	Description
Shell height	H_S	40	feet	This is actual length of the tank.
Shell diameter	D	21	feet	This is the width of the cylindrical shell.
Shell radius	R_S	10.5	feet	Calculated radius
Maximum liquid height	H_{LX}	37	feet	Maximum height of the liquid within the tank shell.
Average liquid height	H_L	18.5	feet	Average height of the liquid within the tank shell.
Working volume		95858.8	gallons	Calculated volume
Turnovers per year (actual)	N	78.2	dimensionless	Calculated number the tank is emptied and refilled, annually.
Turnovers per year (potential)	N	101.7	dimensionless	Calculated number the tank could be emptied and refilled, annually.
Shell color/shade		White/NA	select one	Tank shell color and shade are used to identify **paint solar absorptance**.
Shell condition		Average	select one	Tank condition is used to identify **paint solar absorptance**.
Paint solar absorptance	α	0.25	dimensionless	**Insert value from table 7.1-6.** Paint effectiveness in absorbing radiant energy.
Roof height	H_R	3.69	feet	Calculated roof height.
Dome roof radius	R_R	16.80	feet	Calculated radius. Only applies to a "Dome" roof.
Cone roof slope	S_R	--	ft/ft	If unknown = 0.0625. If known, insert value. Only applies to a "Cone" roof.
Vacuum setting	P_{BV}	-0.03	psig	Vacuum setting is a value set for the tank at the facility.
Pressure setting	P_{BP}	0.03	psig	Breather vent pressure is a reading from the tank monitoring system.

VOC emissions from vertical, fixed roof tank #2

Weather data

Property		Value	Units	Description
Nearest major city		Minneapolis - St. Paul	Select one	Nearest major city to the tank location.
Average annual maximum temperature	T_{AX}	54.2	°F	Average over a calendar year.
Average annual minimum temperature	T_{AN}	35.2	°F	Average over a calendar year.
Atmospheric pressure	P_A	14.26	psia	Average for the location.
Solar insolation	I	1170.00	Btu/(ft^2·day)	Total for a horizontal surface.

Calculation of VOC Emission = Total Losses (L_T)

Variable		Calculated value		Notes (equations are from AP-42, Chapter 7)
Total losses (VOC actual emissions)	L_T	**64.26**	lb/yr	Equation 1-1
Total losses (VOC potential emissions)	L_T	**69.21**	lb/yr	Equation 1-1
Standing storage losses	L_S	9.80	lb/yr	Equation 1-2
Working losses (actual)	L_W	54.46	lb/yr	Equation 1-35
Working losses (potential)	L_W	59.41	lb/yr	Equation 1-35
Annual net throughput (actual)	Q	178585.29	bbl/yr	Based on actual throughput entered by user (gal/year) / 42 bbl/gal
Annual net throughput (potential)	Q	232160.87	bbl/yr	Based on calculated potential throughput (gal/year) / 42 bbl/gal
Working loss turnover factor (actual)	K_N	0.55	dimensionless	Saturation; turnovers >36 = (180 + N) / 6 * N; turnovers at 36 or lower = 1; Equation 1
Working loss turnover factor (potential)	K_N	0.46	dimensionless	Saturation; turnovers >36 = (180 + N) / 6 * N; turnovers at 36 or lower = 1
Stock vapor density	W_V	0.00	lb/ft^3	Equation 1-22
Vapor Molecular Weight at 60 °F	M_V	130	lb/lb-mole	Table 7.1-2
Vapor pressure at 60 °F	P_{VA}	0.004135096	psia	Equation 1-25, P_{VA} based on T_{LA}
Vapor space volume	V_V	8111.22	ft^3	Equation 1-3
Vapor space roof outage	H_{RO}	1.92	feet	Equation 1-17 Cone; Equation 1-19 Dome
Vapor space tank outage	H_{VO}	23.42	feet	Equation 1-16, vertical
Vapor space expansion factor	K_E	0.03		Equation 1-5
Vented vapor saturation factor	K_S	0.99	dimensionless	Equation 1-21
Working loss product factor	K_P	1	dimensionless	Assume value of 1 for gasoline or diesel.
Ideal gas constant	R	10.731	psia*ft^3/lb-mole*°R	Constant, Equation 1-22
Average vapor temperature	T_V	507.30	°R	Equation 1-33
Daily average liquid surface temperature	T_{LA}	506.39	°R	Equation 1-28
Daily vapor temperature range	ΔT_V	19.15	°R	Equation 1-7
Daily ambient temperature range	ΔT_A	19.00	°R	Equation 1-11
Daily maximum ambient temperature	T_{AX}	513.90	°R	Table 7-1-7. Conversion factor: Rankine = Fahrenheit + 459.7
Daily minimum ambient temperature	T_{AN}	494.90	°R	Table 7-1-7. Conversion factor: Rankine = Fahrenheit + 459.7
Daily average ambient temperature	T_{AA}	504.40	°R	Equation 1-30
Liquid bulk temperature	T_B	505.28	°R	Equation 1-31
Daily vapor pressure range	ΔP_V	0.00	psia	Equation 1-9
Breather vent pressure setting range	ΔP_B	0.06	psi	Equation 1-10
Vapor pressure equation constant	A	12.101	dimensionless	Table 7.1-2
Vapor pressure equation constant	B	8907	°R	Table 7.1-2
Vapor pressure at T_{LX}	P_{VX}	0.00	psia	Equation 1-9, note 5
Vapor pressure at T_{LN}	P_{VN}	0.00	psia	Equation 1-9, note 5
Maximum T_{LA}	T_{LX}	511.18	°R	Equation 1-9, note to Figure 7.1-17
Minimum T_{LA}	T_{LN}	501.60	°R	Equation 1-9, note to Figure 7.1-17

Xcel Energy - Blue Lake Plant
IA 1 - Blasting Cabinet

Demonstration that the abrasive blasting cabinet qualifies as conditionally insignificant under 7008.4110.
PM Emissions Calculation Required by 7008.4110 Subp. 4:

Subp. 4. **Calculating emissions of particulate matter.** The owner or operator claiming mechanical finishing operations as a conditionally insignificant activity must calculate emissions of particulate matter from each mechanical finishing operation according to the following equations:

$$E = E_C + E_U$$

$$E_C = OP \times EF \times Q_{Air} \times (1 \text{ lb}/7{,}000 \text{ grains}) \times (60 \text{ minutes}/1 \text{ hour})$$

$$E_U = R \times E_C$$

Where:

E = actual emissions from the mechanical finishing operation, in pounds per calendar year.

E_C = actual emissions from the control equipment, in pounds per calendar year.

E_U = actual emissions that are uncaptured by the control equipment, in pounds per calendar year.

OP = hours of operations of the control equipment per calendar year.

EF = design concentration for particulate matter from the control equipment, in grains per standard cubic foot, but if the manufacturer's design value is unknown, then the default value is 0.07 grains per standard cubic foot for cyclones or 0.03 grains per standard cubic foot for fabric filters.

Q_{Air} = design airflow rate from the control equipment, in standard cubic feet per minute.

Pollutant	Potential Operating Hours hr/yr	Filtration System Design PM Rate gr/scf	Design Air Flow Rate scfm	Controlled Emissions (lb pollutant/hr)	Controlled Emissions (ton pollutant/yr)	Controlled Emissions (lb pollutant/yr)	7008.4110 Subp. 2 Threshold (lbs/calendar yr)	Control Efficiency % from 7007.0070 for total enclosure	Potential to Emit (PTE) uncontrolled (lb/hr)	Potential to Emit (PTE) uncontrolled (tons/year)	Does this unit qualify as a conditionally IA?
PM (Particulate Matter)	8760	0.03	282	0.0724	0.3173	**635**	**10,000**	99%	7.24	31.73	Yes, 7008.4110, subp. 4
PM 10 (PM < 10 microns)	8760	0.03	282	0.0724	0.3173	**635**	**10,000**	99%	7.24	31.73	Yes, 7008.4110, subp. 4
PM2.5 (PM < 2.5 microns)	8761	0.03	282	0.0724	0.3173	**635**	**10,001**	99%	7.25	31.73	Yes, 7008.4110, subp. 4

Filtration system design particulate concentration assumed according to 7008.4110 Subp. 4 for fabric filters.
Sandblasting cabinet fabric filtration system is total enclosure.
Design air flow rate from manufacturer specifications for Snap-On #YA4224 Abrasive Blast Cabinet. Exhaust system flow is 280 cfm @ 2.5" wc static pressure (gauge).
Standard pressure of 1 atm = 406.78" wc absolute, ambient temperature assumed in conversion to scfm.
Control efficiency for fabric filters from 7007.0070 is assumed in order to back calculate uncontrolled emissions. The PM control eff. of 99% is conservatively assumed for both PM & PM10 as PM10 EF is assumed equal to PM EF and back calculating uncontrolled emissions using a higher % eff. is conservative.
In order for CAM to apply, the uncontrolled PTE must be greater than 100 tons/yr for PM. Therefore, CAM does not apply to this emission unit.

Xcel Energy - Blue Lake Plant
IA 2 - Parts Washer

Demonstration that solvent use in a parts washer with 35 gallon capacity qualifies as conditionally insignificant under Minn. R. 7008.4100.
VOC Emissions Calculation Required by 7008.4100
Capacity: *35.00* *Gallons (one cleaning/turnover per yr)*
Solvent Properties Obtained from SDS:

Solvent	Relative Density	Density (lb/gal)	VOC
ZEP Dyna 14	0.79	6.59	100%

Pollutant	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Uncontrolled Emissions (lb/yr)	IA Threshold lb/yr	Does this unit qualify as a conditionally IA?
VOC	2.63E-02	1.15E-01	**231**	**10,000**	Yes, 7008.4100

Liquid Petroleum Gas

EQUI ID	IA 3
Heat Input (MMBtu/hr)	0.08
Fuel Usage (1000 Gal/hr)	0.000874317
Fuel Usage (MMscf/hr)	3.14492E-05
Unlimited Operating Hours	8760
Limited Operating Hours	8760
Sulfur %	0.0123
Firing Type	Propane, Commercial

Per AP-42 1.5.3.1 propane is 91.5 mmbtu/1000 gal
91.5 mmbtu/1000 gal

	Pollutant	AP-42 Emission Factor (lb/1000 gal)	Other Emission Factor (lb/1000 gal)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	lb/year	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
PM	Particulate Matter	7.00E-01			6.12E-04	6.12E-04	5.36	2.68E-03	2.68E-03
PM_{10}	PM < 10 micron	7.00E-01			6.12E-04	6.12E-04	5.36	2.68E-03	2.68E-03
$PM_{2.5}$	PM < 2.5 micron	7.00E-01			6.12E-04	6.12E-04	5.36	2.68E-03	2.68E-03
NO_X	Nitrogen Oxides	1.30E+01			1.14E-02	1.14E-02	99.57	4.98E-02	4.98E-02
CO	Carbon Monoxide	7.50E+00			6.56E-03	6.56E-03	57.44	2.87E-02	2.87E-02
SO_2	Sulfur Dioxide	1.00E-01			1.08E-06	1.08E-06	0.01	4.71E-06	4.71E-06
VOC	Volatile Organic Compounds	1.00E+00			8.74E-04	8.74E-04	7.66	3.83E-03	3.83E-03
Lead	Lead Compounds	5.00E-03			4.37E-06	4.37E-06	0.04	1.91E-05	1.91E-05
Total HAPs	HAPs - Total	1.89E+00			1.65E-03	1.65E-03	14.46	7.23E-03	7.23E-03
CO_2	Carbon Dioxide	1.39E+02			1.11E+01	1.11E+01	9.71E+04	4.86E+01	4.86E+01
CH_4	Methane	6.61E-03			5.29E-04	5.29E-04	4.63E+00	2.32E-03	2.32E-03
N_2O	Nitrous Oxide	1.32E-03			1.06E-04	1.06E-04	9.27E-01	4.63E-04	4.63E-04
CO_2e	Carbon Dioxide Equivalent	1.39E+02			1.11E+01	1.11E+01	9.75E+04	4.88E+01	4.88E+01
1,1,2,2-Tetrachloroethane	1,4-Dichlorobenzene (para-)	1.20E-03			3.77E-08	3.77E-08	3.31E-04	1.65E-07	1.65E-07
Arsenic	Arsenic compounds	2.00E-04			6.29E-09	6.29E-09	5.51E-05	2.75E-08	2.75E-08
Benzene	Benzene	2.10E-03			6.60E-08	6.60E-08	5.79E-04	2.89E-07	2.89E-07
Beryllium	Beryllium compounds	1.20E-05			3.77E-10	3.77E-10	3.31E-06	1.65E-09	1.65E-09
Cadmium	Cadmium compounds	1.10E-03			3.46E-08	3.46E-08	3.03E-04	1.52E-07	1.52E-07
Chromium	Chromium compounds	1.40E-03			4.40E-08	4.40E-08	3.86E-04	1.93E-07	1.93E-07
Cobalt	Cobalt compounds	8.40E-05			2.64E-09	2.64E-09	2.31E-05	1.16E-08	1.16E-08
Formaldehyde	Formaldehyde	7.50E-02			2.36E-06	2.36E-06	2.07E-02	1.03E-05	1.03E-05
n-Hexane	Hexane	1.80E+00			5.66E-05	5.66E-05	4.96E-01	2.48E-04	2.48E-04
Manganese	Manganese compounds	3.80E-04			1.20E-08	1.20E-08	1.05E-04	5.23E-08	5.23E-08
Mercury	Mercury	2.60E-04			8.18E-09	8.18E-09	7.16E-05	3.58E-08	3.58E-08
Naphthalene	Naphthalene	6.10E-04			1.92E-08	1.92E-08	1.68E-04	8.40E-08	8.40E-08
Nickel	Nickel compounds	2.10E-03			6.60E-08	6.60E-08	5.79E-04	2.89E-07	2.89E-07
POM	Polycyclic organic matter (POM)	6.98E-04			2.20E-08	2.20E-08	1.92E-04	9.62E-08	9.62E-08
Selenium	Selenium compounds	2.40E-05			7.55E-10	7.55E-10	6.61E-06	3.31E-09	3.31E-09
Toluene	Toluene	3.40E-03			1.07E-07	1.07E-07	9.37E-04	4.68E-07	4.68E-07

Other Emission Factor and/or Control Efficiency Factor Notes:

Notes for AP-42, Section 1.5 Calculations:

The SO2 emission factor is determined by multiplying the sulfur content of the fuel (expressed in gr/100ft^3 gas vapor) by a numerical constant, as found in AP-42 Section 1.5-1. Emission factors for CO2, CH4, and N2O are from 40 CFR Part 98, Subpart C, Table C-1 and C-2 (November 29, 2013). CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 25, and N2O = 298) (November 29, 2013).

Firing Options					
Butane, Industrial					
Butane, Commercial					
Propane, Industrial		1 gal pro	35.97 scf	1cf	2516 btu
Propane, Commercial				1gal	91452 btu
Design based PTE of PM	0.00765	1 ft3	0.0278 gal		
Combined total heat input	0.20500 MMBTU/hr				
	205000 BTU/hr				

Insignificant Activity Criteria	These IAs 3 and 4 qualify as IA under subp. 3(A)
To qualify as an insignificant activity under Minn. R. 7007.1300, subp. 3(A), 420000 BTU/hr	Yes, 7007.1300, subp. 3A

EQUI ID	IA 4	Per AP-42 1.5.3.1 propane is 91.5 mmbtu/1000 gal
Heat Input (MMBTU/hr)	0.125	91.5 mmbtu/1000 gal
Fuel Usage (1000 Gal/hr)	0.00136612	
Fuel Usage (MMscf/hr)	4.91393E-05	
Unlimited Operating Hours	8760	
Limited Operating Hours	8760	
Sulfur %	0.0123	
Firing Type	Propane, Commercial	

AP-42 Emission Factor (lb/1000 gal)	Other Emission Factor (lb/1000 gal)	Control Efficiency (%)	Unrestriced Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
7.00E-01			9.56E-04	9.56E-04	4.19E-03	4.19E-03
7.00E-01			9.56E-04	9.56E-04	4.19E-03	4.19E-03
7.00E-01			9.56E-04	9.56E-04	4.19E-03	4.19E-03
1.30E+01			1.78E-02	1.78E-02	7.78E-02	7.78E-02
7.50E+00			1.02E-02	1.02E-02	4.49E-02	4.49E-02
1.00E-01			1.68E-06	1.68E-06	7.36E-06	7.36E-06
1.00E+00			1.37E-03	1.37E-03	5.98E-03	5.98E-03
5.00E-03			6.83E-06	6.83E-06	2.99E-05	2.99E-05
1.89E+00			2.58E-03	2.58E-03	1.13E-02	1.13E-02
1.39E+02			1.73E+01	1.73E+01	7.59E+01	7.59E+01
6.61E-03			8.27E-04	8.27E-04	3.62E-03	3.62E-03
1.32E-03			1.65E-04	1.65E-04	7.24E-04	7.24E-04
1.39E+02			1.74E+01	1.74E+01	7.62E+01	7.62E+01
1.20E-03			5.90E-08	5.90E-08	2.58E-07	2.58E-07
2.00E-04			9.83E-09	9.83E-09	4.30E-08	4.30E-08
2.10E-03			1.03E-07	1.03E-07	4.52E-07	4.52E-07
1.20E-05			5.90E-10	5.90E-10	2.58E-09	2.58E-09
1.10E-03			5.41E-08	5.41E-08	2.37E-07	2.37E-07
1.40E-03			6.88E-08	6.88E-08	3.01E-07	3.01E-07
8.40E-05			4.13E-09	4.13E-09	1.81E-08	1.81E-08
7.50E-02			3.69E-06	3.69E-06	1.61E-05	1.61E-05
1.80E+00			8.85E-05	8.85E-05	3.87E-04	3.87E-04
3.80E-04			1.87E-08	1.87E-08	8.18E-08	8.18E-08
2.60E-04			1.28E-08	1.28E-08	5.60E-08	5.60E-08
6.10E-04			3.00E-08	3.00E-08	1.31E-07	1.31E-07
2.10E-03			1.03E-07	1.03E-07	4.52E-07	4.52E-07
6.98E-04			3.43E-08	3.43E-08	1.50E-07	1.50E-07
2.40E-05			1.18E-09	1.18E-09	5.17E-09	5.17E-09
3.40E-03			1.67E-07	1.67E-07	7.32E-07	7.32E-07

VOC emissions from vertical, fixed roof tank #3

Enter tank specific information in all blue cells.

Tank information

Tank identification	Tank 35
Description	Tank 35 - Fuel oil
Location (city)	Shakopee, MN

Property	Value	Units	Description
Fuel type	Diesel	select one	Type of fuel stored in the tank.
Type of roof	Dome	select one	Fixed roof structure.
Actual throughput	897,900	gal/yr	Gallons stored in his tank over the period of 12 consecutive months.
Actual hours operated	8760	hours/year	Number of hours the tank is being used.
Potential throughput	1,167,270	gal/yr	Calculated based on actual tank throughput divided by the hours operated and multiplied by 8760 hours/day.
VOC actual emissions	**0.05**	ton/yr	Amount of VOC actually released over the 12-month period.
VOC potential emissions	**0.05**	ton/yr	Amount of VOCs potentially released over a 12-month period.

Physical properties of the tank

Property		Value	Units	Description
Shell height	H_S	16	feet	This is actual length of the tank.
Shell diameter	D	100	feet	This is the width of the cylindrical shell.
Shell radius	R_S	50	feet	Calculated radius
Maximum liquid height	H_{LX}	15.29166667	feet	Maximum height of the liquid within the tank shell.
Average liquid height	H_L	15.29166667	feet	Average height of the liquid within the tank shell.
Working volume		898351.5	gallons	Calculated volume
Turnovers per year (actual)	N	0.1	dimensionless	Calculated number the tank is emptied and refilled, annually.
Turnovers per year (potential)	N	0.5	dimensionless	Calculated number the tank could be emptied and refilled, annually.
Shell color/shade		White/NA	select one	Tank shell color and shade are used to identify **paint solar absorptance**.
Shell condition		Average	select one	Tank condition is used to identify **paint solar absorptance**.
Paint solar absorptance	α	0.25	dimensionless	**Insert value from table 7.1-6.** Paint effectiveness in absorbing radiant energy.
Roof height	H_R	17.55	feet	Calculated roof height.
Dome roof radius	R_R	80.00	feet	Calculated radius. Only applies to a "Dome" roof.
Cone roof slope	S_R	--	ft/ft	If unknown = 0.0625. If known, insert value. Only applies to a "Cone" roof.
Vacuum setting	P_{BV}	-0.03	psig	Vacuum setting is a value set for the tank at the facility.
Pressure setting	P_{BP}	0.03	psig	Breather vent pressure is a reading from the tank monitoring system.

VOC emissions from vertical, fixed roof tank #3

Weather data

Property		Value	Units	Description
Nearest major city		Minneapolis - St. Paul	Select one	Nearest major city to the tank location.
Average annual maximum temperature	T_{AX}	54.2	°F	Average over a calendar year.
Average annual minimum temperature	T_{AN}	35.2	°F	Average over a calendar year.
Atmospheric pressure	P_A	14.26	psia	Average for the location.
Solar insolation	I	1170.00	Btu/(ft^2·day)	Total for a horizontal surface.

Calculation of VOC Emission = Total Losses (L_T)

Variable		Calculated value		Notes (equations are from AP-42, Chapter 7)
Total losses (VOC actual emissions)	L_T	**105.57**	lb/yr	Equation 1-1
Total losses (VOC potential emissions)	L_T	**109.13**	lb/yr	Equation 1-1
Standing storage losses	L_S	93.72	lb/yr	Equation 1-2
Working losses (actual)	L_W	11.85	lb/yr	Equation 1-35
Working losses (potential)	L_W	15.41	lb/yr	Equation 1-35
Annual net throughput (actual)	Q	21378.57	bbl/yr	Based on actual throughput entered by user (gal/year) / 42 bbl/gal
Annual net throughput (potential)	Q	27792.14	bbl/yr	Based on calculated potential throughput (gal/year) / 42 bbl/gal
Working loss turnover factor (actual)	K_N	1.00	dimensionless	Saturation; turnovers >36 = (180 + N) / 6 * N; turnovers at 36 or lower = 1; Equation 1
Working loss turnover factor (potential)	K_N	1.00	dimensionless	Saturation; turnovers >36 = (180 + N) / 6 * N; turnovers at 36 or lower = 1
Stock vapor density	W_V	0.00	lb/ft^3	Equation 1-22
Vapor Molecular Weight at 60 °F	M_V	130	lb/lb-mole	Table 7.1-2
Vapor pressure at 60 °F	P_{VA}	0.004135096	psia	Equation 1-25, P_{VA} based on T_{LA}
Vapor space volume	V_V	77312.30	ft^3	Equation 1-3
Vapor space roof outage	H_{RO}	9.14	feet	Equation 1-17 Cone; Equation 1-19 Dome
Vapor space tank outage	H_{VO}	9.84	feet	Equation 1-16, vertical
Vapor space expansion factor	K_E	0.03		Equation 1-5
Vented vapor saturation factor	K_S	1.00	dimensionless	Equation 1-21
Working loss product factor	K_P	1	dimensionless	Assume value of 1 for gasoline or diesel.
Ideal gas constant	R	10.731	psia*ft^3/lb-mole*°R	Constant, Equation 1-22
Average vapor temperature	T_V	507.30	°R	Equation 1-33
Daily average liquid surface temperature	T_{LA}	506.39	°R	Equation 1-28
Daily vapor temperature range	ΔT_V	19.15	°R	Equation 1-7
Daily ambient temperature range	ΔT_A	19.00	°R	Equation 1-11
Daily maximum ambient temperature	T_{AX}	513.90	°R	Table 7-1-7. Conversion factor: Rankine = Fahrenheit + 459.7
Daily minimum ambient temperature	T_{AN}	494.90	°R	Table 7-1-7. Conversion factor: Rankine = Fahrenheit + 459.7
Daily average ambient temperature	T_{AA}	504.40	°R	Equation 1-30
Liquid bulk temperature	T_B	505.28	°R	Equation 1-31
Daily vapor pressure range	ΔP_V	0.00	psia	Equation 1-9
Breather vent pressure setting range	ΔP_B	0.06	psi	Equation 1-10
Vapor pressure equation constant	A	12.101	dimensionless	Table 7.1-2
Vapor pressure equation constant	B	8907	°R	Table 7.1-2
Vapor pressure at T_{LX}	P_{VX}	0.00	psia	Equation 1-9, note 5
Vapor pressure at T_{LN}	P_{VN}	0.00	psia	Equation 1-9, note 5
Maximum T_{LA}	T_{LX}	511.18	°R	Equation 1-9, note to Figure 7.1-17
Minimum T_{LA}	T_{LN}	501.60	°R	Equation 1-9, note to Figure 7.1-17

What is the HAP total limited value after the deletion of EQUIs 1-4?

87.18 TPY

Does the facility still need the Pre-Cap for HAPs to qualify as a area source under Pt. 63?

Yes, Pre-CAP is needed

Pollutant	EF (g/kWe·hr) - NG	EF (g/kWe·hr) - Diesel	η (NG)	η (Diesel)	Result (lb/MMBtu) - NG	Xcell calculations	Result (lb/MMBtu) - Diesel	Xcell calculations
NOx	0.08	0.53	0.411	0.396	0.021208	0.02	0.1353726	0.14
CO	0.12	0.18	0.411	0.396	0.031811	0.03	0.0459756	0.05
VOC (as C3H8)	0.015	0.22	0.411	0.396	0.003976	0.04	0.0561924	0.05
PM2.5/PM10	0.1	0.22	0.411	0.396	0.026510	0.03	0.0561924	0.06

Table 101-2

Emission Guarantees at 100% Load – BLUE LAKE & WHEATON

Emission Values for Normal Operation with Catalyst			
Pollutant [A]	**Units**	**100% Load Guarantee [B] Natural Gas Fired**	**100% Load Guarantee [B] Fuel Oil Fired**
NOx	g/kWe	0.08	0.53
CO	g/kWe	0.12	0.18
VOC (as C_3H_8)	g/kWe	~~0.015~~ 0.15[E]	0.22
$PM_{2.5}$ / PM_{10} [C]	g/kWe	0.10[C]	~~0.22~~ 0.15[D]
CO_2	g/kWe	-	-
CH_2O	g/kWe	0.006	-
Acrolein	g/kWe	0.016	-
Acetaldehyde	g/kWe	0.013	-
Methanol	g/kWe	0.007	-
Flow Stack	Nm^3/s dry	10.5	13.1
Reference	O_2% dry		
Gas Consumption	scfh	Refer to Heat Rate Table 101a & 101b	Refer to Heat Rate Table 101a & 101b
Output Mech	BHP-gross	12,861	12,675 / 12,674
Output	kWe-gross	9,370	9,233 / 9,232

Notes:

(A) Controls - oxidation catalyst and SCR using NH3 or urea

(B) 100% load values are to be provided as guarantees

(C) Filterable plus condensable

(D) Filterable

(E) Guarantee applies for fuel gas VOC concentrations <1.0 mol-%. For fuel gas VOC concentrations between 1.0 mol-% and 1.8 mol-% guarantee is 0.17 g/kWe

Methodology for Converting Emission Guarantees (g/kWe-hr) to lb/MMBtu

Emission guarantees provided by the manufacturer were expressed in **grams per kilowatt-electric hour (g/kWe-hr)**. To compare with emission standards expressed on a heat input basis (**lb/MMBtu**), the following conversion was performed:

1. **Unit Conversion:**
   Each emission factor (EF) in g/kWe-hr was converted to lb/kWe-hr using:
   $$1\ \text{g} = 2.2046 \times 10^{-3}\ \text{lb}$$
2. **Thermal Efficiency Determination:**
   Engine efficiencies were derived from the rated electrical output (kWe) and the corresponding heat input (MMBtu/hr):
   $$\eta = \frac{(\text{kWe} \times 3,412\ \text{Btu/kWe\cdotphr})}{\text{Heat Input (Btu/hr)}}$$
   resulting in **0.411** for natural gas and **0.396** for diesel operation.
3. **Conversion to Heat Input Basis:**
   The emission factors were converted to lb/MMBtu using the relationship:
   $$\text{EF(lb/MMBtu)} = \text{EF(g/kWe\cdotphr)} \times 0.645 \times \eta$$
   where 0.645 is the derived conversion constant combining the mass and energy unit conversions.
4. **Application of Engine-Specific Efficiency:**
   Each pollutant factor was multiplied by the appropriate efficiency (0.411 for natural gas, 0.396 for diesel) to obtain the final **lb/MMBtu** values.

Reference tables from AP-42, chapter 7

AP-42, Chapter 7 (updated June 2020) https://www3.epa.gov/ttn/chief/ap42/ch07/final/ch07s01.pdf

Table 7.1-2 Properties of selected petroleum liquids at 60°F

Petroleum liquid	Vapor molecular weight M_V (lb/lb-mole)	Liquid density W_L (lb/gal)	True vapor pressure P_{VA} (psi)	Vapor pressure equation A (dimensionless)	Vapor pressure B (°R)
Distillate fuel oil No. 2	130	7.1	0.006	12.101	8907
Gasoline RVP 7	68	5.6	3.5	11.833	5500.6

Table 7.1-6 Paint solar absorption for fixed roof tanks

Paint Color	Paint shade or type	Reflective condition (α)[1] New	Average	Aged	
Aluminum	Specular	0.39	0.44	0.49	Aluminum paint/Specular shade
Aluminum	Diffuse	0.60	0.64	0.68	Aluminum paint/Diffuse shade
Aluminum[2]	Mill-finish, unpainte	0.10	0.12	0.15	Aluminum metal/unpainted
Beige/Cream	No shade	0.35	0.42	0.49	Beige/Cream/no shade
Black	No shade	0.97	0.97	0.97	Black/no shade
Brown	No shade	0.58	0.62	0.67	Brown/no shade
Gray	Light	0.54	0.58	0.63	Gray/Light shade
Gray	Medium	0.68	0.71	0.74	Gray/Medium shade
Green	Dark	0.89	0.90	0.91	Green/Dark shade
Red	Primer	0.89	0.90	0.91	Red/Primer shade
Rust	Red iron oxide	0.38	0.44	0.50	Rust/Red iron oxide shade
Tan	No shade	0.43	0.49	0.55	Tan/no shade
White	N/A not applicable	0.17	0.25	0.34	White/NA

[1]Reflective condition definitions

New: For paint, paint still retains the fresh shine of having been recently applied; for mill-finished aluminum, surface is shiny.

Average: For paint, paint is in good condition, but the initial shine has faded; for mill-finished aluminum, surface is oxidized but still bright.

Aged: For paint, paint is noticeably faded and dull; for mill-finish aluminum, surface is dull.

[2]Refers to aluminum as the base metal, rather than aluminum colored paint.

Table 7.1-7 Daily average maximum, daily average minimum liquid temperature, and insolation factor in Minnesota

Location	Average daily maximum temperature[1] T_{AX} °F	Average daily minimum temperature[1] T_{AN} °F	Average solar insolation factor I Btu/(ft²·day)	Atmospheric pressure P_A psia (ln/in²)
Minneapolis - St. Paul	54.2	35.2	1170	14.26
Duluth, MN	48.2	31.4	1133	13.95
International Falls, MN	48.2	27.6	1077	14.08
Rochester, MN	53.2	36	1169	14.01
St. Cloud, MN	52.9	32.9	1165	14.16

[1]Ambient temperature

Conversion Constants:

ppm SO2 to lb/scf:	0.000000166
ppm NOx to lb/scf:	0.0000001194
ppm CO to lb/scf:	0.00000007267
ppm HCl to lb/scf:	0.0000000947

1 lb=	7000	grains
1 lb=	453,590,000	micrograms
1 scf=	0.02831685	scm
1 lb=	453590000000	nanograms
1 kg=	2.20462262	lbs

1.4 Natural Gas Combustion

1.4.1 General[1-2]

Natural gas is one of the major fuels used throughout the country. It is used mainly for industrial process steam and heat production; for residential and commercial space heating; and for electric power generation. Natural gas consists of a high percentage of methane (generally above 85 percent) and varying amounts of ethane, propane, butane, and inerts (typically nitrogen, carbon dioxide, and helium). Gas processing plants are required for the recovery of liquefiable constituents and removal of hydrogen sulfide before the gas is used (see Section 5.3, Natural Gas Processing). The average gross heating value of natural gas is approximately 1020 British thermal units per standard cubic foot (Btu/scf), usually varying from 950 to 1050 Btu/scf.

Natural Gas BTU: 1020 Btu/scf

Emission Factors

AP-42, Section 1.1 Emission Factors for Bituminous and Sub-bituminous Coal[1,2]

	PC, dry bottom, wall-fired, bituminous Pre-NSPS	PC, dry bottom, wall-fired, bituminous, Pre-NSPS with low-NOx burner	PC, dry bottom, wall-fired, bituminous NSPS	PC, dry bottom, wall-fired, sub-bituminous Pre-NSPS	PC, dry bottom, wall-fired, sub-bituminous NSPS	PC, dry bottom, cell burner fired, bituminous	PC, dry bottom, cell burner fired, sub-bituminous	PC, dry bottom, tangentially fired, bituminous, Pre-NSPS	PC, dry bottom, tangentially fired, bituminous, Pre-NSPS with low-NOx burner	PC, dry bottom, tangentially fired, bituminous, NSPS
Parameter Code	lb/ton									
Particulate Matter	10	10	10	10	10	10	10	10	10	10
PM < 10 micron	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
PM < 2.5 micron	0.6	0.6	0.6	2.3	2.3	2.3	2.3	0.6	0.6	0.6
Nitrogen Oxides	22	11	12	12	7.4	31	31	14	15	9.7	10
Carbon Monoxide	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sulfur Dioxide	38	38	38	35	35	38	35	38	38	38	38
Volatile Organic Compounds	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Lead Compounds	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04
Parameter Code	kg/MMBtu										
Carbon Dioxide	93.28	93.28	93.28	97.17	97.17	93.28	97.17	93.28	93.28	93.28	93.28
Methane	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Nitrous Oxide	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
Carbon Dioxide Equivalent	94.0318	94.0318	94.0318	97.9218	97.9218	94.0318	97.9218	94.0318	94.0318	94.0318	94.0318
Parameter Code	lb/ton										
HAPs - Total	2.08E+03	2.08E+03	2.08E+03	2.08E+03	2.08E+03	1.58E+00	1.58E+00	2.40E+03	2.40E+03	2.40E+03	2.40E+03
HAPs											
1,1,1-Trichloroethane	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
1,2-Dibromoethane (Ethylene dibromide). EDB	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06
1,2-Dichloroethane	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05
1,4-Dichlorobenzene (para-)											
1,2-Dichloropropane											
2,4,6-Trichlorophenol											
2,4-Dinitrophenol											
2,4-Dinitrotoluene	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07
2-Chloroacetophenone	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06
Acetaldehyde	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04
Acetophenone	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
Acrolein	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Antimony compounds	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03
Arsenic compounds	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02
Benzene	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Benzyl chloride	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04
Beryllium Compounds	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03
Bis(2-ethylhexyl) phthalate	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05
Bromoform	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05
Bromomethane (Methyl bromide)	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04
Cadmium compounds	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03
Carbon disulfide	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04
Carbon tetrachloride											
Chlorine											
Chlorobenzene (Monochlorobenzene)	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05
Chloroethane	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05
Chloroform	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05
Chloromethane	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04
Chromium compounds	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02
Cobalt compounds	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02
Cumene (Isopropylbenzene)	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06
Cyanide compounds	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03
Dichloromethane (Methylene chloride)	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Dimethyl sulfate	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05
Ethylbenzene	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05
Formaldehyde	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Hexane	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05
Hydrogen Chloride	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00
Hydrogen Fluoride	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01
Isophorone	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04
Manganese compounds	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02
Mercury	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02
Methyl methacrylate	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Methylhydrazine	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04
Methyl-tert-butylether	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05
Nickel compounds	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02
Pentachlorophenol (PCP)											
Phenol	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05
Phosphorus											
Polycyclic organic matter (POM)	2.08E+03	2.08E+03	2.08E+03	2.08E+03	2.08E+03	2.08E-05	2.08E-05	2.40E+03	2.40E+03	2.40E+03	2.40E+03
Propionaldehyde	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04
Selenium compounds	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Styrene	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05
Tetrachloroethylene (Perchloroethylene)	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05
Toluene	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Vinyl acetate (Acetic acid)	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06
Vinyl chloride (chloroethene)											
Xylenes, Total	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05
POMs											
2-Methylnaphthalene											
5-Methylchrysene	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08
7,12-Dimethylbenz[a]anthracene											
Acenaphthene	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07
Acenaphthylene	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07
Anthracene	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07
Benzo(a)anthracene	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08
Benzo(b)fluoranthene											
Benzo(e)pyrene											
Benzo(ghi)perylene	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08
Benzo(b)fluoranthene	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07
Benzo(k)fluoranthene											
Benzo[a]pyrene	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08
Biphenyl	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06
Chrysene	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
Dibenz[a,h]anthracene											
Dioxins and Furans											
Fluoranthene	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07
Fluorene	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07
Indeno(1,2,3-cd)pyrene	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08
Naphthalene	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05
Octachlorodibenzo-p-dioxin											
PCBs (Polychlorinated biphenyls)											
Phenanthrene	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06
Pyrene	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07
Total POM	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05

[1]Uncontrolled emission factors are derived from AP-42 Section 1.1 controlled emission factors assuming an ESP with a control efficiency of 99.2%.

