TECHNICAL SUPPORT DOCUMENT
For
DRAFT/PROPOSED AIR EMISSION PERMIT NO. 16300087-006

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/proposed 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)
LSP Cottage Grove, L.P. 9525 105th Street Court South Cottage Grove, MN 55016	LSP Cottage Grove Cogeneration Facility 9525 105th Street Court South Cottage Grove Washington County
Contact: Charlene Tuck Phone: 651-459-8339	

1.2 Facility Description

The LSP Cottage Grove Cogeneration Facility (facility) is an existing combined cycle steam-electric cogeneration facility. The facility consists of a 245 megawatt Westinghouse 501F combined cycle Combustion Turbine Generator (CTG) designed to provide electrical energy to Xcel Energy and to supply thermal energy as steam to an off-site customer. The CTG can burn either natural gas or distillate fuel oil, and is equipped with a heat recovery steam generator with Duct Burner (DB). There are also two identical natural gas- and distillate oil-fired auxiliary boilers each with a heat input capacity of 114 mmBtu/hr, a distillate oil storage tank, an emergency fire pump diesel engine, an emergency diesel generator, a fuel gas heater, and a cooling tower.

An oxidation catalyst and Selective Catalytic Reduction (SCR) are used for the control of CTG/DB carbon monoxide (CO) and nitrogen oxides (NO_X), respectively. The CTG operates in lean pre-mix mode (after startup) when combusting natural gas by using dry low-NO_X combustion. Water injection into the CTG combustor is used for NO_X control when combusting fuel oil.

CTG/DB NO_X and CO emissions are monitored with continuous emissions monitoring systems (CEMS). Each auxiliary boiler has a NO_X predictive emissions monitoring system (PEMS) and a continuous opacity monitoring system (COMS).

The facility was constructed at a time (mid 1990s) when the location was designated nonattainment for CO and sulfur dioxide (SO_2). As a result, the facility is subject to a non-expiring Title I federally enforceable 99.0 ton per year CO limit to avoid classification as a major source of CO according to 40 CFR pt. 51, Appendix S as well as modeling-based limits for SO_2 to reduce ambient SO_2 impacts. Even though the area is no longer classified as nonattainment, these limits remain in effect.

The facility is also subject to Acid Rain rules.

1.3 Description of any Changes Allowed with this Permit Issuance

This permit action is a Total Facility Operating Permit reissuance. No physical changes or changes in the method of operation are authorized through this permit action. No significant changes have been made to the requirements in the permit. However, the MPCA has a combined operating and construction permitting program under Minnesota

Rules Chapter 7007, and under Minn. R. 7007.0800, the MPCA has authority to include additional requirements in a permit. Under that authority, the following additional changes to the permit are made through this permit action:

- updated to reflect current MPCA templates and standard citation formatting;
- completed requirements and the requirements for equipment that has been removed have been deleted;
- some requirements have been reordered to help with clarity (i.e., similar requirements are grouped);and
- requirements have been updated to reflect revisions to NSPS standards for boilers and combustion turbines.

1.4 Description of All Amendments Issued Since the Issuance of the Last Total Facility Permit

- 16300087-004; July 12, 2005: Administrative amendment, for extension of required testing dates
- 16300087-005; July 16, 2010: Major amendment, for revision of CO limits based on modeling

1.5 Facility Emissions:

Table 2. 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	175.1	148.9	148.9	65.6	349.2	99.0	392,100	48.0	6.4	13.4
Total Facility Actual Emissions (2011)	0.7	0.56	NR	0.64	24.4	44.4	NR	0.78	NR	

NR = Not reported in 2011 emission inventory, which is the most recent QA/QC'd inventory.

Table 3. Facility Classification

Classification	Major/Affected Source	Synthetic Minor/Area	Minor/Area
PSD	NO_X, PM, PM_{10}, $PM_{2.5}$, H_2SO_4,	CO, SO_2	VOC, CO_2e
Part 70 Permit Program	NO_X, PM, PM_{10}, $PM_{2.5}$, CO_2e	CO, SO_2	VOC, HAPs
Part 63 NESHAP			Area

2. Regulatory and/or Statutory Basis

2.1 New Source Review (NSR)

The facility is an existing major source under New Source Review, and this permit action does not change this status.

The facility is subject to a non-expiring 99.0 ton per year (365-day rolling sum) Title I Total Facility CO limit. LSP agreed to accept the limit to avoid classification as a major source in a nonattainment area according to 40 CFR pt. 51 Appendix S. Although the area is no longer classified as nonattainment, the CO limit remains in the permit.

Since there are no proposed increases in greenhouse gases (GHG) (measured as carbon dioxide equivalents, CO_2e) due to this permit action, GHGs are not subject to regulation (as defined in 40 CFR § 52.21(b)(49)) and the facility is not major for GHG (for purposes of NSR) at this time.

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)

40 CFR Subpart Da, Standards of Performance for Electric Utility Steam Generating Units

EU002 is subject to the requirements of Subpart Da. EU002 is not subject to the PM and opacity standards of Subpart Da, because it burns only gaseous fuel with potential SO_2 emissions less than 0.060 lb/MMBtu and does not use post combustion controls for SO_2 or PM (40 CFR § 60.42Da(f)(1)).

EU002 is subject to NO_X and SO_2 emission limits under Subpart Da. The rule provides that NO_X monitoring required under 40 CFR Part 75 can be used as monitoring for Subpart Da (40 CFR § 60.49Da(c)(2)); the permit has and continues to require this. Subpart Da does not require continuous monitoring for SO_2 if only gas is combusted (40 CFR § 60.49Da(b)), nor is a NO_X CEMS automatically required for a duct burner (40 CFR § 60.49Da(o)).

40 CFR 60 Subpart Db, Standards of Performance for Industrial, Commercial, Institutional Steam Generating Units

EU003 and EU004 are subject to Subpart Db. Both units are subject to an SO_2 limit under Subpart Db, but are exempt from the recent reduction requirements because the combust only very-low-sulfur fuel oil (in addition to natural gas) (40 CFR § 60.42b(j)).The units are not required to demonstrate compliance with the SO_2 limit provided fuel receipts are obtained (40 CFR § 60.45b(j) and 40 CFR § 60.47b(f)).

Neither unit is subject to a PM limit under Subpart Db. Both units are subject to opacity limits under Subpart Db. The Permittee is not required to have COMS on these units because they burn only distillate oil and natural gas with potential SO_2 emissions less than 0.060 lb/MMBtu and do not use a post-combustion technology to reduce SO_2 or PM emissions (40 CFR § 60.48b(j)(2)).

The Permittee has approval from EPA to use Predictive Emissions Monitoring Systems (PEMS) in place of Continuous Emissions Monitoring System (CEMS) to measure NO_X emissions from the boilers. The PEMS plan was updated in November 2012 and is included as an appendix to the permit.

40 CFR 60 Subpart GG – Standards of Performance for Stationary Gas Turbines

EU001 is subject to Subpart GG. A July 24, 1995 EPA letter granted a waiver to specific requirements in Subpart GG at the time. However, revisions to Subpart GG since 1995 make the waiver obsolete and unnecessary – the provisions allowed by the waiver are now specifically allowed by Subpart GG.

40 CFR 60 Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

EU006 (TK001) is larger than 151 m^3 in volume but the vapor pressure of distillate fuel oil #2 is less than 3.5 kPa. The only requirement of Subpart Kb is that the Permittee must keep records showing the dimensions and capacity of each storage tank.

2.4 National Emission Standards for Hazardous Air Pollutants (NESHAP)

LSP Cottage Grove is permitted as an Area Source of HAPs, meaning that the permitted potential HAP emissions are less than 10 tpy of any individual HAP, and less than 25 tpy of all HAPs combined.

40 CFR 63 Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Receiprocating Internal Combustion Engines

The facility contains two reciprocating internal combustion engines subject to Subpart ZZZZ. EU005 is a 280 hp (206 kW) emergency fire-pump diesel engine and EU007 is a 228 hp (170 kw) emergency diesel engine.

40 CFR 63 Subpart JJJJJJ National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

The facility contains two Auxiliary Boilers (EU003 and EU004) that are 114 MMBtu/hr each and can combust both natural gas or distillate fuel. The Permittee has stated that their use of distillate fuel is only during period of gas curtailments, gas supply emergencies, or periodic testing where periodic testing of liquid fuel does not exceed a

combined total of 48 hours during any calendar year. Therefore the Auxiliary Boilers are categorized as gas-fired boilers, and are not subject to regulation by Subpart JJJJJJ (40 CFR Section 63.11195(e)).

2.5 Acid Rain

The facility is considered a gas-fired unit subject to Acid Rain provisions. It qualifies as a 'new unit' and is subject to Phase II SO_2 program requirements. The facility does not qualify for exemption under 40 CFR 72.7. The Acid Rain rules require that the facility holds allowances not less than the total annual SO_2 emissions for the previous calendar year. The facility is not subject to Acid Rain provisions for NO_X emission reduction, but must continuously monitor NO_X emissions per 40 CFR Part 75. Rather than continuously monitoring SO_2 emissions, the facility is allowed to use fuel sulfur contents to calculate emissions from low sulfur fuels. The units are exempt from opacity monitoring requirements as long as they qualify as gas-fired units. Status as a gas-fired unit is maintained provided the unit derives at least 90 percent of its heat input from gaseous fuels and the rest from distillate oil containing less than 0.05 percent sulfur.

The facility is not subject to 40 CFR 76 Acid Rain Nitrogen Oxides Emission Reduction Program because they are not a coal-fired utility. According to 40 CFR 76.9, the designated representative of any source with an affected unit subject to this part shall submit an Acid Rain application that includes a complete compliance plan for NO_X emissions – however, Cottage Grove is not subject to this part so is not required to submit a NO_X compliance plan.

The permit includes as Appendix C the Acid Rain Permit Renewal Application for SO_2.

2.6 Compliance Assurance Monitoring (CAM)

The table below lists the sources at the facility and whether they are subject to CAM, whether the source is a large pollutant specific emission unit (PSEU), and the monitoring for the applicable pollutants.

Table 4. CAM Summary

Unit	Control	CAM Applicability	Pollutant	Monitoring
EU001 EU002	CE001 Catalytic Afterburner	Exempt	CO	MR003 CO Monitor
EU001 EU002	CE002 Catalytic Reduction	Exempt	NO_X	MR001 NO_X Monitor

The pre-control emissions to the catalytic afterburner are greater than 100 tons per year (tpy) of CO, and the pre-control emissions to the catalytic reduction equipment are greater than 100 tpy of NO_X. Both pollutants have continuous emissions monitoring equipment on the associated stack subject to Appendix B of 40 CFR part 60. The facility submitted documentation that EU001 and EU002 are exempt from CAM under 40 CFR 64.2(b)(1)(vi), which states that the requirements of this part shall not apply to any of the following emission limits or standards:

> "Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in §64.1. The exemption provided in this paragraph (b)(1)(vi) shall not apply if the applicable compliance method includes an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device (such as a surface coating line controlled by an incinerator for which continuous compliance is determined by calculated emissions on the basis of coating records and an assumed control device efficiency factor based on an initial performance test; in this example, this part would apply to the control device and capture system, but not to the remaining elements of the coating line, such as raw material usage)."

The facility operates CEMS for both NO_X and CO to demonstrate compliance with the 99 tpy CO limit and to meet acid rain requirements. These are limits that are listed in the Part 70 permit. Moreover, the permit specifically

requires use of the CEMS to monitor compliance with the limits under NSPS Subpart GG (for EU001) and Subpart Da (for EU002). Because of this, these units are exempt from CAM, and CAM has not been included in the permit.

The previous permit included CAM applicability for VOC for Catalytic Afterburner. Review of emissions finds that VOC is not applicable to CAM and CAM requirements on the CD-01 have been removed for VOC.

2.7 Minnesota State Rules

Minn. R. 7011.2300 State Standards of Performance for Internal Combustion Engines

Minn. R. 7011.2300 applies to opacity and sulfur dioxide for the diesel engines, EU005 and EU007.

Minn. R. 7011.0515 State Standards of Performance for New Direct Heating Equipment

Minn. R. 7011.0515 applies to opacity for EU008.

Minn. R. 7011. 0715 Standards of Performance for Post-1969 Industrial Process Equipment

Minn. R. 7011.0715 applies to particulate matter and opacity for FS001, the cooling tower

Table 5. Regulatory Overview of Facility

Level*	Applicable Regulations	Comments:
EU001	40 CFR pt 60, subp. GG	New Source Performance Standards for Stationary Gas Turbines • Stationary gas turbine greater than 10 MMBtu/Hour • Commenced Construction after October 3, 1977
	40 CFR pt 72	• Acid Rain regulations
	40 CFR pt 75	
EU002	40 CFR pt 60, subp. Da	New Source Performance Standards for Electric Steam Generating Units • Steam generating unit with capacity greater than 250 MMBtu/Hour • Construction commenced in 1995 • For heat recovery steam generators use with duct burners subject, only the emissions from the duct burners are subject to standards under this subpart
	40 CFR pt 72	• Acid Rain regulations
	40 CFR pt 75	
EU003 & EU004 (GP001)	40 CFR pt 60, subp. Db	New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units • Steam generating unit with capacity greater than 100 MMBtu/Hour but less than 250 MMBtu/Hour • Construction commenced after June 19, 1984

Level*	Applicable Regulations	Comments:
EU005	40 CFR pt. 63, subp. ZZZZ;	NESHAP for Stationary Reciprocating Internal Combustion Engines Determination of applicable limits from rule: • The unit is an existing unit located at an area source • The unit is 280 hp • The fuel burned is Distillate Fuel Oil • The engine is compression ignition • The unit is an emergency fire-pump engine
	Minn. R. 7011.2300, subp. 2	State Standards of Performance for Internal Combustion Engines; limits opacity and sulfur dioxide
EU007	40 CFR pt. 63, subp. ZZZZ;	NESHAP for Stationary Reciprocating Internal Combustion Engines Determination of applicable limits from rule: • The unit is an existing unit located at an area source • The unit is 228 hp • The fuel burned is Distillate Fuel Oil • The engine is compression ignition • The unit is an emergency generator engine
	Minn. R. 7011.2300, subp. 2	State Standards of Performance for Internal Combustion Engines; limits opacity and sulfur dioxide
EU008	Minn. R. 7011.0515	The unit was constructed after December 31, 1977, and is therefore "new" indirect heating equipment.
FS001	Minn. R. 7011.0715	State Standards of Performance for Post-1969 Industrial Process Equipment sets standards for particulate matter and opacity
GP002 (EU001, EU002, EU003, EU004, EU005, EU007, EU008)	40 CFR 52.21	New Source Review (Prevention of Significant Deterioration): Limit set for CO to avoid major source classification un 40 CFR 52.21.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3. Technical Information

3.1 Calculations of Potential to Emit

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 Permittee and MPCA.