[2]Polycyclic Organic Matter (POM) emission factor has units of lb/MMBtu for the following firing types:

PC, dry bottom, wall-fired, bituminous Pre-NSPS
PC, dry bottom, wall-fired, bituminous, Pre-NSPS with low-NOx burner
PC, dry bottom, wall-fired, bituminous NSPS
PC, dry bottom, wall-fired, sub-bituminousPre-NSPS
PC, dry bottom, wall-fired, sub-bituminous NSPS
PC, dry bottom, tangentially fired, bituminous, Pre-NSPS
PC, dry bottom, tangentially fired, bituminous, Pre-NSPS with low-NOx burner
PC, dry bottom, tangentially fired, bituminous, NSPS
PC, dry bottom, tangentially fired, sub-bituminous, pre-NSPS
PC, dry bottom, tangentially fired, sub-bituminous, NSPS

Emission Factors

	PC, dry bottom, tangentially fired, sub-bituminous, pre-NSPS	PC, dry bottom, tangentially fired, sub-bituminous, NSPS	PC, wet bottom, wall-fired, bituminous, Pre-NSPS	PC, wet bottom, wall-fired, bituminous, NSPS	PC, wet bottom, wall-fired, sub-bituminous	Cyclone Furnace, bituminous	Cyclone Furnace, sub-bituminous	Spreader stoker, bituminous	Spreader stoker, bituminous, with multiple cyclones, with reinjection	Spreader stoker, bituminous, with multiple cyclones, no reinjection
Parameter Code										
Particulate Matter	10	10	7	7	7	2	2	66	17.0	12.0
PM < 10 micron	2.3	2.3	2.6	2.6	2.6	0.26	0.26	13.2	12	7.8
PM < 2.5 micron	2.3	2.3	1.48	2.6	2.6	0.11	0.26	4.6	1.4	3.2
Nitrogen Oxides	8.4	7.2	31	14	24	33	17	11	11	11
Carbon Monoxide	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5	5
Sulfur Dioxide	35	35	38	38	35	38	35	38	38	38
Volatile Organic Compounds	0.06	0.06	0.04	0.04	0.04	0.11	0.11	0.05	0.05	0.05
Lead Compounds	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04
Parameter Code										
Carbon Dioxide	97.17	97.17	93.28	93.28	97.17	93.28	97.17	93.28	93.28	93.28
Methane	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Nitrous Oxide	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
Carbon Dioxide Equivalent	97.9218	97.9218	94.0318	94.0318	97.9218	94.0318	97.9218	94.0318	94.0318	94.0318
Parameter Code										
HAPs - Total	2.40E+03	2.40E+03	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00
HAPs										
1,1,1-Trichloroethane	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
1,2-Dibromoethane (Ethylene dibromide). EDB	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06
1,2-Dichloroethane	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05
1,4-Dichlorobenzene (para-)										
1,2-Dichloropropane										
2,4,6-Trichlorophenol										
2,4-Dinitrophenol										
2,4-Dinitrotoluene	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07
2-Chloroacetophenone	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06
Acetaldehyde	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04
Acetophenone	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
Acrolein	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Antimony compounds	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03
Arsenic compounds	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02
Benzene	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Benzyl chloride	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04
Beryllium Compounds	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03
Bis(2-ethylhexyl) phthalate	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05
Bromoform	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05
Bromomethane (Methyl bromide)	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04
Cadmium compounds	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03
Carbon disulfide	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04
Carbon tetrachloride										
Chlorine										
Chlorobenzene (Monochlorobenzene)	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05
Chloroethane	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05
Chloroform	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05
Chloromethane	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04
Chromium compounds	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02
Cobalt compounds	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02
Cumene (Isopropylbenzene)	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06
Cyanide compounds	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03
Dichloromethane (Methylene chloride)	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Dimethyl sulfate	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05
Ethylbenzene	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05
Formaldehyde	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Hexane	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05
Hydrogen Chloride	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00
Hydrogen Fluoride	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01
Isophorone	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04
Manganese compounds	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02
Mercury	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02
Methyl methacrylate	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Methylhydrazine	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04
Methyl-tert-butylether	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05
Nickel compounds	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02
Pentachlorophenol (PCP)										
Phenol	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05
Phosphorus										
Polycyclic organic matter (POM)	2.40E+03	2.40E+03	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05
Propionaldehyde	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04
Selenium compounds	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Styrene	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05
Tetrachloroethylene (Perchloroethylene)	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05
Toluene	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Vinyl acetate (Acetic acid)	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06
Vinyl chloride (chloroethene)										
Xylenes, Total	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05
POMs										
2-Methylnaphthalene										
5-Methylchrysene	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08
7,12-Dimethylbenz[a]anthracene										
Acenaphthene	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07
Acenaphthylene	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07
Anthracene	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07
Benzo(a)anthracene	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08
Benzo(b)fluoranthene										
Benzo(e)pyrene										
Benzo(ghi)perylene	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08
Benzo(b)fluoranthene	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07
Benzo(k)fluoranthene										
Benzo[a]pyrene	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08
Biphenyl	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06
Chrysene	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
Dibenz[a,h]anthracene										
Dioxins and Furans										
Fluoranthene	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07
Fluorene	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07
Indeno(1,2,3-cd)pyrene	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08
Naphthalene	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05
Octachlorodibenzo-p-dioxin										
PCBs (Polychlorinated biphenyls)										
Phenanthrene	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06
Pyrene	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07
Total POM	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05

Emission Factors

	Spreader stoker, sub-bituminous	Spreader stoker, sub-bituminous, with multiple cyclones, with reinjection	Spreader stoker, sub-bituminous, with multiple cyclones, no reinjection	Overfeed stoker, bituminous	Overfeed stoker, bituminous, with multiple cyclones	Overfeed stoker, sub-bituminous	Overfeed stoker, sub-bituminous, with multiple cyclones	Underfeed stoker, bituminous	Underfeed stoker, bituminous, with multiple cyclones	Underfeed stoker, sub-bituminous
Parameter Code										
Particulate Matter	66	17	12	16.0	9.0	16.0	9.0	15	11	15
PM < 10 micron	13.2	12.4	7.8	6.0	5.0	6.0	5.0	6.2	6.2	6.2
PM < 2.5 micron	4.6	12.4	7.8	2.2	3.8	2.2	5.0	3.8	6.2	6.2
Nitrogen Oxides	8.8	8.8	8.8	7.5	7.5	7.5	7.5	9.5	9.5	9.5
Carbon Monoxide	5	5	5	6	6	6	6	11	11	11
Sulfur Dioxide	35	35	35	38	38	35	35	31	31	31
Volatile Organic Compounds	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.3	1.3	1.3
Lead Compounds	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04
Parameter Code										
Carbon Dioxide	97.17	97.17	97.17	93.28	93.28	97.17	97.17	93.28	93.28	97.17
Methane	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Nitrous Oxide	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
Carbon Dioxide Equivalent	97.9218	97.9218	97.9218	94.0318	94.0318	97.9218	97.9218	94.0318	94.0318	97.9218
Parameter Code										
HAPs - Total	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00
HAPs										
1,1,1-Trichloroethane	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
1,2-Dibromoethane (Ethylene dibromide). EDB	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06
1,2-Dichloroethane	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05
1,4-Dichlorobenzene (para-)										
1,2-Dichloropropane										
2,4,6-Trichlorophenol										
2,4-Dinitrophenol										
2,4-Dinitrotoluene	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07
2-Chloroacetophenone	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06
Acetaldehyde	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04
Acetophenone	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
Acrolein	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Antimony compounds	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03
Arsenic compounds	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02
Benzene	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Benzyl chloride	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04
Beryllium Compounds	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03
Bis(2-ethylhexyl) phthalate	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05
Bromoform	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05
Bromomethane (Methyl bromide)	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04
Cadmium compounds	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03
Carbon disulfide	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04
Carbon tetrachloride										
Chlorine										
Chlorobenzene (Monochlorobenzene)	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05
Chloroethane	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05
Chloroform	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05
Chloromethane	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04
Chromium compounds	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02
Cobalt compounds	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02
Cumene (Isopropylbenzene)	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06
Cyanide compounds	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03
Dichloromethane (Methylene chloride)	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Dimethyl sulfate	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05
Ethylbenzene	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05
Formaldehyde	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Hexane	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05
Hydrogen Chloride	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00
Hydrogen Fluoride	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01
Isophorone	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04
Manganese compounds	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02
Mercury	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02
Methyl methacrylate	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Methylhydrazine	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04
Methyl-tert-butylether	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05
Nickel compounds	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02
Pentachlorophenol (PCP)										
Phenol	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05
Phosphorus										
Polycyclic organic matter (POM)	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05
Propionaldehyde	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04
Selenium compounds	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Styrene	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05
Tetrachloroethylene (Perchloroethylene)	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05
Toluene	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Vinyl acetate (Acetic acid)	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06
Vinyl chloride (chloroethene)										
Xylenes, Total	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05
POMs										
2-Methylnaphthalene										
3-Methylchrysene	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08
7,12-Dimethylbenz[a]anthracene										
Acenaphthene	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07
Acenaphthylene	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07
Anthracene	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07
Benzo(a)anthracene	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08
Benzo(b)fluoranthene										
Benzo(e)pyrene										
Benzo(ghi)perylene	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08
Benzo(b)fluoranthene	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07
Benzo(k)fluoranthene										
Benzo[a]pyrene	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08
Biphenyl	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06
Chrysene	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
Dibenz[a,h]anthracene										
Dioxins and Furans										
Fluoranthene	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07
Fluorene	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07
Indeno(1,2,3-cd)pyrene	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08
Naphthalene	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05
Octachlorodibenzo-p-dioxin										
PCBs (Polychlorinated biphenyls)										
Phenanthrene	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06
Pyrene	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07
Total POM	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05

Emission Factors

	Underfeed stoker, sub-bituminous, with multiple cyclones	Hand-fed units, bituminous	Hand-fed units, sub-bituminous	FBC, circulating bed, bituminous	FBC, circulating bed, sub-bituminous	FBC, bubbling bed, bituminous	FBC, bubbling bed, sub-bituminous	AP-42, Section 1.2 Emission Factors for Anthracite Coal[a]			
								Stoker-fired	FBC	Pulverized coal	Residential space heaters
Parameter Code								lb/ton			
Particulate Matter	11	15	15	17	17	17	17	10	10	10	10
PM < 10 micron	6.2	6.2	6.2	12.4	12.4	12.4	12.4	2.3	2.3	2.3	2.3
PM < 2.5 micron	6.2	6.2	6.2	12.4	12.4	12.4	12.4	0.6	0.6	0.6	0.6
Nitrogen Oxides	9.5	9.1	9.1	5.0	5.0	15.2	15.2	9.0	1.8	18	3
Carbon Monoxide	11	275	275	18	18	18	18	0.6	0.6	0.6	0.6
Sulfur Dioxide	31	31	31	39.6	39.6	39.6	39.6	39	2.9	39	39
Volatile Organic Compounds	1.3	10	10	0.05	0.05	0.05	0.05	0.3	0.3	0.3	0.3
Lead Compounds	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	4.20E-04	0.0089	0.0089	0.0089	0.0089
Parameter Code								kg/MMBtu			
Carbon Dioxide	97.17	93.28	97.17	93.28	97.17	93.28	97.17	103.69	103.69	103.69	103.69
Methane	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Nitrous Oxide	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
Carbon Dioxide Equivalent	97.9218	94.0318	97.9218	94.0318	97.9218	94.0318	97.9218	104.4418	104.4418	104.4418	104.4418
Parameter Code								lb/ton			
HAPs - Total	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.58E+00	1.59E+00	1.62E+00	1.62E+00	1.59E+00
HAPs											
1,1,1-Trichloroethane	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
1,2-Dibromoethane (Ethylene dibromide). EDB	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06
1,2-Dichloroethane	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05
1,4-Dichlorobenzene (para-)											
1,2-Dichloropropane											
2,4,6-Trichlorophenol											
2,4-Dinitrophenol											
2,4-Dinitrotoluene	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07	2.80E-07
2-Chloroacetophenone	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06
Acetaldehyde	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04	5.70E-04
Acetophenone	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
Acrolein	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Antimony compounds	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03	2.25E-03
Arsenic compounds	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	5.13E-02	1.90E-04	5.13E-02	5.13E-02	5.13E-02
Benzene	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Benzyl chloride	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04
Beryllium Compounds	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	2.63E-03	3.10E-04	2.63E-03	2.63E-03	2.63E-03
Bis(2-ethylhexyl) phthalate	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05	7.30E-05
Bromoform	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05
Bromomethane (Methyl bromide)	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04
Cadmium compounds	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	6.37E-03	7.10E-05	6.37E-03	6.37E-03	6.37E-03
Carbon disulfide	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04	1.30E-04
Carbon tetrachloride											
Chlorine											
Chlorobenzene (Monochlorobenzene)	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05
Chloroethane	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05	4.20E-05
Chloroform	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05	5.90E-05
Chloromethane	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04	5.30E-04
Chromium compounds	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	4.24E-02	2.80E-02	4.24E-02	4.24E-02	4.24E-02
Cobalt compounds	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02
Cumene (Isopropylbenzene)	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06	5.30E-06
Cyanide compounds	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03
Dichloromethane (Methylene chloride)	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Dimethyl sulfate	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05
Ethylbenzene	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05	9.40E-05
Formaldehyde	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Hexane	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05	6.70E-05
Hydrogen Chloride	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00	1.20E+00
Hydrogen Fluoride	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01
Isophorone	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04	5.80E-04
Manganese compounds	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	6.12E-02	3.60E-03	6.12E-02	6.12E-02	6.12E-02
Mercury	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.30E-04	1.04E-02	1.04E-02	1.04E-02
Methyl methacrylate	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Methylhydrazine	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04	1.70E-04
Methyl-tert-butylether	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05	3.50E-05
Nickel compounds	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	3.50E-02	2.60E-02	3.50E-02	3.50E-02	3.50E-02
Pentachlorophenol (PCP)											
Phenol	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05
Phosphorus											
Polycyclic organic matter (POM)	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	1.62E-01	3.18E-02	3.18E-02	1.11E-03
Propionaldehyde	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04
Selenium compounds	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
Styrene	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05
Tetrachloroethylene (Perchloroethylene)	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05	4.30E-05
Toluene	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04
Vinyl acetate (Acetic acid)	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06
Vinyl chloride (chloroethene)											
Xylenes, Total	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05	3.70E-05
POMs											
2-Methylnaphthalene											
3-Methylchrysene	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08
7,12-Dimethylbenz[a]anthracene											
Acenaphthene	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	5.10E-07	2.20E-05
Acenaphthylene	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	2.50E-07	8.60E-05
Anthracene	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.50E-05
Benzo(a)anthracene	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	8.00E-08	7.10E-05
Benzo(b)fluoranthene											
Benzo(e)pyrene											6.20E-06
Benzo(ghi)perylene	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	2.70E-08	5.50E-06
Benzo(b)fluoranthene	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	2.50E-05
Benzo(k)fluoranthene											
Benzo[a]pyrene	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	5.30E-06
Biphenyl	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	2.50E-02	2.50E-02	2.50E-02	
Chrysene	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	8.30E-05
Dibenz[a,h]anthracene											
Dioxins and Furans											
Fluoranthene	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	7.10E-07	1.70E-04
Fluorene	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	2.50E-05
Indeno(1,2,3-cd)pyrene	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.10E-08	6.90E-06
Naphthalene	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-01	1.30E-05	1.30E-05	2.20E-04
Octachlorodibenzo-p-dioxin											
PCBs (Polychlorinated biphenyls)											
Phenanthrene	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	6.80E-03	6.80E-03	6.80E-03	2.40E-04
Pyrene	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	3.30E-07	1.20E-04
Total POM	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	2.08E-05	1.62E-01	3.18E-02	3.18E-02	1.11E-03

[a]Factors from Section 1.2 used where none provided in Section 1.1.

Emission Factors — **AP-42, Section 1.3 Emission Factors for Fuel Oil**

	Large, No. 6 oil fired, normal firing	Large, No. 6 oil fired, normal firing, low NOx burner	Large, No. 6 oil fired, tangential firing	Large, No. 6 oil fired, tangential firing, low NOx burner	Large, No. 5 oil fired, normal firing	Large, No. 5 oil fired, tangential firing	Large, No. 4 oil fired, normal firing	Large, No. 4 oil fired, tangential firing	Large, No. 2 oil fired	Large, No. 2 oil fired, LNB/FGR	Small, No. 6 oil fired	Small, No. 5 oil fired	Small, No. 4 oil fired	Small, Distillate oil fired	Residential furnace
Parameter Code	lb/10^3 gal														
Particulate Matter	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	2.00	2.00	8.34	8.34	8.34	2.00	0.4
PM < 10 micron	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	1.00	1.00	5.17	5.17	5.17	1.00	0.4
PM < 2.5 micron	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	0.25	0.25	1.92	1.92	1.92	0.25	0.4
Nitrogen Oxides	47	40	32	26	47	32	47	32	24	10	55	55	20	20	18
Carbon Monoxide	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Sulfur Dioxide	157	157	157	157	157	157	150	150	142	142	157	157	150	142	142
Volatile Organic Compounds	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.2	0.2	1.13	1.13	0.34	0.2	0.713
Lead Compounds	1.51E-03	1.51E-03	1.51E-03	1.51E-03	9.00E-09	9.00E-09	9.00E-09	9.00E-09	9.00E-09	9.00E-09	1.51E-03	9.00E-09	9.00E-09	9.00E-09	9.00E-09
Parameter Code	kg/MMBtu														
Carbon Dioxide	75.10	75.10	75.10	75.10	72.93	72.93	75.04	75.04	73.96	73.96	75.10	72.93	75.04	73.96	73.96
Methane	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Nitrous Oxide	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Carbon Dioxide Equivalent	75.3538	75.3538	75.3538	75.3538	73.1838	73.1838	75.2938	75.2938	74.2138	74.2138	75.3538	73.1838	75.2938	74.2138	74.2138
Parameter Code	lb/10^3 gal														
HAPs - Total	5.00E-01	5.00E-01	5.00E-01	5.00E-01	4.10E-02	4.10E-02	4.10E-02	4.10E-02	4.31E-02	4.31E-02	1.53E-01	4.10E-02	4.10E-02	4.31E-02	4.10E-02
HAPs															
1,1,1-Trichloroethane	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04	2.36E-04
1,2-Dibromoethane (Ethylene dibromide). EDB															
1,2-Dichloroethane															
1,4-Dichlorobenzene (para-)															
1,2-Dichloropropane															
2,4,6-Trichlorophenol															
2,4-Dinitrophenol															
2,4-Dinitrotoluene															
2-Chloroacetophenone															
Acetaldehyde															
Acetophenone															
Acrolein															
Antimony compounds	5.25E-03	5.25E-03	5.25E-03	5.25E-03							5.25E-03				
Arsenic compounds	1.32E-03	1.32E-03	1.32E-03	1.32E-03	4.00E-09	4.00E-09	4.00E-09	4.00E-09	4.00E-09	4.00E-09	1.32E-03	4.00E-09	4.00E-09	4.00E-09	4.00E-09
Benzene	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04	2.14E-04
Benzyl chloride															
Beryllium Compounds	2.78E-05	2.78E-05	2.78E-05	2.78E-05	8.00E-09	8.00E-09	8.00E-09	8.00E-09	8.00E-09	8.00E-09	2.78E-05	8.00E-09	8.00E-09	8.00E-09	8.00E-09
Bis(2-ethylhexyl) phthalate															
Bromoform															
Bromomethane (Methyl bromide)															
Cadmium compounds	3.98E-04	3.98E-04	3.98E-04	3.98E-04	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.98E-04	3.00E-09	3.00E-09	3.00E-09	3.00E-09
Carbon disulfide															
Carbon tetrachloride															
Chlorine	3.47E-01	3.47E-01	3.47E-01	3.47E-01											
Chlorobenzene (Monochlorobenzene)															
Chloroethane															
Chloroform															
Chloromethane															
Chromium compounds	8.45E-04	8.45E-04	8.45E-04	8.45E-04	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	8.45E-04	3.00E-09	3.00E-09	3.00E-09	3.00E-09
Cobalt compounds	6.02E-03	6.02E-03	6.02E-03	6.02E-03							6.02E-03				
Cumene (Isopropylbenzene)															
Cyanide compounds															
Dichloromethane (Methylene chloride)															
Dimethyl sulfate															
Ethylbenzene	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05
Formaldehyde	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02	3.30E-02
Hexane															
Hydrogen Chloride															
Hydrogen Fluoride															
Isophorone															
Manganese compounds	3.00E-03	3.00E-03	3.00E-03	3.00E-03	6.00E-09	6.00E-09	6.00E-09	6.00E-09	6.00E-09	6.00E-09	3.00E-03	6.00E-09	6.00E-09	6.00E-09	6.00E-09
Mercury	1.13E-04	1.13E-04	1.13E-04	1.13E-04	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	1.13E-04	3.00E-09	3.00E-09	3.00E-09	3.00E-09
Methyl methacrylate															
Methylhydrazine															
Methyl-tert-butylether															
Nickel compounds	8.45E-02	8.45E-02	8.45E-02	8.45E-02	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	8.45E-02	3.00E-09	3.00E-09	3.00E-09	3.00E-09
Pentachlorophenol (PCP)															
Phenol															
Phosphorus	9.46E-03	9.46E-03	9.46E-03	9.46E-03							9.46E-03				
Polycyclic organic matter (POM)	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.19E-03	1.19E-03	1.19E-03	1.19E-03	3.30E-03	3.30E-03	1.30E-03	1.19E-03	1.19E-03	3.30E-03	1.19E-03
Propionaldehyde															
Selenium compounds	6.83E-04	6.83E-04	6.83E-04	6.83E-04	1.50E-08	1.50E-08	1.50E-08	1.50E-08	1.50E-08	1.50E-08	6.83E-04	1.50E-08	1.50E-08	1.50E-08	1.50E-08
Styrene															
Tetrachloroethylene (Perchloroethylene)															
Toluene	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03	6.20E-03
Vinyl acetate (Acetic acid)															
Vinyl chloride (chloroethene)															
Xylenes, Total	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04
POMs															
2-Methylnaphthalene															
5-Methylchrysene															
7,12-Dimethylbenz[a]anthracene															
Acenaphthene	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05	2.11E-05
Acenaphthylene	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07	2.53E-07
Anthracene	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06
Benzo(a)anthracene	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06	4.01E-06
Benzo(b)fluoranthene															
Benzo(e)pyrene															
Benzo(ghi)perylene	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06
Benzo(j)fluoranthene	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06
Benzo(k)fluoranthene															
Benzo[a]pyrene															
Biphenyl															
Chrysene	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06	2.38E-06
Dibenz[a,h]anthracene	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06
Dioxins and Furans															
Fluoranthene	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06	4.84E-06
Fluorene	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06	4.47E-06
Indeno(1,2,3-cd)pyrene	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06	2.14E-06
Naphthalene	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03	1.13E-03
Octachlorodibenzo-p-dioxin	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09	3.10E-09
PCBs (Polychlorinated biphenyls)															
Phenanthrene	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05	1.05E-05
Pyrene	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06	4.25E-06
Total POM	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.19E-03	1.19E-03	1.19E-03	1.19E-03	3.30E-03	3.30E-03	1.30E-03	1.19E-03	1.19E-03	3.30E-03	1.19E-03

Emission Factors	AP-42, Section 1.4 Emission Factors for Natural Gas									
	Large, Uncontrolled, Pre-NSPS	Large, Uncontrolled, Post-NSPS	Large, Controlled, Low Nox	Large, Controlled, Flue Gas Recirculation	Small, Uncontrolled	Small, Controlled, Low NOx burners	Small, Controlled, Flue Gas Recirculation	Tangential Fired, Uncontrolled	Tangential Fired, Controlled, Flue Gas Recirculation	Residential, Uncontrolled
Parameter Code	(lb/MMscf)									
Particulate Matter	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
PM < 10 micron	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
PM < 2.5 micron	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Nitrogen Oxides	280	190	140	100	100	50	32	170	76	94
Carbon Monoxide	84	84	84	84	84	84	84	24	98	40
Sulfur Dioxide	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Volatile Organic Compounds	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead Compounds	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Parameter Code	kg/MMBtu									
Carbon Dioxide	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06
Methane	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Nitrous Oxide	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Carbon Dioxide Equivalent	53.1148	53.1148	53.1148	53.1148	53.1148	53.1148	53.1148	53.1148	53.1148	53.1148
Parameter Code	(lb/MMscf)									
HAPs - Total	1.89E+00	1.89E+00	1.89E+00	1.89E+00	1.89E+00	1.89E+00	1.89E+00	1.89E+00	1.89E+00	1.89E+00
HAPs										
1,1,1-Trichloroethane										
1,2-Dibromoethane (Ethylene dibromide). EDB										
1,2-Dichloroethane										
1,4-Dichlorobenzene (para-)	1.20E-03	1.20E-03	1.20E-03	1.20E-03	1.20E-03	1.20E-03	1.20E-03	1.20E-03	1.20E-03	1.20E-03
1,2-Dichloropropane										
2,4,6-Trichlorophenol										
2,4-Dinitrophenol										
2,4-Dinitrotoluene										
2-Chloroacetophenone										
Acetaldehyde										
Acetophenone										
Acrolein										
Antimony compounds										
Arsenic compounds	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04
Benzene	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03
Benzyl chloride										
Beryllium Compounds	1.20E-05	1.20E-05	1.20E-05	1.20E-05	1.20E-05	1.20E-05	1.20E-05	1.20E-05	1.20E-05	1.20E-05
Bis(2-ethylhexyl) phthalate										
Bromoform										
Bromomethane (Methyl bromide)										
Cadmium compounds	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03
Carbon disulfide										
Carbon tetrachloride										
Chlorine										
Chlorobenzene (Monochlorobenzene)										
Chloroethane										
Chloroform										
Chloromethane										
Chromium compounds	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.40E-03
Cobalt compounds	8.40E-05	8.40E-05	8.40E-05	8.40E-05	8.40E-05	8.40E-05	8.40E-05	8.40E-05	8.40E-05	8.40E-05
Cumene (Isopropylbenzene)										
Cyanide compounds										
Dichloromethane (Methylene chloride)										
Dimethyl sulfate										
Ethylbenzene										
Formaldehyde	7.50E-02	7.50E-02	7.50E-02	7.50E-02	7.50E-02	7.50E-02	7.50E-02	7.50E-02	7.50E-02	7.50E-02
Hexane	1.80E+00	1.80E+00	1.80E+00	1.80E+00	1.80E+00	1.80E+00	1.80E+00	1.80E+00	1.80E+00	1.80E+00
Hydrogen Chloride										
Hydrogen Fluoride										
Isophorone										
Manganese compounds	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04
Mercury	2.60E-04	2.60E-04	2.60E-04	2.60E-04	2.60E-04	2.60E-04	2.60E-04	2.60E-04	2.60E-04	2.60E-04
Methyl methacrylate										
Methylhydrazine										
Methyl-tert-butylether										
Nickel compounds	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03
Pentachlorophenol (PCP)										
Phenol										
Phosphorus										
Polycyclic organic matter (POM)	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04
Propionaldehyde										
Selenium compounds	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05
Styrene										
Tetrachloroethylene (Perchloroethylene)										
Toluene	3.40E-03	3.40E-03	3.40E-03	3.40E-03	3.40E-03	3.40E-03	3.40E-03	3.40E-03	3.40E-03	3.40E-03
Vinyl acetate (Acetic acid)										
Vinyl chloride (chloroethene)										
Xylenes, Total										
POMs										
2-Methylnaphthalene	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05
3-Methylchrysene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
7,12-Dimethylbenz[a]anthracene	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05	1.60E-05
Acenaphthene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Acenaphthylene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Anthracene	2.40E-06	2.40E-06	2.40E-06	2.40E-06	2.40E-06	2.40E-06	2.40E-06	2.40E-06	2.40E-06	2.40E-06
Benzo(a)anthracene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Benzo(b)fluoranthene										
Benzo(e)pyrene										
Benzo(ghi)perylene	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Benzo(b)fluoranthene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Benzo(k)fluoranthene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Benzo[a]pyrene	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Biphenyl										
Chrysene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Dibenz[a,h]anthracene	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Dioxins and Furans										
Fluoranthene	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06
Fluorene	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Naphthalene	6.10E-04	6.10E-04	6.10E-04	6.10E-04	6.10E-04	6.10E-04	6.10E-04	6.10E-04	6.10E-04	6.10E-04
Octachlorodibenzo-p-dioxin										
PCBs (Polychlorinated biphenyls)										
Phenanthrene	1.70E-05	1.70E-05	1.70E-05	1.70E-05	1.70E-05	1.70E-05	1.70E-05	1.70E-05	1.70E-05	1.70E-05
Pyrene	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06
Total POM	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04	6.98E-04

Emission Factors	AP-42, Section 1.5 Emission Factors for Liquid Petroleum Gas[4]				AP-42, Section 1.6 Emission Factors for Wood Residue							
	Butane, Industrial	Butane, Commercial	Propane, Industrial	Propane, Commercial	Bark/Bark and Wet Wood, No Control	Dry Wood, No Control	Wet Wood, No Control	Bark, Mechanical Collector	Bark and Wet Wood, Mechanical Collector	Dry Wood, Mechanical Collector	Wet Wood, Mechanical Collector	Bark/bark and wet wood/wet wood-fired boiler, with Electrolyzed Gravel Bed
Parameter Code	lb/10^3				lb/MMBtu							
Particulate Matter	0.8	0.8	0.7	0.7	0.56	0.40	0.33	0.54	0.35	0.30	0.22	0.1
PM < 10 micron	0.8	0.8	0.7	0.7	0.50	0.36	0.29	0.49	0.32	0.27	0.20	0.074
PM < 2.5 micron	0.8	0.8	0.7	0.7	0.43	0.31	0.25	0.29	0.19	0.16	0.12	0.065
Nitrogen Oxides	15	15	13	13	0.22	0.49	0.22	0.22	0.22	0.49	0.22	0.22
Carbon Monoxide	8.4	8.4	7.5	7.5	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.6
Sulfur Dioxide	0.09	0.09	0.10	0.10	0.025	0.025	0.025	0.025	0.025	0.25	0.025	0.025
Volatile Organic Compounds	1.1	1.1	1.0	1.0	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Lead Compounds	0.005	0.005	0.005	0.005	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-06	4.80E-05
Parameter Code	kg/MMBtu				kg/MMBtu							
Carbon Dioxide	64.77	64.77	62.87	62.87	93.80	93.80	93.80	93.80	93.80	93.80	93.80	93.80
Methane	0.003	0.003	0.003	0.003	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072
Nitrous Oxide	0.0006	0.0006	0.0006	0.0006	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036
Carbon Dioxide Equivalent	65.0238	65.0238	63.1238	63.1238	95.0528	95.0528	95.0528	95.0528	95.0528	95.0528	95.0528	95.0528
Parameter Code	lb/10^3				lb/MMBtu							
HAPs - Total	1.89E+00	1.89E+00	1.89E+00	1.89E+00	3.86E-02	3.86E-02	3.86E-02	3.86E-02	3.86E-02	3.86E-02	3.86E-02	3.86E-02
HAPs	lb/MMscf											
1,1,1-Trichloroethane					3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05
1,2-Dibromoethane (Ethylene dibromide). EDB					5.50E-05	5.50E-05	5.50E-05	5.50E-05	5.50E-05	5.50E-05	5.50E-05	5.50E-05
1,2-Dichloroethane					2.90E-05	2.90E-05	2.90E-05	2.90E-05	2.90E-05	2.90E-05	2.90E-05	2.90E-05
1,4-Dichlorobenzene (para-)	1.20E-03	1.20E-03	1.20E-03	1.20E-03								
1,2-Dichloropropane					3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05
2,4,6-Trichlorophenol					2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08
2,4-Dinitrophenol					1.80E-07	1.80E-07	1.80E-07	1.80E-07	1.80E-07	1.80E-07	1.80E-07	1.80E-07
2,4-Dinitrotoluene												
2-Chloroacetophenone												
Acetaldehyde					8.30E-04	8.30E-04	8.30E-04	8.30E-04	8.30E-04	8.30E-04	8.30E-04	8.30E-04
Acetophenone					3.20E-09	3.20E-09	3.20E-09	3.20E-09	3.20E-09	3.20E-09	3.20E-09	3.20E-09
Acrolein					4.00E-03	4.00E-03	4.00E-03	4.00E-03	4.00E-03	4.00E-03	4.00E-03	4.00E-03
Antimony compounds					7.90E-06	7.90E-06	7.90E-06	7.90E-06	7.90E-06	7.90E-06	7.90E-06	7.90E-06
Arsenic compounds	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05
Benzene	2.10E-03	2.10E-03	2.10E-03	2.10E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03
Benzyl chloride												
Beryllium Compounds	1.20E-05	1.20E-05	1.20E-05	1.20E-05	1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06
Bis(2-ethylhexyl) phthalate					4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08
Bromoform												
Bromomethane (Methyl bromide)					1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
Cadmium compounds	1.10E-03	1.10E-03	1.10E-03	1.10E-03	4.10E-06	4.10E-06	4.10E-06	4.10E-06	4.10E-06	4.10E-06	4.10E-06	4.10E-06
Carbon disulfide												
Carbon tetrachloride					4.50E-05	4.50E-05	4.50E-05	4.50E-05	4.50E-05	4.50E-05	4.50E-05	4.50E-05
Chlorine					7.90E-04	7.90E-04	7.90E-04	7.90E-04	7.90E-04	7.90E-04	7.90E-04	7.90E-04
Chlorobenzene (Monochlorobenzene)					3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05
Chloroethane												
Chloroform					2.80E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05
Chloromethane					2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05
Chromium compounds	1.40E-03	1.40E-03	1.40E-03	1.40E-03	2.10E-05	2.10E-05	2.10E-05	2.10E-05	2.10E-05	2.10E-05	2.10E-05	2.10E-05
Cobalt compounds	8.40E-05	8.40E-05	8.40E-05	8.40E-05	6.50E-06	6.50E-06	6.50E-06	6.50E-06	6.50E-06	6.50E-06	6.50E-06	6.50E-06
Cumene (Isopropylbenzene)												
Cyanide compounds												
Dichloromethane (Methylene chloride)					2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Dimethyl sulfate												
Ethylbenzene					3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05
Formaldehyde	7.50E-02	7.50E-02	7.50E-02	7.50E-02	4.40E-03	4.40E-03	4.40E-03	4.40E-03	4.40E-03	4.40E-03	4.40E-03	4.40E-03
Hexane	1.80E+00	1.80E+00	1.80E+00	1.80E+00								
Hydrogen Chloride					1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02
Hydrogen Fluoride												
Isophorone												
Manganese compounds	3.80E-04	3.80E-04	3.80E-04	3.80E-04	1.60E-03	1.60E-03	1.60E-03	1.60E-03	1.60E-03	1.60E-03	1.60E-03	1.60E-03
Mercury	2.60E-04	2.60E-04	2.60E-04	2.60E-04	3.50E-06	3.50E-06	3.50E-06	3.50E-06	3.50E-06	3.50E-06	3.50E-06	3.50E-06
Methyl methacrylate												
Methylhydrazine												
Methyl-tert-butylether												
Nickel compounds	2.10E-03	2.10E-03	2.10E-03	2.10E-03	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05
Pentachlorophenol (PCP)					5.10E-08	5.10E-08	5.10E-08	5.10E-08	5.10E-08	5.10E-08	5.10E-08	5.10E-08
Phenol					5.10E-05	5.10E-05	5.10E-05	5.10E-05	5.10E-05	5.10E-05	5.10E-05	5.10E-05
Phosphorus					2.70E-05	2.70E-05	2.70E-05	2.70E-05	2.70E-05	2.70E-05	2.70E-05	2.70E-05
Polycyclic organic matter (POM)	6.98E-04	6.98E-04	6.98E-04	6.98E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04
Propionaldehyde					3.20E-05	3.20E-05	3.20E-05	3.20E-05	3.20E-05	3.20E-05	3.20E-05	3.20E-05
Selenium compounds	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06
Styrene					1.90E-03	1.90E-03	1.90E-03	1.90E-03	1.90E-03	1.90E-03	1.90E-03	1.90E-03
Tetrachloroethylene (Perchloroethylene)												
Toluene	3.40E-03	3.40E-03	3.40E-03	3.40E-03	9.20E-04	9.20E-04	9.20E-04	9.20E-04	9.20E-04	9.20E-04	9.20E-04	9.20E-04
Vinyl acetate (Acetic acid)												
Vinyl chloride (chloroethene)					1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05
Xylenes, Total					2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05
POMs												
2-Methylnaphthalene	2.40E-05	2.40E-05	2.40E-05	2.40E-05	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07
3-Methylchrysene	1.80E-06	1.80E-06	1.80E-06	1.80E-06								
7,12-Dimethylbenz[a]anthracene	1.60E-05	1.60E-05	1.60E-05	1.60E-05								
Acenaphthene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07
Acenaphthylene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06
Anthracene	2.40E-06	2.40E-06	2.40E-06	2.40E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06
Benzo(a)anthracene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	6.50E-08	6.50E-08	6.50E-08	6.50E-08	6.50E-08	6.50E-08	6.50E-08	6.50E-08
Benzo(b)fluoranthene					1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
Benzo(e)pyrene					2.60E-09	2.60E-09	2.60E-09	2.60E-09	2.60E-09	2.60E-09	2.60E-09	2.60E-09
Benzo(ghi)perylene	1.20E-06	1.20E-06	1.20E-06	1.20E-06	9.30E-08	9.30E-08	9.30E-08	9.30E-08	9.30E-08	9.30E-08	9.30E-08	9.30E-08
Benzo(j)fluoranthene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07
Benzo(k)fluoranthene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	3.60E-08	3.60E-08	3.60E-08	3.60E-08	3.60E-08	3.60E-08	3.60E-08	3.60E-08
Benzo[a]pyrene	1.20E-06	1.20E-06	1.20E-06	1.20E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06
Biphenyl												
Chrysene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08
Dibenz[a,h]anthracene	1.20E-06	1.20E-06	1.20E-06	1.20E-06	9.10E-09	9.10E-09	9.10E-09	9.10E-09	9.10E-09	9.10E-09	9.10E-09	9.10E-09
Dioxins and Furans					1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06
Fluoranthene	3.00E-06	3.00E-06	3.00E-06	3.00E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06
Fluorene	2.80E-06	2.80E-06	2.80E-06	2.80E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06
Indeno(1,2,3-cd)pyrene	1.80E-06	1.80E-06	1.80E-06	1.80E-06	8.70E-08	8.70E-08	8.70E-08	8.70E-08	8.70E-08	8.70E-08	8.70E-08	8.70E-08
Naphthalene	6.10E-04	6.10E-04	6.10E-04	6.10E-04	9.70E-05	9.70E-05	9.70E-05	9.70E-05	9.70E-05	9.70E-05	9.70E-05	9.70E-05
Octachlorodibenzo-p-dioxin												
PCBs (Polychlorinated biphenyls)					8.15E-09	8.15E-09	8.15E-09	8.15E-09	8.15E-09	8.15E-09	8.15E-09	8.15E-09
Phenanthrene	1.70E-05	1.70E-05	1.70E-05	1.70E-05	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06
Pyrene	5.00E-06	5.00E-06	5.00E-06	5.00E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06
Total POM	6.98E-04	6.98E-04	6.98E-04	6.98E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04

[4] HAP factors from AP-42, Section 1.4.

Emission Factors

	Dry wood-fired boilers, with Electrolyzed Gravel Bed	Bark/bark and wet wood/wet wood-fired boiler, with Wet Scrubber	Dry wood-fired boilers, with Wet Scrubber	Bark/bark and wet wood/wet wood-fired boiler, with Fabric Filter	Dry wood-fired boilers, with Fabric Filter	Bark/bark and wet wood/wet wood-fired boiler, with Electrostatic Precipitator	Dry wood-fired boilers, with Electrostatic Precipitator
Parameter Code							
Particulate Matter	0.1	0.066	0.066	0.1	0.1	0.054	0.054
PM < 10 micron	0.074	0.065	0.065	0.074	0.074	0.04	0.04
PM < 2.5 micron	0.065	0.065	0.065	0.065	0.065	0.035	0.035
Nitrogen Oxides	0.49	0.22	0.49	0.22	0.49	0.22	0.49
Carbon Monoxide	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Sulfur Dioxide	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Volatile Organic Compounds	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Lead Compounds	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05
Parameter Code							
Carbon Dioxide	93.80	93.80	93.80	93.80	93.80	93.80	93.80
Methane	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072
Nitrous Oxide	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036
Carbon Dioxide Equivalent	95.0528	95.0528	95.0528	95.0528	95.0528	95.0528	95.0528
Parameter Code							
HAPs - Total	3.86E-02	3.86E-02	3.86E-02	3.86E-02	3.86E-02	3.86E-02	3.86E-02
HAPs							
1,1,1-Trichloroethane	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05
1,2-Dibromoethane (Ethylene dibromide); EDB	5.50E-05	5.50E-05	5.50E-05	5.50E-05	5.50E-05	5.50E-05	5.50E-05
1,2-Dichloroethane	2.90E-05	2.90E-05	2.90E-05	2.90E-05	2.90E-05	2.90E-05	2.90E-05
1,4-Dichlorobenzene (para-)							
1,2-Dichloropropane	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05
2,4,6-Trichlorophenol	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08	2.20E-08
2,4-Dinitrophenol	1.80E-07	1.80E-07	1.80E-07	1.80E-07	1.80E-07	1.80E-07	1.80E-07
2,4-Dinitrotoluene							
2-Chloroacetophenone							
Acetaldehyde	8.30E-04	8.30E-04	8.30E-04	8.30E-04	8.30E-04	8.30E-04	8.30E-04
Acetophenone	3.20E-09	3.20E-09	3.20E-09	3.20E-09	3.20E-09	3.20E-09	3.20E-09
Acrolein	4.00E-03	4.00E-03	4.00E-03	4.00E-03	4.00E-03	4.00E-03	4.00E-03
Antimony compounds	7.90E-06	7.90E-06	7.90E-06	7.90E-06	7.90E-06	7.90E-06	7.90E-06
Arsenic compounds	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05	2.20E-05
Benzene	4.20E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03	4.20E-03
Benzyl chloride							
Beryllium Compounds	1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06
Bis(2-ethylhexyl) phthalate	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08
Bromoform							
Bromomethane (Methyl bromide)	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
Cadmium compounds	4.10E-06	4.10E-06	4.10E-06	4.10E-06	4.10E-06	4.10E-06	4.10E-06
Carbon disulfide							
Carbon tetrachloride	4.50E-05	4.50E-05	4.50E-05	4.50E-05	4.50E-05	4.50E-05	4.50E-05
Chlorine	7.90E-04	7.90E-04	7.90E-04	7.90E-04	7.90E-04	7.90E-04	7.90E-04
Chlorobenzene (Monochlorobenzene)	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05
Chloroethane							
Chloroform	2.80E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05
Chloromethane	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05
Chromium compounds	2.10E-05	2.10E-05	2.10E-05	2.10E-05	2.10E-05	2.10E-05	2.10E-05
Cobalt compounds	6.50E-06	6.50E-06	6.50E-06	6.50E-06	6.50E-06	6.50E-06	6.50E-06
Cumene (Isopropylbenzene)							
Cyanide compounds							
Dichloromethane (Methylene chloride)	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.90E-04
Dimethyl sulfate							
Ethylbenzene	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05	3.10E-05
Formaldehyde	4.40E-03	4.40E-03	4.40E-03	4.40E-03	4.40E-03	4.40E-03	4.40E-03
Hexane							
Hydrogen Chloride	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02
Hydrogen Fluoride							
Isophorone							
Manganese compounds	1.60E-03	1.60E-03	1.60E-03	1.60E-03	1.60E-03	1.60E-03	1.60E-03
Mercury	3.50E-06	3.50E-06	3.50E-06	3.50E-06	3.50E-06	3.50E-06	3.50E-06
Methyl methacrylate							
Methylhydrazine							
Methyl-tert-butylether							
Nickel compounds	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05	3.30E-05
Pentachlorophenol (PCP)	5.10E-08	5.10E-08	5.10E-08	5.10E-08	5.10E-08	5.10E-08	5.10E-08
Phenol	5.10E-05	5.10E-05	5.10E-05	5.10E-05	5.10E-05	5.10E-05	5.10E-05
Phosphorus	2.70E-05	2.70E-05	2.70E-05	2.70E-05	2.70E-05	2.70E-05	2.70E-05
Polycyclic organic matter (POM)	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04
Propionaldehyde	3.20E-05	3.20E-05	3.20E-05	3.20E-05	3.20E-05	3.20E-05	3.20E-05
Selenium compounds	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06	2.80E-06
Styrene	1.90E-03	1.90E-03	1.90E-03	1.90E-03	1.90E-03	1.90E-03	1.90E-03
Tetrachloroethylene (Perchloroethylene)							
Toluene	9.20E-04	9.20E-04	9.20E-04	9.20E-04	9.20E-04	9.20E-04	9.20E-04
Vinyl acetate (Acetic acid)							
Vinyl chloride (chloroethene)	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05
Xylenes, Total	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05	2.50E-05
POMs							
2-Methylnaphthalene	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07
5-Methylchrysene							
7,12-Dimethylbenz[a]anthracene							
Acenaphthene	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07	9.10E-07
Acenaphthylene	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06
Anthracene	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06	3.00E-06
Benzo(a)anthracene	6.50E-08	6.50E-08	6.50E-08	6.50E-08	6.50E-08	6.50E-08	6.50E-08
Benzo(b)fluoranthene	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
Benzo(e)pyrene	2.60E-09	2.60E-09	2.60E-09	2.60E-09	2.60E-09	2.60E-09	2.60E-09
Benzo(ghi)perylene	9.30E-08	9.30E-08	9.30E-08	9.30E-08	9.30E-08	9.30E-08	9.30E-08
Benzo(j)fluoranthene	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07
Benzo(k)fluoranthene	3.60E-08	3.60E-08	3.60E-08	3.60E-08	3.60E-08	3.60E-08	3.60E-08
Benzo[a]pyrene	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06
Biphenyl							
Chrysene	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08
Dibenz[a,h]anthracene	9.10E-09	9.10E-09	9.10E-09	9.10E-09	9.10E-09	9.10E-09	9.10E-09
Dioxins and Furans	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06	1.67E-06
Fluoranthene	1.60E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06	1.60E-06
Fluorene	3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06
Indeno(1,2,3-cd)pyrene	8.70E-08	8.70E-08	8.70E-08	8.70E-08	8.70E-08	8.70E-08	8.70E-08
Naphthalene	9.70E-05	9.70E-05	9.70E-05	9.70E-05	9.70E-05	9.70E-05	9.70E-05
Octachlorodibenzo-p-dioxin							
PCBs (Polychlorinated biphenyls)	8.15E-09	8.15E-09	8.15E-09	8.15E-09	8.15E-09	8.15E-09	8.15E-09
Phenanthrene	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06	7.00E-06
Pyrene	3.70E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06	3.70E-06
Total POM	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04

Attachment 2 – Subject item inventory and facility requirements

SI List

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Activity	Insignificant Air Emissions Activity	ACTV 1	Null	All IAs	
Agency Interest	Conventional Site	AISI 1860	Null	Null	
Component Group	Air Component Group	COMG 2	GP002	NG-Fired GE 7FA Combustion Turbines	
		COMG 5	GP005	HAPs Limits	
Equipment	Aboveground Storage Tank	EQUI 32	Null	Diesel Tank #1	
		EQUI 33	Null	Diesel Tank #2	
	Continuous Emission Monitor	EQUI 9	MR001	NOx CEMS for EQUI 7	
		EQUI 10	MR002	CO CEMS for EQUI 7	
		EQUI 11	MR003	NOx CEMS for EQUI 8	
		EQUI 12	MR004	CO CEMS for EQUI 8	
		EQUI 30	Null	O2 CEMS (diluent) for EQUI 7	
		EQUI 31	Null	O2 CEMS (diluent) for EQUI 8	
	Data Acquisition System	EQUI 16	Null	Data Acquisition System	
	Parametric Monitor	EQUI 21	Null	Fuel usage parametric monitor for EQUI 7	
		EQUI 22	Null	Fuel usage parametric monitor for EQUI 8	
		EQUI 34	Null	EQUI 23 SCR and Oxidation Catalyst Inlet Temperature	
		EQUI 35	Null	EQUI 23 SCR and Oxidation Catalyst Inlet Pressure	
		EQUI 36	Null	EQUI 23 SCR and Oxidation Catalyst Outlet Pressure	
		EQUI 37	Null	EQUI 24 SCR and Oxidation Catalyst Inlet Temperature	
		EQUI 38	Null	EQUI 24 SCR and Oxidation Catalyst Inlet Pressure	
		EQUI 39	Null	EQUI 24 SCR and Oxidation Catalyst Outlet Pressure	
		EQUI 40	Null	EQUI 25 SCR and Oxidation Catalyst Inlet Temperature	
		EQUI 41	Null	EQUI 25 SCR and Oxidation Catalyst Inlet Pressure	
		EQUI 42	Null	EQUI 25 SCR and Oxidation Catalyst Outlet Pressure	
		EQUI 65	Null	EQUI 23 SCR Urea Flow Rate	
		EQUI 66	Null	EQUI 24 SCR Urea Flow Rate	
		EQUI 67	Null	EQUI 25 SCR Urea Flow Rate	
	Reciprocating IC Engine	EQUI 5	EU005	Emergency Engine/Generator	
		EQUI 23	Null	Engine Generator 1	
		EQUI 24	Null	Engine Generator 2	
		EQUI 25	Null	Engine Generator 3	
		EQUI 26	Null	Emergency Generator 2	
		EQUI 27	Null	Emergency Generator 3	
		EQUI 28	Null	Emergency Generator 4	
		EQUI 29	Null	Emergency Generator 5	
		EQUI 43	Null	Emergency Generator 6	
	Turbine	EQUI 1	EU001	Combustion Turbine 1 (50 MW) - Turbine	
		EQUI 2	EU002	Combustion Turbine 2 (50 MW) - Turbine	
		EQUI 3	EU003	Combustion Turbine 3 (50 MW) - Turbine	
		EQUI 4	EU004	Combustion Turbine 4 (55 MW) - Turbine	
		EQUI 7	EU007	GE Dry Low NOx Burner Combustion Turbine 7	
		EQUI 8	EU008	GE Dry Low NOx Burner Combustion Turbine 8	
Fugitive	Paved Road	FUGI 1	Null	Engine generator fuel deliveries on paved road	
Structure	Building	STRU 1	BG002	Substation Generator Building	
		STRU 2	BG003	Foam House	
		STRU 3	BG004	Gas Turbine Building	
		STRU 4	BG005	Operations Building	
		STRU 5	BG006	Fuel Forwarding Building	
		STRU 6	BG007	Fire Foam Equipment Building	
		STRU 7	BG008	Fuel Oil Tank	
		STRU 8	BG009	Fuel Oil Tank	
		STRU 9	BG010	Warehouse	
		STRU 10	BG011	Gas Turbine 7 Structure	
		STRU 11	BG012	Gas Turbine 8 Structure	
		STRU 20	BG001	Substation controls building	
		STRU 31	Null	Rice #1 Equipment	
		STRU 32	Null	Rice #2 Equipment	
		STRU 33	Null	Rice #3 Equipment	
		STRU 34	Null	Rice Building Tier 1	
		STRU 35	Null	Rice Building Tier 2	
		STRU 36	Null	West Fuel Oil Tank #1	
		STRU 37	Null	West Fuel Oil Tank #2	
	Stack/Vent	STRU 12	SV007	Combustion Turbine 7 (EQUI 7)	
		STRU 13	SV008	Combustion Turbine 8 (EQUI 8)	
		STRU 14	SV005	Substation engine/generator stack	
		STRU 16	SV001	Combustion Turbine 1	
		STRU 17	SV002	Combustion Turbine 2	
		STRU 18	SV003	Combustion Turbine 3	
		STRU 19	SV004	Combustion Turbine 4	
		STRU 24	Null	EQUI 23 Stack	
		STRU 25	Null	EQUI 24 Stack	
		STRU 26	Null	EQUI 25 Stack	
		STRU 27	Null	EQUI 26 Stack	

SI List

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Structure	Stack/Vent	STRU 28	Null	EQUI 27 Stack	
		STRU 29	Null	EQUI 28 Stack	
		STRU 30	Null	EQUI 29 Stack	
		STRU 38	Null	EQUI 43 Stack	
Total Facility	Air Quality Total Facility	TFAC 1	13900010	Xcel Energy - Blue Lake	
Treatment	139-SCR (Selective Catalytic Reduction)	TREA 2	Null	Selective Catalytic Reduction for EQUI 23	
		TREA 4	Null	Selective Catalytic Reduction for EQUI 24	
		TREA 6	Null	Selective Catalytic Reduction for EQUI 25	
	312-Oxidation Catalyst	TREA 1	Null	Oxidation Catalyst for EQUI 23	
		TREA 3	Null	Oxidation Catalyst for EQUI 24	
		TREA 5	Null	Oxidation Catalyst for EQUI 25	

Insignificant Activities

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Status Description	Sub Attribute Description	
Activity	Insignificant Air Emissions Activity	Active / Existing	Minn. R. 7007.1300, subp. 3(A)	
			Minn. R. 7007.1300, subp. 3(E)	
			Minn. R. 7007.1300, subp. 4	
			Minn. R. 7008.4100	
			Minn. R. 7008.4110	

Emission Units 1

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Firing Method	Subject to CSAPR?	Electric Generating Capacity (MW)	Construction Start Date	Operation Start Date	Modification Date	
Turbine	EQUI 1	EU001	Combustion Turbine 1 (50 MW) - Turbine	Turbodyne	Megapack GT-55	50	megawatts/hours	Electrical Energy	Null	Y	41.47	1/1/1974	1/1/1974	Null	
	EQUI 2	EU002	Combustion Turbine 2 (50 MW) - Turbine	Turbodyne	Megapack GT-55	50	megawatts/hours	Electrical Energy	Null	Y	41.4	1/1/1974	1/1/1974	Null	
	EQUI 3	EU003	Combustion Turbine 3 (50 MW) - Turbine	Turbodyne	Megapack GT-55	50	megawatts/hours	Electrical Energy	Null	Y	46	1/1/1974	1/1/1974	Null	
	EQUI 4	EU004	Combustion Turbine 4 (55 MW) - Turbine	Turbodyne	Megapack GT-55	55	megawatts/hours	Electrical Energy	Null	Y	46	1/1/1974	1/1/1974	Null	
	EQUI 7	EU007	GE Dry Low NOx Burner Combustion Turbine 7	General Electric	7F	174.1	megawatts/hours	Electrical Energy	Null	Y	163.77	5/1/2004	5/15/2004	Null	
	EQUI 8	EU008	GE Dry Low NOx Burner Combustion Turbine 8	General Electric	7F	174.1	megawatts/hours	Electrical Energy	Null	Y	161.66	5/1/2004	5/31/2004	Null	

Emission Units 2

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Engine Use	Firing Method	Engine Displacement	Engine Displacement Units	Construction Start Date	Operation Start Date	Modification Date	
Reciprocating IC Engine	EQUI 5	EU005	Emergency Engine/ Generator	Caterpillar	3304	157	horsepower/each	Electrical Energy	Emergency/blacks..	CI	1.7	liters per cylinder	8/1/1993	8/1/1993	Null	
	EQUI 23	Null	Engine Generator 1	Wartsila	20V34DF	77.7	million British thermal units/hours	Fuel	Unlimited use	CI	36.3	liters per cylinder	4/1/2024	10/27/2025	Null	
	EQUI 24	Null	Engine Generator 2	Wartsila	20V34DF	77.7	million British thermal units/hours	Fuel	Unlimited use	CI	36.3	liters per cylinder	4/1/2024	10/27/2025	Null	
	EQUI 25	Null	Engine Generator 3	Wartsila	20V34DF	77.7	million British thermal units/hours	Fuel	Unlimited use	CI	36.3	liters per cylinder	4/1/2024	10/27/2025	Null	
	EQUI 26	Null	Emergency Generator 2	CAT	C18 750 kW	7.59	million British thermal units/hours	Fuel	Emergency/blacks..	CI	3	liters per cylinder	4/14/2025	12/17/2025	Null	
	EQUI 27	Null	Emergency Generator 3	CAT	C18 750 kW	7.59	million British thermal units/hours	Fuel	Emergency/blacks..	CI	3	liters per cylinder	4/14/2025	12/17/2025	Null	
	EQUI 28	Null	Emergency Generator 4	CAT	C18 750 kW	7.59	million British thermal units/hours	Fuel	Emergency/blacks..	CI	3	liters per cylinder	4/14/2025	12/17/2025	Null	
	EQUI 29	Null	Emergency Generator 5	CAT	C18 550 kW	5.59	million British thermal units/hours	Fuel	Emergency/blacks..	CI	3	liters per cylinder	4/14/2025	12/10/2025	Null	
	EQUI 43	Null	Emergency Generator 6	CAT	C18 550 kW	5.59	million British thermal units/hours	Fuel	Emergency/blacks..	CI	3	liters per cylinder	4/14/2025	12/10/2025	Null	

Component Groups

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 2	GP002	NG-Fired GE 7FA Combustion Turbines	EQUI 7	
			EQUI 8	
COMG 5	GP005	HAPs Limits	EQUI 7	
			EQUI 8	
			EQUI 23	
			EQUI 24	
			EQUI 25	
			EQUI 26	
			EQUI 27	
			EQUI 28	
			EQUI 29	
			EQUI 43	

PTE by SI

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Component Group	Air Component Group	COMG 2	GP002	NG-Fired GE 7FA Combust..	Carbon Monoxide	0	0	310.8	
		COMG 5	GP005	HAPs Limits	Formaldehyde			9	
					HAPs - Total			22.5	
Equipment	Aboveground Storage Tank	EQUI 32	Null	Diesel Tank #1	Volatile Organic Compounds	0.007	0.03	0.03	
		EQUI 33	Null	Diesel Tank #2	Volatile Organic Compounds	0.007	0.03	0.03	
	Reciprocating IC Engine	EQUI 5	EU005	Emergency Engine/Generator	1,3-Butadiene	4.3e-05	0.000188	1.08e-05	
					Acetaldehyde	0.0008437	0.00369541	0.0036954	
					Acrolein	0.00102	0.00446	0.000254	
					Benzene	0.00103	0.0045	0.000257	
					Carbon Dioxide	179.36	785.59	44.84	
					Carbon Dioxide Equivalent	179.97476442	788.28946814	44.9936911	
					Carbon Monoxide	1.045	4.5771	0.26125	
					Formaldehyde	0.0013	0.00569	0	
					HAPs - Total	0.00518	0.0227	0.02	
					Methane	0.00727525	0.03186562	0.00181881	
					Nitrogen Oxides	4.851	21.24738	1.21275	
					Nitrous Oxide	0.00145505	0.00637312	0.00036376	
					Particulate Matter	0.341	1.49358	0.08525	
					PM < 2.5 micron	0.341	1.49	0.0853	
					PM < 10 micron	0.341	1.49	0.0853	
					Sulfur Dioxide	0.319	1.4	0.0798	
					Toluene	0.00045	0.00197	0.000112	
					Volatile Organic Compounds	0.385	1.69	0.0963	
					Xylenes, Total	0.0003135	0.00137313	7.838e-05	
		EQUI 23	Null	Engine Generator 1	1,1,2-Trichloroethane	0.00247	0.0108	0.0108	
					1,1,2,2-Tetrachloroethane	0.00311	0.0136	0.0136	
					1,2-Dibromoethane (Ethylene dibromide); EDB	0.00344211	0.01507644	0.01507644	
					1,3-Butadiene	0.0207	0.0909	0.0909	
					1,3-Dichloropropene	0.00205	0.00898	0.00898	
					2-Methylnaphthalene	0.00258	0.0113	0.0113	
					2,2,4-trimethylpentane	0.019425	0.0850815	0.0850815	
					Acenaphthene	9.71e-05	0.000425	0.000425	
					Acenaphthylene	0.00043	0.00188	0.00188	
					Acetaldehyde	0.65	2.85	2.85	
					Acrolein	0.399	1.75	1.75	
					Benzene	0.0618	0.271	0.258	
					Benzo(b)fluoranthene	1.29e-05	5.65e-05	5.65e-05	
					Benzo(e)pyrene	3.22e-05	0.000141	0.000141	
					Benzo(ghi)perylene	3.217e-05	0.00014089	0.00014089	
					Carbon Dioxide	16,540	72,445.2	72,445.2	
					Carbon Dioxide Equivalent	16,568.85	72,571.56	72,571.56	
					Carbon Monoxide	3.78	198.4	20	
					Carbon tetrachloride	0.00285159	0.01248996	0.01248996	
					Chlorobenzene (Monochlorobenzene)	0.00236208	0.01034591	0.01034591	
					Chloroform	0.00221	0.0097	0.0097	
					Chrysene	5.38e-05	0.000236	0.000236	
					Dichloromethane (Methylene chloride)	0.001554	0.00680652	0.00680652	
					Ethylbenzene	0.00308	0.0135	0.0135	
					Fluoranthene	8.62e-05	0.000378	0.000378	
					Fluorene	0.000441	0.00193	0.00193	
					Formaldehyde	4.1	17.97	0	
					HAPs - Total	5.66	24.78	0	
					Hexane	0.0862	0.378	0.378	
					Methane	0.52645848	2.30588814	2.30588814	
					Methanol	0.194	0.851	0.851	
					Naphthalene	0.0103	0.0453	0.0432	
					Nitrogen Oxides	10.86	824.95	63.32	
					Nitrous Oxide	0.0526	0.231	0.231	
					Particulate Matter	4.75792	148.42484	21.8726	
					Phenanthrene	0.000808	0.00354	0.00354	
					Phenol	0.00186	0.00817	0.00817	
					PM < 2.5 micron	4.76	148.42	21.87	
					PM < 10 micron	4.76	148.42	21.87	
					Pyrene	0.000106	0.000463	0.000463	
					Styrene	0.00183	0.00803	0.00803	
					Sulfur Dioxide	0.12059	0.53	0.53	
					Tetrachloroethylene (Perchloroethylene)	0.0001927	0.00084401	0.00084401	
					Toluene	0.0317	0.139	0.139	
					Vinyl chloride (chloroethene)	0.00115773	0.00507086	0.00507086	
					Volatile Organic Compounds	4.33	75.32	19.4	
					Xylenes, Total	0.0153628	0.06728906	0.06414225	
		EQUI 24	Null	Engine Generator 2	1,1,2-Trichloroethane	0.00247	0.0108	0.0108	
					1,1,2,2-Tetrachloroethane	0.00311	0.0136	0.0136	
					1,2-Dibromoethane (Ethylene dibromide); EDB	0.00344211	0.01507644	0.01507644	
					1,3-Butadiene	0.0207	0.0909	0.0909	

PTE by SI

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 24	Null	Engine Generator 2	1,3-Dichloropropene	0.00205	0.00898	0.00898	
					2-Methylnaphthalene	0.00258	0.0113	0.0113	
					2,2,4-trimethylpentane	0.019425	0.0850815	0.0850815	
					Acenaphthene	9.71e-05	0.000425	0.000425	
					Acenaphthylene	0.00043	0.00188	0.00188	
					Acetaldehyde	0.65	2.85	2.85	
					Acrolein	0.399	1.75	1.75	
					Benzene	0.0618	0.271	0.258	
					Benzo(b)fluoranthene	1.29e-05	5.65e-05	5.65e-05	
					Benzo(e)pyrene	3.22e-05	0.000141	0.000141	
					Benzo(ghi)perylene	3.217e-05	0.00014089	0.00014089	
					Carbon Dioxide	16,540	72,445.2	72,445.2	
					Carbon Dioxide Equivalent	16,568.85	72,571.56	72,571.56	
					Carbon Monoxide	3.78	198.4	20	
					Carbon tetrachloride	0.00285159	0.01248996	0.01248996	
					Chlorobenzene (Monochlorobenzene)	0.00236208	0.01034591	0.01034591	
					Chloroform	0.00221	0.0097	0.0097	
					Chrysene	5.38e-05	0.000236	0.000236	
					Dichloromethane (Methylene chloride)	0.001554	0.00680652	0.00680652	
					Ethylbenzene	0.00308	0.0135	0.0135	
					Fluoranthene	8.62e-05	0.000378	0.000378	
					Fluorene	0.000441	0.00193	0.00193	
					Formaldehyde	4.1	17.97	0	
					HAPs - Total	5.66	24.78	0	
					Hexane	0.0862	0.378	0.378	
					Methane	0.526	2.31	2.31	
					Methanol	0.194	0.851	0.851	
					Naphthalene	0.0103	0.0453	0.0432	
					Nitrogen Oxides	10.86	824.95	63.32	
					Nitrous Oxide	0.0526	0.231	0.231	
					Particulate Matter	4.75792	148.42484	21.8726	
					Phenanthrene	0.000808	0.00354	0.00354	
					Phenol	0.00186	0.00817	0.00817	
					PM < 2.5 micron	4.76	148.42	21.87	
					PM < 10 micron	4.76	148.42	21.87	
					Pyrene	0.000106	0.000463	0.000463	
					Styrene	0.00183	0.00803	0.00803	
					Sulfur Dioxide	0.121	0.528	0.528	
					Tetrachloroethylene (Perchloroethylene)	0.0001927	0.00084401	0.00084401	
					Toluene	0.0317	0.139	0.139	
					Vinyl chloride (chloroethene)	0.00115773	0.00507086	0.00507086	
					Volatile Organic Compounds	4.33	75.32	19.4	
					Xylenes, Total	0.0153628	0.06728906	0.06414225	
		EQUI 25	Null	Engine Generator 3	1,1,2-Trichloroethane	0.00247	0.0108	0.0108	
					1,1,2,2-Tetrachloroethane	0.00311	0.0136	0.0136	
					1,2-Dibromoethane (Ethylene dibromide); EDB	0.00344211	0.01507644	0.01507644	
					1,3-Butadiene	0.0207	0.0909	0.0909	
					1,3-Dichloropropene	0.00205	0.00898	0.00898	
					2-Methylnaphthalene	0.00258	0.0113	0.0113	
					2,2,4-trimethylpentane	0.019425	0.0850815	0.0850815	
					Acenaphthene	9.71e-05	0.000425	0.000425	
					Acenaphthylene	0.00043	0.00188	0.00188	
					Acetaldehyde	0.65	2.85	2.85	
					Acrolein	0.399	1.75	1.75	
					Benzene	0.0618	0.271	0.258	
					Benzo(b)fluoranthene	1.29e-05	5.65e-05	5.65e-05	
					Benzo(e)pyrene	3.22e-05	0.000141	0.000141	
					Benzo(ghi)perylene	3.217e-05	0.00014089	0.00014089	
					Carbon Dioxide	16,540	72,445.2	72,445.2	
					Carbon Dioxide Equivalent	16,568.85	72,571.56	72,571.56	
					Carbon Monoxide	3.78	198.4	20	
					Carbon tetrachloride	0.00285159	0.01248996	0.01248996	
					Chlorobenzene (Monochlorobenzene)	0.00236208	0.01034591	0.01034591	
					Chloroform	0.00221	0.0097	0.0097	
					Chrysene	5.38e-05	0.000236	0.000236	
					Dichloromethane (Methylene chloride)	0.001554	0.00680652	0.00680652	
					Ethylbenzene	0.00308	0.0135	0.0135	
					Fluoranthene	8.62e-05	0.000378	0.000378	
					Fluorene	0.000441	0.00193	0.00193	
					Formaldehyde	4.1	17.97	0	
					HAPs - Total	5.66	24.78	0	
					Hexane	0.0862	0.378	0.378	
					Methane	0.526	2.31	2.31	
					Methanol	0.194	0.851	0.851	
					Naphthalene	0.0103	0.0453	0.0432	

PTE by SI

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 25	Null	Engine Generator 3	Nitrogen Oxides	10.86	824.95	63.32	
					Nitrous Oxide	0.0526	0.231	0.231	
					Particulate Matter	4.75792	148.42484	21.8726	
					Phenanthrene	0.000808	0.00354	0.00354	
					Phenol	0.00186	0.00817	0.00817	
					PM < 2.5 micron	4.76	148.42	21.87	
					PM < 10 micron	4.76	148.42	21.87	
					Pyrene	0.000106	0.000463	0.000463	
					Styrene	0.00183	0.00803	0.00803	
					Sulfur Dioxide	0.12	0.528	0.528	
					Tetrachloroethylene (Perchloroethylene)	0.0001927	0.00084401	0.00084401	
					Toluene	0.0317	0.139	0.139	
					Vinyl chloride (chloroethene)	0.00115773	0.00507086	0.00507086	
					Volatile Organic Compounds	4.33	75.32	19.4	
					Xylenes, Total	0.0153628	0.06728906	0.06414225	
		EQUI 26	Null	Emergency Generator 2	1,3-Butadiene	0.000988	0.00433	0.000247	
					Acetaldehyde	0.00019152	0.00083886	0.000838858	
					Acrolein	5.99e-05	0.000262	1.5e-05	
					Carbon Dioxide	1,254	5,492.52	313.5	
					Carbon Dioxide Equivalent	1,258.25	5,511.15	314.56	
					Carbon Monoxide	6.03	26.41	1.51	
					Formaldehyde	0.00059964	0.00262642	0	
					HAPs - Total	0.00804065	0.03521804	0	
					Methane	0.0503	0.22	0.0126	
					Naphthalene	0.000988	0.00433	0.000247	
					Nitrogen Oxides	11.01	48.23	2.75	
					Nitrous Oxide	0.0101	0.044	0.003	
					Particulate Matter	0.34499	1.51105	0.08625	
					PM < 2.5 micron	0.387982	1.69936116	0.0969955	
					PM < 10 micron	0.388	1.7	0.097	
					Sulfur Dioxide	0.011552	0.05059776	0.002888	
					Toluene	0.00214	0.00935	0.000534	
					Volatile Organic Compounds	0.684	2.99592	0.171	
					Xylenes, Total	0.0014668	0.00642458	0.0003667	
		EQUI 27	Null	Emergency Generator 3	1,3-Butadiene	0.000988	0.00433	0.000247	
					Acetaldehyde	0.000192	0.000839	0.000838858	
					Acrolein	5.99e-05	0.000262	1.5e-05	
					Carbon Dioxide	1,254	5,492.52	313.5	
					Carbon Dioxide Equivalent	1,258.25	5,511.15	314.56	
					Carbon Monoxide	6.03	26.41	1.51	
					Formaldehyde	0.0006	0.00263	0	
					HAPs - Total	0.00804	0.0352	0	
					Methane	0.0503	0.22	0.0126	
					Naphthalene	0.000988	0.00433	0.000247	
					Nitrogen Oxides	11.01	48.22	2.75	
					Nitrous Oxide	0.0101	0.044	0.00251	
					Particulate Matter	0.34499	1.51105	0.08625	
					PM < 2.5 micron	0.387982	1.69936116	0.0969955	
					PM < 10 micron	0.387982	1.69936116	0.0969955	
					Sulfur Dioxide	0.011552	0.05059776	0.002888	
					Toluene	0.00214	0.00935	0.000534	
					Volatile Organic Compounds	0.684	2.99592	0.171	
					Xylenes, Total	0.0014668	0.00642458	0.0003667	
		EQUI 28	Null	Emergency Generator 4	1,3-Butadiene	0.000988	0.00433	0.000247	
					Acetaldehyde	0.000192	0.000839	0.000838858	
					Acrolein	5.99e-05	0.000262	1.5e-05	
					Carbon Dioxide	1,254	5,492.52	313.5	
					Carbon Dioxide Equivalent	1,258.25	5,511.15	314.56	
					Carbon Monoxide	6.03	26.41	1.51	
					Formaldehyde	0.0006	0.00263	0	
					HAPs - Total	0.00804	0.0352	0	
					Methane	0.05	0.22	0.01	
					Naphthalene	0.000988	0.00433	0.000247	
					Nitrogen Oxides	11.01	48.23	2.75	
					Nitrous Oxide	0.01	0.044	0.003	
					Particulate Matter	0.34499	1.51105	0.08624	
					PM < 2.5 micron	0.387982	1.69936116	0.0969955	
					PM < 10 micron	0.387982	1.69936116	0.0969955	
					Sulfur Dioxide	0.011552	0.05059776	0.002888	
					Toluene	0.00214	0.00935	0.000534	
					Volatile Organic Compounds	0.684	2.99592	0.171	
					Xylenes, Total	0.0014668	0.00642458	0.0003667	
		EQUI 29	Null	Emergency Generator 5	1,3-Butadiene	0.000726	0.000182	0.000182	
					Acetaldehyde	0.000141	0.00061811	0.00061811	
					Acrolein	4.4e-05	1.1e-05	1.1e-05	

PTE by SI

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 29	Null	Emergency Generator 5	Carbon Dioxide	924	4,047.12	231	
					Carbon Dioxide Equivalent	927.13338604	4,060.84423084	231.78334651	
					Carbon Monoxide	4.438425	19.4403015	1.10960625	
					Formaldehyde	0.000441	0.00011	0	
					HAPs - Total	0.00592469	0.02595013	0	
					Methane	0.03703766	0.16222495	0.00925942	
					Naphthalene	0.000726	0.000182	0.000182	
					Nitrogen Oxides	8.10495	35.499681	2.0262375	
					Nitrous Oxide	0.00740753	0.03244499	0.00185188	
					Particulate Matter	0.25396	1.11232	0.063489	
					PM < 2.5 micron	0.285603	1.25094114	0.07140075	
					PM < 10 micron	0.285603	1.25094114	0.07140075	
					Sulfur Dioxide	0.008512	0.03728256	0.002128	
					Toluene	0.00157	0.000392	0.000392	
					Volatile Organic Compounds	0.504	2.20752	0.126	
					Xylenes, Total	0.0010808	0.0047339	0.0002702	
		EQUI 43	Null	Emergency Generator 6	1,3-Butadiene	0.000728	0.00319	0.000182	
					Acetaldehyde	0.000141	0.000618	0.00061811	
					Acrolein	4.41e-05	0.000193	1.1e-05	
					Carbon Dioxide	924	4,047.12	231	
					Carbon Dioxide Equivalent	927	4,060.84	231.78	
					Carbon Monoxide	4.44	19.44	1.11	
					Formaldehyde	0.000442	0.00194	0	
					HAPs - Total	0.00592	0.026	0	
					Methane	0.037	0.162	0.00926	
					Naphthalene	0.000728	0.00319	0.000182	
					Nitrogen Oxides	8.1	35.5	2.03	
					Nitrous Oxide	0.00740753	0.03244499	0.00185188	
					Particulate Matter	0.25396	1.11232	0.063489	
					PM < 2.5 micron	0.285603	1.25094114	0.07140075	
					PM < 10 micron	0.285603	1.25094114	0.07140075	
					Sulfur Dioxide	0.008512	0.03728256	0.002128	
					Toluene	0.00157	0.00689	0.000393	
					Volatile Organic Compounds	0.504	2.20752	0.126	
					Xylenes, Total	0.0010808	0.0047339	0.0002702	
	Turbine	EQUI 7	EU007	GE Dry Low NOx Burner Combustion Turbine 7	1,3-Butadiene	0.000878	0.00385	0.00385	
					Acetaldehyde	0.0817	0.358	0.36	
					Acrolein	0.0131	0.0573	0.0573	
					Benzene	0.0245	0.107	0.107	
					Carbon Dioxide	224,664	984,028.32	984,028.32	
					Carbon Dioxide Equivalent	225,237.3	986,539.36	986,539.36	
					Carbon Monoxide	38.8	3,655.1870294	0	
					Ethylbenzene	0.0654	0.286	0.286	
					Formaldehyde	0.817	3.58	0	
					HAPs - Total	1.47	6.42	0	
					Methane	17.56	76.93	76.93	
					Naphthalene	0.00266	0.0116	0.0116	
					Nitrogen Oxides	73.51	2,175.13	330.1	
					Nitrous Oxide	0.45	1.97	1.97	
					Particulate Matter	13.47984	59.041699	59.041699	
					PM < 2.5 micron	13.48	59.04	59.04	
					PM < 10 micron	13.48	59.04	59.04	
					Propylene oxide	0.0592296	0.25942565	0.25942565	
					Sulfur Dioxide	1.17	5.11	5.11	
					Toluene	0.266	1.16	1.16	
					Volatile Organic Compounds	10.03	5,265.87	76.72	
					Xylenes, Total	0.1307136	0.57252557	0.57252557	
		EQUI 8	EU008	GE Dry Low NOx Burner Combustion Turbine 8	1,3-Butadiene	0.000878	0.00385	0.00385	
					Acetaldehyde	0.0817	0.358	0.36	
					Acrolein	0.0131	0.0573	0.0573	
					Benzene	0.0245	0.107	0.107	
					Carbon Dioxide	224,664	984,028.32	984,028.32	
					Carbon Dioxide Equivalent	225,237.3	986,539.36	986,539.36	
					Carbon Monoxide	38.798	3,655.1782694	0	
					Ethylbenzene	0.0654	0.286	0.286	
					Formaldehyde	0.817	3.58	0	
					HAPs - Total	1.47	6.42	0	
					Methane	17.56	76.93	76.93	
					Naphthalene	0.00266	0.0116	0.0116	
					Nitrogen Oxides	73.51	2,175.13	330.1	
					Nitrous Oxide	0.45	1.97	1.97	
					Particulate Matter	13.47984	59.041699	59.041699	
					PM < 2.5 micron	13.48	59.04	59.04	
					PM < 10 micron	13.48	59.04	59.04	
					Propylene oxide	0.0592296	0.25942565	0.25942565	

PTE by SI

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Turbine	EQUI 8	EU008	GE Dry Low NOx Burner Combustion Turbine 8	Sulfur Dioxide	1.17	5.11	5.11	
					Toluene	0.266	1.16	1.16	
					Volatile Organic Compounds	10	5,265.74	76.59	
					Xylenes, Total	0.1307136	0.57252557	0.57252557	

Relationships

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	Related SI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Data Acquisition System	EQUI 16	Null	Data Acquisition System	receives from	EQUI 9	Null	Continuous Emission Monitor	MR001	11/2/2022	Null	
						EQUI 10	Null	Continuous Emission Monitor	MR002	11/2/2022	Null	
						EQUI 11	Null	Continuous Emission Monitor	MR003	11/2/2022	Null	
						EQUI 12	Null	Continuous Emission Monitor	MR004	11/2/2022	Null	
						EQUI 21	Null	Parametric Monitor	Null	9/3/2019	Null	
						EQUI 22	Null	Parametric Monitor	Null	9/3/2019	Null	
						EQUI 30	Null	Continuous Emission Monitor	Null	11/2/2022	Null	
						EQUI 31	Null	Continuous Emission Monitor	Null	11/2/2022	Null	
						EQUI 34	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 35	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 36	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 37	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 38	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 39	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 40	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 41	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 42	Null	Parametric Monitor	Null	5/17/2024	Null	
	Parametric Monitor	EQUI 65	Null	EQUI 23 SCR Urea Flow Rate	sends to	EQUI 16	Null	Data Acquisition System	Null	5/14/2026	Null	
		EQUI 66	Null	EQUI 24 SCR Urea Flow Rate	sends to	EQUI 16	Null	Data Acquisition System	Null	5/14/2026	Null	
		EQUI 67	Null	EQUI 25 SCR Urea Flow Rate	sends to	EQUI 16	Null	Data Acquisition System	Null	5/14/2026	Null	
	Reciprocating IC Engine	EQUI 5	EU005	Emergency Engine/Generator	sends to	STRU 14	Null	Stack/Vent	SV005	9/12/2019	Null	
		EQUI 23	Null	Engine Generator 1	is controlled by	TREA 1	100	312-Oxidation Catalyst	Null	4/1/2024	Null	
						TREA 2	100	139-SCR (Selective Catalytic Reduction)	Null	4/1/2024	Null	
					sends to	STRU 24	100	Stack/Vent	Null	4/1/2024	Null	
		EQUI 24	Null	Engine Generator 2	is controlled by	TREA 3	100	312-Oxidation Catalyst	Null	4/1/2024	Null	
						TREA 4	100	139-SCR (Selective Catalytic Reduction)	Null	4/1/2024	Null	
					sends to	STRU 25	100	Stack/Vent	Null	4/1/2024	Null	
		EQUI 25	Null	Engine Generator 3	is controlled by	TREA 5	100	312-Oxidation Catalyst	Null	4/1/2024	Null	
						TREA 6	100	139-SCR (Selective Catalytic Reduction)	Null	4/1/2024	Null	
					sends to	STRU 26	100	Stack/Vent	Null	4/1/2024	Null	
		EQUI 26	Null	Emergency Generator 2	sends to	STRU 27	100	Stack/Vent	Null	4/1/2024	Null	
		EQUI 27	Null	Emergency Generator 3	sends to	STRU 28	100	Stack/Vent	Null	4/1/2024	Null	
		EQUI 28	Null	Emergency Generator 4	sends to	STRU 29	100	Stack/Vent	Null	4/1/2024	Null	
		EQUI 29	Null	Emergency Generator 5	sends to	STRU 30	100	Stack/Vent	Null	4/1/2024	Null	
		EQUI 43	Null	Emergency Generator 6	sends to	STRU 38	100	Stack/Vent	Null	6/17/2024	Null	
	Turbine	EQUI 7	EU007	GE Dry Low NOx Burner Combustion Turbine 7	is monitored by	EQUI 9	Null	Continuous Emission Monitor	MR001	11/2/2022	Null	
						EQUI 10	Null	Continuous Emission Monitor	MR002	11/2/2022	Null	
						EQUI 21	Null	Parametric Monitor	Null	9/3/2019	Null	
						EQUI 30	Null	Continuous Emission Monitor	Null	11/2/2022	Null	

Relationships

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	Related SI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Turbine	EQUI 7	EU007	GE Dry Low NOx Burner Combustion Turbine 7	sends to	EQUI 16	Null	Data Acquisition System	Null	9/11/2019	Null	
						STRU 12	100	Stack/Vent	SV007	8/9/2004	Null	
		EQUI 8	EU008	GE Dry Low NOx Burner Combustion Turbine 8	is monitored by	EQUI 11	Null	Continuous Emission Monitor	MR003	11/2/2022	Null	
						EQUI 12	Null	Continuous Emission Monitor	MR004	11/2/2022	Null	
						EQUI 22	Null	Parametric Monitor	Null	9/3/2019	Null	
						EQUI 31	Null	Continuous Emission Monitor	Null	11/2/2022	Null	
					sends to	EQUI 16	Null	Data Acquisition System	Null	9/11/2019	Null	
						STRU 13	100	Stack/Vent	SV008	8/9/2004	Null	
Treatment	139-SCR (Selective Catalytic Reduction)	TREA 2	Null	Selective Catalytic Reduction for EQUI 23	is controlled in series by	TREA 1	100	312-Oxidation Catalyst	Null	4/1/2024	Null	
					is monitored by	EQUI 34	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 35	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 36	Null	Parametric Monitor	Null	5/17/2024	Null	
					sends to	EQUI 16	Null	Data Acquisition System	Null	5/17/2024	Null	
		TREA 4	Null	Selective Catalytic Reduction for EQUI 24	is controlled in series by	TREA 3	100	312-Oxidation Catalyst	Null	4/1/2024	Null	
					is monitored by	EQUI 37	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 38	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 39	Null	Parametric Monitor	Null	5/17/2024	Null	
					sends to	EQUI 16	Null	Data Acquisition System	Null	5/17/2024	Null	
		TREA 6	Null	Selective Catalytic Reduction for EQUI 25	is controlled in series by	TREA 5	100	312-Oxidation Catalyst	Null	4/1/2024	Null	
					is monitored by	EQUI 40	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 41	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 42	Null	Parametric Monitor	Null	5/17/2024	Null	
					sends to	EQUI 16	Null	Data Acquisition System	Null	5/17/2024	Null	
	312-Oxidation Catalyst	TREA 1	Null	Oxidation Catalyst for EQUI 23	is monitored by	EQUI 34	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 35	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 36	Null	Parametric Monitor	Null	5/17/2024	Null	
					sends to	EQUI 16	Null	Data Acquisition System	Null	5/17/2024	Null	
		TREA 3	Null	Oxidation Catalyst for EQUI 24	is monitored by	EQUI 37	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 38	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 39	Null	Parametric Monitor	Null	5/17/2024	Null	
					sends to	EQUI 16	Null	Data Acquisition System	Null	5/17/2024	Null	
		TREA 5	Null	Oxidation Catalyst for EQUI 25	is monitored by	EQUI 40	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 41	Null	Parametric Monitor	Null	5/17/2024	Null	
						EQUI 42	Null	Parametric Monitor	Null	5/17/2024	Null	
					sends to	EQUI 16	Null	Data Acquisition System	Null	5/17/2024	Null	

Aboveground Storage Tanks

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item ID	Delta Designation	Description	Capacity (gal)	Construction Type	Column Diameter (ft)	Number of Columns	Deck Type	Interior Diameter (ft)	Interior Height (ft)	Max True Vapor Pressure (psia)	Construction Type	Seal Type	Support Type	Construction or Installation Start Date	
EQUI 32	Null	Diesel Tank #1	100000	Fixed Roof	Null	Null	Null	21	40	0.01	Fixed Roof	Null	Null	TBD	
EQUI 33	Null	Diesel Tank #2	100000	Fixed Roof	Null	Null	Null	21	40	0.01	Fixed Roof	Null	Null	TBD	

CEMs

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item ID	Delta Designation	Description	Manufacturer	Model	Serial Number	Parameter	Primary or Backup?	Bypass Capability?	Install Date (CEMs/COMs)	Certification Date	Certification Basis	Span (ppm)	System Full Scale Value (ppm)	
EQUI 9	MR001	NOx CEMS for EQUI 7	Thermofisher Scientific	42iQLS	12208916764	Nitrogen Oxides	Primary	No	10/1/2022	11/15/2022	40 CFR Pt 75	200	200	
EQUI 10	MR002	CO CEMS for EQUI 7	Thermofisher Scientific	48iQ	12208916736	Carbon Monoxide	Primary	No	10/1/2022	11/15/2022	40 CFR Pt 60	4,000	4,000	
EQUI 11	MR003	NOx CEMS for EQUI 8	Thermofisher Scientific	42iQLS	12218618484	Nitrogen Oxides	Primary	No	10/1/2022	11/16/2022	40 CFR Pt 75	200	200	
EQUI 12	MR004	CO CEMS for EQUI 8	Thermofisher Scientific	48iQ	12218618659	Carbon Monoxide	Primary	No	10/1/2022	11/16/2022	40 CFR Pt 60	4,000	4,000	
EQUI 30	Null	O2 CEMS (diluent) for EQUI 7	Servomex	4900	200112	Oxygen	Primary	No	11/2/2022	11/15/2022	40 CFR Pt 75	25	25	
EQUI 31	Null	O2 CEMS (diluent) for EQUI 8	Servomex	4900	200112	Oxygen	Primary	No	11/2/2022	11/16/2022	40 CFR Pt 75	25	25	

PMs

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item ID	Delta Designation	Description	Manufacturer	Model	Serial Number	Parameter Monitored	Bypass Capability? (parametric)	Install Date (parametric)	
EQUI 21	Null	Fuel usage parametric monitor for EQUI 7	Rosemount	3095MA2CA0013AA	3051SMV	Fuel Usage	No	4/1/2014	
EQUI 22	Null	Fuel usage parametric monitor for EQUI 8	Rosemount	0060496	0408479	Fuel Usage	No	6/10/2014	
EQUI 34	Null	EQUI 23 SCR and Oxidation Catalyst Inlet Temperature	Null	Null	Null	Temperature	Null	5/17/2024	
EQUI 35	Null	EQUI 23 SCR and Oxidation Catalyst Inlet Pressure	Null	Null	Null	Pressure Drop	Null	5/17/2024	
EQUI 36	Null	EQUI 23 SCR and Oxidation Catalyst Outlet Pressure	Null	Null	Null	Pressure Drop	Null	5/17/2024	
EQUI 37	Null	EQUI 24 SCR and Oxidation Catalyst Inlet Temperature	Null	Null	Null	Temperature	Null	5/17/2024	
EQUI 38	Null	EQUI 24 SCR and Oxidation Catalyst Inlet Pressure	Null	Null	Null	Pressure Drop	Null	5/17/2024	
EQUI 39	Null	EQUI 24 SCR and Oxidation Catalyst Outlet Pressure	Null	Null	Null	Pressure Drop	Null	5/17/2024	
EQUI 40	Null	EQUI 25 SCR and Oxidation Catalyst Inlet Temperature	Null	Null	Null	Temperature	Null	5/17/2024	
EQUI 41	Null	EQUI 25 SCR and Oxidation Catalyst Inlet Pressure	Null	Null	Null	Pressure Drop	Null	5/17/2024	
EQUI 42	Null	EQUI 25 SCR and Oxidation Catalyst Outlet Pressure	Null	Null	Null	Pressure Drop	Null	5/17/2024	
EQUI 65	Null	EQUI 23 SCR Urea Flow Rate	Null	Null	Null	Liquid Flow Rate	Null	11/1/2025	
EQUI 66	Null	EQUI 24 SCR Urea Flow Rate	Null	Null	Null	Liquid Flow Rate	Null	11/1/2025	
EQUI 67	Null	EQUI 25 SCR Urea Flow Rate	Null	Null	Null	Liquid Flow Rate	Null	11/1/2025	

DAS

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item ID	Delta Designation	Description	Manufacturer	Model	Serial Number	Primary or Backup? (DASs)	Install Date (DASs)	
EQUI 16	Null	Data Acquisition System	Environmenal Systems Corp	StackVision	M79404	Primary	6/25/2007	

FUGI

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item Type	Subject Item ID	Delta Designation	Description	Install Year	Pollutants Emitted	
Paved Road	FUGI 1	Null	Engine generator fuel deliveries on paved road	2024	Particulate Matter	
					PM < 2.5 micron	
					PM < 10 micron	

Building

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item ID	Delta Designation	Description	Height	Units (height)	Length	Units (length)	Width	Units (width)	
STRU 1	BG002	Substation Generator Building	10	feet	15	feet	8	feet	
STRU 2	BG003	Foam House	10	feet	27	feet	27	feet	
STRU 3	BG004	Gas Turbine Building	14	feet	225	feet	85	feet	
STRU 4	BG005	Operations Building	16	feet	90	feet	40	feet	
STRU 5	BG006	Fuel Forwarding Building	10	feet	10	feet	8	feet	
STRU 6	BG007	Fire Foam Equipment Building	10	feet	10	feet	8	feet	
STRU 7	BG008	Fuel Oil Tank	40	feet	100	feet	Null	Null	
STRU 8	BG009	Fuel Oil Tank	40	feet	100	feet	Null	Null	
STRU 9	BG010	Warehouse	14	feet	53	feet	42	feet	
STRU 10	BG011	Gas Turbine 7 Structure	38.33	feet	92	feet	85	feet	
STRU 11	BG012	Gas Turbine 8 Structure	38.33	feet	92	feet	85	feet	
STRU 20	BG001	Substation controls building	16	feet	54	feet	18	feet	
STRU 31	Null	Rice #1 Equipment	28	feet	26	feet	10	feet	
STRU 32	Null	Rice #2 Equipment	28	feet	26	feet	10	feet	
STRU 33	Null	Rice #3 Equipment	28	feet	26	feet	10	feet	
STRU 34	Null	Rice Building Tier 1	20	feet	241	feet	72	feet	
STRU 35	Null	Rice Building Tier 2	40	feet	92	feet	72	feet	
STRU 36	Null	West Fuel Oil Tank #1	40	feet	27	feet	27	feet	
STRU 37	Null	West Fuel Oil Tank #2	40	feet	27	feet	27	feet	

Stack/Vents

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item ID	Delta Designation	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	
STRU 12	SV007	Combustion Turbine 7 (EQUI 7)	50	17.7	Null	Null	2,388,000	1,105	Manufacturer	Upwards with no cap on stack/vent	
STRU 13	SV008	Combustion Turbine 8 (EQUI 8)	50	17.7	Null	Null	2,388,000	1,105	Manufacturer	Upwards with no cap on stack/vent	
STRU 14	SV005	Substation engine/generator stack	11	0.3	Null	Null	874	952	Manufacturer	Upwards with no cap on stack/vent	
STRU 16	SV001	Combustion Turbine 1	52	Null	15.3	15.3	1,360,000	852	Manufacturer	Upwards with no cap on stack/vent	
STRU 17	SV002	Combustion Turbine 2	52	Null	15.3	15.3	1,360,000	852	Manufacturer	Upwards with no cap on stack/vent	
STRU 18	SV003	Combustion Turbine 3	52	Null	15.3	15.3	1,360,000	852	Manufacturer	Upwards with no cap on stack/vent	
STRU 19	SV004	Combustion Turbine 4	52	Null	15.3	15.3	1,360,000	950	Manufacturer	Upwards with no cap on stack/vent	
STRU 24	Null	EQUI 23 Stack	95	4	Null	Null	58,703	708.4	Manufacturer	Upwards with no cap on stack/vent	
STRU 25	Null	EQUI 24 Stack	95	4	Null	Null	58,703	708.4	Manufacturer	Upwards with no cap on stack/vent	
STRU 26	Null	EQUI 25 Stack	95	4	Null	Null	58,703	708.4	Manufacturer	Upwards with no cap on stack/vent	
STRU 27	Null	EQUI 26 Stack	8.75	1.05	Null	Null	6,028	847.2	Manufacturer	Upwards with no cap on stack/vent	
STRU 28	Null	EQUI 27 Stack	8.75	1.05	Null	Null	6,028	847.2	Manufacturer	Upwards with no cap on stack/vent	
STRU 29	Null	EQUI 28 Stack	8.75	1.05	Null	Null	6,028	847.2	Manufacturer	Upwards with no cap on stack/vent	
STRU 30	Null	EQUI 29 Stack	9.4	1.03	Null	Null	4,551.5	969.1	Manufacturer	Upwards with no cap on stack/vent	
STRU 38	Null	EQUI 43 Stack	9.4	1.03	Null	Null	4,551.5	969.1	Manufacturer	Upwards with no cap on stack/vent	

Other Controls

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item Type	Subject Item ID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Other operating parameters?	Other operating parameters description
139-SCR (Selective Catalytic Reduction)	TREA 2	Null	Selective Catalytic Reduction for EQUI 23	Custom (Custom)	4/1/2024	Nitrogen Oxides	100	90	Yes	Other	Mfr/ Vendor data	Null	Yes	annual stack testing, operate per manufacturer's specifications. SCR operating parameters controlled by engine computer.
	TREA 4	Null	Selective Catalytic Reduction for EQUI 24	Custom (Custom)	4/1/2024	Nitrogen Oxides	100	90	Yes	Other	Mfr/ Vendor data	Null	Yes	annual stack testing, operate per manufacturer's specifications. SCR operating parameters controlled by engine computer.
	TREA 6	Null	Selective Catalytic Reduction for EQUI 25	Custom (Custom)	4/1/2024	Nitrogen Oxides	100	90	Yes	Other	Mfr/ Vendor data	Null	Yes	annual stack testing, operate per manufacturer's specifications. SCR operating parameters controlled by engine computer.