Emissions from the turbine (EU001) are calculated using emission factors from AP-42 (specific tables/locations are listed in the spreadsheets in Attachment 1). The exceptions are the emission factors for SO_2, which is the emission factor specified in the 40 CFR Part 75 (acid rain requirements), the factors for VOC and CO when combusting fuel oil, which are from emissions performance data provided by the manufacturer, and the H_2SO_4 emissions, which are described below.

Emissions from all of the remaining emission units are calculated using emission factors from AP-42 (specific tables/locations are listed in the spreadsheets in Attachment 1), except H_2SO_4 which is described below.

LSP Cottage Grove has a limit of 99.0 tons per year for CO emissions. To calculate emissions and demonstrate that the limit is met, the facility calculates emissions daily from SV001, EU002, EU004, EU005, EU007 and EU008 for the previous day and then once per calendar month calculates the 365-day rolling sum CO emissions for the total facility. The facility has elected not to calculate limited emissions for other pollutants based on this 99 tpy CO limit. Emissions for pollutants other than CO have been calculated at 8760 hours of operation unless another limit exists in the permit.

H_2SO_4

The existing permit includes H_2SO_4 BACT limits, but the supporting documents do not include specific documentation of how the limits were derived. There exists in the TSD for the previous reissuance (Permit 16300087-003) a qualitative explanation that compliance with the limit is met through compliance with the fuel restrictions, but no calculations were provided. Therefore, it was necessary to reconstruct certain information for this permit action.

AP-42 emission factors for fuel oil and natural gas combustion in boilers, generators, and turbines do not include factors for SO_3 or H_2SO_4, except for an SO_3 factor for fuel oil combustion in boilers, and a qualitative discussion of SO_2 and SO_3 formation; it states that while most of the fuel sulfur converts to SO_2, there is a small percentage (1% to 5%) that converts to SO_3 and then to H_2SO_4. In addition, training course materials produced by U.S. EPA for APTI Course No. 415 (Control of Gaseous Emissions) state that "generally 0.5% to 2% is converted to sulfur trioxide…" Assuming that the same holds true for other fuels and other combustion sources (i.e., that most of the fuel sulfur converts to SO_2 but some small percentage can convert to SO_3), and assuming 2% of the available sulfur (within the AP-42 range of 1-5%, at the top of the APTI 415 range of 0.5%-2%) converts to SO_3, one can estimate H_2SO_4 emissions as follows.

- H_2SO_4 from combustion of fuel oil in the auxiliary boilers was estimated by starting with the SO_3 emission factor of 0.2793 lb/kgal (5.7 lb/kgal x 0.05 weight percent S) from AP-42.
    - 0.2793 lb SO_3/kgal x 1 kgal/140 MMBtu = 0.001995 lb SO_3/MMBtu
    - Conservatively assuming 100% conversion of SO_3 to H_2SO_4, 0.001995 lb SO_3/MMBtu x 98/80 = 0.0024 lb H_2SO_4/MMBtu. (where 98/80 is the ratio of the molecular weight of H_2SO_4 to the molecular weight of SO_3). The permit limit is 0.0025 lb/MMBtu.
- H_2SO_4 from combustion of fuel oil in the turbine and generators is estimated by starting with the density of fuel oil and the allowed sulfur content.
    - (7.1 lb/gal) x (1 gal/140000 Btu) x (1000000 Btu/MMBtu) x (0.05/100) = 0.0254 lb S/MMBtu
    - Assume that 2% of the available sulfur converts to SO_3, so 0.0254 lb S/MMBtu x 0.02 = 0.000508 lb S converted to SO_3 (per MMBtu)
    - An SO_3 factor can then be calculated as 0.000508 + (3 x [0.000508 ÷ 2]) = 0.00127 lb SO_3/MMBtu
    - Conservatively assuming 100% conversion of SO_3 to H_2SO_4, 0.00127 lb SO_3/MMBtu x 98/80 = 0.00155 lb H_2SO_4/MMBtu (where 98/80 is the ratio of the molecular weight of H_2SO_4 to the molecular weight of SO_3). (The permit limit is 0.017 lb /MMBtu for SV001, 0.0017 lb/MMBtu for EU005.)
- H_2SO_4 from combustion of natural gas in the turbine is estimated by starting with the SO_2 emission factor of 0.006 lb/MMBtu from Appendix D of 40 CFR Part 75.
    - 0.006 lb SO_2/MMBtu x 1020 MMBtu/mmcf = 0.612 lb SO_2/mmcf
    - 0.612 pounds of SO_2 per mmcf is formed from 0.306 pounds of S and 0.306 pounds of O_2 per mmcf

- Assume that 98% of the fuel sulfur converts to SO_2, and 2% to SO_3. Therefore the total fuel sulfur is 0.312 lb S/mmcf (0.306 ÷ 0.98). The 2% of sulfur that converts to SO_3 is then 0.02 x 0.312 = 0.0062 lb S/mmcf.
- SO_3 factor can be calculated as 0.0062 + (3 x [0.0062 ÷ 2]) = 0.0155 lb SO_3/mmcf
- 0.0155 lb SO_3/mmcf ÷ 1020 MMBtu/mmcf = 0.000015 lb SO_3/MMBtu.
- Conservatively assuming 100% conversion of SO_3 to H_2SO_4, 0.000015 lb SO_3/MMBtu x 98/80 = 0.000019 lb H_2SO_4/MMBtu. (The permit limit is 0.0002 lb H_2SO_4/MMBtu.)

- H_2SO_4 from combustion of natural gas in the auxiliary boiler is estimated by starting with the SO_2 emission factor of 0.6 lb/mmcf from AP-42.
  - 0.6 pounds of SO_2 per mmcf is formed from 0.3 pounds of S and 0.3 pounds of O_2 per mmcf
  - Assume that 98% of the fuel sulfur converts to SO_2, and 2% to SO_3. Therefore the total fuel sulfur is 0.306 lb S/mmcf (0.3 ÷ 0.98). The 2% of sulfur that converts to SO_3 is then 0.02 x 0.306 = 0.0061 lb S/mmcf.
  - SO_3 factor can be calculated as 0.0061 + (3 x [0.0061 ÷ 2]) = 0.015 lb SO_3/mmcf
  - 0.015 lb SO_3/mmcf ÷ 1020 MMBtu/mmcf = 0.000015 lb SO_3/MMBtu.
  - Conservatively assuming 100% conversion of SO_3 to H_2SO_4, 0.000015 lb SO_3/MMBtu x 98/80 = 0.000018 lb H_2SO_4/MMBtu. (The permit limit is 0.000026 lb H_2SO_4/MMBtu.).

3.2 Periodic Monitoring

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

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

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

Table 6 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 6. Periodic Monitoring

Level*	Requirement [basis]	Additional Monitoring	Discussion
GP001 (EU003, EU004)	PM: ≤ 0.005 lbs/MMBtu when combusting natural gas PM: ≤ 0.061 lbs/MMBtu when combusting distillate fuel oil (BACT limit)	Periodic stack testing	Limit applies to each unit individually
	PM_{10}: ≤ 0.005 lbs/MMBtu when	Periodic stack testing	Limit applies to each unit

Level*	Requirement [basis]	Additional Monitoring	Discussion
GP001, cont.	combusting natural gas PM_{10}: ≤ 0.061 lbs/MMBtu when combusting distillate fuel oil (BACT limit)		individually
	Opacity ≤ 20% using 6-minute average except for one six-minute average per house of not more than 27% (NSPS Subpart Db)	COMS	Limit applies to each unit individually
	SO_2: ≤ 5.7 lb/hr using 1-hour average (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	Fuel Records (sulfur content)	Limit applies to each unit individually. Limit is the PTE for distillate oil, based on AP-42 emission factors and the allowed sulfur content of distillate oil.
	SO_2: ≤ 0.20 lb/MMBtu on a 30-day rolling average (NSPS Subpart Db)	Fuel records (sulfur content)	Limit applies to each unit individually. PTE based on the allowed fuel sulfur content is 0.05 lb/MMBtu.
	NO_X: ≤ 6.9 lbs/hour using 30-day average when combusting natural gas NO_X: ≤ 13.4 lbs/hour using 30-day average when combusting distillate fuel oil (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S) NO_X: ≤ 0.06 lbs/MMBtu using 1-hour average when combusting natural gas NO_X: ≤ 0.12 lbs/MMBtu using 1-hour average when combusting distillate fuel oil (BACT limits) NO_X: ≤ 0.20 lb/MMBtu using a 30-day rolling average (NSPS Subpart Db)	PEMS for NO_X Calculate and record NO_X emission rates hourly using approved PEMS plan Calculate 30-day rolling average emission rate once each day for prior 30-day period	Limit applies to each unit individually
	CO: ≤ 5.6 lbs/hr using 1-hour average (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	Periodic performance testing to establish CO emission factors. Calculate and record CO emissions and emission rates hourly, using Equation 5 (natural gas) or Equation 6 (fuel oil) of Permit Appendix	Limit applies to each unit individually

Level*	Requirement [basis]	Additional Monitoring	Discussion
GP001, cont.		B. Calculate daily emissions once per day	
	VOC: ≤ 0.005 lbs/MMBtu using a 3-hour average when combusting natural gas VOC: ≤ 0.03 lbs/MMBtu on a 3-hour average when combusting distillate fuel oil (BACT limits)	Periodic performance testing	Limit applies to each unit individually
	H_2SO_4: ≤ 0.000026 lbs/MMBtu when combusting natural gas H_2SO_4: ≤ 0.0025 lbs/MMBtu when combusting diesel fuel oil (BACT limits)	Records of fuel sulfur content	Limit applies to each unit individually. PTE of each unit, based on published emission factors and mass balance based on estimated fuel Sulfur converted to SO_3, is approximately 0.0025 lb/MMBtu for fuel oil and 0.000018 lb/MMBtu for natural gas.
	Hours of operation: ≤ 3400 hours per year using 365-day Rolling Sum when combusting distillate fuel oil (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	Daily records of distillate fuel oil combustion hours	Limit applies to the combined hours of EU003 and EU004 while combusting fuel oil.
GP002 (EU001, EU002, EU003, EU004, EU005, EU007, EU008)	CO: ≤ 99.0 tpy on a 365 day rolling sum basis (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	CO CEMS data from EU001 & EU002 (SV001) EU001 and EU002 hourly fuel measurements (to use during CEMS downtime) EU003 & EU004 hourly fuel usage records, hourly emission calculation, daily calculation of 365-day average (GP001) EU005, EU007, EU008 hourly and daily emissions using hourly design capacity and published emission factors Daily calculation of total daily CO emissions and 365 day rolling sum	Permit includes data collection and hourly CO emission calculations at the individual source level.
SV001	PM & PM_{10}: ≤ 0.0089 lbs/MMBtu on a 3-hour average when combusting natural Gas PM & PM_{10}: ≤ 0.0327 lbs/MMBtu	Periodic performance testing	Limit is applied at the stack exit

Level*	Requirement [basis]	Additional Monitoring	Discussion
	on a 3-hour average when combusting distillate fuel oil (BACT limits)		
	PM_{10}: ≤ 73.3 lb/hour on a 24-hour rolling average (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	Hourly calculations using equations in permit	Limit is applied at the stack exit
	SO_2: ≤ 99.3 lbs/hour using 3-hour Rolling Average SO_2: ≤ 59.6 lbs/hour using 24-hour Rolling Average (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	Records of fuel sulfur content, hourly calculation of SO_2 emissions using equations in the permit	Limit is applied at the stack exit. PTE based on fuel use limitations is approximately 55.4 lb/hr.
	NO_X: ≤ 4.5 ppm at 15% O_2 on 1-hour average when combusting natural gas, except during startup of shutdown NO_X: ≤ 16 ppm at 15% O_2 on 1-hour average when combusting distillate fuel oil, except during startup of shutdown (BACT limits)	NO_X CEMS	Limit is applied at the stack exit
SV001, cont.	NO_X: ≤ 36.5 lbs/hour using 30-day rolling average when combusting natural gas NO_X: ≤ 139.9 lbs/hour using 30-day rolling average when combusting distillate fuel oil Limit is recalculated each day based on number of hours operating on each fuel during the previous 30 days. (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	NO_X CEMS; daily calculation of 30-day average	Limit is applied at the stack exit
	CO: ≤ 1900 lbs/hour using 1-day rolling average only during startup and shutdown (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	CO CEMS	Limit is applied at the stack exit
	VOC: ≤ 0.008 lbs/MMBtu when combusting natural gas	Periodic performance testing	Limit is applied at the stack exit

Level*	Requirement [basis]	Additional Monitoring	Discussion
	VOC: ≤ 0.009 lbs/MMBtu when combusting distillate fuel oil (BACT limits)		
	H_2SO_4:≤ 0.0002 lbs/MMBtu when combusting natural gas H_2SO_4: ≤ 0.017 lbs/MMBtu when combusting distillate fuel oil (BACT limits)	Records of fuel sulfur content	Limit is applied at the stack exit At the previous permit reissuance (16300087-003, issued 4/20/2005), MPCA removed the performance test requirements for the H_2SO_4 limits, because the test method (Method 8) was deemed inaccurate at the low sulfur compound emission rates. PTE of each unit, based on published emission factors and mass balance based on estimated fuel Sulfur converted to SO_3, is approximately 0.00155 lb/MMBtu for fuel oil and 0.000019 lb/MMBtu for natural gas.
EU001	Operating Hours: ≤ 1700 hours/year using 365-day rolling sum when combusting distillate fuel oil (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)	Daily recordkeeping and calculation of 365-day rolling sum	
	NO_X: ≤ 106.8 ppm at 15% O_2 when combusting natural gas NO_X: ≤ 99.4 ppm at 15% O_2 when combusting distillate fuel oil (NSPS Subpart GG)	NO_X CEMS at SV001	
	Sulfur content of fuel ≤ 0.8 percent by weight (NSPS Subpart GG)	Records of fuel sulfur content	
	SO_2: < 0.50 lb/MMBtu heat input (Minn. R. 7011.2300)	Records of fuel sulfur content	PTE including fuel sulfur restrictions is approximately 0.05 lb/MMBtu
EU002	SO_2: ≤ 0.20 lbs/MMBtu using 30-day rolling average (NSPS Subpart Da)	None	PTE using natural gas is approximately 0.0006 lb/MMBtu.
	NO_X: ≤ 0.20 lbs/MMBtu using 30-day rolling average (NSPS Subpart Da)	NO_X CEMS at SV001	

Level*	Requirement [basis]	Additional Monitoring	Discussion
EU 003	Heat Input: ≤ 113.1 MMBtu/hour (Minn. R. 7017.2025)	Recordkeeping of fuel usage, hourly records of heat input	Limit resides at GP001
EU 004	Heat Input: ≤ 114.8 MMBtu/hour (Minn. R. 7017.2025)	Recordkeeping of fuel usage, hourly records of heat input	Limit resides at GP001
EU005	PM: ≤ 0.26 lbs/MMBtu PM_{10}: ≤ 0.26 lbs/MMBtu (BACT limits)	None	Engine is limited to low sulfur (0.05% by weight) distillate oil. No monitoring (other than fuel sulfur content) or testing warranted due to small size and emergency nature of operation.
	SO_2: < 0.50 lb/MMBtu heat input Opacity ≤ 20% once operating temperatures have been achieved (Minn. R. 7011.2300)		
	SO_2: ≤ 0.14 lbs/hr (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)		
	NO_X: ≤ 1.85 lbs/MMBtu (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)		
	CO: ≤ 5.0 lbs/hour using 1-hour average (Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S)		
	VOC: ≤ 0.71 lbs/MMBtu (BACT limit)		
	Sulfuric Acid Mist: ≤ 0.0017 lbs/MMBtu (BACT limit)		
EU005, cont.	Sulfur content of fuel ≤ 0.05 percent by weight (BACT limit; Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S))	Records of fuel sulfur content	
	Operating Hours: ≤ 150 hours/year using 365-day rolling sum when combusting distillate fuel oil (Title I Condition to avoid	Daily recordkeeping and calculation of 365-day rolling sum	

Level*	Requirement [basis]	Additional Monitoring	Discussion
	classification as a major source under 40 CFR pt. 51 Appendix S)		
	Operating Limits as required by the 40 CFR Part 63 Subpart ZZZZ	Monitoring, Recordkeeping, and Reporting Requirements as required by 40 CFR Part 63 Subpart ZZZZ.	Monitoring, Recordkeeping, and Reporting are required by 40 CFR 63 Subpart ZZZZ and are sufficient to show compliance with operating limits of 40 CFR Part 63 Subpart ZZZZ.
EU007	SO_2: ≤ 0.5 lbs/MMBtu (Minn. R. 7011.2300)		Engine is limited to low sulfur (0.05% by weight) distillate oil. No additional monitoring or testing warranted due to small size and emergency nature of operation.
	Opacity: ≤ 20 percent (Minn. R. 7011.2300)		
	Sulfur content of fuel ≤ 0.05 percent by weight (BACT limit; Title I Condition to avoid classification as a major source under 40 CFR pt. 51 Appendix S))	Records of fuel sulfur content	
	Operating Limits as required by the 40 CFR Part 63 Subpart ZZZZ	Monitoring, Recordkeeping, and Reporting Requirements as required by 40 CFR Part 63 Subpart ZZZZ.	Monitoring, Recordkeeping, and Reporting are required by 40 CFR 63 Subpart ZZZZ and are sufficient to show compliance with operating limits of 40 CFR Part 63 Subpart ZZZZ.
EU008	PM: ≤ 0.40 lbs/MMBtu (Minn. R. 7011.0515)	None	Engine is limited to natural gas. Potential emissions are approximately 2% of the limit. Noncompliance is unlikely.
	Opacity: ≤ 20 percent (Minn. R. 7011.0515)		
	Operating Limits as required by the 40 CFR Part 63 Subpart ZZZZ	Monitoring, Recordkeeping, and Reporting Requirements as required by 40 CFR Part 63 Subpart ZZZZ.	Monitoring, Recordkeeping, and Reporting are required by 40 CFR 63 Subpart ZZZZ and are sufficient to show compliance with operating limits of 40 CFR Part 63 Subpart ZZZZ.
FS001	PM: Variable with load Opacity: ≤ 20% (Minn. R. 7011.0715)	None	Potential PM is approximately 0.5% of the rule limit. Noncompliance is unlikely.

3.3 Insignificant Activities

The facility has no operations qualifying as insignificant activities.

3.4 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable

parts of the permit, in general, any requirement that the MPCA thinks should be electronically tracked (e.g., limits, submittals, etc.), should be in Table A or B of the permit. The main reason is that the appendices are word processing sections and are not part of the electronic tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these

3.5 Comments Received

Public Notice Period: <start date> - <end date>
EPA 45-day Review Period: <start date> - <end date>

Comments were <not> received from the public during the public notice period. <The comments received did <not> include adverse comments on any applicable requirements of the permit. Changes to the permit were <not> made as a result of the comments. *Provide summary of changes.* >

<The revised permit was sent to EPA for their 45-day review on <date>.> Comments were <not> received from EPA during their review period. Changes to the permit were <not> made as a result of the comments. *Provide summary of changes.* >

4. Permit Fee Assessment

This permit action is the reissuance of an individual Part 70; therefore, under Minn. R. 7002.0016, no application fees apply to the changes that are covered by the reissuance application. The action also includes the incorporation of a NESHAP, however this was an existing standard that applied to the facility and is not a chargeable activity.

5. Conclusion

Based on the information provided by Cogentrix/LSP Cottage Grove, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No16300087-006 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Toni Volkmeier (permit writer/engineer)
Sarah Kilgriff (enforcement)
Marc Severin (stack testing)
Adriane Lenshek (peer reviewer)
Laurie O'Brien (administrative support)
Sara Kelly/Melissa Clement (Sebesta Blomberg contractors)

AQ File No. 2776A; DQ 2880

Attachments:
1. PTE Summary and Calculation Spreadsheets
2. Facility Description and CD-01 Forms

Attachment 1

Calculations and PTE Summary

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
Acetaldehyde							
	EU 001	PER 003		7.950E-02	3.480E-01	3.480E-01	
	EU 005	PER 006		2.070E-03	5.180E-04	1.550E-04	
	EU 007	PER 006		1.430E-03	3.590E-04	3.590E-04	
Totals					3.489E-01	3.485E-01	0.000E+00
Acrolein							
	EU 001	PER 003		1.270E-02	5.570E-02	5.570E-02	
	EU 005	PER 006		2.500E-04	6.240E-05	1.870E-05	
	EU 007	PER 006		1.730E-04	4.320E-05	4.320E-05	
Totals					5.581E-02	5.576E-02	0.000E+00
Benzene							
	EU 001	PER 003		1.080E-01	4.750E-01	1.760E-01	
	EU 002	PER 003		5.600E-04	2.430E-03	2.400E-03	
	EU 002	PER 006		5.600E-04	2.430E-03	2.430E-03	
	EU 003	PER 003		2.300E-04	1.030E-03	9.250E-04	
	EU 003	PER 006		2.300E-04	1.030E-03	0.000E+00	
	EU 004	PER 003		2.300E-04	1.030E-03	9.250E-04	
	EU 004	PER 006		2.300E-04	1.030E-03	0.000E+00	0.000E+00
	EU 005	PER 006		2.520E-03	1.100E-02	1.890E-04	
	EU 007	PER 006		1.740E-03	4.360E-04	4.360E-04	
	EU 008	PER 006		8.750E-06	3.830E-05	3.830E-05	
	GP 001	PER 006				2.060E-03	
Totals					4.910E-01	1.812E-01	0.000E+00
Arsenic compounds							
	EU 001	PER 003		2.170E-02	9.500E-02	1.840E-02	
	EU 002	PER 003		5.300E-05	2.320E-04	2.320E-04	
	EU 003	PER 003		4.640E-04	2.000E-03	8.350E-04	
	EU 003	PER 006		4.640E-04	2.000E-03	0.000E+00	
	EU 004	PER 003		4.640E-04	2.000E-03	8.350E-04	
	EU 004	PER 006		4.640E-04	2.000E-03	0.000E+00	
	EU 008	PER 006		8.330E-07	3.650E-06	3.650E-06	
	GP 001	PER 006				9.330E-04	
Totals					9.924E-02	1.957E-02	0.000E+00
1,3-Butadiene							
	EU 001	PER 003		3.150E-02	1.380E-01	2.980E-02	
	EU 005	PER 006		1.060E-04	2.640E-05	7.920E-06	

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1,3-Butadiene							
	EU 007	PER 006		7.310E-05	1.830E-05	1.830E-05	
Totals					1.380E-01	2.983E-02	0.000E+00
Beryllium							
	EU 001	PER 003		6.110E-04	2.680E-03	5.190E-04	
	EU 002	PER 003		3.200E-06	1.390E-05	1.390E-05	
	EU 003	PER 003		3.400E-04	1.500E-03	5.850E-04	
	EU 003	PER 006		3.400E-04	1.500E-03	0.000E+00	
	EU 004	PER 003		3.400E-04	1.500E-03	8.580E-04	
	EU 004	PER 006		3.400E-04	1.500E-03	0.000E+00	0.000E+00
	EU 008	PER 006		5.000E-08	2.190E-07	2.190E-07	
	GP 001	PER 006				5.910E-04	
Totals					5.694E-03	1.124E-03	0.000E+00
Carbon Dioxide Equivalent							
	EU 001	PER 006			1.410E+06	2.260E+05	
	EU 002	PER 006			1.380E+05	1.380E+05	
	EU 003	PER 006			8.170E+04	1.290E+04	
	EU 004	PER 006			8.170E+04	1.290E+04	
	EU 005	PER 006			1.100E+02	3.310E+01	
	EU 007	PER 006			7.650E+01	7.650E+01	
	EU 008	PER 006			2.180E+03	2.180E+03	
Totals					1.714E+06	3.921E+05	0.000E+00
Cadmium compounds							
	EU 001	PER 003		9.460E-03	4.140E-02	8.040E-03	
	EU 002	PER 003		2.900E-04	1.280E-03	1.280E-03	
	EU 003	PER 003		3.400E-04	1.500E-03	9.110E-04	
	EU 003	PER 006		3.400E-04	1.500E-03	0.000E+00	
	EU 004	PER 003		3.400E-03	1.500E-03	9.110E-04	
	EU 004	PER 006		3.400E-03	1.500E-03	0.000E+00	0.000E+00
	EU 008	PER 006		4.580E-06	2.010E-05	2.010E-05	
	GP 001	PER 006				1.450E-03	
Totals					4.570E-02	1.079E-02	0.000E+00
Methane							
	EU 001	PER 006		1.300E+01	5.710E+01	5.440E+00	
	EU 002	PER 006		5.950E-01	2.610E+00	2.610E+00	
	EU 003	PER 006		7.540E-01	3.300E+00	3.140E-01	
	EU 004	PER 006		7.540E-01	3.300E+00	3.140E-01	