Catalysts

AI ID (Name): 1860 (Xcel Energy - Blue Lake)
Activity: IND20240001

Subject Item Type	Subject Item ID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Catalyst Inlet Temp (°F)	Catalyst Outlet Temp (°F)	
312-Oxidation Catalyst	TREA 1	Null	Oxidation Catalyst for EQUI 23	Custom (Custom)	4/1/2024	Carbon Monoxide	100	90	Yes	Other	Mfr/ Vendor data	Null	484	1,350	
						Volatile Organic Compounds	100	90	Yes	Other	Mfr/ Vendor data	Null	484	1,350	
	TREA 3	Null	Oxidation Catalyst for EQUI 24	Custom (Custom)	4/1/2024	Carbon Monoxide	100	90	Yes	Other	Mfr/ Vendor data	Null	484	1,350	
						Volatile Organic Compounds	100	90	Yes	Other	Mfr/ Vendor data	Null	484	1,350	
	TREA 5	Null	Oxidation Catalyst for EQUI 25	Custom (Custom)	4/1/2024	Carbon Monoxide	100	90	Yes	Other	Mfr/ Vendor data	Null	484	1,350	
						Volatile Organic Compounds	100	90	Yes	Other	Mfr/ Vendor data	Null	484	1,350	

SI Id	Sequence	Requirement
TFAC 1	1240	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the following Appendices: Appendix A - Insignificant Activities and General Applicable Requirements; Appendix B - Acid Rain Permit Renewal Application; Appendix C - 40 CFR Part 60 Subp. A - General Provisions; Appendix D - 40 CFR Part 60 Subp. IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; Appendix E - 40 CFR Part 60 Subp. JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines; Appendix F - 40 CFR Part 60 Subp. GG - Standards of Performance for Stationary Gas Turbines; Appendix G - 40 CFR Part 63, subp. A - General Provisions; Appendix H - 40 CFR Part 63 Subp. ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines; Appendix I - Fugitive Emissions Dust Control Plan; Appendix J – Modeling Parameters; Appendix K - General Public Preclusion Plan; and Appendix L - Transport Rule (TR) Trading Program Title V Requirements. Modeling parameters in Appendices J - Modeling Parameters are included for reference only as described elsewhere in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B)]
	2080	Modeled Parameters for NO2: The parameters used in NO2 modeling for permit number 13900010-105 are listed in Appendix J of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	2084	Modeled Parameters for PM2.5: The parameters used in PM2.5 modeling for permit number 13900010-105 are listed in Appendix J of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	2087	Changes to Modeled Parameters for PM2.5: Any permit amendment that affects any modeled parameter or emission rate for PM2.5 listed in Appendix J must be a major amendment. Any addition to the information documented in Appendix J requires a major amendment. Any change in the location of the ambient air boundary documented in Appendix I requires a major amendment unless the new boundary completely encompasses the original boundary documented in Appendix I. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
	2090	Equivalent or Better Dispersion (EBD) Modeling Triggers (Modeling Required) for PM2.5: Any changes that affect any modeled PM2.5 parameter or emission rate listed in Appendix J, or an addition to the information documented in Appendix J, trigger the EBD Remodeling Submittal requirement. This includes changes that do not require a permit amendment as well as changes that require any type of permit amendment. Changes made under the Administrative amendment process are excluded from this requirement. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
	2100	EBD Modeling Submittal for PM2.5: For changes meeting the criteria in the EBD Modeling Triggers (Modeling Required) requirement, the Permittee may submit an EBD analysis using form AQDM-08. To use an EBD analysis to demonstrate compliance, the baseline modeling (the most recent approved refined modeling demonstration) must be valid as defined in the current version of the MPCA modeling practices manual. The results of the analysis must demonstrate that the proposed change is equivalent or better than the baseline model. When an EBD is submitted for a change, the Permittee must wait for written approval before making the change. When approval is received, construction may begin according to the applicable Minnesota Rules. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
	2110	Computer Dispersion Modeling Triggers for PM2.5: The Permittee must conduct a refined remodeling analysis if: (1) The EBD Modeling Submittal requirement was triggered but the Permittee chose not to or was not eligible to submit an EBD analysis; (2) The Permittee submitted an EBD analysis but the results of the EBD modeling analysis do not demonstrate equivalent or better dispersion characteristics or the submittal was not approved; or (3) the location of the ambient air boundary is being modified, unless the new boundary completely encompasses the original boundary documented in Appendix GPPP Map Appendix I. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
	2120	Computer Dispersion Modeling Protocol for PM2.5: If the requirement to conduct Computer Dispersion Remodeling is triggered, the Permittee must submit a computer dispersion modeling protocol for the total facility including the proposed change. This protocol will describe the proposed modeling methodology and input data, in accordance with the current version of the MPCA modeling practices manual. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
	2130	Computer Dispersion Modeling Results for PM2.5: Once approval of the Computer Dispersion Modeling Protocol is received, the Permittee must submit a Computer Dispersion Modeling Report in accordance with the current version of the MPCA modeling practices manual and the approved Computer Dispersion Modeling Protocol. The Report must be included with the permit application when an application is required for the proposed change. When a modeling report is required for a change, the Permittee must wait for written approval before making the change. When approval is received, construction may begin according to the applicable Minnesota Rules. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
	2140	General Public Preclusion Plan - Boundary Map Within 30 days after Permit Issuance or prior to initial startup of EQUIs 23 to 29, and EQUI 46, whichever comes first, The Permittee must use fencing, control access points, conduct security patrols, place restriction signage, and remote monitoring as specified in Appendix K to maintain control over the effective fence line. Appendix K to this permit is a map that depicts the boundary at which the access of the general public can be controlled and compliance with the National Ambient Air Quality Standards (NAAQS) can be demonstrated. This boundary has been defined as the "effective fence line". Appendix K identifies the forms of control the Permittee will use to restrict access to the general public along portions of the effective fence line. The general public does not include employees or other categories of people who have been directly authorized by the property owner to enter or remain on the property for a limited period of time and for a specific purpose. [Title I Condition: 40 CFR 52.21(k)(modeling) & Minn. R. 7007.3000]
	2145	General Public Preclusion Plan This Plan must, at a minimum, contain the following information: 1. A map of the facility that clearly displays the ambient air boundary. The map must indicate how access is precluded for each section of the boundary and must identify all access points (including roadways, power lines, rail spurs, etc.); 2. Locations where fencing will be implemented; 3. Locations where security patrols will be implemented and the security patrol frequency; 4. Restriction signage spacing (restriction signage may include notices such as “No Trespassing,” “Private Property,” “Do Not Enter,” or “Restricted Area”); 5. Location of remote monitoring devices; 6. Operation and maintenance requirements of remote monitoring software and devices; 7. Contingency plans for downtime for remote monitoring software and devices; and 8. A response plan for when breaches occur. [Title I Condition: 40 CFR 52.21(k)(modeling) & Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	2150	Recordkeeping for Breaches of the Ambient Air Boundary Within three calendar days of each observed breach, the Permittee must document each instance that the ambient air boundary was breached by a member of the general public, including documenting the type, location, and duration of each breach. The Permittee must identify and, within a reasonable amount of time, implement measures to prevent future breaches, if necessary. A breach to the ambient boundary occurs when a member of the general public accesses property identified by the Permittee as non-ambient air. The observation of a breach may be direct or indirect. A direct observation includes witnessing a member of the general public on property identified as non-ambient air. Indirect observations rely on evidence of a breach, such as a cut fence, worn paths, motorized vehicle tracks, or other signs of disturbance by a member of the general public on property identified as non-ambient air. The Permittee must report each breach, including all steps taken or changes made to the General Public Preclusion Plan to prevent additional breaches, in the semiannual Deviations Report required by this permit. [Title I Condition: 40 CFR 52.21(k)(modeling) & Minn. R. 7007.3000]
	2155	General Public Preclusion Plan - Fencing: The Permittee must install and maintain fencing along ambient air boundary effective fence line as depicted in Appendix K. The Permittee must inspect the fence line once per quarter. The Permittee must maintain records of inspection and required maintenance of fence line. [Title I Condition: 40 CFR 52.21(k)(modeling) & Minn. R. 7007.3000]
	2160	General Public Preclusion Plan - Control of Access: The Permittee must control access at any road, trail equal to or wider than 50 inches, and all abandoned railroad grades. The Permittee must secure these access points with a locked and/or monitored gate or other physical barrier precluding access by the general public. [Title I Condition: 40 CFR 52.21(k)(modeling) & Minn. R. 7007.3000]
	2165	General Public Preclusion Plan - Security Patrols: The Permittee must develop, operate, and maintain a security patrol plan as part of the Plan. Patrol routes must be followed as defined in the Plan. For portions of the effective fence line where patrols are identified, the Permittee must patrol those portions at a minimum of once per operating day. The Permittee must maintain records of patrol routes and frequency of patrols. [Title I Condition: 40 CFR 52.21(k)(modeling) & Minn. R. 7007.3000]
	2170	General Public Preclusion Plan - Remote Monitoring: The Permittee must operate and maintain remote monitoring equipment to maintain the effective fence line as depicted in Appendix K. The Permittee must monitor at a minimum of once per day. Remote monitoring devices include but are not limited to fixed cameras and drone mounted cameras. [Title I Condition: 40 CFR 52.21(k)(modeling) & Minn. R. 7007.3000]
	3340	The Permittee shall submit excess emission/downtime report : Due by 30 days after the end of each calendar quarter following permit issuance. Submit this on form DRF-1 (Excess Emissions Reporting) as amended. The EER shall indicate all periods of monitor bypass and exceedances of the limit including those allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions, as well as a summary of audit results and frequencies. If no excess emissions, downtime or bypasses occurred during the quarter, submit a signed report supplying the necessary monitor data needed to verify this. [Minn. R. 7017.1110, subp. 1-2]
	7400	The Permittee must comply with Minn. Stat. 116.385. The Permittee may not use trichloroethylene at its permitted facility including in any manufacturing, processing, or cleaning processes, except as described in Minn. Stat. 116.385, subd. 2(b) and 4. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. R. 7007.0100, subp. 7(X), Minn. Stat. 116.385]

SI Id	Sequence	Requirement
	7420	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. This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800(A)(2)]
	7440	Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and recordkeeping specified in the fugitive dust control plan in Appendix I of this permit. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0020, Minn. R. 7011.0150, Minn. Stat. 116.07, subd. 4a(a)]
	7450	The Permittee must 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 must be demonstrated upon written request by the MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
	7540	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]
	7550	The Permittee must at all times properly operate and maintain the facilities and systems of treatment and control and the appurtenances related to them that are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. [Minn. R. 7007.0800, subp. 16(J)]
	7560	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)]
	7570	Operation Changes: In any shutdown, breakdown, or deviation the Permittee must immediately or as soon as possible considering plant and personnel safety take all practical steps to modify operations to reduce the emission of any regulated air pollutant. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment are permitted to operate. [Minn. R. 7019.1000, subp. 4]
	7580	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]
	7590	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 U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
	7600	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)]
	7610	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
	7620	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit. [Minn. R. ch. 7017]

SI Id	Sequence	Requirement
	7630	Performance Test Notifications and Submittals: Performance Test Notification and Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due seven 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]
	7640	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's follow up 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]
	7650	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)]
	7660	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)]
	7670	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]
	7680	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)]
	7690	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]
	7700	These following 40 CFR 52.21(r)(6) requirements apply if a reasonable possibility (RP) as defined in 40 CFR 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at 40 CFR 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of 40 CFR 52.21(r)(6)(vi)(b). Even though a particular modification is not subject to New Source Review (NSR), or where there isn't a RP that a proposed project could result in a SEI, a permit amendment, recordkeeping, or notification may still be required by Minn. R. 7007.1150 - 7007.1500. [Minn. R. 7007.0800, subp. 2(A), Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	7710	Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following: 1. Project description 2. Identification of any emission unit whose emissions of an NSR pollutant could be affected 3. Pre-change potential emissions of any affected existing emission unit, and the projected post-change potential emissions of any affected existing or new emission unit. 4. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the emission unit could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination. The Permittee shall maintain records of this documentation. [Minn. R. 7007.0800, subps. 4-5, Minn. R. 7007.1200, subp. 4, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]
	7720	Post-change Emissions - The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions in the hybrid test. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if the hybrid test was used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of five years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]
	7730	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 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 identified in the Post-change Emissions requirement (above); and 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]
	7770	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 Permittee does not have advance knowledge of the shutdown, the Permittee must notify 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 must inform the commissioner of the cause of the shutdown and the estimated duration. The owner or operator must notify the commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]
	7780	Breakdown Notifications: Notify the commissioner within 24 hours of a breakdown of more than one hour 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 Permittee must inform the commissioner of the cause of the breakdown and the estimated duration. The Permittee must notify the commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]

SI Id	Sequence	Requirement
	7790	Notification of Deviations Endangering Human Health or the Environment: Immediately after discovery of the deviation or immediately after when the deviation reasonably should have been discovered, notify the commissioner either orally or by e-mail, or telephone the state duty officer at 800-422-0798 or 651-649-5451, of any deviation from permit conditions that could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]
	7800	Notification of Deviations Endangering Human Health or the Environment Report: Within two working days of discovery, notify the commissioner in writing of any deviation from permit conditions that 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]
	7810	The Permittee must submit a semiannual deviations report : Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee must cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(B)(2)]
	7830	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 three or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]
	7840	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)]
	7860	The Permittee must submit a compliance certification : Due annually, by the 31st of January (for the previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(D)]
	7870	Within 15 days of a request from the Commissioner, the Permittee must provide a complete summary of all performance tests required at the facility including the subject item, pollutant, most recent test date (if applicable), and the date of the next test in an approved format. [Minn. R. 7007.0800, subp. 16(L)]
	7880	The Permittee shall submit an application for permit reissuance : Due 180 calendar days before Permit Expiration Date. [Minn. R. 7007.0400, subp. 2]
	7900	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
	7910	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0085]
COMG 2	1	The Permittee must limit emissions of Carbon Monoxide <= 310.8 tons per year 12-month rolling sum. This limit applies to the combined CO emissions of EQUI 7 and EQUI 8. [Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B)]

SI Id	Sequence	Requirement
	2	Monthly Recordkeeping. CO Emissions: By the 15th of the month, the Permittee shall calculate and record: 1) CO emissions for the previous calendar month by summing the CO emissions from EQUI 7 and EQUI 8 as determined according to requirements at EQUI 7 and EQUI 8; and 2) Total COMG 2 CO emissions for the previous 12-month period by summing the monthly CO emissions data for the previous 12 months. Records shall include COMG 2 CO emissions for the previous calendar month and the previous 12-month period. [Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B), Minn. R. 7007.0800, subps. 4-5]
COMG 5	1	The Permittee shall limit emissions of HAPs - Total <= 22.5 tons per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period. [Title I Condition: Avoid major source under 40 CFR 63.2]
	2	The Permittee shall limit emissions of HAPs - Single <= 9.0 tons per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period. [Title I Condition: Avoid major source under 40 CFR 63.2]
	3	HAPs: Daily Recordkeeping. On each day of operation, the Permittee shall calculate and record the total fuel usage for each emission unit EQUI 23-EQUI 29 and EQUI 43. See EQUI 7 and EQUI 8 daily recordkeeping requirements for EQUI 7 and EQUI 8 fuel usage. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 63.2]
	4	Monthly Recordkeeping - Fuel Usage: By the 15th day of each month, the Permittee shall calculate and record: 1. the total fuel usage of EQUI 23-EQUI 29 and EQUI 43 for the previous month, and 2. the total fuel usage of EQUI 7 and EQUI 8 for the previous month. [Minn. R. 7007.0800, subps. 4-5]
	5	HAPs: Monthly Recordkeeping: By the 15th day of each month the Permittee shall calculate and record the following: 1. Individual and total HAP emissions for the previous calendar month based on monthly fuel usage records and emission factors, using formulas in this permit. 2. Individual and total HAP emissions for the previous 12-month period by summing the monthly emissions data for the previous 12 months. See below for emission factor information. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
	6	HAPs: Monthly Calculation: The Permittee shall calculate each individual HAP and total HAP emissions using the following equations: COMG 5 HAP Emissions (tons/month) = Distillate fuel oil units emissions (tons per month) + Dual fuel fired units (tons per month) + Natural gas units emissions (tons per month) Distillate fuel oil units emissions (tons per month) = (DF*EF*HHVD)/2000 DF = Distillate fuel usage (gal/month) EF = HAP-specific emission factor (lbs/MMBtu) 1.06E-03 lb/MMBtu total HAP, 7.89E-05 lb/MMBtu single HAP (EQUIs 26-29, 43) HHVD = High heating value for distillate fuel oil (MMBtu/gal) Dual fuel units emissions (tons per month) = (DuF*EF)/2000 DuF = Dual fuel heat input (total MMBtu/month: diesel + natural gas) EF = HAP-specific emission factor (lbs/MMBtu) 1.70E-03 lb/MMBtu total HAP, 7.89E-05 lb/MMBtu single HAP (diesel) (EQUIs 23-25) 2.28E-02 lb/MMBtu total HAP, 3.24E-03 lb/MMBtu single HAP (natural gas) (EQUIs 23-25) Natural gas units emissions (tons per month) = (NGF*EF*HHVNG)/2000 NGF = Natural gas fuel usage (dscf/month) EF = HAP-specific emission factor (lbs/MMBtu) 7.17E-04 lb/MMBtu total HAP, 4.00E-04 lb/MMBtu single HAP (EQUIs 7, 8) HHVNG = High heating value for natural gas (MMBtu/dscf) Total HAPS (tons per month) are determined by summing all individual (single) HAP (tons per month) emissions. [Minn. R. 7007.0800, subps. 4-5]
	7	Emission Factors: Emissions of any HAP calculated with an emission factor on a lb/mmBtu basis shall be calculated by converting fuel usage volume to fuel heat input on a high heating value basis. Approved emission factors are, in order of preference: 1. The emission factor determined during the most recent stack test for this facility and verified by the MPCA in a Notice of Compliance or Notice of Verification, or, 2. The emission factors in EPA's AP-42 chapter 3.1. Any emission factor determination testing shall follow the performance testing requirements in the TFAC 1 subject item in this permit. [Minn. R. 7007.0800, subps. 4-5]
	3855	The Permittee must submit an annual report by the 31st of January. The report must document the VOC 12-month rolling sum calculations for the previous calendar year. The report must be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee must verify and certify that the Facility has maintained minor source status for New Source Review. [Minn. R. 7007.0800, subp. 2(A)]
EQUI 1	1	EQUI 1 is permanently removed from service and lacks the control system necessary for startup or operation. The Permittee must not operate EQUI 1 under any circumstance. The unit must remain non-operational unless the Permittee obtains an appropriate permit amendment authorizing reconstruction or return to service as a new emission unit. [Minn. R. 4410.4300, subp. 15(A)(limittoavoidthreshold), Minn. R. 7007.0800, subp. 2(B)]
	3080	The Permittee shall submit a notification of equipment removal/dismantlement: Due 15 calendar days after Equipment Removal and/or Dismantlement Date. This notification shall specify which Subject Items (by ID#) were removed and on what date. submit a notification: Due within 30 days. [Minn. R. 4410.4300, subp. 15(A)(limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B)]

SI Id	Sequence	Requirement
EQUI 2	1	EQUI 2 is permanently removed from service and lacks the control system necessary for startup or operation. The Permittee must not operate EQUI 2 under any circumstance. The unit must remain non-operational unless the Permittee obtains an appropriate permit amendment authorizing reconstruction or return to service as a new emission unit. [Minn. R. 4410.4300, subp. 15(A)(limittoavoidthreshold), Minn. R. 7007.0800, subp. 2(B)]
	3080	The Permittee shall submit a notification of equipment removal/dismantlement: Due 15 calendar days after Equipment Removal and/or Dismantlement Date. This notification shall specify which Subject Items (by ID#) were removed and on what date. [Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B)]
EQUI 3	1	EQUI 3 is permanently removed from service and lacks the control system necessary for startup or operation. The Permittee must not operate EQUI 3 under any circumstance. The unit must remain non-operational unless the Permittee obtains an appropriate permit amendment authorizing reconstruction or return to service as a new emission unit. [Minn. R. 4410.4300, subp. 15(A)(limittoavoidthreshold), Minn. R. 7007.0800, subp. 2(B)]
	3080	The Permittee shall submit a notification of equipment removal/dismantlement: Due 15 calendar days after Equipment Removal and/or Dismantlement Date. This notification shall specify which Subject Items (by ID#) were removed and on what date. [Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B)]
EQUI 4	1	EQUI 4 is permanently removed from service and lacks the control system necessary for startup or operation. The Permittee must not operate EQUI 4 under any circumstance. The unit must remain non-operational unless the Permittee obtains an appropriate permit amendment authorizing reconstruction or return to service as a new emission unit. [Minn. R. 4410.4300, subp. 15(A)(limittoavoidthreshold), Minn. R. 7007.0800, subp. 2(B)]
	3080	The Permittee shall submit a notification of equipment removal/dismantlement: Due 15 calendar days after Equipment Removal and/or Dismantlement Date. This notification shall specify which Subject Items (by ID#) were removed and on what date. [Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B)]
EQUI 5	39	The Permittee is subject to pt. 63, subp. ZZZZ because it owns and operates EQUI 5 (a stationary RICE) located at an area HAP emissions source, and EQUI 5 is not being tested at a stationary RICE test cell/stand. [40 CFR 63.6585, Minn. R. 7011.8150]
	42	EQUI 5 is an existing 175 hp compression ignition stationary RICE installed in 1993 subject to 40 CFR pt. 63, subp. ZZZZ because it has a site rating of equal to or less than 500 brake HP, is located at an area HAP emissions source, and the Permittee commenced construction of EQUI 5 before June 12, 2006. [40 CFR 63.6590(a)(1)(iii), Minn. R. 7011.8150]
	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Distillate fuel with sulfur content less than 0.0015 percent by weight. [Minn. R. 7005.0100, subp. 35a]
	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, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
	3565	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]

SI Id	Sequence	Requirement
	21040	The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. ZZZZ, as follows: 40 CFR 63.6585(a); 40 CFR 63.6585(c)-(d); 40 CFR 63.6590(a)(1)(iii); 40 CFR 63.6595(a)(1); 40 CFR 63.6595(b)(2); 40 CFR 63.6603(a); 40 CFR 63.6604(b); 40 CFR 63.6605(a)-(b); 40 CFR 63.6625(e); 40 CFR 63.6625(e)(3); 40 CFR 63.6625(f); 40 CFR 63.6625(h)-(i); 40 CFR 63.6640(a)-(b); 40 CFR 63.6640(e); 40 CFR 63.6640(f); 40 CFR 63.6640(f)(1); 40 CFR 63.6640(f)(2); 40 CFR 63.6640(f)(4); 40 CFR 63.6645(a)(5); 40 CFR 63.6650(a); 40 CFR 63.6650(b); (introductory paragraph only); 40 CFR 63.6650(f); 40 CFR 63.6650(h); 40 CFR 63.6650(h)(1)-(3); 40 CFR 63.6650(i); 40 CFR 63.6655(a); 40 CFR 63.6655(d); 40 CFR 63.6655(e); 40 CFR 63.6655(e)(2); 40 CFR 63.6655(f); 40 CFR 66.6655(f)(2); 40 CFR 63.6660; 40 CFR 63.6665; 40 CFR 63.6675; 40 CFR pt. 63, subp. ZZZZ, Table 2d, item 4; 40 CFR pt. 63, subp. ZZZZ Table 6, item 9; 40 CFR pt. 63, subp. ZZZZ Table 7, item 4; and 40 CFR pt. 63, subp. ZZZZ Table 8. A copy of 40 CFR pt. 63, subp. ZZZZ is included in Appendix H. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 63, subp. ZZZZ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.8150]

SI Id	Sequence	Requirement
	21041	The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. A as follows: 40 CFR 63.1(a); 40 CFR 63.1(b)(1); 40 CFR 63.1(b)(3); 40 CFR 63.1(c)(1)-(c)(2); 40 CFR 63.1(c)(5); 40 CFR 63.1(e); 40 CFR 63.2; 40 CFR 63.3; 40 CFR 63.4(a)-(c); 40 CFR 63.5(a)-(f); 40 CFR 63.6(a)(1)-(a)(2); 40 CFR 63.6(b)(1)-(b)(7); 40 CFR 63.6(c)(1)-(c)(2); 40 CFR 63.6(c)(5); 40 CFR 63.6(e)(1); 40 CFR 63.6(f)-(g); 40 CFR 63.6(i)(1)-(i)(9); 40 CFR 63.6(i)(11); 40 CFR 63.6(j); 40 CFR 63.7(a)(2); 40 CFR 63.7(a)(2)(ix); 40 CFR 63.7(a)(3)-(a)(4); 40 CFR 63.7(b)-(c); 40 CFR 63.7(e)-(h); 40 CFR 63.8(b)(1)-(b)(3); 40 CFR 63.8(c)-(d); 40 CFR 63.8(f)-(g); 40 CFR 63.9(b)(1)-(b)(2); 40 CFR 63.9(b)(4)-(b)(5); 40 CFR 63.9(c)-(j); 40 CFR 63.10(a)(5)-(a)(7); 40 CFR 63.10(b)(1); 40 CFR 63.10(b)(2)(i)-(v); 40 CFR 63.10(b)(2)(vi)-(viii); 40 CFR 63.10(b)(2)(ix)-(2)(xiv); 40 CFR 63.10(b)(3); 40 CFR 63.10(c); 40 CFR 63.10(d)(1)-(d)(5); 40 CFR 63.10(e)-(f); 40 CFR 63.11(a)-(e); 40 CFR 63.12; 40 CFR 63.13; 40 CFR 63.14; 40 CFR 63.15(a); 40 CFR 63.15(b); and 40 CFR 63.16. A copy of 40 CFR pt. 63, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 63, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(B), Minn. R. 7017.1010 & 7017.2015, subp. 3, Minn. R. 7019.0100]

SI Id	Sequence	Requirement
	21042	If installation of the temporary replacement engine does not require a permit amendment, the Permittee shall keep the following records on site for each replacement engine not requiring a permit amendment: - Records required by Minn. R. 7007.1200, subp. 4; - The dates the temporary engine was installed, started operation, and was removed; - Filled form GI05B for each replacement engine with an assigned consecutive emission unit number; - A unique identification for the unit, such as make, model, and serial number; - Rated capacity and type of engine; - Dates and hours of operation of the engine; - A statement of all periods of operation during which the permanent engine being temporarily replaced is not also operating; and - Calculations of the potential to emit of the engine and emission changes pursuant to Minn. R. 7007.1200 subpart 3. [Minn. R. 7007.0800, subp. 5, Minn. R. 7007.1200, subp. 4, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000]
	21050	Temporary replacement conditions: The Permittee may temporarily replace this unit (EQUI 5), provided the following conditions are met: 1) The potential emissions of the replacement unit (including the effect of all enforceable limits imposed through this permit) are less than all of the following: 25 tpy PM, 15 tpy PM < 10 microns, 10 tpy PM < 2.5 microns, 40 tpy VOC, 40 tpy SO2, 40 tpy NOx, 100 tpy CO, 75000 tpy CO2e; 2) For pollutants not specifically limited by a permit or rule, the Permittee shall calculate emissions using an emission factor provided by the temporary replacement engine manufacturer if available, or from AP-42 if not available; 3) The heat input capacity of the replacement unit is less than or equal to the unit it replaces; 4) The project can only be the temporary replacement of an internal combustion engine(s) for the purpose of providing emergency electrical power at the facility; 5) Emissions and operating hours are tracked and calculated as specified in this permit; 6) The replacement engine may only replace a permanent engine that is temporarily out of service for less than one year; 7) The replacement engine must meet the conditions for temporary replacement units under 40 CFR Section 60.4200(e); 8) Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to complete emission calculations described in Minn. R. 7007.1200 subp. 2. A permit will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. [40 CFR 60.4200(e), Minn. R. 7005.0100, subp. 35a, Minn. R. 7007.0800, Minn. R. 7007.1200, subp. 3, Minn. R. 7011.2305, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000]
	35690	The Permittee shall notify the MPCA if the replacement engine is operated simultaneously with the permanent engine being temporarily replaced, except as allowed by this permit. Make verbal notification within 2 days, and written notification with the semi-annual deviations report. [Minn. R. 7007.0800, subp. 5, Minn. R. 7007.1200, subp. 4]
EQUI 7	3	Startup/Shutdown and Emergency Operation Modes: 1. Startup commences upon initial firing and continues until Mode 6 is attained. 2. Shutdown begins when the shutdown sequence is initiated and the unit leaves Mode 6. 3. Emergency operation occurs when the unit is not in Mode 6 but shutdown has not been initiated. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	4	The Permittee must limit emissions of Particulate Matter <= 0.0066 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	5	The Permittee must limit emissions of Particulate Matter <= 13.48 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	6	The Permittee must limit emissions of PM < 10 micron <= 0.0066 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	7	The Permittee must limit emissions of PM < 10 micron <= 13.48 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	8	The Permittee must limit emissions of PM < 2.5 micron <= 0.0066 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	9	The Permittee must limit emissions of PM < 2.5 micron <= 13.48 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	10	The Permittee must limit emissions of Nitrogen Oxides <= 11 parts per million 24-hour rolling average (dry basis) corrected to 15% O2 during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	11	The Permittee must limit emissions of Nitrogen Oxides <= 73.51 pounds per hour 24-hour rolling average. This limit applies during normal operation. Normal operation commences upon initial attainment of Mode 6 operation. Mode 6 operation occurs when all burner nozzles are firing in low-NOx configuration. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	12	The Permittee must limit emissions of Nitrogen Oxides <= 6.76 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. NOx is limited to 68 lbs per SUSD event. Startup shall last no greater than 23 minutes per event. Shutdown shall last no greater than 11 minutes per event. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	13	The Permittee must limit emissions of Nitrogen Oxides <= 7.29 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 304 lb/hr NOx. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	15	The Permittee must limit emissions of Carbon Monoxide <= 9 parts per million 24-hour rolling average (dry basis) corrected to 15% O2 during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	16	The Permittee must limit emissions of Carbon Monoxide <= 38.80 pounds per hour 24-hour rolling average. This limit applies during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	17	The Permittee must limit emissions of Carbon Monoxide <= 18.01 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. CO is limited to 180 lbs per SUSD event. Startup shall last no greater than 23 minutes per event. Shutdown shall last no greater than 11 minutes per event. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	18	The Permittee must limit emissions of Carbon Monoxide <= 11.47 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 478 lb/hr CO. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19	The Permittee must limit emissions of Volatile Organic Compounds <= 4.6 parts per million 3-hour block average (dry basis) at actual O2 (as methane). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20	The Permittee must limit emissions of Volatile Organic Compounds <= 10.03 pounds per hour 3-hour average (as methane). This limit applies during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21	The Permittee must limit emissions of Volatile Organic Compounds <= 8.64 tons per year 12-month rolling sum (as methane) during startup and shutdown (SUSD) events. VOC is limited to 86 lbs per SUSD event. Startup shall last no greater than 23 minutes per event. Shutdown shall last no greater than 11 minutes per event. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22	The Permittee must limit emissions of Volatile Organic Compounds <= 24.95 tons per year 12-month rolling sum (as methane) during emergency operation. Emergency operation is limited to 1040 lb/hr VOC. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	24	The Permittee must limit emissions of Carbon Dioxide <= 110 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	25	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 986,539 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	29	Daily Recordkeeping. On each day of operation, the Permittee shall calculate and record the total EQUI 7 fuel usage. [Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B), Minn. R. 7007.0800, subp. 5]
	30	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	31	CO Monitoring: The Permittee must monitor CO emissions on both a lb/mmBtu and a lb/hr basis using a CO CEMS on EQUI 7 stack/vent (STRU 12) to monitor CO emissions as described by this permit. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	32	CO Emissions: Monthly Recordkeeping: By the 15th of each month, the Permittee must calculate and record total CO emissions for the previous calendar month and the 12-month rolling sum, distinguishing between normal operation, startup/shutdown (SUSD), and emergency operation. Emissions must be determined using hourly CEMS data. If the CEMS is unavailable, emissions shall be calculated using recorded fuel usage and an approved AP-42 emission factor for natural gas-fired lean-premix turbines (Table 3.1-1). [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	33	NOx Monitoring: The Permittee must monitor NOx emissions on both a lb/MMBtu and a lb/hr basis using a NOx CEMS on EQUI 7 stack/vent (STRU 12) to monitor NOx emissions as described by this permit. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	34	NOx Emissions: Monthly Recordkeeping: By the 15th of each month, the Permittee must calculate and record total NOx emissions for the previous calendar month and the 12-month rolling sum, distinguishing between normal operation, startup/shutdown (SUSD), and emergency operation. When CEMS data are available, emissions must be determined using hourly NOx CEMS data. If the CEMS is unavailable, emissions must be calculated using recorded fuel usage and an approved AP-42 emission factor for natural gas-fired lean-premix turbines (Table 3.1-1). [Minn. R. 7007.0800, subp. 2(B), Minn. R. 7007.0800, subps. 4-5]
	35	VOC Monitoring: The Permittee must conduct performance testing to demonstrate compliance with the EQUI 7 VOC limits. Performance test results shall be used to establish VOC emission factors (lb/MMBtu), which must be incorporated into the data acquisition system to calculate continuous 3-hour block average emission rates (ppm and lb/hr) during normal operation. Continuous emission calculations are based on measured fuel heat input from the certified fuel flow sensor. For SUSD and emergency operation, the Permittee must use the established emission factors and recorded operating hours to calculate 12-month rolling sum VOC emissions (tpy). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	36	VOC Emissions: Monthly Recordkeeping: By the 15th of the month, the Permittee must calculate and record total VOC emissions for the previous calendar month and the 12-month rolling sum for normal operation, startup/shutdown (SUSD), and emergency operation. Calculations must be based on measured fuel usage data from the certified fuel flow sensor and recorded hours of operation of the turbine for each operating scenario. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	37	Particulate matter (PM/PM10/PM2.5) Monitoring: The Permittee must conduct performance testing to demonstrate compliance with the EQUI 7 particulate matter (PM/PM10/PM2.5) limits. Performance test results must be used to establish particulate emission factors (lb/MMBtu). These factors must be incorporated into the data acquisition system for continuous calculation of 3-hour average emission rates based on measured fuel heat input. [Minn. R. 7007.0800, subp. 4, Minn. R. 7017.2025, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	38	Particulate matter (PM/PM10/PM2.5) recordkeeping: By the 15th of the month, the Permittee must calculate and record total particulate matter (PM/PM10/PM2.5) emissions for the previous calendar month and the 12-month rolling sum. Calculations must be based on measured fuel usage data from the certified fuel flow sensor and the emission factors (lb/MMBtu) established from the most recent performance test results. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	39	SO2 Monitoring: The Permittee must monitor SO2 emissions in lb/MMBtu and tons per year according to the fuel-based calculation methodology in 40 CFR Part 75 Appendix D Sections 2.1, 2.3, 2.4, 3.3, 3.4, and 3.5. The Permittee shall use the hourly SO2 emissions calculated according to 40 CFR Part 75 Appendix D, Section 3.3 to determine daily, monthly, and 12-month rolling sum (ton per year) EQUI 7 SO2 emissions. Since the Permittee did not install a SO2 CEMS and is no longer eligible for the low mass emissions (LME) method under 40 CFR 75.19, Appendix D shall be the sole methodology for SO2 emissions monitoring. [40 CFR pt. 75, Appendix D, Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
	40	The Permittee is not required to use Continuous Emission Monitoring Systems (CEMS) for sulfur dioxide provided the Permittee complies with the requirements of 40 CFR Part 75 Appendix D. [40 CFR 75.10(a)(1), 40 CFR 75.11(d)(2) and (3)]
	41	Monthly recordkeeping. Greenhouse Gas: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 7. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = ((MNG * 110) + ((MNG * 0.0086) * 25) + ((MNG * 0.00022) * 298)) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MNG = MMBtu of natural gas fuel burned in the previous month; 110 = CO2 emission factor for natural gas in lb/MMBtu; 0.0086 = CH4 emission factor for natural gas in lb/MMBtu; 0.00022 = N2O emission factor for natural gas in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 7 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	42	The Permittee must limit the startup and shutdown events of EQUI 7 to 200 events per year 12-month rolling sum to be recorded by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	43	Recordkeeping for Startup/Shutdown Events: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of each startup and shutdown event. Sum the startup/shutdown events for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	44	Hours <= 48 hours 12-month rolling sum in emergency mode per year, to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 51.21(j)(BACT) & Minn. R. 7007.3000]
		Recordkeeping for Emergency Operation: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of EQUI 7 while operating in emergency mode. Sum the number of hours EQUI 7 operated in emergency mode for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	45	The Permittee shall utilize proper piping design conforming to ANSI, API, ASME, or other standards, and best management practices to prevent, detect, and repair leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	46	The Permittee shall conduct audio/visual/olfactory (AVO) inspections each calendar quarter for natural gas piping components to detect leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	47	The Permittee shall keep records of the quarterly AVO leak inspections on natural gas piping components. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	6460	This source is subject to U.S. EPA's Acid Rain Program, codified at 40 CFR Parts 72 through 78 for EQUI 7. The Permittee must comply with all acid rain requirements in this permit. All other Acid Rain Program requirements are referenced in the Acid Rain Permit Application included in this permit as Appendix B. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.1075]

SI Id	Sequence	Requirement
	6470	Acid Rain Application for Reissuance: The Permittee must submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain permit. [40 CFR 72.21, 40 CFR 72.30(c), Minn. R. 7007.1075]
	18990	Sulfur Dioxide <= 0.015 percent by volume at 15 percent oxygen and on a dry basis. [40 CFR 60.333, Minn. R. 7011.2350]
	19020	Nitrogen Oxides <= 110 parts per million 4-hour rolling average and/or at 15 percent oxygen and on a dry basis when combusting natural gas. [40 CFR 60.332(d), Minn. R. 7011.2350]
	19030	Fuel Type: Limited to pipeline natural gas meeting the definition in 40 CFR 60.331(u). [Minn. R. 7007.0800, subp. 2(A)]
	19100	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. GG as follows: 40 CFR 60.330(a)-(b); 40 CFR 60.331; 40 CFR 60.332(a)(1); 40 CFR 60.332(b); 40 CFR 60.332(i); 40 CFR 60.333(a); 40 CFR 60.334(b)-(c); 40 CFR 60.334(h)(1); 40 CFR 60.334(h)(3); 40 CFR 60.334(i)(1)-(2); 40 CFR 60.334(j)(1)(iii); 40 CFR 60.334(j)(2)(i)-(iii); and 40 CFR 60.334(j)(5). A copy of 40 CFR pt. 60, subp. GG is included in Appendix F. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. GG, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2350]
	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 01/28/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 01/28/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	20040	Particulate Matter: The Permittee shall conduct a performance test due before 01/28/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20080	Volatile Organic Compounds: The Permittee shall conduct a performance test due before 01/28/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 25A, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20760	Cross-State Air Pollution Rule (CSAPR) NOx Annual Trading Program Requirements. The Permittee shall comply with the CSAPR NOx Annual Trading Program requirements contained in Appendix L. [40 CFR 97.430-435]

SI Id	Sequence	Requirement
	20770	The Permittee must comply with all applicable requirements of 40 CFR pt. 97, subp. AAAAA as follows: 40 CFR 97.406(a)-(g). A copy of 40 CFR pt. 97, subp. AAAAA is included in Appendix L. If the regulation changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 97, subp. AAAAA, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500]
	20780	Cross-State Air Pollution Rule (CSAPR) SO2 Group 2 Trading Program Requirements. The Permittee shall comply with the CSAPR SO2 Group 2 Trading Program Requirements contained in Appendix L. [40 CFR 97.730-735]
	20790	The Permittee must comply with all applicable requirements of 40 CFR pt. 97, subp. DDDDD as follows: 40 CFR 97.706(a)-(g). A copy of 40 CFR pt. 97, subp. DDDDD is included in Appendix L. If the regulation changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 97, subp. DDDDD, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500]
	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a); 40 CFR 60.1(b); 40 CFR 60.1(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 60.7(a)(4); 40 CFR 60.7(a)(5); 40 CFR 60.7(b)-(d); 40 CFR 60.8(a)-(i); 40 CFR 60.9; 40 CFR 60.11(d); 40 CFR 60.11(f); 40 CFR 60.11(g); 40 CFR 60.12; 40 CFR 60.13(a)-(b); 40 CFR 60.13(d)(1); 40 CFR 60.13(e)(2); 40 CFR 60.13(f)-(g); 40 CFR 60.13(h)(2); 40 CFR 60.13(h)(3); 40 CFR 60.13(i)(1)-(9); 40 CFR 60.14(a)-(l); 40 CFR 60.15(a)-(g);

SI Id	Sequence	Requirement
		40 CFR 60.17; 40 CFR 60.19(a)-(e); and 40 CFR 60.19(f)(1)-(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
EQUI 8	3	Startup/Shutdown and Emergency Operation Modes: 1. Startup commences upon initial firing and continues until Mode 6 is attained. 2. Shutdown begins when the shutdown sequence is initiated and the unit leaves Mode 6. 3. Emergency operation occurs when the unit is not in Mode 6 but shutdown has not been initiated. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	4	The Permittee must limit emissions of Particulate Matter <= 0.0066 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	5	The Permittee must limit emissions of Particulate Matter <= 13.48 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	6	The Permittee must limit emissions of PM < 10 micron <= 0.0066 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	7	The Permittee must limit emissions of PM < 10 micron <= 13.48 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	8	The Permittee must limit emissions of PM < 2.5 micron <= 0.0066 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	9	The Permittee must limit emissions of PM < 2.5 micron <= 13.48 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	10	The Permittee must limit emissions of Nitrogen Oxides <= 11 parts per million 24-hour rolling average (dry basis) corrected to 15% O2 during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	11	The Permittee must limit emissions of Nitrogen Oxides <= 73.51 pounds per hour 24-hour rolling average. This limit applies during normal operation. Normal operation commences upon initial attainment of Mode 6 operation. Mode 6 operation occurs when all burner nozzles are firing in low-NOx configuration. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	12	The Permittee must limit emissions of Nitrogen Oxides <= 6.76 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. NOx is limited to 68 lbs per SUSD event. Startup shall last no greater than 23 minutes per event. Shutdown shall last no greater than 11 minutes per event. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	13	The Permittee must limit emissions of Nitrogen Oxides <= 7.29 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 304 lb/hr NOx. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	15	The Permittee must limit emissions of Carbon Monoxide <= 9 parts per million 24-hour rolling average (dry basis) corrected to 15% O2 during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	16	The Permittee must limit emissions of Carbon Monoxide <= 38.80 pounds per hour 24-hour rolling average. This limit applies during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	17	The Permittee must limit emissions of Carbon Monoxide <= 18.01 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. CO is limited to 180 lbs per SUSD event. Startup shall last no greater than 23 minutes per event. Shutdown shall last no greater than 11 minutes per event. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	18	The Permittee must limit emissions of Carbon Monoxide <= 11.47 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 478 lb/hr CO. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19	The Permittee must limit emissions of Volatile Organic Compounds <= 4.6 parts per million 3-hour block average (dry basis) at actual O2 (as methane). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20	The Permittee must limit emissions of Volatile Organic Compounds <= 10.03 pounds per hour 3-hour average (as methane). This limit applies during normal operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21	The Permittee must limit emissions of Volatile Organic Compounds <= 8.64 tons per year 12-month rolling sum (as methane) during startup and shutdown (SUSD) events. VOC is limited to 86 lbs per SUSD event. Startup shall last no greater than 23 minutes per event. Shutdown shall last no greater than 11 minutes per event. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22	The Permittee must limit emissions of Volatile Organic Compounds <= 24.95 tons per year 12-month rolling sum (as methane) during emergency operation. Emergency operation is limited to 1040 lb/hr VOC. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	24	The Permittee must limit emissions of Carbon Dioxide <= 110 pounds per million Btu heat input 3-hour rolling average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	25	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 986,539 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	29	Daily Recordkeeping. On each day of operation, the Permittee shall calculate and record the total EQUI 8 fuel usage. [Minn. R. 4410.4300, subp. 15(A) (limit to avoid threshold), Minn. R. 7007.0800, subp. 2(B), Minn. R. 7007.0800, subp. 5]
	30	CO Monitoring: The Permittee must monitor CO emissions on both a lb/mmBtu and a lb/hr basis using a CO CEMS on EQUI 7 stack/vent (STRU 12) to monitor CO emissions as described by this permit. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	31	CO Emissions: Monthly Recordkeeping: By the 15th of each month, the Permittee must calculate and record total CO emissions for the previous calendar month and the 12-month rolling sum, distinguishing between normal operation, startup/shutdown (SUSD), and emergency operation. Emissions must be determined using hourly CEMS data. If the CEMS is unavailable, emissions shall be calculated using recorded fuel usage and an approved AP-42 emission factor for natural gas-fired lean-premix turbines (Table 3.1-1). [Minn. R. 7007.0800, subps 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	32	NOx Monitoring: The Permittee must monitor NOx emissions on both a lb/MMBtu and a lb/hr basis using a NOx CEMS on EQUI 7 stack/vent (STRU 12) to monitor NOx emissions as described by this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	33	NOx Emissions: Monthly Recordkeeping: By the 15th of each month, the Permittee must calculate and record total NOx emissions for the previous calendar month and the 12-month rolling sum, distinguishing between normal operation, startup/shutdown (SUSD), and emergency operation. When CEMS data are available, emissions must be determined using hourly NOx CEMS data. If the CEMS is unavailable, emissions must be calculated using recorded fuel usage and an approved AP-42 emission factor for natural gas-fired lean-premix turbines (Table 3.1-1). [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.300]
	34	VOC Monitoring: The Permittee must conduct performance testing to demonstrate compliance with the EQUI 7 VOC limits. Performance test results shall be used to establish VOC emission factors (lb/MMBtu), which must be incorporated into the data acquisition system to calculate continuous 3-hour block average emission rates (ppm and lb/hr) during normal operation. Continuous emission calculations are based on measured fuel heat input from the certified fuel flow sensor. For SUSD and emergency operation, the Permittee must use the established emission factors and recorded operating hours to calculate 12-month rolling sum VOC emissions (tpy). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	35	VOC Emissions: Monthly Recordkeeping: By the 15th of the month, the Permittee must calculate and record total VOC emissions for the previous calendar month and the 12-month rolling sum for normal operation, startup/shutdown (SUSD), and emergency operation. Calculations must be based on measured fuel usage data from the certified fuel flow sensor and recorded hours of operation of the turbine for each operating scenario. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	36	Particulate matter (PM/PM10/PM2.5) Monitoring: The Permittee must conduct performance testing to demonstrate compliance with the EQUI 7 particulate matter (PM/PM10/PM2.5) limits. Performance test results must be used to establish particulate emission factors (lb/MMBtu). These factors must be incorporated into the data acquisition system for continuous calculation of 3-hour average emission rates based on measured fuel heat input. [40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Minn. R. 7007.0800, subp. 4, Minn. R. 7017.2025]
	37	Particulate matter (PM/PM10/PM2.5) recordkeeping: By the 15th of the month, the Permittee must calculate and record total particulate matter (PM/PM10/PM2.5) emissions for the previous calendar month and the 12-month rolling sum. Calculations must be based on measured fuel usage data from the certified fuel flow sensor and the emission factors (lb/MMBtu) established from the most recent performance test results. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	38	SO2 Monitoring: The Permittee shall monitor SO2 emissions in lb/MMBtu and tons per year according to the fuel-based calculation methodology in 40 CFR Part 75 Appendix D Sections 2.1, 2.3, 2.4, 3.3, 3.4, and 3.5. The Permittee shall use the hourly SO2 emissions calculated according to 40 CFR Part 75 Appendix D, Section 3.3 to determine daily, monthly, and 12-month rolling sum (ton per year) EQUI 7 SO2 emissions. Since the Permittee did not install a SO2 CEMS and is no longer eligible for the low mass emissions (LME) method under 40 CFR 75.19, Appendix D shall be the sole methodology for SO2 emissions monitoring. [40 CFR pt. 75, Appendix D, Minn. R. 7007.0800, subps. 4-5]
	39	Monthly Recordkeeping. CO Emissions: By the 15th of the month, the Permittee shall calculate and record the EQUI 8 CO emissions for the previous calendar month (in tons per month) using one of the following methods: 1. A CO CEMS to determine hourly CO lb/hr emissions for each hour of operation; or, 2. Hourly CO lb/hr emissions data for each hour of operation based on fuel usage and the appropriate AP-42 emission factor and hourly heat input. 3. Approved emission factors for calculating CO emissions are the CO factor in EPA's AP-42 chapter 3.1, Table 3.1-1 for Natural Gas-Fired lean-premix turbines. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	40	The Permittee is not required to use Continuous Emission Monitoring Systems (CEMS) for sulfur dioxide provided the Permittee complies with the requirements of 40 CFR Part 75 Appendix D. [40 CFR 75.10(a)(1), 40 CFR 75.11(d)(2) and (3)]
	41	Fuel Monitoring: The Permittee shall follow the applicable fuel sulfur and nitrogen content monitoring requirements in 40 CFR 60.334(h) and monitor at the frequency specified in 40 CFR 60.334(i). [40 CFR 60.334(h) and (i), Minn. R. 7007.0800, subp. 4, Minn. R. 7011.2350]

SI Id	Sequence	Requirement
	42	Monthly recordkeeping. Greenhouse Gas: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 8. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = ((MNG * 110) + ((MNG * 0.0086) * 25) + ((MNG * 0.00022) * 298)) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MNG = MMBtu of natural gas fuel burned in the previous month; 110 = CO2 emission factor for natural gas in lb/MMBtu; 0.0086 = CH4 emission factor for natural gas in lb/MMBtu; 0.00022 = N2O emission factor for natural gas in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 8 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	43	The Permittee must limit the startup and shutdown events of EQUI 8 to 200 events per year 12-month rolling sum to be recorded by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	44	Recordkeeping for Startup/Shutdown Events: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of each startup and shutdown event. Sum the startup/shutdown events for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	45	Hours <= 48 hours 12-month rolling sum in emergency mode per year, to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	46	Recordkeeping for Emergency Operation: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of EQUI 8 while operating in emergency mode. Sum the number of hours EQUI 8 operated in emergency mode for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	47	The Permittee shall utilize proper piping design conforming to ANSI, API, ASME, or other standards, and best management practices to prevent, detect, and repair leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	48	The Permittee shall conduct audio/visual/olfactory (AVO) inspections each calendar quarter for natural gas piping components to detect leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	49	The Permittee shall keep records of the quarterly AVO leak inspections on natural gas piping components. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
	6460	This source is subject to U.S. EPA's Acid Rain Program, codified at 40 CFR Parts 72 through 78 for EQUI 8. The Permittee must comply with all acid rain requirements in this permit. All other Acid Rain Program requirements are referenced in the Acid Rain Permit Application included in this permit as Appendix B. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.1075]

SI Id	Sequence	Requirement
	6470	Acid Rain Application for Reissuance: The Permittee must submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain permit. [40 CFR 72.21, 40 CFR 72.30(c), Minn. R. 7007.1075]
	18990	Sulfur Dioxide <= 0.015 percent by volume at 15 percent oxygen and on a dry basis. [40 CFR 60.333, Minn. R. 7011.2350]
	19020	Nitrogen Oxides <= 110 parts per million 4-hour rolling average and/or at 15 percent oxygen and on a dry basis when combusting natural gas. [40 CFR 60.332(d), Minn. R. 7011.2350]
	19030	Fuel Type: Limited to pipeline natural gas meeting the definition in 40 CFR 60.331(u). [Minn. R. 7007.0800, subp. 2(A)]
	19100	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. GG as follows: 40 CFR 60.330(a)-(b); 40 CFR 60.331; 40 CFR 60.332(a)(1); 40 CFR 60.332(b); 40 CFR 60.332(i); 40 CFR 60.333(a); 40 CFR 60.334(b)-(c); 40 CFR 60.334(h)(1); 40 CFR 60.334(h)(3); 40 CFR 60.334(i)(1)-(2); 40 CFR 60.334(j)(1)(iii); 40 CFR 60.334(j)(2)(i)-(iii); and 40 CFR 60.334(j)(5). A copy of 40 CFR pt. 60, subp. GG is included in Appendix F. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. GG, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2350]

SI Id	Sequence	Requirement
	19941	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a); 40 CFR 60.1(b); 40 CFR 60.1(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 60.7(a)(4); 40 CFR 60.7(a)(5); 40 CFR 60.7(b)-(d); 40 CFR 60.8(a)-(i); 40 CFR 60.9; 40 CFR 60.11(d); 40 CFR 60.11(f); 40 CFR 60.11(g); 40 CFR 60.12; 40 CFR 60.13(a)-(b); 40 CFR 60.13(d)(1); 40 CFR 60.13(e)(2); 40 CFR 60.13(f)-(g); 40 CFR 60.13(h)(2); 40 CFR 60.13(h)(3); 40 CFR 60.13(i)(1)-(9); 40 CFR 60.14(a)-(l); 40 CFR 60.15(a)-(g); 40 CFR 60.17; 40 CFR 60.19(a)-(e); and 40 CFR 60.19(f)(1)-(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 01/29/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 01/29/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	20040	Particulate Matter: The Permittee shall conduct a performance test due before 01/29/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20080	Volatile Organic Compounds: The Permittee shall conduct a performance test due before 01/29/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 25A, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20760	Cross-State Air Pollution Rule (CSAPR) NOx Annual Trading Program Requirements. The Permittee shall comply with the CSAPR NOx Annual Trading Program requirements contained in Appendix L. [40 CFR 97.430-435]

SI Id	Sequence	Requirement
	20770	The Permittee must comply with all applicable requirements of 40 CFR pt. 97, subp. AAAAA as follows: 40 CFR 97.406(a)-(g). A copy of 40 CFR pt. 97, subp. AAAAA is included in Appendix L. If the regulation changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 97, subp. AAAAA, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500]
	20780	Cross-State Air Pollution Rule (CSAPR) SO2 Group 2 Trading Program Requirements. The Permittee shall comply with the CSAPR SO2 Group 2 Trading Program Requirements contained in Appendix L. [40 CFR 97.730-735]
	20790	The Permittee must comply with all applicable requirements of 40 CFR pt. 97, subp. DDDDD as follows: 40 CFR 97.706(a)-(g). A copy of 40 CFR pt. 97, subp. DDDDD is included in Appendix L. If the regulation changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 97, subp. DDDDD, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500]
EQUI 9	2200	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [40 CFR 60.334(b), 40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), Minn. R. 7017.1180, subp. 3, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2410	The NOx CEMs requirements listed below outline the typical standards of 40 CFR pt. 75 when combine with BACT limits and the NSPS GG. Additional monitoring requirements may apply. The Permittee is responsible for meeting all applicable requirements. [Minn. R. 7007.0800, subp. 4(A), Minn. R. 7017.1020]
	2415	If the owner or operator has installed a NOx CEMS to meet the requirements of 40 CFR Part 75 of this chapter, and is continuing to meet the ongoing requirements of 40 CFR Part 75 of this chapter, the CEMS may be used to meet the requirements of 40 CFR 60.334, except that the missing data substitution methodology provided for at 40 CFR part 75, subpart D, is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in 40 CFR 60.7(c). [40 CFR 60.334(b)(3)(iii), Minn. R. 7011.2350]
	2420	NOx: Emissions Monitoring: The Permittee shall use a CEMS to measure emissions from EQUI 7. [40 CFR 60.334(b), 40 CFR 75.10(a), 40 CFR 75.60(b)(1), 40 CFR pt. 60, subp. GG, Minn. R. 7017.1020, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2430	Certification Application: The Permittee shall apply for certification of each continuous emission or opacity monitoring system used under the Acid Rain Program. The Permittee shall submit the certification application in accordance with 40 CFR 75.60 and each complete certification application shall include the information specified in 40 CFR 75.60 and 40 CFR 75.63. [40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), 40 CFR 75.63, Minn. R. 7017.1020]

SI Id	Sequence	Requirement
	2440	Monitoring Data: Hourly averages shall be computed using at least one data point in each fifteen minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour) if data is unavailable as a result of the performance of calibration, quality assurance, or preventive maintenance activities pursuant to 40 CFR 75.21 and appendix B of 40 CFR pt. 75, or backups of data from the data acquisition and handling system, or recertification, pursuant to 40 CFR 75.20. The Permittee shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour. [40 CFR 60.334(b), 40 CFR 75.10(d)(1), 40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), Minn. R. 7017.1020, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2450	CEMS QA/QC: The Permittee shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 75, Appendix B as amended. [40 CFR 75.21(a), Minn. R. 7017.1020]
	2470	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
	2490	Quarterly Reports: Electronically report the data and information in 40 CFR 75.64(a), (b), and (c) to the Administrator quarterly. [40 CFR 75.64, Minn. R. 7017.1020]
	2500	Recordkeeping: The Permittee shall maintain for each affected unit a file of all measurements, data, reports, and other information required by this part at the source in a form suitable for inspection for at least three (3) years from the date of each record. The file shall contain all information required by 40 CFR 75.57. [40 CFR 75.57, Minn. R. 7017.1020]
	2555	Daily Calibration error (CE) Test: conduct daily CE testing on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, appendix B. [40 CFR 60.334(b), 40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), 40 CFR pt. 75, Appendix B(Sect 2.1), Minn. R. 7017.1020, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2590	The Permittee shall conduct linearity and leak check: Due by the end of each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Linearity checks are required for all emissions monitors and leak checks are required for all flow monitors. If the monitored emission unit is not in operation on the linearity test due date, the Permittee has a grace period of 168 operating hours to perform the linearity test. [40 CFR pt. 75, Appendix B, 2.2, Minn. R. 7017.1020]
	2600	The Permittee shall conduct CEMS relative accuracy test audit (RATA): Due once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours) in accordance with 40 CFR pt. 75, Appendix B, on all CEMS required by the Acid Rain Program. If the monitored emission unit is not in operation on the RATA due date, the Permittee has a grace period of 720 operating hours to perform the RATA. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Sections 2.3.1.2(a) through 2.3.1.2(i) are met. [40 CFR pt. 75, Appendix B, 2.3, Minn. R. 7017.1020]
EQUI 10	2200	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
	2220	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
	2510	Monoxide Oxide: Emissions Monitoring: The owner or operator shall use a CEMS to measure emissions from EQUI 7. [Minn. R. 7017.1006]

SI Id	Sequence	Requirement
	2520	Certification Test Plan due 30 days before Certification Test. Certification Test Pretest Meeting due seven days before Certification Test. Certification Test Report due 45 days after Certification Test. Notify the commissioner prior to making any planned change or if unforeseen, within two working days, when a monitor must be recertified as outlined in Minn. R. 7017.1050, subp. 2. Test plans and reports must be submitted in a format specified by the commissioner. [Minn. R. 7017.1060, subp. 1-3, Minn. R. 7017.1080]
	2530	Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. [Minn. R. 7017.1090]
	2540	Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. Each hourly average starts at the beginning of the hour and ends at the beginning of the following hour. In order for an hour of data to be considered valid, it must contain the following minimum number of data points: A. four data points, equally spaced, if the emission unit operated during the entire hour; B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance; C. one data point if the emission unit operated for 15 minutes or less during the hour. Monitoring data shall be recorded in the same units of measurement and averaging period as the facility's emission standard. [Minn. R. 7017.1160]
	2550	QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan must be on site and available for inspection within 30 days after monitor certification. The plan must include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list. [Minn. R. 7017.1170, subp. 2]
	2560	CEMS Daily Calibration Drift (CD) Test: The CD must be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3(A) and (B), 40 CFR 60.13(d)(1) or 40 CFR pt. 75, Appendix B as applicable for each pollutant concentration, each diluent monitor, and for each monitor range. If no span value is specified in the applicable requirement or in a compliance document, the Permittee must use a span value equivalent to 1.5 times the emission limit. [Minn. R. 7017.1170, subp. 3]
	2580	CEMS Certification/Recertification Test: due 90 days after the first excess emissions report required for the CEMS or any change which invalidates the monitor's certification status as outlined in Minn. R. 7017.1050, subp. 2. [Minn. R. 7017.1050, subp. 1]
	2610	The Permittee shall submit start-up notification: Due 10 working days after Startup of Monitor Date. The notification shall be submitted electronically on Form CS-02. [Minn. R. 7007.0800, subp. 2(A)]
	2620	The Permittee shall conduct CEMS cylinder gas audit (CGA): Due by the end of every second QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) except that a CGA is not required during any quarter in which a RATA is performed. The initial CGA must be performed within 180 days following certification of the CEMS. The CGAs shall be conducted according to the procedures outlined in Minn. R. 7017.1170, subp 4a(A). If the monitored emission unit is not in operation on the CGA due date, the owner or operator has a grace period of 168 operating hours to perform the CGA. [Minn. R. 7017.1170, subp. 4a]
	2630	The Permittee shall conduct a relative accuracy test audit: Due by the end of every fourth QA operating quarter (calendar quarter in which there are at least 168 unit operating hours). RATAs shall be conducted and frequency may be reduced according to the procedures outlined in Minn. R. 7017.1170, subp. 5a. If the monitored emission unit is not in operation on the RATA due date, the owner or operator has a grace period of 720 operating hours to perform the RATA. [Minn. R. 7017.1170, subp. 5a]

SI Id	Sequence	Requirement
	2645	Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source. [Minn. R. 7017.1130]
	2650	Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system. [Minn. R. 7017.1040, subp. 1]
EQUI 11	2200	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [40 CFR 60.334(b), 40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), Minn. R. 7017.1180, subp. 3, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2410	The NOx CEMs requirements listed below outline the typical Federal Standards Requirements of 40 CFR pt. 75 when combined with BACT limits and the NSPS GG. Additional monitoring requirements may apply. The Permittee is responsible for meeting all applicable requirements. [Minn. R. 7007.0800, subp. 4(A), Minn. R. 7017.1020]
	2420	NOx: Emissions Monitoring: The Permittee shall use a CEMS to measure emissions from EQUI 8. [40 CFR 60.334(b), 40 CFR 75.10(a), 40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), Minn. R. 7017.1020, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2430	Certification Application: The Permittee shall apply for certification of each continuous emission or opacity monitoring system used under the Acid Rain Program. The Permittee shall submit the certification application in accordance with 40 CFR 75.60 and each complete certification application shall include the information specified in 40 CFR 75.60 and 40 CFR 75.63. [40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), 40 CFR 75.63, Minn. R. 7017.1020]
	2440	Monitoring Data: Hourly averages shall be computed using at least one data point in each fifteen minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour) if data is unavailable as a result of the performance of calibration, quality assurance, or preventive maintenance activities pursuant to 40 CFR 75.21 and appendix B of 40 CFR pt. 75, or backups of data from the data acquisition and handling system, or recertification, pursuant to 40 CFR 75.20. The Permittee shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour. [40 CFR 60.334(b), 40 CFR 75.10(d)(1), 40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), Minn. R. 7017.1020, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2450	CEMS QA/QC: The Permittee shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 75, Appendix B as amended. [40 CFR 75.21(a), Minn. R. 7017.1020]
	2490	Quarterly Reports: Electronically report the data and information in 40 CFR 75.64(a), (b), and (c) to the Administrator quarterly. [40 CFR 75.64, Minn. R. 7017.1020]
	2500	Recordkeeping: The Permittee shall maintain for each affected unit a file of all measurements, data, reports, and other information required by this part at the source in a form suitable for inspection for at least three (3) years from the date of each record. The file shall contain all information required by 40 CFR 75.57. [40 CFR 75.57, Minn. R. 7017.1020]
	2555	Daily Calibration error (CE) Test: conduct daily CE testing on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, appendix B. [40 CFR 60.334(b), 40 CFR 75.20(a)(2), 40 CFR 75.60(b)(1), 40 CFR pt. 75, Appendix B(Sect 2.1), Minn. R. 7017.1020, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	2590	The Permittee shall conduct linearity and leak check: Due by the end of each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Linearity checks are required for all emissions monitors and leak checks are required for all flow monitors. If the monitored emission unit is not in operation on the linearity test due date, the Permittee has a grace period of 168 operating hours to perform the linearity test. [40 CFR pt. 75, Appendix B, 2.2, Minn. R. 7017.1020]

SI Id	Sequence	Requirement
	2600	The Permittee shall conduct CEMS relative accuracy test audit (RATA): Due once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours) in accordance with 40 CFR pt. 75, Appendix B, on all CEMS required by the Acid Rain Program. If the monitored emission unit is not in operation on the RATA due date, the Permittee has a grace period of 720 operating hours to perform the RATA. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Sections 2.3.1.2(a) through 2.3.1.2(i) are met. [40 CFR pt. 75, Appendix B, 2.3, Minn. R. 7017.1020]
	2651	If the owner or operator has installed a NOx CEMS to meet the requirements of 40 CFR Part 75 of this chapter, and is continuing to meet the ongoing requirements of 40 CFR Part 75 of this chapter, the CEMS may be used to meet the requirements of 40 CFR 60.334, except that the missing data substitution methodology provided for at 40 CFR part 75, subpart D, is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in 40 CFR 60.7(c). [40 CFR 60.334(b)(3)(iii), Minn. R. 7011.2350]
EQUI 12	2200	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
	2220	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
	2510	Carbon Monoxide: Emissions Monitoring: The owner or operator shall use a CEMS to measure emissions from EQUI 8. [Minn. R. 7017.1006]
	2520	Certification Test Plan due 30 days before Certification Test. Certification Test Pretest Meeting due seven days before Certification Test. Certification Test Report due 45 days after Certification Test. Notify the commissioner prior to making any planned change or if unforeseen, within two working days, when a monitor must be recertified as outlined in Minn. R. 7017.1050, subp. 2. Test plans and reports must be submitted in a format specified by the commissioner. [Minn. R. 7017.1060, subp. 1-3, Minn. R. 7017.1080]
	2530	Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. [Minn. R. 7017.1090]
	2540	Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. Each hourly average starts at the beginning of the hour and ends at the beginning of the following hour. In order for an hour of data to be considered valid, it must contain the following minimum number of data points: A. four data points, equally spaced, if the emission unit operated during the entire hour; B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance; C. one data point if the emission unit operated for 15 minutes or less during the hour. Monitoring data shall be recorded in the same units of measurement and averaging period as the facility's emission standard. [Minn. R. 7017.1160]
	2550	QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan must be on site and available for inspection within 30 days after monitor certification. The plan must include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list. [Minn. R. 7017.1170, subp. 2]

SI Id	Sequence	Requirement
	2560	CEMS Daily Calibration Drift (CD) Test: The CD must be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3(A) and (B), 40 CFR 60.13(d)(1) or 40 CFR pt. 75, Appendix B as applicable for each pollutant concentration, each diluent monitor, and for each monitor range. If no span value is specified in the applicable requirement or in a compliance document, the Permittee must use a span value equivalent to 1.5 times the emission limit. [Minn. R. 7017.1170, subp. 3]
	2580	CEMS Certification/Recertification Test: due 90 days after the first excess emissions report required for the CEMS or any change which invalidates the monitor's certification status as outlined in Minn. R. 7017.1050, subp. 2. [Minn. R. 7017.1050, subp. 1]
	2610	The Permittee shall submit start-up notification: Due 10 working days after Startup of Monitor Date. The notification shall be submitted electronically on Form CS-02. [Minn. R. 7007.0800, subp. 2(A)]
	2620	The Permittee shall conduct CEMS cylinder gas audit (CGA): Due by the end of every second QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) except that a CGA is not required during any quarter in which a RATA is performed. The initial CGA must be performed within 180 days following certification of the CEMS. The CGAs shall be conducted according to the procedures outlined in Minn. R. 7017.1170, subp 4a(A). If the monitored emission unit is not in operation on the CGA due date, the owner or operator has a grace period of 168 operating hours to perform the CGA. [Minn. R. 7017.1170, subp. 4a]
	2630	The Permittee shall conduct a relative accuracy test audit: Due by the end of every fourth QA operating quarter (calendar quarter in which there are at least 168 unit operating hours). RATAs shall be conducted and frequency may be reduced according to the procedures outlined in Minn. R. 7017.1170, subp. 5a. If the monitored emission unit is not in operation on the RATA due date, the owner or operator has a grace period of 720 operating hours to perform the RATA. [Minn. R. 7017.1170, subp. 5a]
	2645	Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source. [Minn. R. 7017.1130]
	2650	Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system. [Minn. R. 7017.1040, subp. 1]
EQUI 23	3	Alternative Operating Scenario 1 (AOS 1): Engine Generator 1 (EQUI 23) operates while firing natural gas with ultra-low sulfur diesel. [Minn. R. 7007.0800, subp. 11]
	4	Alternative Operating Scenario 2 (AOS 2): Engine Generator 1 (EQUI 23) operates while firing ultra-low sulfur diesel. [Minn. R. 7007.0800, subp. 11]
	5	Recordkeeping of Alternative Operating Scenario: On each day of operation, the Permittee shall record the alternative operating scenario in which the engine generator is operating. If the Permittee changes the alternative operating scenario, record the date and time of the change and the new alternative operating scenario in which the engine generator is operating. [Minn. R. 7007.0800, subp. 11, Minn. R. 7007.0800, subps. 4-5]
	6	The Permittee must limit Operating Hours <= 241 hours per year 12-month rolling sum in burn-in operation during the 12-month period following initial startup of EQUI 23. This limit expires 366 days after initial startup of EQUI 23. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	7	The Permittee must limit Operating Hours <= 8109 hours per year 12-month rolling sum in normal operation during the 12-month period following initial startup of EQUI 23. This limit expires 366 days after initial startup of EQUI 23. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	8	Daily Recordkeeping of Operation Mode: On each day of operation, the Permittee shall calculate and record the total number of hours EQUI 23 operated in burn-in operation. The Permittee shall record the start time and stop time in burn-in operation. This requirement expires 366 days after initial startup of EQUI 23. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	9	Daily Recordkeeping of Operation Mode: On each day of operation, the Permittee shall calculate and record the total number of hours EQUI 23 operated in normal operation. The Permittee shall record the start time and stop time in normal operation. This requirement expires 366 days after initial startup of EQUI 23. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	10	Monthly Recordkeeping of Operation Mode: By the 15th day of each month, the Permittee shall calculate and record: 1. the total hours of EQUI 23 in burn-in operation for the previous month, and 2. the total hours of EQUI 23 in burn-in operation for the previous 12 months, 12-month rolling sum. This requirement expires 366 days after initial startup of EQUI 23. [Minn. R. 7007.0800, subps. 4-5]
	11	Monthly Recordkeeping of Operation Mode: By the 15th day of each month, the Permittee shall calculate and record: 1. the total hours of EQUI 23 in normal operation for the previous month, and 2. the total hours of EQUI 23 in normal operation for the previous 12 months, 12-month rolling sum. This requirement expires 366 days after initial startup of EQUI 23. [Minn. R. 7007.0800, subps. 4-5]
	12	Startup/Shutdown and Emergency Operation Modes: 1. Startup begins when fuel is introduced to the generator engine and lasts for a period of up to 30 minutes, or until the engine temperature reaches the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits, whichever occurs first. 2. Shutdown begins when the Permittee initiates the shutdown of the engine and ends when fuel is no longer being introduced into the engine. 3. Emergency operation occurs when the engine is below the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits and the engine is not in startup or shutdown. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	13	Normal Operation Mode: For purposes of this permit, “normal operation” means operation in AOS 1 or AOS 2 at any time other than during startup, shutdown, or emergency operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	14	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	15	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	16	Fuel type: Natural gas and Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	17	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
	18	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]
	19	EQUI 23 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII under AOS 2 and 40 CFR pt. 60, subp. JJJJ under AOS 1. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EQUI 23. [40 CFR 63.6590(c), Minn. R. 7011.8150]

SI Id	Sequence	Requirement
	20	Under AOS 1 and AOS 2 the Permittee must comply with all the applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)–(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)–(b); 40 CFR 60.5(a)–(b); 40 CFR 60.6(a)–(b); 40 CFR 60.7(a)(4)–(a)(5); 40 CFR 60.7(b)–(d); 40 CFR 60.8(a)–(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)–(g); 40 CFR 60.12; 40 CFR 60.13(a)–(b); 40 CFR 60.13(d)(1); 40 CFR 60.13(e)(2); 40 CFR 60.13(f)–(h)(3); 40 CFR 60.13(i)(1)–(i)(9); 40 CFR 60.14(a)–(l); 40 CFR 60.15(a)–(g); 40 CFR 60.17; 40 CFR 60.18(a)–(h); 40 CFR 60.19(a)–(e); and 40 CFR 60.19(f)(1)–(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 60.4218 & 60.4246(a), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. A, 40 CFR pt. 60, subps. IIII & JJJJ, Minn. R. 7011.2305 & 7011.2310, Minn. R. 7017.2025]

SI Id	Sequence	Requirement
	21	Under AOS 2 the Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a); 40 CFR 60.4200(a)(2)(i); 40 CFR 60.4204(c)(3); 40 CFR 60.4204(c)(4); 40 CFR 60.4206; 40 CFR 60.4207(d); 40 CFR 60.4211(a)(1)-(a)(3); 40 CFR 60.4211(d)(1)-(d)(3); 40 CFR 60.4212(a); 40 CFR 60.4213(a)-(f); 40 CFR 60.4214(a)(1)-(a)(2); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR pt. 60, subp. IIII Table 7 items (b)-(d); and 40 CFR pt. 60, subp. IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix D. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305, Minn. R. 7011.8150]
	22	Under AOS 1 the Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. JJJJ as follows: 40 CFR 60.4230(a)(6); 40 CFR 60.4233(e); 40 CFR 60.4234; 40 CFR 60.4236(b); 40 CFR 60.4243(b)(2)(ii); 40 CFR 60.4243(e); 40 CFR 60.4244; 40 CFR 60.4245(a)(1)- (a)(2); (a)(4); 40 CFR 60.4245(a)(4); 40 CFR 60.4245(c); 40 CFR 60.4245(d); 40 CFR 60.4246(a); 40 CFR 60.4246(b); 40 CFR 60.4248; 40 CFR pt. 60, subp. JJJJ Table 1; 40 CFR pt. 60, subp. JJJJ Table 2; 40 CFR pt. 60, subp. JJJJ Table 3; and 40 CFR pt. 60, subp. JJJJ Table 4. A copy of 40 CFR pt. 60, subp. JJJJ is included in Appendix E. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2310, Minn. R. 7011.8150]

SI Id	Sequence	Requirement
	23	Under AOS 2 The Permittee must limit emissions of Nitrogen Oxides according to the following equation in units of grams per horsepower-hour: NOx <= 6.7 * n^-0.20 or in units of grams per kilowatt-hour: NOx <= 9.0 * n^-0.20 Where: NOx = nitrogen oxide emissions, g/hp-hr or g/kW-hr n = maximum engine speed >= 130 rpm and < 2000 rpm This limit applies when operating in AOS 2. [40 CFR 60.4204(c)(3)(ii), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]
	30	The Permittee must limit emissions of Nitrogen Oxides <= 1.0 grams per horsepower-hour (1.36 g/kW-hr) or 82 ppmvd at 15% O2 when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	40	The Permittee must limit emissions of Carbon Monoxide <= 2.0 grams per horsepower-hour (2.72 g/kW-hr) or 270 ppmvd at 15% O2 when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	50	The Permittee must limit emissions of Volatile Organic Compounds <= 0.7 grams per horsepower-hour (0.95 g/kW-hr) or 60 ppmvd at 15% O2, not including formaldehyde, when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	60	The Permittee must limit emissions of Nitrogen Oxides <= 0.07 grams per horsepower-hour 24-hour rolling average (0.09 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	70	The Permittee must limit emissions of Nitrogen Oxides <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	80	The Permittee must limit emissions of Nitrogen Oxides <= 1.65 pounds per hour 3-hour average when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	90	The Permittee must limit emissions of Particulate Matter <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	100	The Permittee must limit emissions of PM < 10 micron <= 0.07 grams per horsepower-hour 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	110	The Permittee must limit emissions of PM < 10 micron <= 0.12 grams per horsepower-hour 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	120	The Permittee must limit emissions of PM < 10 micron <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	130	The Permittee must limit emissions of PM < 2.5 micron <= 0.07 grams per horsepower-hour 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	140	The Permittee must limit emissions of PM < 2.5 micron <= 0.12 grams per horsepower-hour 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	150	The Permittee must limit emissions of PM < 2.5 micron <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	160	The Permittee must limit emissions of Carbon Monoxide <= 0.10 grams per horsepower-hour 24-hour rolling average (0.13 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	170	The Permittee must limit emissions of Carbon Monoxide <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	180	The Permittee must limit emissions of Carbon Monoxide <= 2.51 pounds per hour 3-hour average when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	190	The Permittee must limit emissions of Volatile Organic Compounds <= 0.13 grams per horsepower-hour 24-hour rolling average (as methane, 0.17 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	200	The Permittee must limit emissions of Volatile Organic Compounds <= 0.22 grams per horsepower-hour 24-hour rolling average (as methane, 0.30 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	210	The Permittee must limit emissions of Volatile Organic Compounds <= 3.26 pounds per hour 3-hour average (as methane) when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	220	The Permittee must limit emissions of Carbon Dioxide <= 377 grams per horsepower-hour 24-hour rolling average (512 g/kW-hr) when operating in AOS 1. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	230	The Permittee must limit emissions of Nitrogen Oxides <= 0.39 grams per horsepower-hour 24-hour rolling average (0.53 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	240	The Permittee must limit emissions of Nitrogen Oxides <= 0.49 grams per horsepower-hour 24-hour rolling average (0.66 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	250	The Permittee must limit emissions of Nitrogen Oxides <= 10.86 pounds per hour 3-hour average when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	260	The Permittee must limit emissions of Particulate Matter <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr), or reduce particulate matter emissions by 60% or more. This limit applies when operating in AOS 2 at >= 75% load. [40 CFR 60.4204(c)(4), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	270	The Permittee must limit emissions of Particulate Matter <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	280	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	290	The Permittee must limit emissions of PM < 10 micron <= 0.24 grams per horsepower-hour 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	300	The Permittee must limit emissions of PM < 10 micron <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	310	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	320	The Permittee must limit emissions of PM < 2.5 micron <= 0.24 grams per horsepower-hour 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	330	The Permittee must limit emissions of PM < 2.5 micron <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	340	The Permittee must limit emissions of Carbon Monoxide <= 0.14 grams per horsepower-hour 24-hour rolling average (0.19 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	350	The Permittee must limit emissions of Carbon Monoxide <= 0.15 grams per horsepower-hour 24-hour rolling average (0.20 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	360	The Permittee must limit emissions of Carbon Monoxide <= 3.78 pounds per hour 3-hour average when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	370	The Permittee must limit emissions of Volatile Organic Compounds <= 0.15 grams per horsepower-hour 24-hour rolling average (as methane, 0.21 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	380	The Permittee must limit emissions of Volatile Organic Compounds <= 0.17 grams per horsepower-hour 24-hour rolling average (as methane, 0.23 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	390	The Permittee must limit emissions of Volatile Organic Compounds <= 4.33 pounds per hour 3-hour average (as methane) when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	400	The Permittee must limit the Sulfur Content of Fuel <= 1000 parts per million per gallon of diesel. This limit applies when operating in AOS 2. [40 CFR 60.4207(d), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]
	410	The Permittee must limit emissions of Carbon Dioxide <= 494 grams per horsepower-hour 24-hour rolling average (672 g/kW-hr) when operating in AOS 2. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	420	The Permittee must limit emissions of Nitrogen Oxides <= 15.82 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. NOx is limited to 45.20 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 23 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	430	The Permittee must limit emissions of Particulate Matter <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 23 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	440	The Permittee must limit emissions of PM < 10 micron <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM10 is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 23 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	450	The Permittee must limit emissions of PM < 2.5 micron <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM2.5 is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 23 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	460	The Permittee must limit emissions of Carbon Monoxide <= 3.71 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. CO is limited to 10.60 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 23 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	470	The Permittee must limit emissions of Volatile Organic Compounds <= 1.16 tons per year 12-month rolling sum (as methane) during startup and shutdown (SUSD) events. VOC is limited to 3.32 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 23 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	471	The Permittee must limit the startup and shutdown events of EQUI 23 to 700 events per year 12-month rolling sum to be recorded by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	475	Recordkeeping for Startup/Shutdown Events: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of each startup and shutdown event. Sum the startup/shutdown events for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	480	The Permittee must limit emissions of Nitrogen Oxides <= 2.16 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 90 lb/hr NOx. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	490	The Permittee must limit emissions of Particulate Matter <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	500	The Permittee must limit emissions of PM < 10 micron <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM10. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	510	The Permittee must limit emissions of PM < 2.5 micron <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM2.5. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	520	The Permittee must limit emissions of Carbon Monoxide <= 0.50 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 21 lb/hr CO. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	530	The Permittee must limit emissions of Volatile Organic Compounds <= 0.15 tons per year 12-month rolling sum (as methane) during emergency operation. Emergency operation is limited to 6.44 lb/hr VOC. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	531	Hours <= 48 hours 12-month rolling sum in emergency mode per year, to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	540	Recordkeeping for Emergency Operation: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of EQUI 23 while operating in emergency mode. Sum the number of hours EQUI 23 operated in emergency mode for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19589	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 72,583 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19590	The Permittee must operate EQUI 23 using good combustion practices during startup, shutdown and emergency operation. Startup begins when fuel is introduced to the generator engine and lasts for a period of up to 30 minutes or until the engine temperature reaches the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits, whichever occurs first. Shutdown begins when the Permittee initiates the shutdown of the engine and ends when fuel is no longer being introduced into the engine. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19591	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 23. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = (((MNG * 110) + ((MNG * 0.0022) * 25) + ((MNG * 0.00022) * 298)) + ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298))) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MNG = MMBtu of natural gas fuel burned in the previous month; MD = MMBtu of diesel fuel burned in the previous month; 110 = CO2 emission factor for natural gas in lb/MMBtu; 0.0022 = CH4 emission factor for natural gas in lb/MMBtu; 0.00022 = N2O emission factor for natural gas in lb/MMBtu; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 23 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	19594	The Permittee shall utilize proper piping design conforming to ANSI, API, ASME, or other standards, and best management practices to prevent, detect, and repair leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19595	The Permittee shall conduct audio/visual/olfactory (AVO) inspections each calendar quarter for natural gas piping components to detect leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19596	The Permittee shall keep records of the quarterly AVO leak inspections on natural gas piping components. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 11/24/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 11/24/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20040	Particulate Matter: The Permittee shall conduct a performance test due before 11/25/2026 and every 12 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4211(d)(3), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII(Table 7)(items c, d), Minn. R. 7011.2305, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20050	Carbon Monoxide: The Permittee shall conduct a performance test due before 11/24/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 10, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4243(b)(2)(ii), 40 CFR 63.6590(c), Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20060	Nitrogen Oxides: The Permittee shall conduct a performance test due before 11/25/2026 and every 12 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 7E, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4211(d)(3), 40 CFR 60.4242(b)(2)(ii), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII(Table 7)(item b), Minn. R. 7011.2305, Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20080	Volatile Organic Compounds: The Permittee shall conduct a performance test due before 11/24/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 25A, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4243(b)(2)(ii), 40 CFR 60.4245(d), 40 CFR 63.6590(c), Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
EQUI 24	2	Alternative Operating Scenario 1 (AOS 1): Engine Generator 2 (EQUI 24) operates while firing natural gas with ultra-low sulfur diesel. [Minn. R. 7007.0800, subp. 11]
	3	Alternative Operating Scenario 2 (AOS 2): Engine Generator 2 (EQUI 24) operates while firing ultra-low sulfur diesel. [Minn. R. 7007.0800, subp. 11]
	4	Recordkeeping of Alternative Operating Scenario: On each day of operation, the Permittee shall record the alternative operating scenario in which the engine generator is operating. If the Permittee changes the alternative operating scenario, record the date and time of the change and the new alternative operating scenario in which the engine generator is operating. [Minn. R. 7007.0800, subp. 11, Minn. R. 7007.0800, subps. 4-5]
	5	The Permittee must limit Operating Hours <= 241 hours per year 12-month rolling sum in burn-in operation during the 12-month period following initial startup of EQUI 24. This limit expires 366 days after initial startup of EQUI 24. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	6	The Permittee must limit Operating Hours <= 8109 hours per year 12-month rolling sum in normal operation during the 12-month period following initial startup of EQUI 24. This limit expires 366 days after initial startup of EQUI 24. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	7	Daily Recordkeeping of Operation Mode: On each day of operation, the Permittee shall calculate and record the total number of hours EQUI 24 operated in burn-in operation. The Permittee shall record the start time and stop time in burn-in operation. This requirement expires 366 days after initial startup of EQUI 24. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	8	Daily Recordkeeping of Operation Mode: On each day of operation, the Permittee shall calculate and record the total number of hours EQUI 24 operated in normal operation. The Permittee shall record the start time and stop time in normal operation. This requirement expires 366 days after initial startup of EQUI 24. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	9	Monthly Recordkeeping of Operation Mode: By the 15th day of each month, the Permittee shall calculate and record: 1. the total hours of EQUI 24 in burn-in operation for the previous month, and 2. the total hours of EQUI 24 in burn-in operation for the previous 12 months, 12-month rolling sum. This requirement expires 366 days after initial startup of EQUI 24. [Minn. R. 7007.0800, subps. 4-5]
	10	Monthly Recordkeeping of Operation Mode: By the 15th day of each month, the Permittee shall calculate and record: 1. the total hours of EQUI 24 in normal operation for the previous month, and 2. the total hours of EQUI 24 in normal operation for the previous 12 months, 12-month rolling sum. This requirement expires 366 days after initial startup of EQUI 24. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
	11	Startup/Shutdown and Emergency Operation Modes: 1. Startup begins when fuel is introduced to the generator engine and lasts for a period of up to 30 minutes, or until the engine temperature reaches the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits, whichever occurs first, 2. Shutdown begins when the Permittee initiates the shutdown of the engine and ends when fuel is no longer being introduced into the engine, and 3. Emergency operation occurs when the engine is below the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits and the engine is not in startup or shutdown. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	12	Normal Operation Mode: For purposes of this permit, “normal operation” means operation in AOS 1 or AOS 2 at any time other than during startup, shutdown, or emergency operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	13	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	14	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	15	Fuel type: Natural gas and Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	16	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
	17	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]
	18	EQUI 24 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63. 2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII under AOS 2 and 40 CFR pt. 60, subp. JJJJ under AOS 1. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EQUI 23. [40 CFR 63.6590(c), Minn. R. 7011.8150]