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Methane							
	EU 005	PER 006		1.790E-02	4.460E-03	1.340E-03	
	EU 007	PER 006		1.240E-02	3.090E-03	3.090E-03	
	EU 008	PER 006		9.370E-03	4.100E-02	4.100E-02	
Totals					6.636E+01	8.723E+00	0.000E+00
Carbon Monoxide							
	EU 001	PER 006			1.402E+03		
	EU 002	PER 006			9.740E+01		
	EU 003	PER 005				0.000E+00	2.180E+00
	EU 003	PER 006		5.600E+00	2.450E+01	0.000E+00	0.000E+00
	EU 004	PER 005				0.000E+00	2.180E+00
	EU 004	PER 006		5.600E+00	2.450E+01	0.000E+00	0.000E+00
	EU 005	PER 005				0.000E+00	5.400E-03
	EU 005	PER 006		2.570E+00	6.400E-01	0.000E+00	0.000E+00
	EU 007	PER 005				0.000E+00	6.400E-03
	EU 007	PER 006		1.800E+00	4.400E-01	0.000E+00	0.000E+00
	EU 008	PER 005				0.000E+00	3.085E-03
	EU 008	PER 006		3.500E-01	1.500E+00	0.000E+00	0.000E+00
	FC 000	PER 005				9.900E+01	
	FC 000	PER 006				0.000E+00	
	GP 001	PER 006				0.000E+00	
	GP 002	PER 006				9.900E+01	
	SV 001	PER 005		1.900E+03	1.666E+03	0.000E+00	1.746E+01
	SV 001	PER 006		3.420E+01	0.000E+00	0.000E+00	0.000E+00
Totals					1.551E+03	9.900E+01	0.000E+00
Carbon Dioxide							
	EU 001	PER 006		3.200E-05	1.400E-06	2.260E-05	
	EU 002	PER 006		3.160E-04	1.380E-05	1.380E-05	
	EU 003	PER 006		1.860E-04	8.140E-04	1.290E-04	
	EU 004	PER 006		1.860E-04	8.140E-04	1.290E-04	
	EU 005	PER 006		4.400E+02	1.100E+02	3.300E+01	
	EU 007	PER 006		3.050E+02	7.620E+01	7.620E+01	
	EU 008	PER 006		4.970E+02	2.180E+03	2.180E+03	
Totals					2.366E+03	2.289E+03	0.000E+00
Cobalt compounds							
	EU 002	PER 003		2.200E-05	9.740E-05	9.740E-05	

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Cobalt compounds							
	EU 003	PER 003		9.400E-06	4.110E-05	4.110E-05	
	EU 003	PER 006		9.400E-06	4.110E-05	0.000E+00	
	EU 004	PER 003		9.400E-06	4.110E-05	4.110E-05	
	EU 004	PER 006		9.400E-06	4.110E-05	0.000E+00	0.000E+00
	EU 008	PER 006		3.500E-07	1.530E-06	1.530E-06	
	GP 001	PER 006				8.220E-05	
Totals					1.811E-04	1.811E-04	0.000E+00
Chromium compounds							
	EU 001	PER 003		2.170E-02	9.500E-02	1.840E-02	
	EU 002	PER 003		3.700E-04	1.620E-03	1.620E-03	
	EU 003	PER 003		3.400E-04	1.500E-03	1.000E-03	
	EU 003	PER 006		3.400E-04	1.500E-03	0.000E+00	
	EU 004	PER 003		3.400E-03	1.500E-03	1.000E-03	
	EU 004	PER 006		3.400E-03	1.500E-03	0.000E+00	0.000E+00
	EU 008	PER 006		5.830E-06	2.560E-05	2.560E-05	
	GP 001	PER 006				1.690E-03	
Totals					9.965E-02	2.174E-02	0.000E+00
1,4-Dichlorobenzene							
	EU 002	PER 003		3.200E-03	1.390E-03	1.390E-03	
	EU 003	PER 003		1.300E-03	5.900E-04	5.900E-04	
	EU 003	PER 006		1.300E-03	5.900E-04	0.000E+00	
	EU 004	PER 003		1.300E-03	5.900E-04	5.900E-04	
	EU 004	PER 006		1.300E-03	5.900E-04	0.000E+00	
	EU 008	PER 006		5.000E-06	2.190E-05	2.190E-05	
	GP 001	PER 006				1.170E-03	
Totals					2.592E-03	2.582E-03	0.000E+00
Ethylbenzene							
	EU 001	PER 003		6.360E-02	2.790E-01	2.790E-01	
	EU 003	PER 003		5.250E-05	2.300E-04	8.800E-05	
	EU 003	PER 006		5.250E-05	2.300E-04	0.000E+00	
	EU 004	PER 003		5.200E-05	2.300E-04	8.800E-05	
	EU 004	PER 006		5.250E-05	2.300E-04	0.000E+00	0.000E+00
	GP 001	PER 006				8.870E-05	
Totals					2.795E-01	2.791E-01	0.000E+00
Formaldehyde							
	EU 001	PER 003		1.410E+00	6.180E+00	6.180E+00	

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Formaldehyde							
	EU 002	PER 003		2.000E-02	8.700E-02	8.700E-02	
	EU 003	PER 003		2.700E-02	1.180E-01	6.810E-02	
	EU 003	PER 006		2.700E-02	1.190E-01	0.000E+00	
	EU 004	PER 003		2.700E-02	1.180E-01	6.810E-02	
	EU 004	PER 006		2.700E-02	1.190E-01	0.000E+00	0.000E+00
	EU 005	PER 006		3.190E-03	7.970E-04	2.390E-04	
	EU 007	PER 006		2.210E-03	5.520E-04	5.520E-04	
	EU 008	PER 006		3.130E-04	1.370E-03	1.370E-03	
	GP 001	PER 006				1.050E-01	
Totals					6.508E+00	6.374E+00	0.000E+00
Hexane							
	EU 002	PER 003		4.800E-01	2.090E+00	2.090E+00	
	EU 003	PER 003		2.000E-01	8.800E-01	8.800E-01	
	EU 003	PER 006		2.000E-01	8.810E-01	0.000E+00	
	EU 004	PER 003		2.000E-01	8.800E-01	8.800E-01	
	EU 004	PER 006		2.000E-01	8.800E-01	0.000E+00	0.000E+00
	EU 008	PER 006		7.500E-03	3.290E-02	3.290E-02	
	GP 001	PER 006				1.760E+00	
Totals					3.884E+00	3.883E+00	0.000E+00
Naphthalene							
	EU 001	PER 003		6.900E-02	3.020E-01	6.780E-02	
	EU 002	PER 003		1.600E-04	7.070E-04	7.070E-04	
	EU 003	PER 003		9.200E-04	4.030E-03	1.750E-03	
	EU 003	PER 006		9.300E-04	4.060E-03	0.000E+00	
	EU 004	PER 003		9.200E-04	4.300E-03	1.750E-03	
	EU 004	PER 006		9.300E-04	4.060E-03	0.000E+00	0.000E+00
	EU 005	PER 006		2.290E-04	5.720E-05	1.720E-05	
	EU 007	PER 006		1.590E-04	3.960E-05	3.960E-05	
	EU 008	PER 006		2.540E-06	1.110E-05	1.110E-05	
	GP 001	PER 006				2.060E-03	
Totals					3.109E-01	7.063E-02	0.000E+00
HAPs - Total							
	EU 001	PER 003		3.930E+00	1.721E+01	9.810E+00	
	EU 001	PER 006		2.470E+00	1.082E+01	9.300E+00	
	EU 002	PER 003		5.000E-01	2.190E+00	2.190E+00	

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HAPs - Total							
	EU 003	PER 003		2.400E-01	1.050E+00	9.700E-01	
	EU 003	PER 006		2.100E-01	9.240E-01	0.000E+00	
	EU 004	PER 003		2.400E-01	1.050E+00	9.700E-01	
	EU 004	PER 006		2.100E-01	9.240E-01	0.000E+00	0.000E+00
	EU 005	PER 006		1.740E-02	4.360E-03	1.310E-03	
	EU 007	PER 006		1.210E-02	3.020E-03	3.020E-03	
	EU 008	PER 006		1.000E-02	3.000E-02	3.000E-02	
	GP 001	PER 006				1.850E+00	
Totals					1.490E+01	1.337E+01	0.000E+00
Mercury							
	EU 001	PER 003		2.370E-03	1.040E-02	2.010E-03	
	EU 002	PER 003		6.900E-05	3.010E-04	3.010E-04	
	EU 003	PER 003		3.400E-04	1.500E-03	6.590E-04	
	EU 003	PER 006		3.400E-04	1.500E-03	0.000E+00	
	EU 004	PER 003		3.400E-04	1.500E-03	6.590E-04	
	EU 004	PER 006		3.400E-04	1.500E-03	0.000E+00	0.000E+00
	EU 008	PER 006		1.080E-06	4.750E-06	4.750E-06	
	GP 001	PER 006				7.870E-04	
Totals					1.371E-02	3.103E-03	0.000E+00
Propylene oxide							
	EU 001	PER 003		5.770E-02	2.530E-01	2.530E-01	
	EU 005	PER 006		6.970E-03	1.740E-03	5.220E-04	
	EU 007	PER 006		1.820E-03	1.210E-03	1.210E-03	
Totals					2.560E-01	2.547E-01	0.000E+00
Toluene							
	EU 001	PER 003		2.580E-01	1.130E+00	1.130E+00	
	EU 002	PER 003		9.040E-04	3.940E-03	3.940E-03	
	EU 003	PER 003		5.000E-03	2.210E-02	9.600E-03	
	EU 003	PER 006		5.100E-03	2.230E-02	0.000E+00	
	EU 004	PER 003		5.000E-03	2.210E-02	9.600E-03	
	EU 004	PER 006		5.100E-03	2.230E-02	0.000E+00	0.000E+00
	EU 005	PER 006		1.100E-03	2.760E-04	8.280E-05	
	EU 007	PER 006		7.650E-04	1.910E-04	1.910E-04	
	EU 008	PER 006		1.420E-05	6.210E-05	6.210E-05	

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
Toluene							
	GP 001	PER 006				1.130E-02	
Totals					1.179E+00	1.146E+00	0.000E+00
1,1,1-Trichloroethane							
	EU 003	PER 003		1.900E-04	8.400E-04	3.270E-04	
	EU 003	PER 006		1.900E-04	8.400E-04	0.000E+00	
	EU 004	PER 003		1.900E-04	8.400E-04	3.270E-04	
	EU 004	PER 006		1.900E-04	8.400E-04	0.000E+00	
	GP 001	PER 006				3.290E-04	
Totals					1.680E-03	3.290E-04	0.000E+00
Xylenes (mixed isomers)							
	EU 001	PER 003		1.270E-01	5.570E-01	5.570E-01	
	EU 005	PER 006		7.700E-04	1.920E-04	5.770E-05	
	EU 007	PER 006		5.330E-04	1.330E-04	1.330E-04	
Totals					5.573E-01	5.572E-01	0.000E+00
Manganese compounds							
	EU 001	PER 003		1.560E+00	6.820E+00	1.320E+00	
	EU 002	PER 003		1.000E-04	4.410E-04	4.410E-04	
	EU 003	PER 003		6.800E-04	3.000E-03	1.280E-03	
	EU 003	PER 006		6.800E-04	3.000E-03	0.000E+00	
	EU 004	PER 003		6.800E-04	3.000E-03	1.280E-03	
	EU 004	PER 006		6.800E-04	3.000E-03	0.000E+00	0.000E+00
	EU 008	PER 006		1.580E-06	6.940E-06	6.940E-06	
	GP 001	PER 006				1.460E-03	
Totals					6.826E+00	1.322E+00	0.000E+00
Nitrous Oxide							
	EU 001	PER 006		2.610E+00	1.140E+01	7.720E-01	
	EU 002	PER 006		5.950E-02	2.610E-01	2.610E-01	
	EU 003	PER 006		1.510E-01	6.600E-01	4.460E-02	
	EU 004	PER 006		1.510E-01	6.600E-01	4.460E-02	
	EU 005	PER 006		3.570E-03	8.930E-04	2.680E-04	
	EU 007	PER 006		2.470E-03	6.180E-04	6.180E-04	
	EU 008	PER 006		9.370E-04	4.100E-03	4.100E-03	
Totals					1.299E+01	1.127E+00	0.000E+00
o-Xylenes							
	EU 003	PER 003		8.900E-05	3.900E-04	1.510E-04	
	EU 003	PER 006		8.900E-05	3.920E-04	0.000E+00	

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
o-Xylenes							
	EU 004	PER 003		8.900E-05	3.900E-04	1.510E-04	
	EU 004	PER 006		8.900E-05	3.920E-04	0.000E+00	0.000E+00
	GP 001	PER 006				1.520E-04	
Totals					7.840E-04	1.520E-04	0.000E+00
Nickel compounds							
	EU 001	PER 003		9.070E-03	3.970E-02	7.710E-03	
	EU 002	PER 003		5.600E-04	2.430E-03	2.430E-03	
	EU 003	PER 003		3.400E-04	1.500E-03	1.210E-03	
	EU 003	PER 006		3.400E-04	1.500E-03	0.000E+00	
	EU 004	PER 003		3.400E-04	1.500E-03	1.210E-03	
	EU 004	PER 006		3.400E-04	1.500E-03	0.000E+00	0.000E+00
	EU 008	PER 006		8.750E-06	3.830E-05	3.830E-05	
	GP 001	PER 006				1.210E-03	
Totals					4.517E-02	1.139E-02	0.000E+00
Nitrogen Oxides							
	EU 001	PER 006			2.072E+03		
	EU 002	PER 006			2.203E+02		
	EU 003	PER 001				3.577E+01	9.320E+00
	EU 003	PER 006		1.110E+01	4.860E+01	0.000E+00	0.000E+00
	EU 004	PER 001				3.577E+01	7.380E+00
	EU 004	PER 006		6.900E+00	4.860E+01	0.000E+00	0.000E+00
	EU 005	PER 001				3.700E-01	1.060E-02
	EU 005	PER 006		5.000E+00	1.250E+00	3.700E-01	0.000E+00
	EU 007	PER 001				9.700E-02	5.100E-02
	EU 007	PER 006		8.200E+00	2.100E+00	2.100E+00	0.000E+00
	EU 008	PER 001				1.860E+00	1.167E-02
	EU 008	PER 006		4.200E-01	1.800E+00	1.800E+00	0.000E+00
	GP 001	PER 006				9.710E+01	
	SV 001	PER 001		1.413E+02	1.509E+03	2.350E+02	3.842E+01
	SV 001	PER 006		1.399E+02	0.000E+00	2.478E+02	0.000E+00
Totals					2.395E+03	3.492E+02	0.000E+00
PM < 2.5 micron							
	EU 001	PER 006			1.295E+02		
	EU 002	PER 006			8.800E+00		
	EU 003	PER 006		1.300E+00	5.600E+00		

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
PM < 2.5 micron							
	EU 004	PER 006		1.300E+00	5.500E+00		
	EU 005	PER 006		7.000E-01	1.800E-01	5.000E-02	
	EU 007	PER 006		6.000E-01	1.400E-01	1.400E-01	
	EU 008	PER 006		3.000E-02	1.000E-01	1.000E-01	
	FS 001	PER 006		1.880E+00	8.250E+00	8.250E+00	
	GP 001	PER 006				7.200E+00	
	SV 001	PER 006		7.330E+01		1.332E+02	
Totals					1.581E+02	1.489E+02	0.000E+00
Lead							
	EU 001	PER 003		2.760E-02	1.210E-01	2.350E-02	
	EU 001	PER 006		0.000E+00	1.210E-01	0.000E+00	
	EU 002	PER 006			5.800E-04		
	EU 003	PER 003		1.000E-03	4.490E-03	1.740E-03	0.000E+00
	EU 003	PER 006		1.000E-03	4.490E-03	0.000E+00	0.000E+00
	EU 004	PER 003		1.000E-03	4.490E-03	1.740E-03	0.000E+00
	EU 004	PER 006		1.000E-03	4.490E-03	0.000E+00	0.000E+00
	EU 005	PER 001				8.500E-04	0.000E+00
	EU 005	PER 006				0.000E+00	0.000E+00
	EU 007	PER 001				8.500E-04	0.000E+00
	EU 007	PER 006				0.000E+00	0.000E+00
	EU 008	PER 001				8.500E-04	0.000E+00
	EU 008	PER 006		2.080E-06	9.130E-06	9.130E-06	0.000E+00
	GP 001	PER 006				2.140E-03	
	SV 001	PER 001		1.300E-01	5.700E-01		
	SV 001	PER 006		2.770E-02	0.000E+00	2.400E-02	
Totals					1.306E-01	2.615E-02	0.000E+00
PM < 10 micron							
	EU 001	PER 006			1.295E+02		
	EU 002	PER 006			8.800E+00		
	EU 003	PER 001				7.920E+00	8.100E-01
	EU 003	PER 006		1.900E+00	8.300E+00	0.000E+00	0.000E+00
	EU 004	PER 001				7.920E+00	8.100E-01
	EU 004	PER 006		1.900E+00	8.300E+00	0.000E+00	0.000E+00
	EU 005	PER 001				5.000E-02	0.000E+00
	EU 005	PER 006		7.000E-01	1.800E-01	5.000E-02	0.000E+00

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
PM < 10 micron							
	EU 007	PER 001				3.740E-03	0.000E+00
	EU 007	PER 006		6.000E-01	1.400E-01	1.400E-01	0.000E+00
	EU 008	PER 001				1.860E-01	4.500E-04
	EU 008	PER 006		3.000E-02	1.000E-01	1.000E-01	0.000E+00
	FS 001	PER 006		1.880E+00	8.250E+00	8.250E+00	
	GP 001	PER 006				7.200E+00	
	SV 001	PER 001		7.330E+01	3.210E+02	1.277E+02	7.500E+00
	SV 001	PER 006		7.330E+01	0.000E+00	1.332E+02	0.000E+00
Totals					1.636E+02	1.489E+02	0.000E+00
Polycyclic organic matter							
	EU 001	PER 003		7.880E-02	3.450E-01	8.250E-02	
	EU 002	PER 003		2.300E-05	1.020E-04	1.020E-04	
	EU 003	PER 003		1.100E-03	4.640E-03	1.830E-03	
	EU 003	PER 006		2.700E-03	1.190E-02	0.000E+00	
	EU 004	PER 003		1.100E-03	4.640E-03	1.830E-03	
	EU 004	PER 006		2.700E-03	1.190E-02	0.000E+00	0.000E+00
	EU 005	PER 006		2.250E-04	5.620E-05	1.690E-05	
	EU 007	PER 006		1.560E-04	3.890E-05	3.890E-05	
	EU 008	PER 006		3.680E-07	1.610E-06	1.610E-06	
	GP 001	PER 006				4.670E-03	
Totals					3.690E-01	8.733E-02	0.000E+00
Total Particulate Matter							
	EU 001	PER 006			1.295E+02		
	EU 002	PER 006			8.800E+00		
	EU 003	PER 001				7.920E+00	3.500E-01
	EU 003	PER 006		2.700E+00	1.190E+01	0.000E+00	0.000E+00
	EU 004	PER 001				7.920E+00	3.100E-01
	EU 004	PER 006		2.700E+00	1.190E+01	0.000E+00	0.000E+00
	EU 005	PER 001				5.000E-02	4.000E-04
	EU 005	PER 006		7.000E-01	1.800E-01	5.000E-02	0.000E+00
	EU 007	PER 001				3.740E-03	5.100E-03
	EU 007	PER 006		6.000E-01	1.400E-01	1.400E-01	0.000E+00
	EU 008	PER 001				1.860E-01	4.500E-04
	EU 008	PER 006		3.000E-02	1.000E-01	1.000E-01	0.000E+00
	FS 001	PER 006		7.530E+00	3.298E+01	3.298E+01	

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records
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Facility Name: LSP Cottage Grove Cogeneration Facility

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
Total Particulate Matter							
	GP 001	PER 006				8.600E+00	
	SV 001	PER 001		7.330E+01	3.211E+02	1.277E+02	4.402E+00
	SV 001	PER 006		7.330E+01	0.000E+00	1.332E+02	0.000E+00
Totals					1.955E+02	1.751E+02	0.000E+00
Sulfuric Acid Mist							
	EU 003	PER 001				2.500E-01	0.000E+00
	EU 003	PER 006		2.730E-01	1.200E+00	0.000E+00	0.000E+00
	EU 004	PER 001				2.500E-01	0.000E+00
	EU 004	PER 006		2.736E-01	1.200E+00	0.000E+00	0.000E+00
	EU 005	PER 001				3.400E-04	0.000E+00
	EU 005	PER 006		4.185E-03	1.050E-03	3.140E-04	0.000E+00
	EU 007	PER 001				0.000E+00	0.000E+00
	EU 007	PER 006		2.900E-03	7.240E-04	7.240E-04	0.000E+00
	EU 008	PER 001				0.000E+00	0.000E+00
	GP 001	PER 006				4.800E-01	
	SV 001	PER 001				1.804E+01	1.550E+00
	SV 001	PER 006		3.055E+00	2.750E+00	2.750E+00	0.000E+00
Totals					5.152E+00	3.231E+00	0.000E+00
Selenium compounds							
	EU 001	PER 003		4.930E-02	2.160E-01	4.190E-02	
	EU 002	PER 003		6.400E-06	2.780E-05	2.780E-05	
	EU 003	PER 003		1.700E-03	7.490E-03	2.910E-03	
	EU 003	PER 006		1.700E-03	7.490E-03	0.000E+00	
	EU 004	PER 003		1.700E-03	7.490E-03	2.910E-03	
	EU 004	PER 006		1.700E-03	7.490E-03	0.000E+00	0.000E+00
	EU 008	PER 006		1.000E-07	4.380E-07	4.380E-07	
	GP 001	PER 006				2.930E-03	
Totals					2.310E-01	4.486E-02	0.000E+00
Sulfur Dioxide							
	EU 001	PER 006			4.299E+02		
	EU 002	PER 006			7.000E-01		
	EU 003	PER 001				5.220E+00	9.300E-02
	EU 003	PER 006		5.700E+00	2.500E+01	0.000E+00	0.000E+00
	EU 004	PER 001				5.220E+00	9.300E-02
	EU 004	PER 006		5.700E+00	2.500E+01	0.000E+00	0.000E+00

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
Sulfur Dioxide							
	EU 005	PER 001				1.400E-02	2.500E-03
	EU 005	PER 006		1.400E-01	3.000E-02	1.000E-02	0.000E+00
	EU 007	PER 001				2.300E-03	2.550E-04
	EU 007	PER 006		1.000E-01	2.000E-02	2.000E-02	0.000E+00
	EU 008	PER 001				1.100E-02	3.350E-04
	EU 008	PER 006		2.500E-03	1.100E-02	1.100E-02	0.000E+00
	GP 001	PER 006				1.020E+01	
	SV 001	PER 001		9.930E+01	4.349E+02	7.869E+01	6.900E+00
	SV 001	PER 006		5.960E+01	0.000E+00	5.540E+01	0.000E+00
Totals					4.807E+02	6.564E+01	0.000E+00
Volatile Organic Compounds							
	EU 001	PER 006			4.380E+01		
	EU 002	PER 006			6.400E+00		
	EU 003	PER 001				4.920E+00	3.000E-02
	EU 003	PER 006		6.000E-01	2.500E+00	0.000E+00	0.000E+00
	EU 004	PER 001				4.920E+00	3.000E-02
	EU 004	PER 006		6.000E-01	2.500E+00	0.000E+00	0.000E+00
	EU 005	PER 001				1.400E-01	6.700E-03
	EU 005	PER 006		9.500E-01	2.400E-01	7.000E-02	0.000E+00
	EU 007	PER 001				2.500E-03	0.000E+00
	EU 007	PER 006		7.000E-01	1.600E-01	1.600E-01	0.000E+00
	EU 008	PER 001				1.300E-01	0.000E+00
	EU 008	PER 006		2.000E-02	1.000E-01	1.000E-01	0.000E+00
	GP 001	PER 006				5.000E+00	
	SV 001	PER 001		2.090E+01	9.150E+01	8.068E+01	2.230E+00
	SV 001	PER 006		1.130E+01	0.000E+00	4.270E+01	0.000E+00
Totals					5.570E+01	4.803E+01	0.000E+00

PTE Calculations - Combustion Turbine and Duct Burner (SV 001)

Combustion Turbine (EU 001) & Duct Burner (EU 002) Fuel Usage:

					Maximum Annual Fuel Usage	
Fuel Type	Rated Fuel Usage	Heating Value	Sulfur Content	Fuel Use Limit	Unlimited (8,760 hours)	Limited [d]
EU 001 #2 Fuel Oil	14.08 kgal/hr 1971 mmbtu/hr	140 mmbtu/kgal [a]	0.05 % by weight [c]	1700 hours/year	123,328 kgal 17,265,960 mmbtu	23,934 kgal 3,350,700 mmbtu
EU 001 Natural Gas	1.95 mmcfh 1988 mmbtu/hr	1020 mmbtu/mmcf [b]	0.5 grains/hscf [c]	none	17,073 mmcf 17,414,880 mmbtu	13,760 mmcf 14,035,280 mmbtu
EU 002 Natural Gas	0.26 mmcfh 270 mmbtu/hr	1020 mmbtu/mmcf [b]	0.5 grains/hscf [c]	none	2,319 mmcf 2,365,200 mmbtu	1,869 mmcf 1,906,200 mmbtu

Combustion Turbine (EU001) & Duct Burner (EU002) Emissions:

	Combustion Turbine Emissions					Duct Burner Emissions			
Pollutant	**Combustion Turbine Fuel**	**Emission Factor (lb/mmbtu)**	**Emission Factor Source**	**Uncontrolled Emission Rate (lb/hr) [e]**	**Maximum Uncontrolled Emissions (tons/year) [f]**	**Emission Factor (lb/mmcf)**	**Emission Factor Source**	**Uncontrolled Emission Rate (lb/hr) [e]**	**Maximum Uncontrolled Emissions (tons/year) [f]**
PM (total)	#2 Fuel Oil Natural Gas	0.0150 0.0066	AP-42,5th ed., Table 3.1-2a	29.6 13.1	129.5	7.6	AP-42, Table 1.4-2	2.0	8.8
PM_{10}	#2 Fuel Oil Natural Gas	0.015 0.0066	Emissions Test [g] AP-42,Table 3.1-2a	29.6 13.1	129.5	7.6	AP-42, Table 1.4-2	2.0	8.8
$PM_{2.5}$	#2 Fuel Oil Natural Gas	0.015 0.0066	Emissions Test [g] AP-42,Table 3.1-2a	29.6 13.1	129.5	7.6	AP-42, Table 1.4-2	2.0	8.8
SO_2	#2 Fuel Oil Natural Gas	0.0498 0.0006	40 CFR 75, App. D [h]	98.2 1.2	429.9	0.6	AP-42, Table 1.4-2	0.2	0.7
NO_X	#2 Fuel Oil Natural Gas	0.240 0.099	AP-42, 5th ed. Table 3.1-1 [i]	473.0 196.8	2071.9	190	AP-42, Table 1.4-1 [k]	50.3	220.3
VOC	#2 Fuel Oil Natural Gas	0.005 0.004	Westinghouse Performance Data[j]	10 8	43.8	5.5	AP-42, Table 1.4-2	1.5	6.4
CO	#2 Fuel Oil Natural Gas	0.162 0.018	Westinghouse Performance Data[j]	320 36	1401.6	84	AP-42, Table 1.4-1 [k]	22.2	97.4
Pb	#2 Fuel Oil Natural Gas	1.40E-05 0	AP-42, 5th ed. Table 3.1-2a	0.028 0.0	1.21E-01	0.0005	AP-42, Table 1.4-2	0.0001	5.80E-04