SI Id	Sequence	Requirement
	19	Under AOS 1 and AOS 2 the Permittee must comply with all the applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)–(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)–(b); 40 CFR 60.5(a)–(b); 40 CFR 60.6(a)–(b); 40 CFR 60.7(a)(4)–(a)(5); 40 CFR 60.7(b)–(d); 40 CFR 60.8(a)–(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)–(g); 40 CFR 60.12; 40 CFR 60.13(a)–(b); 40 CFR 60.13(d)(1); 40 CFR 60.13(e)(2); 40 CFR 60.13(f)–(h)(3); 40 CFR 60.13(i)(1)–(i)(9); 40 CFR 60.14(a)–(l); 40 CFR 60.15(a)–(g); 40 CFR 60.17; 40 CFR 60.18(a)–(h); 40 CFR 60.19(a)–(e); and 40 CFR 60.19(f)(1)–(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 60.4218 & 60.4246(a), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. A, 40 CFR pt. 60, subps. IIII & JJJJ, Minn. R. 7011.2305 & 7011.2310, Minn. R. 7017.2025]

SI Id	Sequence	Requirement
	20	Under AOS 2 the Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a); 40 CFR 60.4200(a)(2)(i); 40 CFR 60.4204(c)(3); 40 CFR 60.4204(c)(4); 40 CFR 60.4206; 40 CFR 60.4207(d); 40 CFR 60.4211(a)(1)-(a)(3); 40 CFR 60.4211(d)(1)-(d)(3); 40 CFR 60.4212(a); 40 CFR 60.4213(a)-(f); 40 CFR 60.4214(a)(1)-(a)(2); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR pt. 60, subp. IIII Table 7 items (b)-(d); and 40 CFR pt. 60, subp. IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix D. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305, Minn. R. 7011.8150]
	21	Under AOS 1 The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. JJJJ as follows: 40 CFR 60.4230(a)(6); 40 CFR 60.4233(e); 40 CFR 60.4234; 40 CFR 60.4236(b); 40 CFR 60.4243(b)(2)(ii); 40 CFR 60.4243(e); 40 CFR 60.4244; 40 CFR 60.4245(a)(1) - (a)(2); 40 CFR 60.4245(a)(4); 40 CFR 60.4245(c); 40 CFR 60.4245(d); 40 CFR 60.4246(a); 40 CFR 60.4246(b); 40 CFR 60.4248; 40 CFR pt. 60, subp. JJJJ Table 1; 40 CFR pt. 60, subp. JJJJ Table 2; 40 CFR pt. 60, subp. JJJJ Table 3; and 40 CFR pt. 60, subp. JJJJ Table 4. A copy of 40 CFR pt. 60, subp. JJJJ is included in Appendix E. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2310, Minn. R. 7011.8150]

SI Id	Sequence	Requirement
	25	The Permittee must limit emissions of Nitrogen Oxides according to the following equation in units of grams per horsepower-hour: NOx <= 6.7 * n^-0.20 or in units of grams per kilowatt-hour: NOx <= 9.0 * n^-0.20 Where: NOx = nitrogen oxide emissions, g/hp-hr or g/kW-hr n = maximum engine speed >= 130 rpm and < 2000 rpm This limit applies when operating in AOS 2. [40 CFR 60.4204(c)(3)(ii), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]
	28	The Permittee must limit emissions of Nitrogen Oxides <= 1.0 grams per horsepower-hour (1.36 g/kW-hr) or 82 ppmvd at 15% O2 when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	30	The Permittee must limit emissions of Carbon Monoxide <= 2.0 grams per horsepower-hour (2.72 g/kW-hr) or 270 ppmvd at 15% O2 when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	40	The Permittee must limit emissions of Volatile Organic Compounds <= 0.7 grams per horsepower-hour (0.95 g/kW-hr) or 60 ppmvd at 15% O2, not including formaldehyde, when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	50	The Permittee must limit emissions of Nitrogen Oxides <= 0.07 grams per horsepower-hour 24-hour rolling average (0.09 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	60	The Permittee must limit emissions of Nitrogen Oxides <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	70	The Permittee must limit emissions of Nitrogen Oxides <= 1.65 pounds per hour 3-hour average when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	80	The Permittee must limit emissions of Particulate Matter <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	90	The Permittee must limit emissions of PM < 10 micron <= 0.07 grams per horsepower-hour 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	100	The Permittee must limit emissions of PM < 10 micron <= 0.12 grams per horsepower-hour 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	110	The Permittee must limit emissions of PM < 10 micron <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	120	The Permittee must limit emissions of PM < 2.5 micron <= 0.07 grams per horsepower-hour 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	130	The Permittee must limit emissions of PM < 2.5 micron <= 0.12 grams per horsepower-hour 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	140	The Permittee must limit emissions of PM < 2.5 micron <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	150	The Permittee must limit emissions of Carbon Monoxide <= 0.10 grams per horsepower-hour 24-hour rolling average (0.13 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	160	The Permittee must limit emissions of Carbon Monoxide <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	170	The Permittee must limit emissions of Carbon Monoxide <= 2.51 pounds per hour 3-hour average when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	180	The Permittee must limit emissions of Volatile Organic Compounds <= 0.13 grams per horsepower-hour 24-hour rolling average (as methane, 0.17 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	190	The Permittee must limit emissions of Volatile Organic Compounds <= 0.22 grams per horsepower-hour 24-hour rolling average (as methane, 0.30 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	200	The Permittee must limit emissions of Volatile Organic Compounds <= 3.26 pounds per hour 3-hour average (as methane) when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	210	The Permittee must limit emissions of Carbon Dioxide <= 377 grams per horsepower-hour 24-hour rolling average (512 g/kW-hr) when operating in AOS 1. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	220	The Permittee must limit emissions of Nitrogen Oxides <= 0.39 grams per horsepower-hour 24-hour rolling average (0.53 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	230	The Permittee must limit emissions of Nitrogen Oxides <= 0.49 grams per horsepower-hour 24-hour rolling average (0.66 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	240	The Permittee must limit emissions of Nitrogen Oxides <= 10.86 pounds per hour 3-hour average when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	250	The Permittee must limit emissions of Particulate Matter <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr), or reduce particulate matter emissions by 60% or more. This limit applies when operating in AOS 2 at >= 75% load. [40 CFR 60.4204(c)(4), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	260	The Permittee must limit emissions of Particulate Matter <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	270	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	280	The Permittee must limit emissions of PM < 10 micron <= 0.24 grams per horsepower-hour 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	290	The Permittee must limit emissions of PM < 10 micron <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	300	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	310	The Permittee must limit emissions of PM < 2.5 micron <= 0.24 grams per horsepower-hour 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	320	The Permittee must limit emissions of PM < 2.5 micron <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	330	The Permittee must limit emissions of Carbon Monoxide <= 0.14 grams per horsepower-hour 24-hour rolling average (0.19 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	340	The Permittee must limit emissions of Carbon Monoxide <= 0.15 grams per horsepower-hour 24-hour rolling average (0.20 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	350	The Permittee must limit emissions of Carbon Monoxide <= 3.78 pounds per hour 3-hour average when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	360	The Permittee must limit emissions of Volatile Organic Compounds <= 0.15 grams per horsepower-hour 24-hour rolling average (as methane, 0.21 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	370	The Permittee must limit emissions of Volatile Organic Compounds <= 0.17 grams per horsepower-hour 24-hour rolling average (as methane, 0.23 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	380	The Permittee must limit emissions of Volatile Organic Compounds <= 4.33 pounds per hour 3-hour average (as methane) when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	390	The Permittee must limit the Sulfur Content of Fuel <= 1000 parts per million per gallon of diesel. This limit applies when operating in AOS 2. [40 CFR 60.4207(d), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]
	400	The Permittee must limit emissions of Carbon Dioxide <= 494 grams per horsepower-hour 24-hour rolling average (672 g/kW-hr) when operating in AOS 2. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	410	The Permittee must limit emissions of Nitrogen Oxides <= 15.82 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. NOx is limited to 45.20 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 24 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	420	The Permittee must limit emissions of Particulate Matter <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 24 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	430	The Permittee must limit emissions of PM < 10 micron <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM10 is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 24 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	440	The Permittee must limit emissions of PM < 2.5 micron <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM2.5 is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 24 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	450	The Permittee must limit emissions of Carbon Monoxide <= 3.71 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. CO is limited to 10.60 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 24 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	460	The Permittee must limit emissions of Volatile Organic Compounds <= 1.16 tons per year 12-month rolling sum (as methane) during startup and shutdown (SUSD) events. VOC is limited to 3.32 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 24 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	461	The Permittee must limit the startup and shutdown events of EQUI 24 to 700 events per year 12-month rolling sum to be recorded by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	470	Recordkeeping for Startup/Shutdown Events: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of each startup and shutdown event. Sum the startup/shutdown events for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	480	The Permittee must limit emissions of Nitrogen Oxides <= 2.16 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 90 lb/hr NOx. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	490	The Permittee must limit emissions of Particulate Matter <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	500	The Permittee must limit emissions of PM < 10 micron <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM10. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	510	The Permittee must limit emissions of PM < 2.5 micron <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM2.5. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	520	The Permittee must limit emissions of Carbon Monoxide <= 0.50 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 21 lb/hr CO. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	530	The Permittee must limit emissions of Volatile Organic Compounds <= 0.15 tons per year 12-month rolling sum (as methane) during emergency operation. Emergency operation is limited to 6.44 lb/hr VOC. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	531	Hours <= 48 hours 12-month rolling sum in emergency mode per year, to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	540	Recordkeeping for Emergency Operation: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of EQUI 24 while operating in emergency mode. Sum the number of hours EQUI 24 operated in emergency mode for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19589	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 72,583 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19590	The Permittee must operate EQUI 24 using good combustion practices during startup, shutdown and emergency operation. Startup begins when fuel is introduced to the generator engine and lasts for a period of up to 30 minutes or until the engine temperature reaches the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits, whichever occurs first. Shutdown begins when the Permittee initiates the shutdown of the engine and ends when fuel is no longer being introduced into the engine. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19591	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 24. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = (((MNG * 110) + ((MNG * 0.0022) * 25) + ((MNG * 0.00022) * 298)) + ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298))) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MNG = MMBtu of natural gas fuel burned in the previous month; MD = MMBtu of diesel fuel burned in the previous month; 110 = CO2 emission factor for natural gas in lb/MMBtu; 0.0022 = CH4 emission factor for natural gas in lb/MMBtu; 0.00022 = N2O emission factor for natural gas in lb/MMBtu; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 24 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	19594	The Permittee shall utilize proper piping design conforming to ANSI, API, ASME, or other standards, and best management practices to prevent, detect, and repair leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19595	The Permittee shall conduct audio/visual/olfactory (AVO) inspections each calendar quarter for natural gas piping components to detect leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19596	The Permittee shall keep records of the quarterly AVO leak inspections on natural gas piping components. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 11/19/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 11/19/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20040	Particulate Matter: The Permittee shall conduct a performance test due before 11/20/2026 and every 12 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4211(d)(3), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII(Table 7)(items c, d), Minn. R. 7011.2305, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20050	Carbon Monoxide: The Permittee shall conduct a performance test due before 11/19/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 10, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4243(b)(2)(ii), 40 CFR 63.6590(c), Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20060	Nitrogen Oxides: The Permittee shall conduct a performance test due before 11/20/2026 and every 12 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 7E, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4211(d)(3), 40 CFR 60.4243(b)(2)(ii), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII(Table 7)(item b), Minn. R. 7011.2305, Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20080	Volatile Organic Compounds: The Permittee shall conduct a performance test due before 11/19/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 25A, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4243(b)(2)(ii), 40 CFR 60.4245(d), 40 CFR 63.6590(c), Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
EQUI 25	2	Alternative Operating Scenario 1 (AOS 1): Engine Generator 3 (EQUI 25) operates while firing natural gas with ultra-low sulfur diesel. [Minn. R. 7007.0800, subp. 11]
	3	Alternative Operating Scenario 2 (AOS 2): Engine Generator 3 (EQUI 25) operates while firing ultra-low sulfur diesel. [Minn. R. 7007.0800, subp. 11]
	4	Recordkeeping of Alternative Operating Scenario: On each day of operation, the Permittee shall record the alternative operating scenario in which the engine generator is operating. If the Permittee changes the alternative operating scenario, record the date and time of the change and the new alternative operating scenario in which the engine generator is operating. [Minn. R. 7007.0800, subp. 11, Minn. R. 7007.0800, subps. 4-5]
	5	The Permittee must limit Operating Hours <= 241 hours per year 12-month rolling sum in burn-in operation during the 12-month period following initial startup of EQUI 25. This limit expires 366 days after initial startup of EQUI 25. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	6	The Permittee must limit Operating Hours <= 8109 hours per year 12-month rolling sum in normal operation during the 12-month period following initial startup of EQUI 25. This limit expires 366 days after initial startup of EQUI 25. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	7	Daily Recordkeeping of Operation Mode: On each day of operation, the Permittee shall calculate and record the total number of hours EQUI 25 operated in burn-in operation. The Permittee shall record the start time and stop time in burn-in operation. This requirement expires 366 days after initial startup of EQUI 25. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	8	Daily Recordkeeping of Operation Mode: On each day of operation, the Permittee shall calculate and record the total number of hours EQUI 25 operated in normal operation. The Permittee shall record the start time and stop time in normal operation. This requirement expires 366 days after initial startup of EQUI 25. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	9	Monthly Recordkeeping of Operation Mode: By the 15th day of each month, the Permittee shall calculate and record: 1. the total hours of EQUI 25 in burn-in operation for the previous month, and 2. the total hours of EQUI 25 in burn-in operation for the previous 12 months, 12-month rolling sum. This requirement expires 366 days after initial startup of EQUI 25. [Minn. R. 7007.0800, subps. 4-5]
	10	Monthly Recordkeeping of Operation Mode: By the 15th day of each month, the Permittee shall calculate and record: 1. the total hours of EQUI 25 in normal operation for the previous month, and 2. the total hours of EQUI 25 in normal operation for the previous 12 months, 12-month rolling sum. This requirement expires 366 days after initial startup of EQUI 25. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
	11	Startup/Shutdown and Emergency Operation Modes: 1. Startup begins when fuel is introduced to the generator engine and lasts for a period of up to 30 minutes, or until the engine temperature reaches the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits, whichever occurs first, 2. Shutdown begins when the Permittee initiates the shutdown of the engine and ends when fuel is no longer being introduced into the engine, and 3. Emergency operation occurs when the engine is below the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits and the engine is not in startup or shutdown. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	12	Normal Operation Mode: For purposes of this permit, “normal operation” means operation in AOS 1 or AOS 2 at any time other than during startup, shutdown, or emergency operation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	13	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	14	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	15	Fuel type: Natural gas and Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	16	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
	17	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]
	18	EQUI 25 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII under AOS 2 and 40 CFR pt. 60, subp. JJJJ under AOS 1. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EQUI 23. [40 CFR 63.6590(c), Minn. R. 7011.8150]

SI Id	Sequence	Requirement
	20	Under AOS 1 and AOS 2 the Permittee must comply with all the applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)–(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)–(b); 40 CFR 60.5(a)–(b); 40 CFR 60.6(a)–(b); 40 CFR 60.7(a)(4)–(a)(5); 40 CFR 60.7(b)–(d); 40 CFR 60.8(a)–(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)–(g); 40 CFR 60.12; 40 CFR 60.13(a)–(b); 40 CFR 60.13(d)(1); 40 CFR 60.13(e)(2); 40 CFR 60.13(f)–(h)(3); 40 CFR 60.13(i)(1)–(i)(9); 40 CFR 60.14(a)–(l); 40 CFR 60.15(a)–(g); 40 CFR 60.17; 40 CFR 60.18(a)–(h); 40 CFR 60.19(a)–(e); and 40 CFR 60.19(f)(1)–(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 60.4218 & 60.4246(a), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. A, 40 CFR pt. 60, subps. IIII & JJJJ, Minn. R. 7011.2305 & 7011.2310, Minn. R. 7017.2025]

SI Id	Sequence	Requirement
	21	Under AOS 2 The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a); 40 CFR 60.4200(a)(2)(i); 40 CFR 60.4204(c)(3); 40 CFR 60.4204(c)(4); 40 CFR 60.4206; 40 CFR 60.4207(d); 40 CFR 60.4211(a)(1)-(a)(3); 40 CFR 60.4211(d)(1)-(d)(3); 40 CFR 60.4212(a); 40 CFR 60.4213(a)-(f); 40 CFR 60.4214(a)(1)-(a)(2); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR pt. 60, subp. IIII Table 7 items (b)-(d); and 40 CFR pt. 60, subp. IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix D. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305, Minn. R. 7011.8150]
	22	Under AOS 1 the Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. JJJJ as follows: 40 CFR 60.4230(a)(6); 40 CFR 60.4233(e); 40 CFR 60.4234; 40 CFR 60.4236(b); 40 CFR 60.4243(b)(2)(ii); 40 CFR 60.4243(e); 40 CFR 60.4244; 40 CFR 60.4245(a)(1) - (a)(2); 40 CFR 60.4245(a)(4); 40 CFR 60.4245(c); 40 CFR 60.4245(d); 40 CFR 60.4246(a); 40 CFR 60.4246(b); 40 CFR 60.4248; 40 CFR pt. 60, subp. JJJJ Table 1; 40 CFR pt. 60, subp. JJJJ Table 2; 40 CFR pt. 60, subp. JJJJ Table 3; and 40 CFR pt. 60, subp. JJJJ Table 4. A copy of 40 CFR pt. 60, subp. JJJJ is included in Appendix E. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2310, Minn. R. 7011.8150]

SI Id	Sequence	Requirement
	25	Under AOS 2 the Permittee must limit emissions of Nitrogen Oxides according to the following equation in units of grams per horsepower-hour: NOx <= 6.7 * n^-0.20 or in units of grams per kilowatt-hour: NOx <= 9.0 * n^-0.20 Where: NOx = nitrogen oxide emissions, g/hp-hr or g/kW-hr n = maximum engine speed >= 130 rpm and < 2000 rpm This limit applies when operating in AOS 2. [40 CFR 60.4204(c)(3)(ii), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]
	28	The Permittee must limit emissions of Nitrogen Oxides <= 1.0 grams per horsepower-hour (1.36 g/kW-hr) or 82 ppmvd at 15% O2 when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	30	The Permittee must limit emissions of Carbon Monoxide <= 2.0 grams per horsepower-hour (2.72 g/kW-hr) or 270 ppmvd at 15% O2 when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	40	The Permittee must limit emissions of Volatile Organic Compounds <= 0.7 grams per horsepower-hour (0.95 g/kW-hr) or 60 ppmvd at 15% O2, not including formaldehyde, when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]
	50	The Permittee must limit emissions of Nitrogen Oxides <= 0.07 grams per horsepower-hour 24-hour rolling average (0.09 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	60	The Permittee must limit emissions of Nitrogen Oxides <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	70	The Permittee must limit emissions of Nitrogen Oxides <= 1.65 pounds per hour 3-hour average when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	80	The Permittee must limit emissions of Particulate Matter <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	90	The Permittee must limit emissions of PM < 10 micron <= 0.07 grams per horsepower-hour 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	100	The Permittee must limit emissions of PM < 10 micron <= 0.12 grams per horsepower-hour 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	110	The Permittee must limit emissions of PM < 10 micron <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	120	The Permittee must limit emissions of PM < 2.5 micron <= 0.07 grams per horsepower-hour 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	130	The Permittee must limit emissions of PM < 2.5 micron <= 0.12 grams per horsepower-hour 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	140	The Permittee must limit emissions of PM < 2.5 micron <= 2.01 pounds per hour 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	150	The Permittee must limit emissions of Carbon Monoxide <= 0.10 grams per horsepower-hour 24-hour rolling average (0.13 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	160	The Permittee must limit emissions of Carbon Monoxide <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	170	The Permittee must limit emissions of Carbon Monoxide <= 2.51 pounds per hour 3-hour average when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	180	The Permittee must limit emissions of Volatile Organic Compounds <= 0.13 grams per horsepower-hour 24-hour rolling average (as methane, 0.17 g/kW-hr) when operating in AOS 1 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	190	The Permittee must limit emissions of Volatile Organic Compounds <= 0.22 grams per horsepower-hour 24-hour rolling average (as methane, 0.30 g/kW-hr) when operating in AOS 1 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	200	The Permittee must limit emissions of Volatile Organic Compounds <= 3.26 pounds per hour 3-hour average (as methane) when operating in AOS 1 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	210	The Permittee must limit emissions of Carbon Dioxide <= 377 grams per horsepower-hour 24-hour rolling average (512 g/kW-hr) when operating in AOS 1. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	220	The Permittee must limit emissions of Nitrogen Oxides <= 0.39 grams per horsepower-hour 24-hour rolling average (0.53 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	230	The Permittee must limit emissions of Nitrogen Oxides <= 0.49 grams per horsepower-hour 24-hour rolling average (0.66 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	240	The Permittee must limit emissions of Nitrogen Oxides <= 10.86 pounds per hour 3-hour average when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	250	The Permittee must limit emissions of Particulate Matter <= 0.11 grams per horsepower-hour 24-hour rolling average (0.15 g/kW-hr), or reduce particulate matter emissions by 60% or more. This limit applies when operating in AOS 2 at >= 75% load. [40 CFR 60.4204(c)(4), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	260	The Permittee must limit emissions of Particulate Matter <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	270	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	280	The Permittee must limit emissions of PM < 10 micron <= 0.24 grams per horsepower-hour 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	290	The Permittee must limit emissions of PM < 10 micron <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	300	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and >= 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	310	The Permittee must limit emissions of PM < 2.5 micron <= 0.24 grams per horsepower-hour 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and less than 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	320	The Permittee must limit emissions of PM < 2.5 micron <= 4.76 pounds per hour 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	330	The Permittee must limit emissions of Carbon Monoxide <= 0.14 grams per horsepower-hour 24-hour rolling average (0.19 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	340	The Permittee must limit emissions of Carbon Monoxide <= 0.15 grams per horsepower-hour 24-hour rolling average (0.20 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	350	The Permittee must limit emissions of Carbon Monoxide <= 3.78 pounds per hour 3-hour average when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	360	The Permittee must limit emissions of Volatile Organic Compounds <= 0.15 grams per horsepower-hour 24-hour rolling average (as methane, 0.21 g/kW-hr) when operating in AOS 2 and >= 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	370	The Permittee must limit emissions of Volatile Organic Compounds <= 0.17 grams per horsepower-hour 24-hour rolling average (as methane, 0.23 g/kW-hr) when operating in AOS 2 and less than 75% load. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	380	The Permittee must limit emissions of Volatile Organic Compounds <= 4.33 pounds per hour 3-hour average (as methane) when operating in AOS 2 in normal operation. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	390	The Permittee must limit the Sulfur Content of Fuel <= 1000 parts per million per gallon of diesel. This limit applies when operating in AOS 2. [40 CFR 60.4207(d), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]
	400	The Permittee must limit emissions of Carbon Dioxide <= 494 grams per horsepower-hour 24-hour rolling average (672 g/kW-hr) when operating in AOS 2. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	410	The Permittee must limit emissions of Nitrogen Oxides <= 15.82 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. NOx is limited to 45.20 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 25 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	420	The Permittee must limit emissions of Particulate Matter <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 25 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	430	The Permittee must limit emissions of PM < 10 micron <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM10 is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 25 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	440	The Permittee must limit emissions of PM < 2.5 micron <= 1.77 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. PM2.5 is limited to 5.05 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 25 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	450	The Permittee must limit emissions of Carbon Monoxide <= 3.71 tons per year 12-month rolling sum during startup and shutdown (SUSD) events. CO is limited to 10.60 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 25 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	460	The Permittee must limit emissions of Volatile Organic Compounds <= 1.16 tons per year 12-month rolling sum (as methane) during startup and shutdown (SUSD) events. VOC is limited to 3.32 lbs per SUSD event. Startup shall last no greater than 30 minutes per event. Shutdown shall last no greater than 1 minute per event. EQUI 25 shall conduct no greater than 2 SUSD events per day using diesel. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	461	The Permittee must limit the startup and shutdown events of EQUI 25 to 700 events per year 12-month rolling sum to be recorded by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	470	Recordkeeping for Startup/Shutdown Events: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of each startup and shutdown event. Sum the startup/shutdown events for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	480	The Permittee must limit emissions of Nitrogen Oxides <= 2.16 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 90 lb/hr NOx. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	490	The Permittee must limit emissions of Particulate Matter <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	500	The Permittee must limit emissions of PM < 10 micron <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM10. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	510	The Permittee must limit emissions of PM < 2.5 micron <= 0.24 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 10.0 lb/hr PM2.5. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	520	The Permittee must limit emissions of Carbon Monoxide <= 0.50 tons per year 12-month rolling sum during emergency operation. Emergency operation is limited to 21 lb/hr CO. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	530	The Permittee must limit emissions of Volatile Organic Compounds <= 0.15 tons per year 12-month rolling sum (as methane) during emergency operation. Emergency operation is limited to 6.44 lb/hr VOC. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	531	Hours <= 48 hours 12-month rolling sum in emergency mode per year, to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. [Minn. R. 7007.0800, subps 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) & Minn. R. 7007.3000]
	540	Recordkeeping for Emergency Operation: By the 15th of the month for the previous month, the Permittee must record the date, time and duration of EQUI 25 while operating in emergency mode. Sum the number of hours EQUI 25 operated in emergency mode for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19589	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 72,583 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19590	The Permittee must operate EQUI 25 using good combustion practices during startup, shutdown and emergency operation. Startup begins when fuel is introduced to the generator engine and lasts for a period of up to 30 minutes or until the engine temperature reaches the target operating temperature specified by the manufacturer that is needed to comply with normal operating limits, whichever occurs first. Shutdown begins when the Permittee initiates the shutdown of the engine and ends when fuel is no longer being introduced into the engine. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19591	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in mmBtu in EQUI 25. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = (((MNG * 110) + ((MNG * 0.0022) * 25) + ((MNG * 0.00022) * 298)) + ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298))) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MNG = MMBtu of natural gas fuel burned in the previous month; MD = MMBtu of diesel fuel burned in the previous month; 110 = CO2 emission factor for natural gas in lb/MMBtu; 0.0022 = CH4 emission factor for natural gas in lb/MMBtu; 0.00022 = N2O emission factor for natural gas in lb/MMBtu; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 25 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	19594	The Permittee shall utilize proper piping design conforming to ANSI, API, ASME, or other standards, and best management practices to prevent, detect, and repair leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19595	The Permittee shall conduct audio/visual/olfactory (AVO) inspections each calendar quarter for natural gas piping components to detect leaks of natural gas. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	19596	The Permittee shall keep records of the quarterly AVO leak inspections on natural gas piping components. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 11/20/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 11/20/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20040	Particulate Matter: The Permittee shall conduct a performance test due before 11/21/2026 and every 12 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4211(d)(3), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII(Table 7)(items c, d), Minn. R. 7011.2305, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20050	Carbon Monoxide: The Permittee shall conduct a performance test due before 11/20/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 10, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4243(b)(2)(ii), 40 CFR 63.6590(c), Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	20060	Nitrogen Oxides: The Permittee shall conduct a performance test due before 11/21/2026 and every 12 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 7E, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4211(d)(3), 40 CFR 60.4243(b)(2)(ii), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII(Table 7)(item b), Minn. R. 7011.2305, Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	20080	Volatile Organic Compounds: The Permittee shall conduct a performance test due before 11/20/2030 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 25A, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [40 CFR 60.4243(b)(2)(ii), 40 CFR 60.4245(d), 40 CFR 63.6590(c), Minn. R. 7011.2310, Minn. R. 7011.8150, Minn. R. 7017.2020, subp. 1, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
EQUI 26	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	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, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3565	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]
	19530	EQUI 26 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. 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 26. [40 CFR 63.6590(c), Minn. R. 7011.8150]
	28030	The Permittee must limit emissions of NMHC+NOx <= 6.6 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28040	The Permittee must limit emissions of Particulate Matter <= 0.20 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28044	The Permittee must limit emissions of Carbon Monoxide <= 3.5 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28045	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28052	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28053	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28054	The Permittee must limit Sulfur Content of Fuel <= 15.0 parts per million and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume, as required by 40 CFR 1090.305. [40 CFR 60.4207(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28055	The Permittee must limit emissions of Particulate Matter <= 0.35 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28056	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28057	The Permittee must limit emissions of PM < 10 micron <= 0.39 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28058	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28059	The Permittee must limit emissions of PM < 2.5 micron <= 0.39 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28061	The Permittee must limit emissions of Carbon Monoxide <= 6.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28062	The Permittee must limit emissions of Volatile Organic Compounds <= 4.8 grams per horsepower-hour 24-hour rolling average (6.4 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28063	The Permittee must limit emissions of Volatile Organic Compounds <= 11.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28064	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 314 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28171	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 26. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298)) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MD = MMBtu of diesel fuel burned in the previous month; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 26 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28172	Best Management Practices for Reciprocating Internal Combustion Engines (RICE) 1. The Permittee shall only use diesel fuel with a sulfur content of less than or equal to 15 ppm in the emergency engine. 2. The Permittee may not install a rain cap on any emergency engine stack. 3. The Permittee may install and operate a hinged flapper which is opened by the exhaust flow from the emergency engine stack. There shall be no flow obstruction at the point of discharge that inhibits vertical dispersion. The Permittee shall inspect the hinged flapper (i.e. tip-up rain cap) once per calendar month to make sure it is operating per the manufacturer's specifications and is not impeding the vertical flow of exhaust from the emergency engine stack. The Permittee shall keep records of these monthly inspections. 4. The Permittee shall make the test runs for each engine as short as allowed by insurance and building code considerations. 5. The testing for an emergency engine shall not occur while another emergency engine is being tested. 6. No testing shall be conducted on a day the Air Quality Index (AQI) or the forecasted AQI exceeds 90 unless the test cannot be deferred. For testing conducted on a day with the AQI above 90, document the reason it was not possible to defer the test and any actions that were taken to limit emissions during the test with the testing records. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	28173	Air Quality Index (AQI) The AQI and the forecasted AQI can be found at: http://www.pca.state.mn.us/index.php/air/air-quality-and-pollutants/general-air-quality/air-quality-index/current-air-quality-index.html. [Minn. R. 7007.0800, subp. 2(A)]
	35680	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(1)–(a)(4); 40 CFR 60.4200(b); 40 CFR 60.4201(a)–(c); 40 CFR 60.4202(a)–(b); 40 CFR 60.4203; 40 CFR 60.4204(a)–(c), (f); 40 CFR 60.4205(a)–(f); 40 CFR 60.4206; 40 CFR 60.4207(a)–(b); 40 CFR 60.4208(a)–(e); 40 CFR 60.4209(a)–(b); 40 CFR 60.4210(a)–(i); 40 CFR 60.4211(a)–(g); 40 CFR 60.4212(a)–(e); 40 CFR 60.4213(a)–(f); 40 CFR 60.4214(a)–(d); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR Part 60 Subpart IIII Table 7; and 40 CFR Part 60 Subpart IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix G. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]

SI Id	Sequence	Requirement
	35685	If the emergency stationary engine operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). However, if the reporting form 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 60.4 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 60.4214(g). [40 CFR 60.4214(d), 40 CFR 60.4214(g), Minn. R. 7011.2305]
	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)-(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)-(b); 40 CFR 60.5(a)-(b); 40 CFR 60.6(a)-(b); 40 CFR 60.7(a)(1)-(a)(5), (b)-(d); 40 CFR 60.8(a)-(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)-(g); 40 CFR 60.12; 40 CFR 60.13(a)-(i); 40 CFR 60.14(a)-(l); 40 CFR 60.15(a)-(g); 40 CFR 60.16; 40 CFR 60.17(a)-(h); 40 CFR 60.18(a)-(h); 40 CFR 60.19(a)-(d); 40 CFR 60.19(e); 40 CFR 60.19(f)(1)-(f)(3); and 40 CFR 60.19(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
	35740	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 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7011.0050]
EQUI 27	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	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, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3565	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]
	19530	EQUI 27 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. 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 27. [40 CFR 63.6590(c), Minn. R. 7011.8150]
	28030	The Permittee must limit emissions of NMHC+NOx <= 6.6 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28040	The Permittee must limit emissions of Particulate Matter <= 0.20 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28041	The Permittee must limit emissions of Carbon Monoxide <= 3.5 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28042	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28043	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28044	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28045	The Permittee must limit Sulfur Content of Fuel <= 15.0 parts per million and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume, as required by 40 CFR 1090.305. [40 CFR 60.4207(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28050	The Permittee must limit emissions of NMHC+NOx <= 11.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28051	The Permittee must limit emissions of Particulate Matter <= 0.35 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28052	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28053	The Permittee must limit emissions of PM < 10 micron <= 0.39 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28054	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28055	The Permittee must limit emissions of PM < 2.5 micron <= 0.39 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28061	The Permittee must limit emissions of Carbon Monoxide <= 6.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28062	The Permittee must limit emissions of Volatile Organic Compounds <= 4.8 grams per horsepower-hour 24-hour rolling average (6.4 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28063	The Permittee must limit emissions of Volatile Organic Compounds <= 11.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28064	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 314 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28171	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 27. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298)) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MD = MMBtu of diesel fuel burned in the previous month; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 27 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28172	Best Management Practices for Reciprocating Internal Combustion Engines (RICE) 1. The Permittee shall only use diesel fuel with a sulfur content of less than or equal to 15 ppm in the emergency engine. 2. The Permittee may not install a rain cap on any emergency engine stack. 3. The Permittee may install and operate a hinged flapper which is opened by the exhaust flow from the emergency engine stack. There shall be no flow obstruction at the point of discharge that inhibits vertical dispersion. The Permittee shall inspect the hinged flapper (i.e. tip-up rain cap) once per calendar month to make sure it is operating per the manufacturer's specifications and is not impeding the vertical flow of exhaust from the emergency engine stack. The Permittee shall keep records of these monthly inspections. 4. The Permittee shall make the test runs for each engine as short as allowed by insurance and building code considerations. 5. The testing for an emergency engine shall not occur while another emergency engine is being tested. 6. No testing shall be conducted on a day the Air Quality Index (AQI) or the forecasted AQI exceeds 90 unless the test cannot be deferred. For testing conducted on a day with the AQI above 90, document the reason it was not possible to defer the test and any actions that were taken to limit emissions during the test with the testing records. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	28173	Air Quality Index (AQI) The AQI and the forecasted AQI can be found at: http://www.pca.state.mn.us/index.php/air/air-quality-and-pollutants/general-air-quality/air-quality-index/current-air-quality-index.html. [Minn. R. 7007.0800, subp. 2(A)]

SI Id	Sequence	Requirement
	35680	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(1)–(a)(4); 40 CFR 60.4200(b); 40 CFR 60.4201(a)–(c); 40 CFR 60.4202(a)–(b); 40 CFR 60.4203; 40 CFR 60.4204(a)–(c), (f); 40 CFR 60.4205(a)–(f); 40 CFR 60.4206; 40 CFR 60.4207(a)–(b); 40 CFR 60.4208(a)–(e); 40 CFR 60.4209(a)–(b); 40 CFR 60.4210(a)–(i); 40 CFR 60.4211(a)–(g); 40 CFR 60.4212(a)–(e); 40 CFR 60.4213(a)–(f); 40 CFR 60.4214(a)–(d); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR Part 60 Subpart IIII Table 7; and 40 CFR Part 60 Subpart IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix D. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]
	35685	If the emergency stationary engine operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). However, if the reporting form 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 60.4 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 60.4214(g). [40 CFR 60.4214(d), 40 CFR 60.4214(g), Minn. R. 7011.2305]

SI Id	Sequence	Requirement
	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)-(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)-(b); 40 CFR 60.5(a)-(b); 40 CFR 60.6(a)-(b); 40 CFR 60.7(a)(1)-(a)(5), (b)-(d); 40 CFR 60.8(a)-(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)-(g); 40 CFR 60.12; 40 CFR 60.13(a)-(i); 40 CFR 60.14(a)-(l); 40 CFR 60.15(a)-(g); 40 CFR 60.16; 40 CFR 60.17(a)-(h); 40 CFR 60.18(a)-(h); 40 CFR 60.19(a)-(d); 40 CFR 60.19(e); 40 CFR 60.19(f)(1)-(f)(3); and 40 CFR 60.19(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
	35740	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 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7011.0050]
EQUI 28	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	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, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3565	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]

SI Id	Sequence	Requirement
	4540	If the emergency stationary engine operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). However, if the reporting form 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 60.4 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 60.4214(g). [40 CFR 60.4214(d), 40 CFR 60.4214(g), Minn. R. 7011.2305]
	4590	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 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7011.0050]
	19530	EQUI 28 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. 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 28. [40 CFR 63.6590(c), Minn. R. 7011.8150]
	28035	The Permittee must limit emissions of NMHC+NOx <= 6.6 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28040	The Permittee must limit emissions of Particulate Matter <= 0.20 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28041	The Permittee must limit emissions of Carbon Monoxide <= 3.5 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28042	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28043	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28045	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28046	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28048	The Permittee must limit emissions of NMHC+NOx <= 4.8 grams per horsepower-hour 24-hour rolling average (6.4 g/kW-hr). [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28049	The Permittee must limit emissions of NMHC+NOx <= 11.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28050	The Permittee must limit emissions of Particulate Matter <= 0.15 grams per horsepower-hour 24-hour rolling average (0.20 g/kW-hr). [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28051	The Permittee must limit emissions of Particulate Matter <= 0.35 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28052	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28053	The Permittee must limit emissions of PM < 10 micron <= 0.39 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28054	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28055	The Permittee must limit emissions of PM < 2.5 micron <= 0.39 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28060	The Permittee must limit emissions of Carbon Monoxide <= 2.6 grams per horsepower-hour 24-hour rolling average (3.5 g/kW-hr). [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28061	The Permittee must limit emissions of Carbon Monoxide <= 6.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28062	The Permittee must limit emissions of Volatile Organic Compounds <= 4.8 grams per horsepower-hour 24-hour rolling average (6.4 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28063	The Permittee must limit emissions of Volatile Organic Compounds <= 11.03 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28064	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 314 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28171	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 28. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298)) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MD = MMBtu of diesel fuel burned in the previous month; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 28 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28172	Best Management Practices for Reciprocating Internal Combustion Engines (RICE) 1. The Permittee shall only use diesel fuel with a sulfur content of less than or equal to 15 ppm in the emergency engine. 2. The Permittee may not install a rain cap on any emergency engine stack. 3. The Permittee may install and operate a hinged flapper which is opened by the exhaust flow from the emergency engine stack. There shall be no flow obstruction at the point of discharge that inhibits vertical dispersion. The Permittee shall inspect the hinged flapper (i.e. tip-up rain cap) once per calendar month to make sure it is operating per the manufacturer's specifications and is not impeding the vertical flow of exhaust from the emergency engine stack. The Permittee shall keep records of these monthly inspections. 4. The Permittee shall make the test runs for each engine as short as allowed by insurance and building code considerations. 5. The testing for an emergency engine shall not occur while another emergency engine is being tested. 6. No testing shall be conducted on a day the Air Quality Index (AQI) or the forecasted AQI exceeds 90 unless the test cannot be deferred. For testing conducted on a day with the AQI above 90, document the reason it was not possible to defer the test and any actions that were taken to limit emissions during the test with the testing records. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	28173	Air Quality Index (AQI) The AQI and the forecasted AQI can be found at: http://www.pca.state.mn.us/index.php/air/air-quality-and-pollutants/general-air-quality/air-quality-index/current-air-quality-index.html. [Minn. R. 7007.0800, subp. 2(A)]

SI Id	Sequence	Requirement
	35680	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(1)–(a)(4); 40 CFR 60.4200(b); 40 CFR 60.4201(a)–(c); 40 CFR 60.4202(a)–(b); 40 CFR 60.4203; 40 CFR 60.4204(a)–(c), (f); 40 CFR 60.4205(a)–(f); 40 CFR 60.4206; 40 CFR 60.4207(a)–(b); 40 CFR 60.4208(a)–(e); 40 CFR 60.4209(a)–(b); 40 CFR 60.4210(a)–(i); 40 CFR 60.4211(a)–(g); 40 CFR 60.4212(a)–(e); 40 CFR 60.4213(a)–(f); 40 CFR 60.4214(a)–(d); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR Part 60 Subpart IIII Table 7; and 40 CFR Part 60 Subpart IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix D. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]
	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)-(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)-(b); 40 CFR 60.5(a)-(b); 40 CFR 60.6(a)-(b); 40 CFR 60.7(a)(1)-(a)(5), (b)-(d); 40 CFR 60.8(a)-(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)-(g); 40 CFR 60.12; 40 CFR 60.13(a)-(i); 40 CFR 60.14(a)-(l); 40 CFR 60.15(a)-(g); 40 CFR 60.16; 40 CFR 60.17(a)-(h); 40 CFR 60.18(a)-(h); 40 CFR 60.19(a)-(d); 40 CFR 60.19(e); 40 CFR 60.19(f)(1)-(f)(3); and 40 CFR 60.19(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C.