Combustion Turbine & Duct Burner Emission Controls:

Control ID	**Equipment Description**	**Pollutant(s) Controlled**	**Capture Efficiency**	**Destruction / Collection Efficiency**		**Control Efficiency [l]**	
				#2 Fuel Oil	Natural Gas	#2 Fuel Oil	Natural Gas
CE 001	Oxidation Catalyst	CO	100%	90%	90%	90%	90%
		VOC	100%	1%	1%	1%	1%
CE 002	SCR	NOx	100%	73%	85%	73%	85%

Combined Combustion Turbine & Duct Burner Emissions (SV 001):

Pollutant	**Combustion Turbine Fuel**	**Uncontrolled Emission Rate (lb/hr) [m]**	**Maximum Uncontrolled Emissions (tons/year) [f]**	**Air Permit No. 16300087 Emission Limits**			**Controlled Emission Rate (lb/hr) [n]**	**Unrestricted Controlled Emissions (tons/year) [o]**	**Limited Controlled Emissions (tons/year) [p]**
				lb/mmbtu	**lb/hr**	**averaging period**			
PM (total)	#2 Fuel Oil Natural Gas	31.6 15.1	138.3	0.0327 0.0089		1-hour	73.3 20.1	321.0	133.2
PM_{10}	#2 Fuel Oil Natural Gas	31.6 15.1	138.3	0.0327 0.0089	73.3	1-hr (lb/mmbtu) / 24-hr rolling (lb/hr)	73.3 20.1	321.0	133.2
$PM_{2.5}$	#2 Fuel Oil Natural Gas	31.6 15.1	138.3				73.3 20.1	321.0	133.2
SO_2	#2 Fuel Oil Natural Gas	98.3 1.4	430.6		99.3	3-hour	98.3 1.4	430.6	88.3
NO_X	#2 Fuel Oil Natural Gas	523.3 247.1	2292.2		139.9 36.5	30-day	139.9 36.5	612.8	247.8
VOC	#2 Fuel Oil Natural Gas	11.5 9.5	50.2	0.009 0.008		1-hour	11.3 9.4	49.7	42.7
CO	#2 Fuel Oil Natural Gas	342.2 58.2	1499.0		1200	1-hour	34.2 5.8	149.9	49.6
Pb	#2 Fuel Oil Natural Gas	0.0 0.0	0.1				2.77E-02 1.32E-04	0.1	2.40E-02

PTE Calculations - Combustion Turbine and Duct Burner (SV 001)

Notes:

(a) Distillate fuel oil heating value of 140 mmbtu/1000 gallon used for calculations

(b) Natural gas heating value of 1,020 mmbtu/mmcf used for calculations per note c to Table 3.1-1 & note a to Table 1.4-1 of AP-42.

(c) Maximum sulfur content allowed by permit: 0.05 % by weight for fuel oil and 0.5 grains/hscf (0.0016% by weight) for pipeline natural gas.

(d) Combustion turbine operating 1,700 hours/year on fuel oil and the balance (7,060 hours/year) on natural gas.

(e) Uncontrolled Emission Rate = Emission Factor x Rated Fuel Usage (in applicable units)

(f) Maximum Uncontrolled Emissions = (8,760 hours/year) x (1 ton / 2000 lbs) x Uncontrolled Emission Rate (lb/hr); for the combustion turbine the highest uncontrolled emission rate (gas-firing or oil-firing) is used.

(g) Combustion turbine PM_{10} emission test results from 2007 were 0.015 lb/mmbtu which is higher than the corresponding PM10/PM2.5 emission factors from WebFIRE; therefore the test results were used to calculate uncontrolled emissions.

(h) SO_2 Emission Factor for EU001 & EU002:
= 0.0006 lb/mmbtu when firing natural gas; default emission rate for pipeline natural gas from 40 CFR 75, App. D, Sect. 2.3.1.1.
= 0.0498 lb/MMBtu when firing fuel oil = 7.1 lb fuel/gal ÷ 140000 Btu/gal x 106 Btu/MMBtu x 0.05/100 x 2 SO_2/S

(i) Emission factor for turbines using water-steam injection (fuel oil operations) or lean-premix (natural gas operations) combustion controls.

(j) The uncontrolled CO & VOC emission rates for combustion turbine (EU 001) are the emission rates (in lb/hr) specified for base load operation of the turbine in the Westinghouse design performance data sheet for the oxidation catalyst.

(k) Emission factor for large (> 100 mmbtu/hr), uncontrolled, post-NSPS wall-fired boilers.

(l) Control Efficiency = Capture Efficiency x Destruction/Collection Efficiency. The control efficiencies for the Oxidation Catalyst are taken from Westinghouse gauranteed performance data (CO) and estimated performance data (VOC) for the facility. The control efficiencies for the SCR are calculated from the controlled and uncontrolled emission rates and are consistent with the predicted perfomance for the SCR.

(m) The uncontrolled emission rate (in lb/hr) for SV001 is the sum of the uncontrolled emission rates for EU001 (firing gas or oil) and EU002 (firing gas)

(n) Controlled Emission Rate (lb/hr) takes into account emission control equipment and permit emission limits:
= maximum mass emission rate allowed by the permit (i.e. the permit limit in lb/hr or the permit limit in lb/mmbtu multiplied by the EU 001 & 002 rated heat input), or
= Uncontrolled Emission Rate (lb/hr) x (1 - Control Efficiency), whichever is more restrictive.

(o) Unrestricted Controlled Emissions (tons/year) is the maximum controlled emissions without regard to permit limits on operations or fuel use:
= (8,760 hours/year) x (1 ton / 2000 lbs) x Controlled Emission Rate (lb/hr); [for the combustion turbine fuel with the highest Controlled Emission Rate]

(p) Limited Controlled Emissions (tons/year) takes into account permit limits on operations and fuel use:
= Controlled Emission Rate (lb/hr) for EU001 firing natural gas x 8,760 hours/year x (1 ton / 2000 lbs), or
= [Controlled Emission Rate (lb/hr) for EU001 firing oil x 1,700 hours/year + Controlled Emission Rate (lb/hr) for EU001 firing gas x 7,060 hours/year] x (1 ton / 2000 lbs), whichever is larger.

(q) 7.1 lb fuel/gallon ÷ 140000 Btu/gall x 10^6 Btu/MMBtu x 0.05/100 = 0.0254 lb S/MMBtu. Assuming 2% converts to SO_3 (see TSD), 0.000508 lb to SO_3, and SO_3 factor is 0.00127 lb/MMBtu (0.000508 + (3 x (0.000508/2)).
Further assuming 100% conversion of SO_3 to H_2SO_4, H_2SO_4 = 0.00127 x 98/80 = 0.00155 lb/MMBtu
0.006 lb SO_2/MMBtu x 1020 MMBtu/mmcf = 0.612 lb SO_2/mmcf, formed from 0.306 lb S/mmcf.
Assume 0.306 lb is 98% of the S in 1 mmcf, so 2% of the S in 1 mmcf, or 0.0062 lb S/mmcf converts to SO_3.
SO_3 = S + (3S/2) = 0.0155 lb SO_3/mmcf, ÷ 1020 Mmbtu/mmcf, gives 0.000015 lb SO_3/MMBtu.
Further assuming 100% conversion of SO_3 to H_2SO_4, H_2SO_4 = 0.000015 x 98/80 = 0.000019 lb/MMBtu

5256

EU 001 - Combustion Turbine Generator

1,988.0 MMBTU/hr (Natural Gas)

1,971.0 MMBTU/hr (Fuel Oil)

Fuel Type	% Sulfur	% Ash	Heat Value	Units	Maximum Fuel Consumption Rate	Units
Natural Gas	0.8 grains/100 scf	negligible	1,020	Btu/cf	1.95	MMcf/hr
Fuel Oil No. 2	0.05	negligible	140,000	Btu/gal	15,714.3	gal/hr

Natural Gas Emissions

HAP Name (CAS)	Emission Factor (lbs/ton, lbs/gal, **lbs/MMBtu**, etc)[c]	Emission Rate (lbs/hr)[d]	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)
Acetaldehyde [534-15-6]	4.00E-05	7.95E-02	3.48E-01	0.00%	3.48E-01	3.48E-01
Acrolein [107-02-8]	6.40E-06	1.27E-02	5.57E-02	0.00%	5.57E-02	5.57E-02
Benzene [71-43-2]	1.20E-05	2.39E-02	1.04E-01	0.00%	1.04E-01	1.04E-01
1,3 Butadiene [106-99-0]	4.29E-07	8.53E-04	3.74E-03	0.00%	3.74E-03	3.74E-03
Ethylbenzene [100-41-4]	3.20E-05	6.36E-02	2.79E-01	0.00%	2.79E-01	2.79E-01
Formaldehyde [50-00-0]	7.10E-04	1.41E+00	6.18E+00	0.00%	6.18E+00	6.18E+00
Naphthalene[a] [91-20-3]	1.30E-06	2.58E-03	1.13E-02	0.00%	1.13E-02	1.13E-02
PAH[b][130498-29-2]	2.20E-06	4.37E-03	1.92E-02	0.00%	1.92E-02	1.92E-02
Propylene Oxide [75-56-9]	2.90E-05	5.77E-02	2.53E-01	0.00%	2.53E-01	2.53E-01
Toluene [108-88-3]	1.30E-04	2.58E-01	1.13E+00	0.00%	1.13E+00	1.13E+00
Xylene [1330-20-7]	6.40E-05	1.27E-01	5.57E-01	0.00%	5.57E-01	5.57E-01
Totals		**2.04**	**8.93**		**8.93**	**8.93**

[a]Naphthalene is included in the Polyaromatic Hydorcarbon(PAH) emissions and is not double-counted in the total HAPs.

[b]Total PAH emission factor is equal to the sum of the individual PAH compounds.

[c]All emission factors are from AP-42, Section 3.1 (4/00).

Fuel Oil Emissions

HAP Name (CAS)	Emission Factor **lbs/MMBtu**	Emission Rate (lbs/hr)[c]	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)
Arsenic [7440-38-2]	1.10E-05	2.17E-02	9.50E-02	0.00%	9.50E-02	1.84E-02

Benzene [71-43-2]	5.50E-05	1.08E-01	4.75E-01	0.00%	4.75E-01	9.21E-02
Beryllium [7440-41-7]	3.10E-07	6.11E-04	2.68E-03	0.00%	2.68E-03	5.19E-04
1,3-Butadiene [106-99-0]	1.60E-05	3.15E-02	1.38E-01	0.00%	1.38E-01	2.68E-02
Cadmium [7440-43-9]	4.80E-06	9.46E-03	4.14E-02	0.00%	4.14E-02	8.04E-03
Chromium [7440-47-3]	1.10E-05	2.17E-02	9.50E-02	0.00%	9.50E-02	1.84E-02
Formeldahyde [50-00-0]	2.80E-04	5.52E-01	2.42E+00	0.00%	2.42E+00	4.69E-01
Lead [7439-92-1]	1.40E-05	2.76E-02	1.21E-01	0.00%	1.21E-01	2.35E-02
Manganese [7439-96-5]	7.90E-04	1.56E+00	6.82E+00	0.00%	6.82E+00	1.32E+00
Mercury [7439-97-6]	1.20E-06	2.37E-03	1.04E-02	0.00%	1.04E-02	2.01E-03
Naphthalene[a] [91-20-3]	3.50E-05	6.90E-02	3.02E-01	0.00%	3.02E-01	5.86E-02
Nickel [7440-02-0]	4.60E-06	9.07E-03	3.97E-02	0.00%	3.97E-02	7.71E-03
PAH[b] [130498-29-2]	4.00E-05	7.88E-02	3.45E-01	0.00%	3.45E-01	6.70E-02
Selenium [7782-49-2]	2.50E-05	4.93E-02	2.16E-01	0.00%	2.16E-01	4.19E-02
Totals		**2.47**	**10.82**		**10.82**	**2.10**

[a]Naphthalene is included in the Polyaromatic Hydorcarbon(PAH) emissions and is not double-counted in the total HAPs.

[b]Total PAH emission factor is equal to the sum of the individual PAH compounds.

[c]All emission factors are from AP-42, Section 3.1 (4/00).

[c]The combustion turbine is limited to firing low sulfur distillate fuel oil (no greater than 0.05% sulfur by weight) for no more than 1700 hours per year.

10) Worse-Case Potential-to-Emit Summary

HAP Name (CAS)	***Before Operating Limits*** (ton/yr)[c]	***After Operating Limits*** (ton/yr)
Acetaldehyde [75-07-0][a]	3.48E-01	3.48E-01
Acrolein [107-02-8][a]	5.57E-02	5.57E-02
Arsenic [7440-38-2][b]	9.50E-02	1.84E-02
Benzene [71-43-2][b]	4.75E-01	1.76E-01
Beryllium [7440-41-7][b]	2.68E-03	5.19E-04
1,3 Butadiene [106-99-0][b]	1.38E-01	2.98E-02
Cadmium [7440-43-9][b]	4.14E-02	8.04E-03
Chromium [7440-47-3][b]	9.50E-02	1.84E-02
Ethylbenzene [100-41-4][a]	2.79E-01	2.79E-01
Formaldehyde [50-00-0][b]	6.18E+00	5.45E+00
Lead [7439-92-1][b]	1.21E-01	2.35E-02

Manganese [7439-96-5][b]	6.82E+00	1.32E+00
Mercury [7439-97-6][b]	1.04E-02	2.01E-03
Naphthalene [91-20-3][b, d]	3.02E-01	6.78E-02
Nickel [7440-02-0][b]	3.97E-02	7.71E-03
PAH [130498-29-2][b, e]	3.45E-01	8.25E-02
Propylene Oxide [75-56-9][a]	2.53E-01	2.53E-01
Selenium [7782-49-2][b]	2.16E-01	4.19E-02
Toluene [108-88-3][a]	1.13E+00	1.13E+00
Xylenes [1330-20-7][a]	5.57E-01	5.57E-01
Totals		**9.30**

[a] After operating limit emissions are based on the turbine firing natural gas for 8,760 hours per year.
[b] After operating limit emissions assume the turbine operates on fuel oil for 1700 hours per year and the remainder of the year (7,060 hours) the turbine fires natural gas.
[c] Represents the worst case annual conctrolled HAP emissions.

[d] Nahpthalene is included in the Polyaromatic Hydorcarbon(PAH) emissions and is not double-counted in the total HAPs.

[e] Total PAH emission factor is equal to the sum of the individual PAH compounds.

Operating Limitations:

1700 hours/year when combusting distillate fuel oil.

EU 002 - Supplemental Duct Firing Burners

270.0 MMBTU/hr

Fuel Type	% Sulfur	% Ash	Heat Value	Units	Maximum Fuel Consumption Rate	Units
Natural Gas	0.8 grains/100 scf	negligible	1,020	Btu/cf	0.26	MMcf/hr

HAP Name (CAS)	Emission Factor[a] **lbs/MMcf**	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (tons/yr)
Benzene (71-43-2)	2.1E-03	5.6E-04	2.43E-03	0.0	2.43E-03
Dichlorobenzene (25321-22-6)	1.2E-03	3.2E-04	1.39E-03	0.0	1.39E-03
Formaldehyde (50-00-0)	7.5E-02	2.0E-02	8.70E-02	0.0	8.70E-02
Hexane (110-54-3)	1.8E+00	4.8E-01	2.09E+00	0.0	2.09E+00
Naphthalene (91-20-3)[b]	6.1E-04	1.6E-04	7.07E-04	0.0	7.07E-04
Toluene (108-88-3)	3.4E-03	9.0E-04	3.94E-03	0.0	3.94E-03
Polycyclic Organic Matter (POM)[c]	8.8E-05	2.3E-05	1.02E-04	0.0	1.02E-04
Arsenic (7440-38-2)	2.0E-04	5.3E-05	2.32E-04	0.0	2.32E-04
Beryllium (744-43-0-9)	1.2E-05	3.2E-06	1.39E-05	0.0	1.39E-05
Cadmium (7440-43-9)	1.1E-03	2.9E-04	1.28E-03	0.0	1.28E-03
Chromium (7440-47-3)	1.4E-03	3.7E-04	1.62E-03	0.0	1.62E-03
Cobalt (744-48-4)	8.4E-05	2.2E-05	9.74E-05	0.0	9.74E-05
Manganese (74439-96-5)	3.8E-04	1.0E-04	4.41E-04	0.0	4.41E-04
Mercury (7439-97-6)	2.6E-04	6.9E-05	3.01E-04	0.0	3.01E-04
Nickel (7440-02-0)	2.1E-03	5.6E-04	2.43E-03	0.0	2.43E-03
Selenium (7782-49-2)	2.4E-05	6.4E-06	2.78E-05	0.0	2.78E-05
Totals		**0.50**	**2.19**		**2.19**

[a]All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion"(7/98).

[b]Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

[c]Total POM emission factor is equal to the sum of the individual POM compounds.

HAP Name (CAS)	***Before Operating Limits*** (ton/yr)
Benzene (71-43-2)	2.43E-03
Dichlorobenzene (25321-22-6)	1.39E-03
Formaldehyde (50-00-0)	8.70E-02
Hexane (110-54-3)	2.09E+00
Naphthalene (91-20-3)[1]	7.07E-04
Toluene (108-88-3)	3.94E-03
POM	1.02E-04
Arsenic (7440-38-2)	2.32E-04
Beryllium (7440-43-0-9)	1.39E-05
Cadmium (7440-43-9)	1.28E-03
Chromium (7440-47-3)	1.62E-03
Cobalt (744-48-4)	9.74E-05
Manganese (74439-96-5)	4.41E-04
Mercury (7439-97-6)	3.01E-04
Nickel (7440-02-0)	2.43E-03
Selenium (7782-49-2)	2.78E-05
Total HAP	**2.19**

PTE Calculations - Auxiliary Boilers #1 & #2 (SV 002 & 003)

Auxiliary Boiler (EU 003 & EU 004) Fuel Usage:

					Maximum Annual Fuel Usage (both boilers combined)	
Fuel Type	Rated Fuel Usage	Heating Value	Sulfur Content	Fuel Oil Limit	Unlimited (8,760 hours)	Limited [e]
#2 Fuel Oil	0.82 kgal/hr 114 mmbtu/hr	139 mmbtu/kgal [b]	0.05 % by weight [d]	3400 hours/year (total for both boilers)	14,369 kgal 1,997,280 mmbtu	2,788 kgal 387,600 mmbtu
Natural Gas	0.11 mmcfh 113.1 mmbtu/hr [a]	1020 mmbtu/mmcf [c]	0.5 grains/hscf [d]		1,943 mmcf 1,981,512 mmbtu	1,566 mmcf 1,596,972 mmbtu

Auxiliary Boiler Emission Controls:

There are no post-combustion emission controls for the Auxiliary Boilers (Control Efficiency = 0). Combustion NOx controls (CE 003 & 004, Low NOx Burners, and CE 005 & 006 Flue Gas Recirculation) are accounted for in the emission factors used below.

Auxiliary Boiler #1 (EU 003) Emissions: potential SO2 = 0.02

Pollutant	Auxiliary Boiler Fuel	Emission Factor (lb/kgal, lb/mmcf)	Emission Factor Source	Uncontrolled Emission Rate (lb/hr) [f]	Maximum Uncontrolled Emissions (tons/year) [g]	Air Permit No. 16300087 Emission Limits			Controlled Emission Rate (lb/hr) [h]	Unrestricted Controlled Emissions (tons/year) [i]	Limited Controlled Emissions (tons/year) [j]
						lb/mmbtu	lb/hr	averaging period			
PM (total)	#2 Fuel Oil Natural Gas	3.3 7.6	AP-42, 5th edition, Tables 1.3-1 & 2, 1.3-6 and 1.4-2	2.7 0.8	11.9	0.061 0.005	6.954 0.5655	1-hour	2.7 0.6	11.9	4.3
PM_{10}	#2 Fuel Oil Natural Gas	2.3 7.6		1.9 0.8	8.3	0.061 0.005	6.954 0.5655	1-hour	1.9 0.6	8.3	3.6
$PM_{2.5}$	#2 Fuel Oil Natural Gas	1.6 7.6		1.3 0.8	5.6	Assume that $PM_{2.5}$ does not exceed PM_{10}			1.9 0.6	8.3	3.6
SO_2	#2 Fuel Oil Natural Gas	7.0 0.6	AP-42, 5th ed., Tables 1.3-1 and 1.4-2	5.7 0.1	25.0		5.7	1-hour	5.7 0.1	25.0	5.1
NO_X	#2 Fuel Oil Natural Gas	10 100	AP-42, 5th ed., Tables 1.3-1 and 1.4-1	8.2 11.1	48.6	0.06 0.12	6.9 13.4	1-hr (lb/mmbtu) / 30-day rolling (lb/hr)	6.8 11.1	48.6	48.6
VOC	#2 Fuel Oil Natural Gas	0.2 5.5	AP-42, 5th ed., Tables 1.3-1 and 1.4-2	0.2 0.6	2.7	0.03 0.005	3.42 0.5655	1-hour	0.2 0.6	2.5	2.5
CO	#2 Fuel Oil Natural Gas	5 84.0	AP-42, 5th ed., Tables 1.3-1 and 1.4-1	4.1 9.3	40.8		5.6	1-hour	4.1 5.6	24.5	24.5
H_2SO_4 [n]	#2 Fuel Oil Natural Gas	0.002400 0.0000	lb/MMBtu, by mass balance	0.273600 0.002036	1.19837	0.0025 0.000026	0.285 0.0029406		0.273600 0.002036	1.19837	0.23975

Auxiliary Boiler #2 (EU 004) Emissions:

Pollutant	Auxiliary Boiler Fuel	Emission Factor (lb/kgal, lb/mmcf)	Emission Factor Source	Uncontrolled Emission Rate (lb/hr) [f]	Maximum Uncontrolled Emissions (tons/year) [g]	Air Permit No. 16300087 Emission Limits			Controlled Emission Rate (lb/hr) [h]	Unrestricted Controlled Emissions (tons/year) [i]	Limited Controlled Emissions (tons/year) [j]
						lb/mmbtu	lb/hr	averaging period			
PM (total)	#2 Fuel Oil Natural Gas	3.3 7.6	AP-42, 5th edition, Tables 1.3-1[k] & 2, 1.3-6 and 1.4-2	2.7 0.8	11.9	0.061 0.005	6.954 0.5655	1-hour	2.7 0.6	11.9	4.3
PM_{10}	#2 Fuel Oil Natural Gas	2.3 7.6		1.9 0.8	8.3	0.061 0.005	6.954 0.5655	1-hour	1.9 0.6	8.3	3.6
$PM_{2.5}$	#2 Fuel Oil Natural Gas	1.6 7.6		1.3 0.8	5.6	Assume that $PM_{2.5}$ does not exceed PM_{10}			1.9 0.6	8.3	3.6
SO_2	#2 Fuel Oil Natural Gas	7.0 0.6	AP-42, 5th ed., Tables 1.3-1 and 1.4-2	5.7 0.1	25.0		5.7	1-hour	5.7 0.1	25.0	5.1
NO_X	#2 Fuel Oil Natural Gas	10 100	AP-42, 5th ed., Tables 1.3-1[k] and 1.4-1[l]	8.2 11.1	48.6	0.06 0.12	6.9 13.4	1-hr (lb/mmbtu) / 30-day rolling (lb/hr)	6.9 11.1	48.6	48.6
VOC	#2 Fuel Oil Natural Gas	0.2 5.5	AP-42, 5th ed., Tables 1.3-3[m] and 1.4-2	0.2 0.6	2.7	0.03 0.005	3.42 0.5655	1-hour	0.2 0.6	2.5	2.5
CO	#2 Fuel Oil Natural Gas	5 84.0	AP-42, 5th ed., Tables 1.3-1[k] and 1.4-1[l]	4.1 9.3	40.8		5.6	1-hour	4.1 5.6	24.5	24.5
H_2SO_4 [n]	#2 Fuel Oil Natural Gas	0.002400 0.000018	lb/MMBtu, by mass balance	0.273600 0.002036	1.19837	0.0025 0.000026	0.285 0.0029406		0.273600 0.002036	1.19837	0.23975

PTE Calculations - Auxiliary Boilers #1 & #2 (SV 002 & 003)

Notes:

(a) Maximum heat input allowed by permit (8-hour block average) during natural gas firing

(b) Distillate fuel oil heating value of 139 mmbtu/gallon used for calculations per note d to AP-42, Table 1.3-2

(c) Natural gas heating value of 1,020 mmbtu/mmcf used for calculations per note c to Table 3.1-1 & note a to Table 1.4-1 of AP-42

(d) Maximum sulfur content allowed by permit: 0.05 % by weight for fuel oil and 0.5 grains/hscf for pipeline natural gas. SO2 emission factor for oil is calculated from the oil value as described in AP-42, Table 1.3-1 (assuming S content will not be exactly 0.05%, 0.049% was used).
The natural gas emission factor is not based on S content but on AP-42 factor of 0.6 for pipeline gas

(e) Each boiler operating 1,700 hours/year on fuel oil and the balance (7,060 hours/year) on natural gas.

(f) Uncontrolled Emission Rate = Emission Factor x Rated Fuel Usage (in applicable units)

(g) Maximum Uncontrolled Emissions = (8,760 hours/year) x (1 ton / 2000 lbs) x Uncontrolled Emission Rate (lb/hr) for the fuel with the highest uncontrolled emission rate (gas or oil).

(h) Controlled Emission Rate (lb/hr) takes into account emission control equipment and permit emission limits:
= maximum mass emission rate allowed by the permit (i.e. the permit limit in lb/hr or the permit limit in lb/mmbtu multiplied by the EU 003 or EU 004 rated heat input), o
= Uncontrolled Emission Rate (lb/hr) x (1 - Control Efficiency), whichever is more restrictive.

(i) Unrestricted Controlled Emissions (tons/year) is the maximum controlled emissions without regard to permit limits on operations or fuel use:
= (8,760 hours/year) x (1 ton / 2000 lbs) x Controlled Emission Rate (lb/hr) for the fuel with the highest Controlled Emission Rat

(j) Limited Controlled Emissions (tons/year) takes into account permit limits on operations and fuel use:
= Controlled Emission Rate (lb/hr) for EU 003 & 004 firing natural gas x 8,760 hours/year x (1 ton / 2000 lbs), or
= [Controlled Emission Rate (lb/hr) for firing oil x 1,700 hours/year + Controlled Emission Rate (lb/hr) for firing gas x 7,060 hours/year] x (1 ton / 2000 lbs), whichever is larger.

(k) Emission factor for No. 2 fired boilers with LNB/FGR controls.