SI Id	Sequence	Requirement
		If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
EQUI 29	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	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, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3565	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]
	4540	If the emergency stationary engine operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). However, if the reporting form 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 60.4 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 60.4214(g). [40 CFR 60.4214(d), 40 CFR 60.4214(g), Minn. R. 7011.2305]
	4590	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 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7011.0050]
	19530	EQUI 29 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2.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 29. [40 CFR 63.6590(c), Minn. R. 7011.8150]
	28000	The Permittee must limit emissions of NMHC+NOx <= 6.6 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28005	The Permittee must limit emissions of Particulate Matter <= 0.20 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28010	The Permittee must limit emissions of Carbon Monoxide <= 3.5 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28015	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28020	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28025	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28028	The Permittee must limit Sulfur Content of Fuel <= 15.0 parts per million and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume, as required by 40 CFR 1090.305. [40 CFR 60.4207(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28031	The Permittee must limit emissions of NMHC+NOx <= 4.8 grams per horsepower-hour 24-hour rolling average (6.4 g/kW-hr). [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28041	The Permittee must limit emissions of NMHC+NOx <= 8.12 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28050	The Permittee must limit emissions of Particulate Matter <= 0.15 grams per horsepower-hour 24-hour rolling average (0.20 g/kW-hr). [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28051	The Permittee must limit emissions of Particulate Matter <= 0.25 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28052	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28053	The Permittee must limit emissions of PM < 10 micron <= 0.29 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28054	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28055	The Permittee must limit emissions of PM < 2.5 micron <= 0.29 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28060	The Permittee must limit emissions of Carbon Monoxide <= 2.6 grams per horsepower-hour 24-hour rolling average (3.5 g/kW-hr). [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28061	The Permittee must limit emissions of Carbon Monoxide <= 4.44 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28062	The Permittee must limit emissions of Volatile Organic Compounds <= 4.8 grams per horsepower-hour 24-hour rolling average (6.4 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28063	The Permittee must limit emissions of Volatile Organic Compounds <= 8.12 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28064	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 231 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28171	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 29. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298)) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MD = MMBtu of diesel fuel burned in the previous month; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 29 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28172	Best Management Practices for Reciprocating Internal Combustion Engines (RICE) 1. The Permittee shall only use diesel fuel with a sulfur content of less than or equal to 15 ppm in the emergency engine. 2. The Permittee may not install a rain cap on any emergency engine stack. 3. The Permittee may install and operate a hinged flapper which is opened by the exhaust flow from the emergency engine stack. There shall be no flow obstruction at the point of discharge that inhibits vertical dispersion. The Permittee shall inspect the hinged flapper (i.e. tip-up rain cap) once per calendar month to make sure it is operating per the manufacturer's specifications and is not impeding the vertical flow of exhaust from the emergency engine stack. The Permittee shall keep records of these monthly inspections. 4. The Permittee shall make the test runs for each engine as short as allowed by insurance and building code considerations. 5. The testing for an emergency engine shall not occur while another emergency engine is being tested. 6. No testing shall be conducted on a day the Air Quality Index (AQI) or the forecasted AQI exceeds 90 unless the test cannot be deferred. For testing conducted on a day with the AQI above 90, document the reason it was not possible to defer the test and any actions that were taken to limit emissions during the test with the testing records. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	28173	Air Quality Index (AQI) The AQI and the forecasted AQI can be found at: http://www.pca.state.mn.us/index.php/air/air-quality-and-pollutants/general-air-quality/air-quality-index/current-air-quality-index.html. [Minn. R. 7007.0800, subp. 2(A)]

SI Id	Sequence	Requirement
	35680	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(1)–(a)(4); 40 CFR 60.4200(b); 40 CFR 60.4201(a)–(c); 40 CFR 60.4202(a)–(b); 40 CFR 60.4203; 40 CFR 60.4204(a)–(c), (f); 40 CFR 60.4205(a)–(f); 40 CFR 60.4206; 40 CFR 60.4207(a)–(b); 40 CFR 60.4208(a)–(e); 40 CFR 60.4209(a)–(b); 40 CFR 60.4210(a)–(i); 40 CFR 60.4211(a)–(g); 40 CFR 60.4212(a)–(e); 40 CFR 60.4213(a)–(f); 40 CFR 60.4214(a)–(d); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR Part 60 Subpart IIII Table 7; and 40 CFR Part 60 Subpart IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix D. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]
	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)-(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)-(b); 40 CFR 60.5(a)-(b); 40 CFR 60.6(a)-(b); 40 CFR 60.7(a)(1)-(a)(5), (b)-(d); 40 CFR 60.8(a)-(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)-(g); 40 CFR 60.12; 40 CFR 60.13(a)-(i); 40 CFR 60.14(a)-(l); 40 CFR 60.15(a)-(g); 40 CFR 60.16; 40 CFR 60.17(a)-(h); 40 CFR 60.18(a)-(h); 40 CFR 60.19(a)-(d); 40 CFR 60.19(e); 40 CFR 60.19(f)(1)-(f)(3); and 40 CFR 60.19(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C.

SI Id	Sequence	Requirement
		If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
EQUI 30	2200	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
	2590	The Permittee shall conduct linearity and leak check: Due by the end of each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Linearity checks are required for all emissions monitors and leak checks are required for all flow monitors. If the monitored emission unit is not in operation on the linearity test due date, the Permittee has a grace period of 168 operating hours to perform the linearity test. [40 CFR pt. 75, Appendix B, 2.2, Minn. R. 7017.1020]
	2600	The Permittee shall conduct CEMS relative accuracy test audit (RATA): Due once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours) in accordance with 40 CFR pt. 75, Appendix B, on all CEMS required by the Acid Rain Program. If the monitored emission unit is not in operation on the RATA due date, the Permittee has a grace period of 720 operating hours to perform the RATA. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Sections 2.3.1.2(a) through 2.3.1.2(i) are met. [40 CFR pt. 75, Appendix B, 2.3, Minn. R. 7017.1020]
EQUI 31	2200	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
	2590	The Permittee shall conduct linearity and leak check: Due by the end of each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Linearity checks are required for all emissions monitors and leak checks are required for all flow monitors. If the monitored emission unit is not in operation on the linearity test due date, the Permittee has a grace period of 168 operating hours to perform the linearity test. [40 CFR pt. 75, Appendix B, 2.2, Minn. R. 7017.1020]
	2600	The Permittee shall conduct CEMS relative accuracy test audit (RATA): Due once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours) in accordance with 40 CFR pt. 75, Appendix B, on all CEMS required by the Acid Rain Program. If the monitored emission unit is not in operation on the RATA due date, the Permittee has a grace period of 720 operating hours to perform the RATA. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Sections 2.3.1.2(a) through 2.3.1.2(i) are met. [40 CFR pt. 75, Appendix B, 2.3, Minn. R. 7017.1020]
EQUI 32	1	EQUI 32 must be constructed and operated with good tank design, including: 1. Fixed roof. 2. PRV (conservation vent). 3. Submerged fill pipe. 4. Light tank color. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
EQUI 33	1	EQUI 33 must be constructed and operated with good tank design, including: 1. Fixed roof. 2. PRV (conservation vent). 3. Submerged fill pipe. 4. Light tank color. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
EQUI 43	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
	3540	Fuel type: Diesel only, by design. [Minn. R. 7005.0100, subp. 35a, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	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, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	3565	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]
	4540	If the emergency stationary engine operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). However, if the reporting form 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 60.4 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 60.4214(g). [40 CFR 60.4214(d), 40 CFR 60.4214(g), Minn. R. 7011.2305]
	4590	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 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7011.0050]
	19530	EQUI 43 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. 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 43. [40 CFR 63.6590(c), Minn. R. 7011.8150]
	28030	The Permittee must limit emissions of NMHC+NOx <= 6.4 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28040	The Permittee must limit emissions of Particulate Matter <= 0.20 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28041	The Permittee must limit emissions of Carbon Monoxide <= 3.5 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28042	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28043	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28044	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28045	The Permittee must limit Sulfur Content of Fuel <= 15.0 parts per million and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume, as required by 40 CFR 1090.305. [40 CFR 60.4207(b), 40 CFR 63.6590(c), Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28050	The Permittee must limit emissions of NMHC+NOx <= 8.12 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28052	The Permittee must limit emissions of Particulate Matter <= 0.25 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28053	The Permittee must limit emissions of PM < 10 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28054	The Permittee must limit emissions of PM < 10 micron <= 0.29 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28055	The Permittee must limit emissions of PM < 2.5 micron <= 0.16 grams per horsepower-hour 24-hour rolling average (0.22 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28056	The Permittee must limit emissions of PM < 2.5 micron <= 0.29 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28061	The Permittee must limit emissions of Carbon Monoxide <= 4.44 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28062	The Permittee must limit emissions of Volatile Organic Compounds <= 4.8 grams per horsepower-hour 24-hour rolling average (6.4 g/kW-hr). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28063	The Permittee must limit emissions of Volatile Organic Compounds <= 8.12 pounds per hour 3-hour average. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28064	The Permittee must limit emissions of Carbon Dioxide Equivalent <= 231 tons per year 12-month rolling sum. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	28171	Monthly recordkeeping: By the 15th of the month, the Permittee shall calculate and record the total amount of fuel burned for the previous month in MMBtu in EQUI 43. The Permittee shall then use that amount to calculate total greenhouse gas emissions in tons per month for the previous month using the following equation: GHG = ((MD * 163.05) + ((MD * 0.0066) * 25) + ((MD * 0.0013) * 298)) / 2000 Where: GHG = monthly greenhouse gas emissions in tons; MD = MMBtu of diesel fuel burned in the previous month; 163.05 = CO2 emission factor for diesel fuel in lb/MMBtu; 0.0066 = CH4 emission factor for diesel fuel in lb/MMBtu; 0.0013 = N2O emission factor for diesel fuel in lb/MMBtu; 25 = global warming potential for CH4; 298 = global warming potential for N2O; 2000 = conversion factor lb/ton. By the 15th of the month the Permittee shall calculate the 12 month rolling sum of GHG emissions from EQUI 43 by summing the monthly emissions of GHG, in tons, for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	28172	Best Management Practices for Reciprocating Internal Combustion Engines (RICE) 1. The Permittee shall only use diesel fuel with a sulfur content of less than or equal to 15 ppm in the emergency engine. 2. The Permittee may not install a rain cap on any emergency engine stack. 3. The Permittee may install and operate a hinged flapper which is opened by the exhaust flow from the emergency engine stack. There shall be no flow obstruction at the point of discharge that inhibits vertical dispersion. The Permittee shall inspect the hinged flapper (i.e. tip-up rain cap) once per calendar month to make sure it is operating per the manufacturer's specifications and is not impeding the vertical flow of exhaust from the emergency engine stack. The Permittee shall keep records of these monthly inspections. 4. The Permittee shall make the test runs for each engine as short as allowed by insurance and building code considerations. 5. The testing for an emergency engine shall not occur while another emergency engine is being tested. 6. No testing shall be conducted on a day the Air Quality Index (AQI) or the forecasted AQI exceeds 90 unless the test cannot be deferred. For testing conducted on a day with the AQI above 90, document the reason it was not possible to defer the test and any actions that were taken to limit emissions during the test with the testing records. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]
	28173	Air Quality Index (AQI) The AQI and the forecasted AQI can be found at: http://www.pca.state.mn.us/index.php/air/air-quality-and-pollutants/general-air-quality/air-quality-index/current-air-quality-index.html. [Minn. R. 7007.0800, subp. 2(A)]
	35680	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(1)–(a)(4); 40 CFR 60.4200(b); 40 CFR 60.4201(a)–(c); 40 CFR 60.4202(a)–(b); 40 CFR 60.4203; 40 CFR 60.4204(a)–(c), (f); 40 CFR 60.4205(a)–(f); 40 CFR 60.4206; 40 CFR 60.4207(a)–(b); 40 CFR 60.4208(a)–(e); 40 CFR 60.4209(a)–(b); 40 CFR 60.4210(a)–(i); 40 CFR 60.4211(a)–(g); 40 CFR 60.4212(a)–(e); 40 CFR 60.4213(a)–(f); 40 CFR 60.4214(a)–(d); 40 CFR 60.4218; 40 CFR 60.4219; 40 CFR Part 60 Subpart IIII Table 7; and 40 CFR Part 60 Subpart IIII Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix D. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]

SI Id	Sequence	Requirement
	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)-(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4(a)-(b); 40 CFR 60.5(a)-(b); 40 CFR 60.6(a)-(b); 40 CFR 60.7(a)(1)-(a)(5), (b)-(d); 40 CFR 60.8(a)-(i); 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11(a)-(g); 40 CFR 60.12; 40 CFR 60.13(a)-(i); 40 CFR 60.14(a)-(l); 40 CFR 60.15(a)-(g); 40 CFR 60.16; 40 CFR 60.17(a)-(h); 40 CFR 60.18(a)-(h); 40 CFR 60.19(a)-(d); 40 CFR 60.19(e); 40 CFR 60.19(f)(1)-(f)(3); and 40 CFR 60.19(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
FUGI 1	1	Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and recordkeeping specified in the fugitive dust control plan in Appendix I of this permit. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
TREA 1	17610	The Permittee must vent emissions from EQUI 23 to TREA 1 whenever EQUI 23 operates, and operate and maintain TREA 1 at all times that any emissions are vented to TREA 1. The Permittee must document periods of non-operation of the control equipment TREA 1 whenever EQUI 23 is operating. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	17615	If the Permittee replaces TREA 1, the replacement control must meet or exceed the control efficiency requirements of TREA 1 as well as comply with all other requirements of TREA 1. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21820	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Carbon Monoxide >= 90 percent control efficiency, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	21830	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds >= 90 percent control efficiency, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21840	Temperature >= 484 and <= 1350 degrees Fahrenheit 3-hour rolling average at the oxidation catalyst inlet, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever occurs first. If the recorded temperature is outside the required range, emissions must be considered uncontrolled until the inlet temperature once again is within the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21850	Pressure Drop: When operating at 100 percent load +/- 10 percent, the Permittee must maintain TREA 1 so that the pressure drop across TREA 1 and TREA 2 does not differ by more than 2.0 inches of water from the value stated in the most recent MPCA-approved performance test where compliance was demonstrated (1-hour average). This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations.. If the recorded pressure drop is outside the required range, emissions must be considered uncontrolled until the pressure drop is once again within the required range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21860	The Permittee must operate and maintain the control equipment in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	21870	Temperature Monitoring: The Permittee must maintain and operate a thermocouple monitoring device that continuously indicates and records the control equipment inlet temperature. The monitoring device must have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device must also calculate the three-hour rolling average inlet temperature. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21880	The Permittee must maintain and operate a pressure drop monitoring device that records hourly average pressure drop across the control device. The Permittee must measure and record the hourly average pressure drop across the control device once per month to demonstrate that the pressure drop across the control device is within the operating limitation specified in this permit. If TREA 1 does not operate during a given calendar month, the Permittee does not have to start up TREA 1 solely for the purpose of recording pressure drop. If there is no pressure drop reading during a calendar month, the Permittee must record the pressure drop immediately upon the next startup of TREA 1. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21890	Daily Monitoring: The Permittee must physically verify the operation of the temperature and pressure drop recording devices at least once each operating day to verify that they are working and recording properly. The Permittee must maintain a written record of the daily verifications. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21900	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment to conduct the temperature and pressure drop monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200]
	21910	The Permittee must maintain a continuous hard copy readout or computer disk file of the inlet temperature readings and calculated three hour rolling average inlet temperatures. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21920	Annual Calibration: The Permittee must calibrate the temperature and pressure drop monitors at least once every 12 months and must maintain a written record of the calibration and any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
	21930	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	21940	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded temperature is outside the required operating range; - the recorded pressure drop is outside the required operating range; or - the control equipment or any of its components are found during the inspections to need repair. Corrective actions must return the temperature and/or the pressure drop to within the permitted range(s), and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O & M) Plan for the control equipment. The Permittee must keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 2	17610	The Permittee must vent emissions from EQUI 23 to TREA 2 whenever EQUI 23 operates, and operate and maintain TREA 2 at all times that any emissions are vented to TREA 2. The Permittee must document periods of non-operation of the control equipment TREA 2 whenever EQUI 23 is operating. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	17615	If the Permittee replaces TREA 2, the replacement control must meet or exceed the control efficiency requirements of TREA 2 as well as comply with all other requirements of TREA 2. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21950	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Nitrogen Oxides >= 90 percent control efficiency. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21970	The Permittee must continuously monitor the urea injection system performance using both the actual and demand injection rates communicated to the DAS on a one-minute basis. The percent difference between the actual and demand urea injection rates must be calculated as specified in the approved Compliance Assurance Monitoring (CAM) Plan. The acceptable operating range for this parameter is +/-10 percent. If the recorded urea injection system performance is outside the required range, emissions during that time must be considered uncontrolled until the urea injection system performance once again is withing the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21980	Pressure Drop: When operating at 100 percent load +/- 10 percent, the Permittee must maintain TREA 2 so that the pressure drop across TREA 1 and TREA 2 does not differ by more than 2.0 inches of water from the value stated in the most recent MPCA-approved performance test where compliance was demonstrated (1-hour average). This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. If the recorded pressure drop is outside the required range, emissions must be considered uncontrolled until the pressure drop is once again within the required range. This must be reported as a deviation. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21985	Temperature >= 484 and <= 1350 degrees Fahrenheit 3-hour rolling average at the inlet, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. If the recorded temperature is outside the required range, emissions must be considered uncontrolled until the inlet temperature once again is within the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	21990	The Permittee must operate and maintain the SCR in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	22000	Temperature Monitoring: The Permittee must maintain and operate a thermocouple monitoring device (EQUI 34) that continuously indicates and records the control equipment inlet temperature. The monitoring device must have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device must also calculate the three-hour rolling average inlet temperature. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22020	The Permittee must maintain and operate a pressure drop monitoring device that records hourly average pressure drop across the control device. The Permittee must measure and record the hourly average pressure drop across the control device once per month to demonstrate that the pressure drop across the control device is within the operating limitation specified in this permit. If TREA 2 does not operate during a given calendar month, the Permittee does not have to start up TREA 2 solely for the purpose of recording pressure drop. If there is no pressure drop reading during a calendar month, the Permittee must record the pressure drop immediately upon the next startup of TREA 2. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22025	For periods when TREA 2 is operated at an inlet temperature at or above the permitted minimum and below or at the permitted maximum, and the TREA 2 pressure drop is no more than 2.0 inches of water higher or lower than the value recorded during the most recent performance test, the Permittee must use either one of the following when completing calculations as required elsewhere in this permit: a. The overall TREA 2 NOx control efficiency limit specified in this permit; or b. The overall TREA 2 NOx control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, this must be reported as a deviation and the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test. [Minn. R. 7007.0800, subps. 4-5]
	22030	Daily Monitoring: The Permittee must physically verify the operation of the temperature, Urea injection feedback monitoring, and pressure drop recording devices at least once each operating day to verify that they are working and recording properly. The Permittee must maintain a written record of the daily verifications. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22040	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment to conduct the temperature, Urea injection feedback monitoring, and pressure drop monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [40 CFR 64.7(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200]
	22050	The Permittee must maintain a continuous hard copy readout or computer disk file of the inlet temperature, urea injection feedback monitoring readings (actual and demand injection rates and calculated percent difference), and calculated three-hour rolling average inlet temperature. [40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22060	Annual Calibration: The Permittee must calibrate the temperature, Urea, and pressure drop monitors at least once every 12 months and must maintain a written record of the calibration and any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5, Minn. R. 7017.0200]
	22070	Quarterly Inspections: At least once per calendar quarter, the Permittee must inspect the control equipment internal and external system components, including but not limited to, the catalyst bed, Urea injection grid, reagent pump, and electrical systems. The Permittee must maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
	22080	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded temperature is outside the required operating range; - the recorded Urea injection feedback monitoring flow rate is outside the required operating range; - the recorded pressure drop is outside the required operating range; or - the SCR or any of its components are found during the inspections to need repair. Corrective actions must return the temperature, pressure drop and/or Urea injection feedback monitoring flow rate to within the permitted range(s), and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O & M) Plan for the control equipment. The Permittee must keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 3	17610	The Permittee must vent emissions from EQUI 24 to TREA 3 whenever EQUI 24 operates, and operate and maintain TREA 3 at all times that any emissions are vented to TREA 3. The Permittee must document periods of non-operation of the control equipment TREA 3 whenever EQUI 24 is operating. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	17615	If the Permittee replaces TREA 3, the replacement control must meet or exceed the control efficiency requirements of TREA 3 as well as comply with all other requirements of TREA 3. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21820	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Carbon Monoxide >= 90 percent control efficiency, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21830	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds >= 90 percent control efficiency, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21840	Temperature >= 484 and <= 1350 degrees Fahrenheit 3-hour rolling average at the oxidation catalyst inlet, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever occurs first. If the recorded temperature is outside the required range, emissions must be considered uncontrolled until the inlet temperature once again is within the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21850	Pressure Drop: When operating at 100 percent load +/- 10 percent, the Permittee must maintain TREA 1 so that the pressure drop across TREA 1 and TREA 2 does not differ by more than 2.0 inches of water from the value stated in the most recent MPCA-approved performance test where compliance was demonstrated (1-hour average). This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations. If the recorded pressure drop is outside the required range, emissions must be considered uncontrolled until the pressure drop is once again within the required range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21860	The Permittee must operate and maintain the control equipment in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]

SI Id	Sequence	Requirement
	21870	Temperature Monitoring: The Permittee must maintain and operate a thermocouple monitoring device that continuously indicates and records the control equipment inlet temperature. The monitoring device must have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device must also calculate the three-hour rolling average inlet temperature. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21880	The Permittee must maintain and operate a pressure drop monitoring device that records hourly average pressure drop across the control device. The Permittee must measure and record the hourly average pressure drop across the control device once per month to demonstrate that the pressure drop across the control device is within the operating limitation specified in this permit. If TREA 3 does not operate during a given calendar month, the Permittee does not have to start up TREA 3 solely for the purpose of recording pressure drop. If there is no pressure drop reading during a calendar month, the Permittee must record the pressure drop immediately upon the next startup of TREA 3. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
	21890	Daily Monitoring: The Permittee must physically verify the operation of the temperature and pressure drop recording devices at least once each operating day to verify that they are working and recording properly. The Permittee must maintain a written record of the daily verifications. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21900	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment to conduct the temperature and pressure drop monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200]
	21910	The Permittee must maintain a continuous hard copy readout or computer disk file of the inlet temperature readings and calculated three hour rolling average inlet temperatures. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21920	Annual Calibration: The Permittee must calibrate the temperature and pressure drop monitors at least once every 12 months and must maintain a written record of the calibration and any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5, Minn. R. 7017.0200]
	21930	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	21940	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded temperature is outside the required operating range; - the recorded pressure drop is outside the required operating range; or - the control equipment or any of its components are found during the inspections to need repair. Corrective actions must return the temperature and/or the pressure drop to within the permitted range(s), and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O & M) Plan for the control equipment. The Permittee must keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 4	17610	The Permittee must vent emissions from EQUI 24 to TREA 4 whenever EQUI 24 operates, and operate and maintain TREA 4 at all times that any emissions are vented to TREA 4. The Permittee must document periods of non-operation of the control equipment TREA 4 whenever EQUI 24 is operating. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	17615	If the Permittee replaces TREA 4, the replacement control must meet or exceed the control efficiency requirements of TREA 4 as well as comply with all other requirements of TREA 4. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21950	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Nitrogen Oxides >= 90 percent control efficiency. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21970	The Permittee must continuously monitor the urea injection system performance using both the actual and demand injection rates communicated to the DAS on a one-minute basis. The percent difference between the actual and demand urea injection rates must be calculated as specified in the approved Compliance Assurance Monitoring (CAM) Plan. The acceptable operating range for this parameter is +/-10 percent. If the recorded urea injection system performance is outside the required range, emissions during that time must be considered uncontrolled until the urea injection system performance once again is withing the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21980	Pressure Drop: When operating at 100 percent load +/- 10 percent, the Permittee must maintain TREA 4 so that the pressure drop across TREA 3 and TREA 4 does not differ by more than 2.0 inches of water from the value stated in the most recent MPCA-approved performance test where compliance was demonstrated (1-hour average). This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. If the recorded pressure drop is outside the required range, emissions must be considered uncontrolled until the pressure drop is once again within the required range. This must be reported as a deviation. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21985	Temperature >= 484 and <= 1350 degrees Fahrenheit 3-hour rolling average at the inlet, except during startup of EQUI 24. This limit applies after 241 hours of burn-in operation of EQUI 24, or upon commencement of normal operation of EQUI 24, whichever comes first. If the recorded temperature is outside the required range, emissions must be considered uncontrolled until the inlet temperature once again is within the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21990	The Permittee must operate and maintain the SCR in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	22000	Temperature Monitoring: The Permittee must maintain and operate a thermocouple monitoring device (EQUI 34) that continuously indicates and records the control equipment inlet temperature. The monitoring device must have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device must also calculate the three-hour rolling average inlet temperature. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22020	The Permittee must maintain and operate a pressure drop monitoring device that records hourly average pressure drop across the control device. The Permittee must measure and record the hourly average pressure drop across the control device once per month to demonstrate that the pressure drop across the control device is within the operating limitation specified in this permit. If TREA 4 does not operate during a given calendar month, the Permittee does not have to start up TREA 4 solely for the purpose of recording pressure drop. If there is no pressure drop reading during a calendar month, the Permittee must record the pressure drop immediately upon the next startup of TREA 4. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	22025	For periods when TREA 4 is operated at an inlet temperature at or above the permitted minimum and below or at the permitted maximum, and the TREA 4 pressure drop is no more than 2.0 inches of water higher or lower than the value recorded during the most recent performance test, the Permittee must use either one of the following when completing calculations as required elsewhere in this permit: a. The overall TREA 4 NOx control efficiency limit specified in this permit; or b. The overall TREA 4 NOx control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, this must be reported as a deviation and the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test. [Minn. R. 7007.0800, subps. 4-5]
	22030	Daily Monitoring: The Permittee must physically verify the operation of the temperature, urea injection feedback monitoring, and pressure drop recording devices at least once each operating day to verify that they are working and recording properly. The Permittee must maintain a written record of the daily verifications. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22040	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment to conduct the temperature, urea injection feedback monitoring, and pressure drop monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [40 CFR 64.7(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200]
	22050	The Permittee must maintain a continuous hard copy readout or computer disk file of the inlet temperature, urea injection feedback monitoring readings (actual and demand injection rates and calculated percent difference), and calculated three-hour rolling average inlet temperature. [40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22060	Annual Calibration: The Permittee must calibrate the temperature, Urea, and pressure drop monitors at least once every 12 months and must maintain a written record of the calibration and any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5, Minn. R. 7017.0200]
	22070	Quarterly Inspections: At least once per calendar quarter, the Permittee must inspect the control equipment internal and external system components, including but not limited to, the catalyst bed, Urea injection grid, reagent pump, and electrical systems. The Permittee must maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	22080	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded temperature is outside the required operating range; - the recorded urea injection feedback monitoring is outside the required operating range; - the recorded pressure drop is outside the required operating range; or - the SCR or any of its components are found during the inspections to need repair. Corrective actions must return the temperature, pressure drop and/or urea injection feedback monitoring flow rate to within the permitted range(s), and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O & M) Plan for the control equipment. The Permittee must keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 5	17610	The Permittee must vent emissions from EQUI 25 to TREA 5 whenever EQUI 25 operates, and operate and maintain TREA 5 at all times that any emissions are vented to TREA 5. The Permittee must document periods of non-operation of the control equipment TREA 5 whenever EQUI 25 is operating. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	17615	If the Permittee replaces TREA 5, the replacement control must meet or exceed the control efficiency requirements of TREA 5 as well as comply with all other requirements of TREA 5. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21820	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Carbon Monoxide >= 90 percent control efficiency, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21830	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds >= 90 percent control efficiency, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21840	Temperature >= 484 and <= 1350 degrees Fahrenheit 3-hour rolling average at the oxidation catalyst inlet, except during startup of EQUI 23. This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever occurs first. If the recorded temperature is outside the required range, emissions must be considered uncontrolled until the inlet temperature once again is within the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21850	Pressure Drop: When operating at 100 percent load +/- 10 percent, the Permittee must maintain TREA 1 so that the pressure drop across TREA 1 and TREA 2 does not differ by more than 2.0 inches of water from the value stated in the most recent MPCA-approved performance test where compliance was demonstrated (1-hour average). This limit applies after 241 hours of burn-in operation of EQUI 23, or upon commencement of normal operation of EQUI 23, whichever comes first. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations. If the recorded pressure drop is outside the required range, emissions must be considered uncontrolled until the pressure drop is once again within the required range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21860	The Permittee must operate and maintain the control equipment in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	21870	Temperature Monitoring: The Permittee must maintain and operate a thermocouple monitoring device that continuously indicates and records the control equipment inlet temperature. The monitoring device must have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device must also calculate the three-hour rolling average inlet temperature. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21880	The Permittee must maintain and operate a pressure drop monitoring device that records hourly average pressure drop across the control device. The Permittee must measure and record the hourly average pressure drop across the control device once per month to demonstrate that the pressure drop across the control device is within the operating limitation specified in this permit. If TREA 5 does not operate during a given calendar month, the Permittee does not have to start up TREA 5 solely for the purpose of recording pressure drop. If there is no pressure drop reading during a calendar month, the Permittee must record the pressure drop immediately upon the next startup of TREA 5. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
	21890	Daily Monitoring: The Permittee must physically verify the operation of the temperature and pressure drop recording devices at least once each operating day to verify that they are working and recording properly. The Permittee must maintain a written record of the daily verifications. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	21900	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment to conduct the temperature and pressure drop monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200]
	21910	The Permittee must maintain a continuous hard copy readout or computer disk file of the inlet temperature readings and calculated three hour rolling average inlet temperatures. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21920	Annual Calibration: The Permittee must calibrate the temperature and pressure drop monitors at least once every 12 months and must maintain a written record of the calibration and any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5, Minn. R. 7017.0200]
	21930	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	21940	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded temperature is outside the required operating range; - the recorded pressure drop is outside the required operating range; or - the control equipment or any of its components are found during the inspections to need repair. Corrective actions must return the temperature and/or the pressure drop to within the permitted range(s), and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O & M) Plan for the control equipment. The Permittee must keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 6	17610	The Permittee must vent emissions from EQUI 25 to TREA 6 whenever EQUI 25 operates, and operate and maintain TREA 6 at all times that any emissions are vented to TREA 6. The Permittee must document periods of non-operation of the control equipment TREA 6 whenever EQUI 25 is operating. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	17615	If the Permittee replaces TREA 6, the replacement control must meet or exceed the control efficiency requirements of TREA 6 as well as comply with all other requirements of TREA 6. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21950	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Nitrogen Oxides >= 90 percent control efficiency. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21970	The Permittee must continuously monitor the urea injection system performance using both the actual and demand injection rates communicated to the DAS on a one-minute basis. The percent difference between the actual and demand urea injection rates must be calculated as specified in the approved Compliance Assurance Monitoring (CAM) Plan. The acceptable operating range for this parameter is +/-10 percent. If the recorded urea injection system performance is outside the required range, emissions during that time must be considered uncontrolled until the urea injection system performance once again is withing the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
	21980	Pressure Drop: When operating at 100 percent load +/- 10 percent, the Permittee must maintain TREA 6 so that the pressure drop across TREA 5 and TREA 6 does not differ by more than 2.0 inches of water from the value stated in the most recent MPCA-approved performance test where compliance was demonstrated (1-hour average). This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. If the recorded pressure drop is outside the required range, emissions must be considered uncontrolled until the pressure drop is once again within the required range. This must be reported as a deviation. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21985	Temperature >= 484 and <= 1350 degrees Fahrenheit 3-hour rolling average at the inlet, except during startup of EQUI 25. This limit applies after 241 hours of burn-in operation of EQUI 25, or upon commencement of normal operation of EQUI 25, whichever comes first. If the recorded temperature is outside the required range, emissions must be considered uncontrolled until the inlet temperature once again is within the specified operating range. This must be reported as a deviation. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	21990	The Permittee must operate and maintain the SCR in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	22000	Temperature Monitoring: The Permittee must maintain and operate a thermocouple monitoring device (EQUI 34) that continuously indicates and records the control equipment inlet temperature. The monitoring device must have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device must also calculate the three-hour rolling average inlet temperature. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22020	The Permittee must maintain and operate a pressure drop monitoring device that records hourly average pressure drop across the control device. The Permittee must measure and record the hourly average pressure drop across the control device once per month to demonstrate that the pressure drop across the control device is within the operating limitation specified in this permit. If TREA 6 does not operate during a given calendar month, the Permittee does not have to start up TREA 6 solely for the purpose of recording pressure drop. If there is no pressure drop reading during a calendar month, the Permittee must record the pressure drop immediately upon the next startup of TREA 6. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22025	For periods when TREA 6 is operated at an inlet temperature at or above the permitted minimum and below or at the permitted maximum, and the TREA 6 pressure drop is no more than 2.0 inches of water higher or lower than the value recorded during the most recent performance test, the Permittee must use either one of the following when completing calculations as required elsewhere in this permit: a. The overall TREA 6 NOx control efficiency limit specified in this permit; or b. The overall TREA 6 NOx control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, this must be reported as a deviation and the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test. [Minn. R. 7007.0800, subps. 4-5]
	22030	Daily Monitoring: The Permittee must physically verify the operation of the temperature, urea injection feedback monitoring, and pressure drop recording devices at least once each operating day to verify that they are working and recording properly. The Permittee must maintain a written record of the daily verifications. [40 CFR 264.3, 40 CFR 264.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22040	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment to conduct the temperature, urea injection feedback monitoring (actual vs. demand rate differential), and pressure drop monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [40 CFR 64.7(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200]

SI Id	Sequence	Requirement
	22050	The Permittee must maintain a continuous hard copy readout or computer disk file of the inlet temperature, urea injection feedback readings (actual and demand injection rates and calculated percent difference), and calculated three hour rolling average inlet temperature. [40 CFR 64.9(b), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7017.0200, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]
	22060	Annual Calibration: The Permittee must calibrate the temperature, Urea, and pressure drop monitors at least once every 12 months and must maintain a written record of the calibration and any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5, Minn. R. 7017.0200]
	22070	Quarterly Inspections: At least once per calendar quarter, the Permittee must inspect the control equipment internal and external system components, including but not limited to, the catalyst bed, Urea injection grid, reagent pump, and electrical systems. The Permittee must maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	22080	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded temperature is outside the required operating range; - the recorded urea injection feedback monitoring is outside the required operating range; - the recorded pressure drop is outside the required operating range; or - the SCR or any of its components are found during the inspections to need repair. Corrective actions must return the temperature, pressure drop and/or urea injection feedback monitoring rate to within the permitted range(s), and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O & M) Plan for the control equipment. The Permittee must keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Xcel Energy - Blue Lake
Permit Number 13900010-106
Technical Support Document

Attachment 3
Compliance Assurance Monitoring (CAM) Plan

Compliance Assurance Monitoring Plan
Xcel Energy – Blue Lake

Company:	Xcel Energy
Facility Address:	Blue Lake Generating Plant 1200 70th St. S. Shakopee, Scott County, MN 55379
AQ Facility ID:	13900010
Date:	June 2024

TABLE OF CONTENTS

CAM PLAN INTRODUCTION

The compliance assurance monitoring (CAM) Plan provides assurance that the limits of the pollutants outlined below are met at all times for the three engine generators (EQUI 23, 24, and 25). Each engine generator is equipped with a reactor system consisting of selective catalytic reduction (SCR) and an oxidation catalyst, in series.

EQUIs 23, 24 & 25 Engine Generators (Oxidation Catalyst)

I. **Background**

a. Emissions Unit

Description:	Reciprocating Internal Combustion Engine
AQ Facility ID:	13900010
Facility:	Xcel Energy – Blue Lake, Shakopee, MN
Applicable Emission Units:	EQUI 23 Engine Generator 1/TREA 1 Oxidation Catalyst
	EQUI 24 Engine Generator 2/TREA 3 Oxidation Catalyst
	EQUI 25 Engine Generator 3/TREA 5 Oxidation Catalyst

b. Applicable Regulation, Emission Limit and Monitoring Requirements

Emission Limits: Carbon Monoxide/Volatile Organic Compounds (CO/VOC)

Limit/Basis	Pollutant	Regulatory Citation
>=90 percent CO and VOC control efficiency	CO and VOC	40 CFR 52.21(j)(BACT) Minn. R. 7007.3000

Monitoring Requirements: Reactor system inlet temperature continuous monitoring and pressure drop continuous monitoring.

c. Control Technology

Oxidation Catalysts

II. **Monitoring Approach**

I. Indicator	**Inlet Temperature Continuous Monitoring**	**Pressure Drop Continuous Monitoring**
Parameter	Reactor system (SCR and Oxidation Catalyst, in series) Inlet Temperature (°F).	Pressure Drop across reactor system (SCR and Oxidation Catalyst, in series) (inches of H_2O)
Measurement Approach	The inlet temperature to the reactor (SCR and Oxidation Catalyst, in series) is continuously monitored using a thermocouple. The thermocouple measures and communicates the temperature to the DAS for recording and reporting.	Pressure drop across the reactor is monitored via an inlet pressure transmitter and an outlet pressure transmitter. The transmitters measure and communicate inlet and outlet pressure to the DAS, where pressure drop is calculated and recorded.
II. Indicator Range	Reactor inlet temperature range of 484°F - 1350°F during normal operation on either dual-fuel or diesel. Excursions trigger an inspection, corrective action, and a reporting requirement.	pressure drop range of +/- 2.0 inches of H20 from the pressure drop range recorded during the most recent performance demonstrating compliance applicable limits. The limit only applies during periods of normal operation and does not apply during periods of startup, shutdown, or emergency operations. Excursions trigger an inspection, corrective action, and reporting requirement.
III. Performance Criteria		
A. Data Accuracy and Precision	The reactor inlet temperature is measured on a continuous basis using a thermocouple capable of providing accuracy within 4.5°F.	The inlet pressure transmitter and outlet pressure transmitter will be installed upstream of the SCR and downstream of the oxidation catalyst, respectively. Pressures will be measured on a continuous basis.
B. Verification of Operational Status	The emissions monitoring system will continuously monitor and track the functionality and output of the thermocouple.	The emissions monitoring system will continuously monitor and track the functionality and outputs of the pressure transmitters
C. QA/QC Practices and Criteria	Annual calibration of thermocouple (acceptance criteria: ±4.5°F).	Annual calibration of pressure transmitters.
D. Monitoring Frequency	Continuously	Continuously

E. Data Collection Procedures	The data acquisition system (DAS) records the temperature data.	The data acquisition system (DAS) records the inlet, outlet and differential pressure.
F. Averaging Period	1-hour average	1-hour average

III. **Monitoring Approach Justification**

a. Background

The pollutant specific emissions units (PSEUs) are three (3) Wartsila 20V34DF-B Reciprocating Internal Combustion Engines (RICE) that are capable of being operated on diesel fuel oil or with dual fuel (natural gas supplemented with diesel fuel oil). Each engine will be equipped with a reactor system that consists of a Selective Catalytic Reduction (SCR) system in series with an oxidation catalyst to control NO_x, CO, and VOC emissions. The monitoring approaches used here is to provide compliance assurance for CO and VOC emission limits by monitoring the catalyst system operations.

b. Rationale for Selecting Performance Indicators

Inlet Temperature to Reactor

Oxidation catalysts facilities conversion of CO and VOCs (hydrocarbons) in the exhaust stream to CO_2 and H_2O through oxidation. The oxidation reactions are as follows:

$$CO + \frac{1}{2}O_2 \longrightarrow CO_2$$

$$[Hydrocarbons] + O_2 \longrightarrow CO_2 + H_2O$$

The two main factors on conversion rates are O2 concentration and temperature of the exhaust stream into the catalyst. Due to design of the unit, there will always be more than sufficient excess air for the oxidation catalyst to operate. Therefore, the inlet temperature is a parameter that must be monitored to ensure reduction efficiencies are achieved.

Pressure Drop across Reactor

Pressure drop across reactor are a key indicator of oxidation catalyst performance. Deposits of particulates from products of combustion can accumulate on the catalyst, resulting in an increased pressure drop. These build-ups reduce the ability of the catalyst to effectively oxidize CO and VOC.

c. Rationale for Selection of Indicator Ranges

Inlet Temperature to Reactor

Xcel Energy proposes an inlet temperature range to the reactor system of 484°F - 1350°F, to be monitored and recorded continuously, as required in facility air permit. The lower limit is the manufacturer's recommendation to achieve the 90% reduction in CO/VOC. Above 1350°F the oxidation catalyst loses efficiency due to thermal damage.

Pressure Drop across Reactor

Xcel Energy proposes a pressure drop across the reactor system of ±2.0 inH_2O from the pressure drop measured in the most recent, compliant stack test. This is consistent with the RICE NESHAP regulations and assumes the system will have some variance overtime while still effectively controlling emissions.

EQUIs 23, 24 & 25 Engine Generators (SCR)

I. **Background**

a. Emissions Unit

Description:	Reciprocating Internal Combustion Engines
AQ Facility ID:	13900010
Facility:	Xcel Energy – Blue Lake, Shakopee, MN
Applicable Emission Units:	EQUI 23 Engine Generator 1/TREA 2 SCR
	EQUI 24 Engine Generator 2/TREA 4 SCR
	EQUI 25 Engine Generator 3/TREA 6 SCR

b. Applicable Regulation, Emission Limit and Monitoring Requirements

Emission Limits: Nitrogen Oxides (NO_x)

Limit/Basis	Pollutant	Regulatory Citation
≥95% control efficiency	NO_x	40 CFR 52.21(j)(BACT) Minn. R. 7007.3000

Monitoring Requirements: Reactor inlet temperature continuous monitoring and pressure drop continuous monitoring.

c. Control Technology

Selective Catalytic Reduction (SCR)

II. **Monitoring Approach**

I. Indicator	**Inlet Temperature Continuous Monitoring**	**Pressure Drop Continuous Monitoring**
Parameter	Reactor (SCR and Oxidation Catalyst, in series) Inlet Temperature (°F).	Pressure Drop across reactor (SCR and Oxidation Catalyst, in series) (inches of H_2O)
Measurement Approach	The inlet temperature to the reactor (SCR and Oxidation Catalyst, in series) is continuously monitored using a thermocouple. The thermocouple measures and communicates the temperature to the DAS for recording and reporting.	Pressure drop across the reactor is monitored via an inlet pressure transmitter and an outlet pressure transmitter. The transmitters measure and communicate inlet and outlet pressure to the DAS, where pressure drop is calculated and recorded.
II. Indicator Range	Reactor inlet temperature range of 484°F - 1350°F during normal operation on either dual-fuel or diesel. Excursions trigger an inspection, corrective action, and a reporting requirement.	pressure drop range of +/- 2.0 inches of H20 from the pressure drop range recorded during the most recent performance demonstrating compliance applicable limits. The limit only applies during periods of normal operation and does not apply during periods of startup, shutdown, or emergency operations. Excursions trigger an inspection, corrective action, and reporting requirement.
III. Performance Criteria		
A. Data Accuracy and Precision	The reactor inlet temperature is measured on a continuous basis using a thermocouple capable of providing accuracy within 4.5°F.	The inlet pressure transmitter and outlet pressure transmitter will be installed upstream of the SCR and downstream of the oxidation catalyst, respectively. Pressures will be measured on a continuous basis.
B. Verification of Operational Status	The emissions monitoring system will continuously monitor and track the functionality and output of the thermocouple.	The emissions monitoring system will continuously monitor and track the functionality and outputs of the pressure transmitters
C. QA/QC Practices and Criteria	Annual calibration of thermocouple (acceptance criteria: ±4.5°F).	Annual calibration of pressure transmitters.
D. Monitoring Frequency	Continuously	Continuously

E. Data Collection Procedures	The data acquisition system (DAS) records the temperature data.	The data acquisition system (DAS) records the inlet, outlet and differential pressure.
F. Averaging Period	1-hour average	1-hour average

III. **Monitoring Approach Justification**

a. Background

The pollutant specific emissions units (PSEUs) are three (3) Wartsila 20V34DF-B Reciprocating Internal Combustion Engines (RICE) that are capable of being operated on diesel fuel oil or with dual fuel (natural gas supplemented with diesel fuel oil). Each engine will be equipped with a reactor system that consists of a Selective Catalytic Reduction (SCR) system in series with an oxidation catalyst to control NO_x, CO, and VOC emissions. The monitoring approaches used here is to provide compliance assurance for NO_x emission limits by monitoring the reactor operations.

b. Rationale for Selecting Performance Indicators and Indicator Ranges

Inlet Temperature to Reactor

SCRs facilities conversion of NO_x in exhaust gas to nitrogen (N_2) and water (H_2O) with the aid of ammonia (NH_3) as a reactant. Aqueous urea is injected into the duct upstream of the SCR where it is converted to ammonia and carbon dioxide shown as follows:

$$(NH_2)_2CO + H_2O \longrightarrow 2NH_3 + CO_2$$

The SCR then reduces nitrogen oxides to N2 and H2O by the reactions as follows:

$$4NO + 4NH_3 + O_2 \longrightarrow 4N_2 + 6H_2O$$

$$4NO_2 + 4NH_3 \longrightarrow 4N_2 + 6H_2O + O_2$$

The temperature at the inlet to the SCR catalyst bed provides a good indication of catalytic reduction performance as it indicates the exhaust is at sufficient temperatures to initiate NOx reduction. Additionally, a high temperature limit is appropriate to ensure that the catalyst bed is not damaged. Therefore, the inlet temperature is the parameter that must be monitored to ensure reduction efficiency is achieved.

Pressure Drop across Reactor

Pressure drop across catalysts are a key indicator of SCR performance. Deposits of particulates from products of combustion can accumulate on the SCR catalyst bed, resulting in an increased pressure drop. These build-ups reduce the ability of the catalyst to effectively reduce NO_x.

c. Rationale for Selection of Indicator Ranges

Inlet Temperature to Reactor

Xcel Energy proposes an inlet temperature range to the reactor system of 484°F - 1350°F, to be monitored and recorded continuously, as required in facility air permit. The lower limit is the manufacturer's recommendation to achieve the 90% reduction in NO_x. Above 1350°F the catalyst bed can be thermally damaged.

Pressure Drop across Reactor

Xcel Energy proposes a pressure drop across the reactor system of ±2.0 inH_2O from the pressure drop measured in the most recent, compliant stack test. This is consistent with the RICE NESHAP regulations and assumes the system will have some variance overtime while still effectively controlling emissions.

Xcel Energy - Blue Lake
Permit Number 13900010-106
Technical Support Document

Attachment 4
Standard language evaluation

Updates to standard permit conditions

Whenever processing an air permit, MPCA staff evaluate if any standard permit language used in the current permit has been changed in our Tempo database since the last permit was issued. Staff then need to make a decision as to how to proceed for each revised standard condition, considering the following questions:

- Is the change relevant to this permit (or was it deleted/revised in the permit such that the change is not relevant)?
- If relevant, is the change important enough to incorporate at the first opportunity or can it wait for the next major amendment or reissuance?
- Can the change be made as part of a minor amendment, or does it require a major amendment/reissuance?
- If the change needs to be included, what is the most efficient mechanism for doing this? Reloading an entire set of standard conditions (referred to as a "profile") or directly editing the existing requirements?

Some of the following standard profiles appeared in the last permit and have changed since the last permit was issued in August 2024:

1. General Total Facility Requirements > Major NSR Facilities.
2. Modeling and Ambient Monitoring > Modeling - Criteria Pollutant >Have Modeled > With re-modeling requirements.
3. CEMS/COMS at Facility.
4. Construction Conditions > NSR.
5. Federal Requirements > 40 CFR pt. 63, subp. ZZZZ > Area, Existing, Compression Ignition > Emergency.
6. Minnesota Performance Stds > .2300 Internal Combustion Engines.
7. Construction Conditions > Equipment Dismantlement.
8. Federal Requirement > Acid Rain Affected Units.
9. Federal Requirement> NSPS > GG > NOx Limit (> 100 MMBtu/hr) > CEMS, water/steam injection, fuel sampling.
10. Federal Requirement > Transport Rule.
11. Performance Testing > Emission Rate Testing >Initial > Performance Tests > Particulates.
12. Performance Testing > Emission Rate Testing >Initial > Performance Tests > Volatile Organic Compounds.
13. Performance Testing > Emission Rate Testing >Initial > Performance Tests > Carbon Monoxide.
14. Performance Testing > Emission Rate Testing >Initial > Performance Tests > Nitrogen Oxides.
15. CEMS/COMS Audits > CEMS > Part 60.
16. CEMS/COMS PEMs > CEMS > Part 75.
17. CEMS/COMS Audits > CEMS > Part 75.
18. CEMS/COMS Audits > CEMS >Part 60.
19. CEMS/COMS PEMs > CEMS > Part 60.
20. Control Equipment > No CAM > Oxidizer, Catalytic - w/o CE rule > No ARM for Temperature.
21. Control Equipment > No CAM > Selective Catalytic Reduction.

Table A4-1 summarizes how the permit was or wasn't updated.

Table A4-1. Standard language evaluation

Where in the permit	Profile	Summary of standard language changes	Updated in permit?	If yes, how
TFAC 1	General Total Facility Requirements > Major NSR Facilities	Updates to current standard language, including new standard requirements banning TCE and requiring a summary of testing upon request.	Yes.	Reloaded Profile.
	Modeling and Ambient Monitoring > Modeling - Criteria Pollutant >Have Modeled > With re-modeling requirements	Updates to current standard language.	Yes.	Reloaded Profile.

Where in the permit	Profile	Summary of standard language changes	Updated in permit?	If yes, how
	CEMS/COMS at Facility	Updates to current standard language.	Yes.	Reloaded Profile.
COMG 2	Custom requirements	Updates to current standard language.	Yes	Manual formatting updates to match current agency style.
COMG 5	Source Specific Limits > Facility Wide > Emission Caps > HAPs	Updates to current standard language.	Yes	Manual formatting updates to match current agency style.
EQUIS 1, 2, 3, and 4	Construction Conditions > Equipment Dismantlement	Updates to current standard language.	Yes.	Reloaded Profile.
EQUI 5	Federal Requirements > 40 CFR pt. 63, subp. ZZZZ > Area, Existing, Compression Ignition > Emergency	Updates to current standard language.	Yes.	Reloaded the profile and applied the manual formatting updates to match current style.
	Minnesota Performance Stds > .2300 Internal Combustion Engines	Updates to current standard language.	Yes.	Reloaded Profile.
EQUIs 7 and 8	Federal Requirement > Acid Rain Affected Units	Moved the language profile from the group level to the individual unit level per current permit organization guidance.	Yes.	Associate and load update standard language profile.
	Federal Requirement> NSPS > GG >NOx Limit (> 100 MMBtu/hr) > CEMS, water/steam injection, fuel sampling	A new language profile has been added for these units under this permit action, as it was missing from the previous permit.	Yes	Associate and load update standard language profile.
	Federal Requirement > Transport Rule	Moved the language profile from the group level to the individual unit level per current permit organization guidance.	Yes.	Associate and load update standard language profile.
	Minnesota Performance Stds > .2300 Internal Combustion Engines	Updates to current standard language.	Yes.	Reloaded Profile.
	Performance Testing > Emission Rate Testing > Recuring > Performance Tests > Particulates	Updates to current standard language.	Yes.	Reloaded the profiles; completed formatting and wording updates to match current agency style, generalize MPCA compliance-response language, and update NOC wording.
	Performance Testing > Emission Rate Testing >Recuring > Performance Tests > Volatile Organic Compounds	Updates to current standard language.	Yes.	
EQUIs 9 and 11	CEMS/COMS Audits> CEMS > Part 60	Updates to current standard language.	Yes.	Associated and loaded the standard language profile for NO_X monitoring to comply with NSPS subp. GG.
	CEMS/COMS PEMs> CEMS > Part 75	Updates to current standard language.	Yes.	Replace custom language with profile standard language
	CEMS/COMS Audits> CEMS > Part 75	Updates to current standard language.	Yes.	Reloaded Profile.
EQUIs 10 and 12	CEMS/COMS Audits > CEMS >Part 60	Updates to current standard language.	Yes	Reloaded unit-level audit profiles and moved/loaded Pt 60 PEMs profiles to each unit. Manually added SIP citations to support the
	CEMS/COMS PEMs> CEMS > Part 60	Moved the language profile from the group level to the		

Where in the permit	Profile	Summary of standard language changes	Updated in permit?	If yes, how
		individual unit level per current permit organization guidance.		Minnesota CO monitoring limit.
EQUIs 23, 24, and 25	Federal Requirements > 40 CFR pt. 63, subp. ZZZZ > Regulated under pt. 60	Updates to current standard language.	Yes	Reloaded Profile.
	Minnesota Performance Stds > .2300 Internal Combustion Engines	Updates to current standard language.	Yes	Reloaded Profile.
	Performance Testing > Emission Rate Testing > Recuring Performance Tests > Particulates	Updates to current standard language.	Yes	Reloaded the profiles; completed formatting and wording updates to match current agency style, generalize MPCA compliance-response language, and update NOC wording.
	Performance Testing > Emission Rate Testing > Recuring Performance Tests > Carbon Monoxide	Updates to current standard language.	Yes	
	Performance Testing > Emission Rate Testing > Recuring Performance Tests > Nitrogen Oxides	Updates to current standard language.	Yes	
	Performance Testing > Emission Rate Testing > Recuring Performance Tests > Volatile Organic Compounds	Updates to current standard language.	Yes	
EQUIs 26, 27, 28, 29, and 43	Federal Requirements > 40 CFR pt. 63, subp. ZZZZ > Regulated under pt. 60	Updates to current standard language.	Yes	Reloaded Profile.
	Federal Requirements > NSPS >IIII > Emergency, NOT fire pump, 2007 and later model year, < 30 liters/cylinder > output >750 hp and <=3000 hp.	Updates to current standard language.	Yes	Reloaded the profile and applied manual formatting updates to align with approved language and correct an emission limit value.
	Minnesota Performance Stds > .2300 Internal Combustion Engines.	Updates to current standard language.	Yes	Reloaded Profile.
EQUIs 30 and 31	CEMS/COMS Audits > CEMS > Part 75	Updates to current standard language.	Yes	Reloaded the profile and manually updated it to include Minn. R. 7017.1020 citations and align with the most up-to-date language.
TREAs 1, 3, and 5	Control Equipment > No CAM > Oxidation Catalyst.	New language profile in this permit action, tweak language to include CAM standard language and CAM citations.	Yes	Replace custom language with profile standard language and Manual updates to change “shall” for “must” and NOC wording.
TREAs 2, 4, and 6	Control Equipment > No CAM > Selective Catalytic Reduction.	New language profile in this permit action, tweak language to include CAM standard language and CAM citations.	Yes	Replace custom language with profile standard language and Manual updates to change “shall” for “must” and NOC wording.

Xcel Energy - Blue Lake
Permit Number 13900010-106
Technical Support Document

Attachment 5
Notice of Compliance

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

April 2, 2026

Sent via email

Kelsey Suddard, Environmental Analyst
Xcel Energy - Blue Lake
1200 70th St S
Shakopee, MN 55379-2100

RE: Notice of Compliance and Verification of Test Results for the November 11-25, 2025, Carbon Monoxide, Nitrogen Oxides, Particulate Matter, PM < 10 microns, PM < 2.5 microns, Volatile Organic Compounds Performance Test of the Engine Generator 1 (EQUI 23), Engine Generator 2 (EQUI 24), Engine Generator 3 (EQUI 25) Pursuant to Air Emission Permit Number 13900010-105

Dear Kelsey Suddard:

The Minnesota Pollution Control Agency (MPCA) performance test staff reviewed the final test report for the performance test conducted at Xcel Energy - Blue Lake located in Shakopee, Minnesota. The test report was submitted January 26, 2026. The supporting operating data was submitted February 3-18, 2026.

Summary of performance test results

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 1 EQUI 23 **AOS 1 – Natural Gas** (High Load)	Nitrogen Oxides (NOx): ≤ 1.0 grams per horsepower-hour (g/HP-hr) (1.36 grams per kilowatt-hour (g/kW-hr)) when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	NOx: 0.03 g/HP-hr	Compliant
		NOx: 0.04 g/kW-hr	Compliant
	NOx: ≤ 0.07 g/HP-hr 24-hour rolling average (0.09 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.03 g/HP-hr	Compliant
		NOx: 0.04 g/HP-hr	Compliant
	NOx: ≤ 1.65 pounds per hour (lb/hr) 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.76 lb/hr	Compliant
	Carbon Monoxide (CO): ≤ 2.0 g/HP-hr (2.72 g/kW-hr) when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	CO: 0.01 g/HP-hr	Compliant
		CO: 0.01 g/kW-hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 1 EQUI 23 **AOS 1 – Natural Gas** (High Load)	CO: ≤ 0.10 g/HP-hr 24-hour rolling average (0.13 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.01 g/HP-hr	Compliant
		CO: 0.01 g/kW-hr	Compliant
	CO: ≤ 2.51 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.21 lb/hr	Compliant
	Volatile Organic Compounds (VOCs): ≤ 0.7 g/HP-hr (0.95 g/kW-hr), not including formaldehyde (CH_2O), when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	VOCs: 0.09 g/HP-hr	Compliant
		VOCs: 0.11 g/kW-hr	Compliant
	VOCs: ≤ 0.13 g/HP-hr 24-hour rolling average (as methane (CH_4), 0.17 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.07 g/HP-hr	Compliant
		VOCs: 0.10 g/kW-hr	Compliant
	VOCs: ≤ 3.26 lb/hr 3-hour average (as CH_4) when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 1.98 lb/hr	Compliant
	PM, PM_{10}, $PM_{2.5}$: ≤ 2.01 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.114 lb/hr	Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.07 g/HP-hr 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.004 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.006 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 1 – Natural Gas** (High Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 685.1°F	Compliant
	dP: ≤ 2.0 inches of water (in. H_2O). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 12.7 in. H_2O	Verified
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 1 – Natural Gas** (High Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 691.9°F	Compliant
	dP: ≤ 2.0 inches of water (in. H_2O). [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 12.5 in. H_2O	Verified

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 1 EQUI 23 **AOS 1 – Natural Gas** (Low Load)	NOx: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.04 g/HP-hr	Compliant
		NOx: 0.06 g/kW-hr	Compliant
	NOx: ≤ 1.65 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.48 lb/hr	Compliant
	CO: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 g/HP-hr	Compliant
		CO: 0.00 g/kW-hr	Compliant
	CO: ≤ 2.51 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 lb/hr	Compliant
	VOCs: ≤ 0.22 g/HP-hr 24-hour rolling average (as CH_4, 0.30 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.03 g/HP-hr	Compliant
		VOCs: 0.04 g/kW-hr	Compliant
	VOCs: ≤ 3.26 lb/hr 3-hour average (as CH_4) when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.37 lb/hr	Compliant
	PM, PM_{10}, $PM_{2.5}$: ≤ 2.01 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.252 lb/hr	Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.12 g/HP-hr 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.023 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.031 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 1 – Natural Gas** (Low Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 828.3°F	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 1 – Natural Gas** (Low Load) PM, PM_{10}, $PM_{2.5}$ Test		Temperature: 830.4°F	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 1 EQUI 23 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	NOx: ≤ 0.39 g/HP-hr 24-hour rolling average (0.53 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.15 g/HP-hr	Compliant
		NOx: 0.21 g/kW-hr	Compliant
	NOx: ≤ 6.7 * n^-0.20 g/HP-hr or NOx ≤ 9.0 * n^-0.20 g/kW-hr where (n = max engine speed of 720 rpm). This limit applies when operating in AOS 2. **Limit calculated to 1.80 g/HP-hr OR 2.41 g/kW-hr.** [40 CFR 60.4204(c)(3)(ii), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]	NOx: 0.15 g/HP-hr	Compliant
		NOx: 0.21 g/kW-hr	Compliant
	NOx: ≤ 10.86 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]	NOx: 4.25 lb/hr	Compliant
	CO: ≤ 0.14 g/HP-hr 24-hour rolling average (0.19 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00986 g/HP-hr	Compliant
		CO: 0.01 g/kW-hr	Compliant
	CO: ≤ 3.78 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.27 lb/hr	Compliant
	VOCs: ≤ 0.15 g/HP-hr 24-hour rolling average (as CH_4, 0.21 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.03 g/HP-hr	Compliant
		VOCs: 0.04 g/kW-hr	Compliant
	VOCs: ≤ 4.33 lb/hr 3-hour average (as CH_4) when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.73 lb/hr	Compliant
	PM: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr). This limit applies when operating in AOS 2 at ≥ 75% load. [40 CFR 60.4204(c)(4), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM: 0.049 g/HP-hr	Compliant
		PM: 0.066 g/kW-hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 1 EQUI 23 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	PM, PM_{10}: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 1.356 lb/hr	Compliant
	$PM_{2.5}$: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]		Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.16 g/HP-hr 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.049 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.066 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 594.2°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 28.0 in. H_2O*	Verified
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 596.3°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 28.0 in. H_2O*	Verified
Engine Generator 1 EQUI 23 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load)	NOx: ≤ 0.49 g/HP-hr 24-hour rolling average (0.66 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.06 g/HP-hr	Compliant
		NOx: 0.08 g/kW-hr	Compliant
	NOx: ≤ 10.86 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]	NOx: 0.64 lb/hr	Compliant
	CO: ≤ 0.15 g/HP-hr 24-hour rolling average (0.20 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00273 g/HP-hr	Compliant
		CO: 0.00366 g/kW-hr	Compliant
	CO: ≤ 3.78 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.03 lb/hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 1 EQUI 23 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load)	VOCs: ≤ 0.17 g/HP-hr 24-hour rolling average (as CH_4, 0.23 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.03 g/HP-hr	Compliant
		VOCs: 0.04 g/kW-hr	Compliant
	VOCs: ≤ 4.33 lb/hr 3-hour average (as CH_4) when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.32 lb/hr	Compliant
	PM, PM_{10}: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 1.261 lb/hr	Compliant
	$PM_{2.5}$: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]		Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.24 g/HP-hr 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.114 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.153 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 792.8°F	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 1 & 2 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load) PM, PM_{10}, $PM_{2.5}$ Test		Temperature: 798.3°F	Compliant
Engine Generator 2 EQUI 24 **AOS 1 – Natural Gas** (High Load)	NOx: ≤ 1.0 g/HP-hr (1.36 g/kW-hr) when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	NOx: 0.02 g/HP-hr	Compliant
		NOx: 0.03 g/kW-hr	Compliant
	NOx: ≤ 0.07 g/HP-hr 24-hour rolling average (0.09 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.02 g/HP-hr	Compliant
		NOx: 0.03 g/kW-hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 2 EQUI 24 **AOS 1 – Natural Gas** (High Load)	NOx: ≤ 1.65 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.62 lb/hr	Compliant
	CO: ≤ 2.0 g/HP-hr (2.72 g/kW-hr) when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	CO: 0.00 g/HP-hr	Compliant
		CO: 0.00 g/kW-hr	Compliant
	CO: ≤ 0.10 g/HP-hr 24-hour rolling average (0.13 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 g/HP-hr	Compliant
		CO: 0.00 g/kW-hr	Compliant
	CO: ≤ 2.51 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 lb/hr	Compliant
	VOCs: ≤ 0.7 g/HP-hr (0.95 g/kW-hr), not including CH_2O, when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	VOCs: 0.07 g/HP-hr	Compliant
		VOCs: 0.09 g/kW-hr	Compliant
	VOCs: ≤ 0.13 g/HP-hr 24-hour rolling average (as CH_4, 0.17 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.06 g/HP-hr	Compliant
		VOCs: 0.08 g/kW-hr	Compliant
	VOCs: ≤ 3.26 lb/hr 3-hour average (as CH_4) when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 1.63 lb/hr	Compliant
	PM, PM_{10}, $PM_{2.5}$: ≤ 2.01 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.079 lb/hr	Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.07 g/HP-hr 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.0029 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.0039 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalyst Reduction TREAs 3 & 4 **AOS 1 – Natural Gas** (High Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 682.5°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 12.6 in. H_2O	Verified

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Oxidation Catalyst & Selective Catalyst Reduction TREAs 3 & 4 **AOS 1 – Natural Gas** (High Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 687.4°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 12.4 in. H_2O	Verified
Engine Generator 2 EQUI 24 **AOS 1 – Natural Gas** (Low Load)	NOx: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.03 g/HP-hr	Compliant
		NOx: 0.05 g/kW-hr	Compliant
	NOx: ≤ 1.65 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.38 lb/hr	Compliant
	CO: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 g/HP-hr	Compliant
		CO: 0.00 g/kW-hr	Compliant
	CO: ≤ 2.51 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 lb/hr	Compliant
	VOCs: ≤ 0.22 g/HP-hr 24-hour rolling average (as CH_4, 0.30 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.10 g/HP-hr	Compliant
		VOCs: 0.14 g/kW-hr	Compliant
	VOCs: ≤ 3.26 lb/hr 3-hour average (as CH_4) when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 1.15 lb/hr	Compliant
	PM, PM_{10}, $PM_{2.5}$: ≤ 2.01 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.066 lb/hr	Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.12 g/HP-hr 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.006 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.008 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 3 & 4 **AOS 1 – Natural Gas** (Low Load) NOx, CO, VOCs Test	Temperature ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 734.1°F	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Oxidation Catalyst & Selective Catalytic Reduction TREAs 3 & 4 **AOS 1 – Natural Gas** (Low Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 732.1°F	Compliant
Engine Generator 2 EQUI 24 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	NOx: ≤ 0.39 g/HP-hr 24-hour rolling average (0.53 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.25 g/HP-hr	Compliant
		NOx: 0.33 g/kW-hr	Compliant
	NOx: ≤ 6.7 * n^-0.20 g/HP-hr or NOx ≤ 9.0 * n^-0.20 g/kW-hr where (n = max engine speed of 720 rpm). This limit applies when operating in AOS 2. **Limit calculated to 1.80 g/HP-hr OR 2.41 g/kW-hr.** [40 CFR 60.4204(c)(3)(ii), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]	NOx: 0.25 g/HP-hr	Compliant
		NOx: 0.33 g/kW-hr	Compliant
	NOx: ≤ 10.86 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]	NOx: 6.83 lb/hr	Compliant
	CO: ≤ 0.14 g/HP-hr 24-hour rolling average (0.19 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.01 g/HP-hr	Compliant
		CO: 0.01 g/kW-hr	Compliant
	CO: ≤ 3.78 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.29 lb/hr	Compliant
	VOCs: ≤ 0.15 g/HP-hr 24-hour rolling average (as CH_4, 0.21 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.03 g/HP-hr	Compliant
		VOCs: 0.04 g/kW-hr	Compliant
	VOCs: ≤ 4.33 lb/hr 3-hour average (as CH_4) when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.75 lb/hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 2 EQUI 24 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	PM, PM_{10}: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.507 lb/hr	Compliant
	$PM_{2.5}$: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]		Compliant
	PM: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr). This limit applies when operating in AOS 2 at ≥ 75% load. [40 CFR 60.4204(c)(4), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM: 0.018 g/HP-hr	Compliant
		PM: 0.024 g/kW-hr	Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.16 g/HP-hr 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.018 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.024 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 3 & 4 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 591.4°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 35.5 in. H_2O*	Verified
Oxidation Catalyst & Selective Catalytic Reduction TREAs 3 & 4 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 591.7°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 35.4 in. H_2O*	Verified
Engine Generator 2 EQUI 24 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load)	NOx: ≤ 0.49 g/HP-hr 24-hour rolling average (0.66 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.02 g/HP-hr	Compliant
		NOx: 0.02 g/kW-hr	Compliant
	NOx: ≤ 10.86 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]	NOx: 0.19 lb/hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 2 EQUI 24 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load)	CO: ≤ 0.15 g/HP-hr 24-hour rolling average (0.20 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00406 g/HP-hr	Compliant
		CO: 0.00545 g/kW-hr	Compliant
	CO: ≤ 3.78 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.04 lb/hr	Compliant
	VOCs: ≤ 0.17 g/HP-hr 24-hour rolling average (as CH_4, 0.23 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.03 g/HP-hr	Compliant
		VOCs: 0.04 g/kW-hr	Compliant
	VOCs: ≤ 4.33 lb/hr 3-hour average (as CH_4) when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.29 lb/hr	Compliant
	PM, PM_{10}: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.741 lb/hr	Compliant
	$PM_{2.5}$: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]		Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.24 g/HP-hr 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.067 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.090 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 3 & 4 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 790.5°F	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 3 & 4 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load) PM, PM_{10}, $PM_{2.5}$ Test		Temperature: 785.7°F	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 3 EQUI 25 **AOS 1 – Natural Gas** (High Load)	NOx: ≤ 1.0 g/HP-hr (1.36 g/kW-hr) when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	NOx: 0.02 g/HP-hr	Compliant
		NOx: 0.03 g/kW-hr	Compliant
	NOx: ≤ 0.07 g/HP-hr 24-hour rolling average (0.09 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.02 g/HP-hr	Compliant
		NOx: 0.03 g/kW-hr	Compliant
	NOx: ≤ 1.65 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.65 lb/hr	Compliant
	CO: ≤ 2.0 g/HP-hr (2.72 g/kW-hr) when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	CO: 0.00772 g/HP-hr	Compliant
		CO: 0.010 g/kW-hr	Compliant
	CO: ≤ 0.10 g/HP-hr 24-hour rolling average (0.13 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00772 g/HP-hr	Compliant
		CO: 0.010 g/kW-hr	Compliant
	CO: ≤ 2.51 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.21 lb/hr	Compliant
	VOCs: ≤ 0.7 g/HP-hr (0.95 g/kW-hr), not including CH_2O, when operating in AOS 1. [40 CFR 60.4233(e), 40 CFR 63.6590(c), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2310, Minn. R. 7011.8150]	VOCs: 0.08 g/HP-hr	Compliant
		VOCs: 0.11 g/kW-hr	Compliant
	VOCs: ≤ 0.13 g/HP-hr 24-hour rolling average (as CH_4, 0.17 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.07 g/HP-hr	Compliant
		VOCs: 0.10 g/kW-hr	Compliant
	VOCs: ≤ 3.26 lb/hr 3-hour average (as CH_4) when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 1.93 lb/hr	Compliant
	PM, PM_{10}, $PM_{2.5}$: ≤ 2.01 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.298 lb/hr	Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.07 g/HP-hr 24-hour rolling average (0.10 g/kW-hr) when operating in AOS 1 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.011 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.015 g/kW-hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 1 – Natural Gas** (High Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 698.8°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 12.5 in. H_2O	Verified
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 1 – Natural Gas** (High Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 695.6°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 12.3 in. H_2O	Verified
Engine Generator 3 EQUI 25 **AOS 1 – Natural Gas** (Low Load)	NOx: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.03 g/HP-hr	Compliant
		NOx: 0.04 g/kW-hr	Compliant
	NOx: ≤ 1.65 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.36 lb/hr	Compliant
	CO: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00132 g/HP-hr	Compliant
		CO: 0.00176 g/kW-hr	Compliant
	CO: ≤ 2.51 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.01 lb/hr	Compliant
	VOCs: ≤ 0.22 g/HP-hr 24-hour rolling average (as CH_4, 0.30 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.13 g/HP-hr	Compliant
		VOCs: 0.17 g/kW-hr	Compliant
	VOCs: ≤ 3.26 lb/hr 3-hour average (as CH_4) when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 1.39 lb/hr	Compliant
	PM, PM_{10}, $PM_{2.5}$: ≤ 2.01 lb/hr 3-hour average when operating in AOS 1 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.141 lb/hr	Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.12 g/HP-hr 24-hour rolling average (0.16 g/kW-hr) when operating in AOS 1 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.013 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.017 g/kW-hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 1 – Natural Gas** (Low Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 775.7°F	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 1 – Natural Gas** (Low Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 765.3°F	Compliant
Engine Generator 3 EQUI 25 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	NOx: ≤ 0.39 g/HP-hr 24-hour rolling average (0.53 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.20 g/HP-hr	Compliant
		NOx: 0.26 g/kW-hr	Compliant
	NOx: ≤ 6.7 * n^-0.20 g/HP-hr or NOx ≤ 9.0 * n^-0.20 g/kW-hr where (n = max engine speed of 720 rpm). This limit applies when operating in AOS 2. **Limit calculated to 1.80 g/HP-hr OR 2.41 g/kW-hr.** [40 CFR 60.4204(c)(3)(ii), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150]	NOx: 0.20 g/HP-hr	Compliant
		NOx: 0.26 g/kW-hr	Compliant
	NOx: ≤ 10.86 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]	NOx: 5.42 lb/hr	Compliant
	CO: ≤ 0.14 g/HP-hr 24-hour rolling average (0.19 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00349 g/HP-hr	Compliant
		CO: 0.00468 g/kW-hr	Compliant
	CO: ≤ 3.78 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.10 lb/hr	Compliant
	VOCs: ≤ 0.15 g/HP-hr 24-hour rolling average (as CH_4, 0.21 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.0101 g/HP-hr	Compliant
		VOCs: 0.0136 g/kW-hr	Compliant
	VOCs: ≤ 4.33 lb/hr 3-hour average (as CH_4) when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.28 lb/hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 3 EQUI 25 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	PM: ≤ 0.11 g/HP-hr 24-hour rolling average (0.15 g/kW-hr). This limit applies when operating in AOS 2 at ≥ 75% load. [40 CFR 60.4204(c)(4), 40 CFR 63.6590(c), Minn. R. 7007.0800, subp. 11, Minn. R. 7011.2305, Minn. R. 7011.8150, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM: 0.033 g/HP-hr	Compliant
		PM: 0.044 g/kW-hr	Compliant
	PM, PM_{10}: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.903 lb/hr	Compliant
	$PM_{2.5}$: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]		Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.16 g/HP-hr 24-hour rolling average (0.22 g/kW-hr) when operating in AOS 2 and ≥ 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.033 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.044 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 592.5°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 14.0 in. H_2O	Verified
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load) PM, PM_{10}, $PM_{2.5}$ Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 592.3°F	Compliant
	dP: ≤ 2.0 in. H_2O. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	dP: 13.9 in. H_2O	Verified
Engine Generator 3 EQUI 25 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load)	NOx: ≤ 0.49 g/HP-hr 24-hour rolling average (0.66 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	NOx: 0.08 g/HP-hr	Compliant
		NOx: 0.11 g/kW-hr	Compliant
	NOx: ≤ 10.86 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]	NOx: 0.86 lb/hr	Compliant

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Engine Generator 3 EQUI 25 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load)	CO: ≤ 0.15 g/HP-hr 24-hour rolling average (0.20 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 g/HP-hr	Compliant
		CO: 0.00 g/kW-hr	Compliant
	CO: ≤ 3.78 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	CO: 0.00 lb/hr	Compliant
	VOCs: ≤ 0.17 g/HP-hr 24-hour rolling average (as CH_4, 0.23 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.0104 g/HP-hr	Compliant
		VOCs: 0.0140 g/kW-hr	Compliant
	VOCs: ≤ 4.33 lb/hr 3-hour average (as CH_4) when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	VOCs: 0.12 lb/hr	Compliant
	PM, PM_{10}: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM, PM_{10}, $PM_{2.5}$: 0.741 lb/hr	Compliant
	$PM_{2.5}$: ≤ 4.76 lb/hr 3-hour average when operating in AOS 2 in normal operation. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000, Title I Condition: 40 CFR 52.21(k)(modeling) and Minn. R. 7007.3000]		Compliant
	PM_{10}, $PM_{2.5}$: ≤ 0.24 g/HP-hr 24-hour rolling average (0.32 g/kW-hr) when operating in AOS 2 and < 75% load. [Minn. R. 7007.0800, subp. 11, Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	PM_{10}, $PM_{2.5}$: 0.067 g/HP-hr	Compliant
		PM_{10}, $PM_{2.5}$: 0.090 g/kW-hr	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load) NOx, CO, VOCs Test	Temperature: ≥ 484 and ≤ 1,350°F. [Title I Condition: 40 CFR 52.21(j)(BACT) and Minn. R. 7007.3000]	Temperature: 793.0°F	Compliant
Oxidation Catalyst & Selective Catalytic Reduction TREAs 5 & 6 **AOS 2 – Ultra-Low Sulfur Diesel** (Low Load) PM, PM_{10}, $PM_{2.5}$ Test		Temperature: 793.4°F	Compliant

*__Note__: the facility's data acquisition system and the engine manufacturer's control system were incorrectly scaled for pressure drop, leading to inaccurate pressure drop readings on EQUIs 23 & 24 while operating in AOS 2 during the high load tests.

Emission unit operating rate

Emission unit tested	Pollutant(s) tested	Fuel type combusted	Load Level	Fuel combustion rate	Operating rate (MW)
Engine Generator 1 EQUI 23	NOx, CO, VOCs	Natural Gas	High	77,413.2 SCFH	9.348
			Low	35,960.4 SCFH	3.748
		Ultra-Low Sulfur Diesel	High	9.20 gpm	9.344
			Low	4.22 gpm	3.738
	PM, PM_{10}, $PM_{2.5}$	Natural Gas	High	76,923.3 SCFH	9.359
			Low	35,960.4 SCFH	3.746
		Ultra-Low Sulfur Diesel	High	9.20 gpm	9.344
			Low	4.22 gpm	3.738
Engine Generator 2 EQUI 24	NOx, CO, VOCs	Natural Gas	High	77,023.9 SCFH	9.358
			Low	35,473.8 SCFH	3.753
		Ultra-Low Sulfur Diesel	High	9.21 gpm	9.351
			Low	4.23 gpm	3.744
	PM, PM_{10}, $PM_{2.5}$	Natural Gas	High	76,655.8 SCFH	9.363
			Low	35,412.0 SCFH	3.743
		Ultra-Low Sulfur Diesel	High	9.21 gpm	9.350
			Low	4.22 gpm	3.743
Engine Generator 3 EQUI 25	NOx, CO, VOCs	Natural Gas	High	77,763.8 SCFH	9.364
			Low	35,671.1 SCFH	3.756
		Ultra-Low Sulfur Diesel	High	9.13 gpm	9.376
			Low	3.96 gpm	3.723
	PM, PM_{10}, $PM_{2.5}$	Natural Gas	High	78,009.2 SCFH	9.370
			Low	35,568.4 SCFH	3.756
		Ultra-Low Sulfur Diesel	High	9.05 gpm	9.378
			Low	4.02 gpm	3.725

APC operating rate

Emission unit	Pollutant(s) tested	Fuel type combusted	Load level	Urea injection rate (gph)	dP (in. H_2O)*
Engine Generator 1 EQUI 23	NOx, CO, VOCs	Natural Gas	High	3.0	
			Low	3.4	6.3
		Ultra-Low Sulfur Diesel	High	45.6	
			Low	30.5	14.3
	PM, PM_{10}, $PM_{2.5}$	Natural Gas	High	3.7	
			Low	3.3	6.3
		Ultra-Low Sulfur Diesel	High	45.4	
			Low	30.5	13.3
Engine Generator 2 EQUI 24	NOx, CO, VOCs	Natural Gas	High	3.9	
			Low	5.4	6.5
		Ultra-Low Sulfur Diesel	High	47.5	
			Low	31.1	7.1
	PM, PM_{10}, $PM_{2.5}$	Natural Gas	High	4.8	
			Low	5.4	6.6
		Ultra-Low Sulfur Diesel	High	47.6	
			Low	31.0	12.7
Engine Generator 3 EQUI 25	NOx, CO, VOCs	Natural Gas	High	3.3	
			Low	4.4	7.0
		Ultra-Low Sulfur Diesel	High	47.9	
			Low	31.8	5.3
	PM, PM_{10}, $PM_{2.5}$	Natural Gas	High	3.1	
			Low	4.2	6.7
		Ultra-Low Sulfur Diesel	High	47.9	
			Low	31.5	5.3

***Note**: the pressure drop results during the high load tests while operating in AOS 1 & 2 are under the Summary of Performance Test Results table.

These parameters are within the ranges defined in the approved test plan except as indicated in Item 3 of this letter. Operating limits based on these conditions are defined in Item 1 of this letter.

In addition, please be advised of the following:

1. The following operating limit applies pursuant to Minn. R. 7017.2025, subp. 3. This limit supersedes any previous operating limit in the permit and does not serve to relax any other limit or requirement. This letter grants preliminary instruction to operate at the new rate. The limit is final upon issuance of a permit amendment incorporating the change.

Emission unit	Operating limit and averaging method
Oxidation Catalyst – TREA 1 **AOS 1 – Natural Gas** (High Load)	dP: ≥ 10.7 and ≤ 14.7 in. H_2O 1-hr average when operating at 100% load ± 10% in AOS 1 based on the average dP during the NOx test. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations.*
Selective Catalytic Reduction – TREA 2 **AOS 1 – Natural Gas** (High Load)	
Oxidation Catalyst – TREA 1 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	dP: ≥ 12.0 and ≤ 16.0 in. H_2O 1-hr average when operating at 100% load ± 10% in AOS 2 based on the average dP during the NOx test on EQUI 25.** This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations.*
Selective Catalytic Reduction – TREA 2 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	
Oxidation Catalyst – TREA 3 **AOS 1 – Natural Gas** (High Load)	dP: ≥ 10.6 and ≤ 14.6 in. H_2O 1-hr average when operating at 100% load ± 10% in AOS 1 based on the average dP during the NOx test. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations.*
Selective Catalyst Reduction – TREA 4 **AOS 1 – Natural Gas** (High Load)	
Oxidation Catalyst – TREA 3 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	dP: ≥ 12.0 and ≤ 16.0 in. H_2O 1-hr average when operating at 100% load ± 10% in AOS 2 based on the average dP during the NOx test on EQUI 25.** This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations.*
Selective Catalytic Reduction – TREA 4 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	
Oxidation Catalyst – TREA 5 **AOS 1 – Natural Gas** (High Load)	dP: ≥ 10.5 and ≤ 14.5 in. H_2O 1-hr average when operating at 100% load ± 10% in AOS 1 based on the average dP during the NOx test. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations.*
Selective Catalytic Reduction – TREA 6 **AOS 1 – Natural Gas** (High Load)	
Oxidation Catalyst – TREA 5 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	dP: ≥ 12.0 and ≤ 16.0 in. H_2O 1-hr average when operating at 100% load ± 10% in AOS 2 based on the average dP during the NOx test. This requirement applies during normal operation only and does not apply during startup, shutdown, or emergency operations.*
Selective Catalytic Reduction – TREA 6 **AOS 2 – Ultra-Low Sulfur Diesel** (High Load)	

***Note**: the pressure drop limits apply during normal operation only and do not apply during startup, shutdown, or emergency operations. However, in the event that the MPCA rejects Xcel's updated CAM Plan excluding startup, shutdown, or emergency operations from the pressure drop limit requirements in the permit no. 13900010-106, the pressure drop limits will apply during all periods of operation.

Note: the scaling issues on the facility's data acquisition system and the engine manufacturer's control system led to inaccurate pressure drop data on EQUIs 23 & 24 during the high load tests while combusting ultra-low sulfur diesel (AOS 2). The high load test on EQUI 25 in AOS 2 was conducted after the scaling issues were resolved. Since EQUIs 23-25 are like-kind engines with similar pressure drop results by load level and fuel type, the pressure drop limits for EQUIs 23 & 24 at high load when in AOS 2 are determined based on the average pressure drop test result from EQUI 25 when operating at high load in AOS 2.

The Regulated Party may not operate an emission unit at a less stringent rate than that listed in the table above unless it conducts a performance test at an alternate rate, MPCA performance test staff determines compliance at that rate for the emission unit, and a Notice of Compliance with approval to operate at the new rate is received.

Ongoing compliance with the operating limit will be determined using the same data acquisition and reduction as was used during the performance test. If an operating limit is exceeded, it must be reported in accordance with the deviation reporting requirements of Minn. R. 7007.0800, subp. 6(A).

2. The Emission Inventory rule, Minn. R. 7019.3000 to 7019.3100, requires the calculation of emissions based on an established hierarchy. In the absence of Continuous Emission Monitor data meeting the requirements of Minn. R. 7019.3040, a performance test must be used. When a performance test for particulate matter, carbon monoxide, nitrogen oxides, sulfur oxides, volatile organic compounds or lead is conducted and meets the requirements of Minn. R. 7017.2001 to 7017.2060, the results must be used to calculate emissions, unless specified otherwise by Minn. R. 7019.3000 to 7019.3100. It is the Regulated Party's responsibility to ensure the results of performance tests are accounted for in their annual emission inventory submittal. Note that the final decision to approve the emission factor for any given inventory year will be made by the MPCA Emission Inventory Coordinator.

3. The operating conditions during the test deviated from the approved test plan as follows: the test plan indicated that three test runs would be conducted on EQUI 25 while operating in AOS 1 at high load to determine the NOx, CO, and VOC results. However, four test runs were conducted. A performance guarantee/criteria test was conducted concurrently with the compliance test runs on EQUI 25 for this test. During run 1, the TO-15 summa canister required by the performance guarantee/criteria test was at the exit/exhaust of the FTIR and was in place before the pre-spike and during the post-spike of run 1. This potentially caused dilution of the summa canister, which made the run 1 data unusable for the performance guarantee/criteria test. Thus, an additional test run was conducted on EQUI 25 to satisfy the performance guarantee/criteria test requirements. Since all four test runs contain valid compliance data, the 4-run average is used to report the NOx, CO, and VOC results for EQUI 25 while operating in AOS 1 at high load.

4. The tests on EQUIs 23-25 for PM10, PM2.5, CO, and VOCs were conducted more than 60 days prior to the performance test due dates in the permit. Future performance tests will be reset based on these test dates of November 25, 2025, November 20, 2025, and November 21, 2025, for EQUIs 23-25 respectively, at the frequency of every 60 months.

The tests on EQUIs 23-25 for PM and NOx were conducted more than 60 days prior to the performance test due dates in the permit. Future performance tests will be reset based on these test dates of November 25, 2025, November 20, 2025, and November 21, 2025, for EQUIs 23-25 respectively, at the frequency of every 12 months.

If you have questions or comments regarding the content of this letter, please contact me at 651-757-2582 or Rebecca.Settle@state.mn.us.

Sincerely,

Rebecca D. Settle

This document has been electronically signed.

Rebecca D. Settle
Environmental Specialist
Industrial Division

RDS:rc

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