(l) Emission factor for large (> 100 mmbtu/hr), FGR controlled boilers.

(m) NMTOC emission factor for distillate oil fired industrial boilers

EU003 and EU004 (identical units)
Maximum Rated Boiler Capacity: **114.0** MMBTU/hr

Fuel Type	% Sulfur	% Ash	Heat Value	Units	Maximum Fuel Consumption Rate	Units
Natural Gas	0.4 gr/100 scf	negligible	1,020	Btu/cf	0.11	MMcf/hr
Fuel Oil No. 2	0.05	negligible	139,000	Btu/gal	820.1	gal/hr

Natural Gas Calculations

HAP Name (CAS)	Emission Factor (lbs/ton, lbs/gal, **lbs/MMcf**, etc)	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Maximum Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)
Benzene (71-43-2)	2.1E-03	2.3E-04	1.0E-03	1.0E-03	1.0E-03
Dichlorobenzene (25321-22-6)	1.2E-03	1.3E-04	5.9E-04	5.9E-04	5.9E-04
Formaldehyde (50-00-0)	7.5E-02	8.4E-03	3.7E-02	3.7E-02	3.7E-02
Hexane (110-54-3)	1.8E+00	2.0E-01	8.8E-01	8.8E-01	8.8E-01
Naphthalene (91-20-3)	6.1E-04	6.8E-05	3.0E-04	3.0E-04	3.0E-04
Toluene (108-88-3)	3.4E-03	3.8E-04	1.7E-03	1.7E-03	1.7E-03
Polycyclic Orgainc Matter (POM)[c]	8.8E-05	9.9E-06	4.3E-05	4.3E-05	4.3E-05
Arsenic (7440-38-2)	2.0E-04	2.2E-05	9.8E-05	9.8E-05	9.8E-05
Beryllium (744-43-0-9)	1.2E-05	1.3E-06	5.9E-06	5.9E-06	5.9E-06
Cadmium (7440-43-9)	1.1E-03	1.2E-04	5.4E-04	5.4E-04	5.4E-04
Chromium (7440-47-3)	1.4E-03	1.6E-04	6.9E-04	6.9E-04	6.9E-04
Cobalt (744-48-4)	8.4E-05	9.4E-06	4.1E-05	4.1E-05	4.1E-05
Manganese (74439-96-5)	3.8E-04	4.2E-05	1.9E-04	1.9E-04	1.9E-04
Mercury (7439-97-6)	2.6E-04	2.9E-05	1.3E-04	1.3E-04	1.3E-04
Nickel (7440-02-0)	2.1E-03	2.3E-04	1.0E-03	1.0E-03	1.0E-03
Lead	5.0E-04	5.6E-05	2.4E-04	2.4E-04	2.4E-04
Selenium (7782-49-2)	2.4E-05	2.7E-06	1.2E-05	1.2E-05	1.2E-05
Totals		**0.21**	**0.92**	**0.92**	**0.92**

All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion"(7/98).
Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.
Total POM emission factor is equal to the sum of the individual POM compounds.

Fuel Oil Calculations

HAP Name (CAS)	Emission Factor (lbs/ton, **lbs/gal**, lbs/MMcf, etc)	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Maximum Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)
Benzene (71-43-2)	2.14E-07	1.8E-04	7.7E-04	7.7E-04	2.98E-04
Ethylbenzene (100-41-4)	6.36E-08	5.2E-05	2.3E-04	2.3E-04	8.87E-05
Formaldehyde (50-00-0)	3.30E-05	2.7E-02	1.2E-01	1.2E-01	4.60E-02
1,1,1-Trichloroethane (71-55-6)	2.36E-07	1.9E-04	8.5E-04	8.5E-04	3.29E-04
Naphthalene (91-20-3)	1.13E-06	9.3E-04	4.1E-03	4.1E-03	1.58E-03
Toluene (108-88-3)	6.20E-06	5.1E-03	2.2E-02	2.2E-02	8.64E-03
o-Xylenes (95-47-6)	1.09E-07	8.9E-05	3.9E-04	3.9E-04	1.52E-04
Polycyclic Organic Matter (POM)	3.30E-06	2.7E-03	1.2E-02	1.2E-02	4.60E-03
Arsenic (7440-38-2)	5.56E-07	4.6E-04	2.0E-03	2.0E-03	7.75E-04
Beryllium (7440-43-0-9)	4.17E-07	3.4E-04	1.5E-03	1.5E-03	5.81E-04
Cadmium (7440-43-9)	4.17E-07	3.4E-04	1.5E-03	1.5E-03	5.81E-04
Chromium (7440-47-3)	4.17E-07	3.4E-04	1.5E-03	1.5E-03	5.81E-04
Lead [7439-92-1]	1.25E-06	1.0E-03	4.5E-03	4.5E-03	1.74E-03
Manganese (74439-96-5)	8.34E-07	6.8E-04	3.0E-03	3.0E-03	1.16E-03
Mercury (7439-97-6)	4.17E-07	3.4E-04	1.5E-03	1.5E-03	5.81E-04
Nickel (7440-02-0)	4.17E-07	3.4E-04	1.5E-03	1.5E-03	5.81E-04

Selenium (7782-49-2)	2.09E-06	1.7E-03	7.5E-03	7.5E-03	2.91E-03
Totals		**0.04**	**0.18**	**0.18**	**0.07**

All emissions are calculated based on emission factors from AP-42, Section 1.3 "Fuel Oil Combustion", Table 1.3-9 and Table 1.3-10 (9/98).

Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

Total POM emission factor is fro AP-42, Section 1.3, table 1.3-8

Worse-Case Potential-to-Emit Summary

HAP Name (CAS)	lb/hr	***Max Emissions Each*** (ton/yr)	***GP001 Operating Limits*** (ton/yr)
Benzene (71-43-2)	2.3E-04	1.03E-03	2.06E-03
Ethylbenzene (100-41-4)	5.2E-05	2.28E-04	8.87E-05
Dichlorobenzene (25321-22-6)	1.3E-04	5.87E-04	1.17E-03
Formaldehyde (50-00-0)	2.7E-02	1.19E-01	1.05E-01
Hexane (110-54-3)	2.0E-01	8.81E-01	1.76E+00
Naphthalene (91-20-3)	9.3E-04	4.06E-03	2.06E-03
Toluene (108-88-3)	5.1E-03	2.23E-02	1.13E-02
1,1,1-Trichloroethane (71-55-6)	1.9E-04	8.48E-04	3.29E-04
o-Xylenes (95-47-6)	8.9E-05	3.92E-04	1.52E-04
POM	2.7E-03	1.19E-02	4.67E-03
Arsenic (7440-38-2)	4.6E-04	2.00E-03	9.33E-04
Beryllium (7440-43-0-9)	3.4E-04	1.50E-03	5.91E-04
Cadmium (7440-43-9)	3.4E-04	1.50E-03	1.45E-03
Chromium (7440-47-3)	3.4E-04	1.50E-03	1.69E-03
Cobalt (744-48-4)	9.4E-06	4.11E-05	8.22E-05
Lead [7439-92-1]	1.0E-03	4.49E-03	2.14E-03
Manganese (74439-96-5)	6.8E-04	3.00E-03	1.46E-03
Mercury (7439-97-6)	3.4E-04	1.50E-03	7.87E-04
Nickel (7440-02-0)	3.4E-04	1.50E-03	1.21E-03
Selenium (7782-49-2)	1.7E-03	7.49E-03	2.93E-03
Total HAP	0.21	9.24E-01	1.85E+00

GP001 operating limits means the total emissions from the 2 boilers combined, assuming the limit of 3400 hours per year combined for both boilers.

GP001 limit is calculated as the max of (operating both boilers on gas for 2x8760 hours) or (operating for 3400 hours on oil and [(2x8760)-3400] hours on gas
Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.
Operating Limitations: 3400 hours/year when combusting distillate oil

PTE Calculations - Emergency Diesel Engines (SV 004 & 006)

Emergency Fire Pump (EU 005) and Emergency Diesel Generator (EU 007) Fuel Usage:

					Maximum Annual Fuel Usage	
Diesel Engine	Rated Fuel Usage	Diesel Fuel		Operating Limit	Unlimited (8,760 hours)	Limited [d]
EU 005	0.019 kgal/hr 2.7 mmbtu/hr	Heating Value:	140 mmbtu/kgal [b]	150 hours/year [d]	169 kgal 23,652 mmbtu	2.9 kgal 405 mmbtu
EU 007	0.013 kgal/hr 1.87 mmbtu/hr [a]	Sulfur Content:	0.05 % by weight [c]	500 hours/year [d]	117 kgal 16,381 mmbtu	6.7 kgal 935 mmbtu

Diessel Engine Emission Controls:

There are no post-combustion emission controls for the Diesel Engines (Control Efficiency = 0). The NOx/PM controls employed (engine timing and aftercooling) for the Emergency Diesel Fire Pump are accounted for in the emission factors used below.

Emergency Diesel Fire Pump (EU 005) Emissions:

Pollutant	Emission Factor (lb/mmbtu)	Emission Factor Source	Uncontrolled Emission Rate (lb/hr) [e]	Maximum Uncontrolled Emissions (tons/year) [f]	Air Permit No. 16300087 Emission Limits			Controlled Emission Rate (lb/hr) [g]	Unrestricted Controlled Emissions (tons/year) [h]	Limited Controlled Emissions (tons/year) [i]
					lb/mmbtu	lb/hr	averaging period			
PM (total)	0.31	AP-42, 5th edition, Table 3.3-1	0.8	0.2	0.26		1-hour	0.70	0.18	0.05
PM_{10}	0.31		0.8	0.2	0.26		1-hour	0.70	0.18	0.05
$PM_{2.5}$	0.31		0.8	0.2	(j)			0.70	0.18	0.05
SO_2 [l]	0.05	mass balance	0.14	0.0	0.5	0.14	1-hour	0.14	0.03	0.01
NO_X	4.41	AP-42, 5th edition, Table 3.3-1	11.9	3.0	1.85	4.995	1-hour	5.00	1.25	0.37
VOC	0.35		0.9	0.2	0.71		1-hour	0.95	0.24	0.07
CO	0.95		2.6	0.6		5.0	1-hour	2.57	0.64	0.19
H_2SO_4 [k]	0.00155				0.0017	0.00459		0.004185	1.05E-04	3.14E-04

Emergency Diesel Generator (EU 007) Emissions:

Pollutant	Emission Factor (lb/mmbtu)	Emission Factor Source	Uncontrolled Emission Rate (lb/hr) [e]	Maximum Uncontrolled Emissions (tons/year) [f]	Air Permit No. 16300087 Emission Limits			Controlled Emission Rate (lb/hr) [g]	Unrestricted Controlled Emissions (tons/year) [h]	Limited Controlled Emissions (tons/year) [i]
					lb/mmbtu	lb/hr	averaging period			
PM (total)	0.31	AP-42, 5th edition, Table 3.3-1	0.6	0.1				0.6	0.14	0.14
PM_{10}	0.31		0.6	0.1				0.6	0.14	0.14
$PM_{2.5}$	0.31		0.6	0.1				0.6	0.14	0.14
SO_2 [l]	0.05	mass balance	0.1	0.0	0.5		1-hour	0.1	0.02	0.02
NO_X	4.41	AP-42, 5th edition, Table 3.3-1	8.2	2.1				8.2	2.06	2.06
VOC	0.35		0.7	0.2				0.7	0.16	0.16
CO	0.95		1.8	0.4				1.8	0.44	0.44
H_2SO_4 [k]	0.00155							0.0028985	0.000724625	0.000724625

Notes:

(a) Maximum heat input allowed by permit (8-hour block average) during natural gas firing.
(b) Distillate fuel oil heating value of 139 mmbtu/gallon used for calculations per note d to AP-42, Table 1.3-2; except as noted in (g) below.
(c) Maximum sulfur content allowed by permit: 0.05 % by weight for fuel oil.
(d) EU 005 is limited to 150 hours per year operation by Permit. EU 007 is an emergency use engine and is assumed to operate no more than 500 hours per year for PTE calculations.
(e) Uncontrolled Emission Rate = Emission Factor x Rated Fuel Usage (in applicable units)
(f) Maximum Uncontrolled Emissions for Emergency Engines are based on 500 hours per year of operations as specified in the instructions for MCPA form EC-03, Part 1, Item 12 (d):
= (500 hours/year) x (1 ton / 2000 lbs) x Uncontrolled Emission Rate (lb/hr)
(g) Controlled Emission Rate (lb/hr) takes into account emission control equipment and permit emission limits:
= maximum mass emission rate allowed by the permit (i.e. the permit limit in lb/hr or the permit limit in lb/mmbtu multiplied by the EU 003 or EU 004 rated heat input), or
= Uncontrolled Emission Rate (lb/hr) x (1 - Control Efficiency), whichever is more restrictive.
(h) Unrestricted Controlled Emissions (tons/year) is the maximum controlled emissions without regard to permit limits on operations or fuel use:
= (500 hours/year) x (1 ton / 2000 lbs) x Controlled Emission Rate (lb/hr); [see note (f)]
(i) Limited Controlled Emissions (tons/year) takes into account permit limits on operations and fuel use:
= Controlled Emission Rate (lb/hr) for EU 005 x 150 hours/year x (1 ton / 2000 lbs)
= Controlled Emission Rate (lb/hr) for EU 007 x 500 hours/year x (1 ton / 2000 lbs)
(j) PM/PM_{10} emission limits are used to calculate $PM_{2.5}$ controlled emissions since there is no permit limit for $PM_{2.5}$.

EU005 Capacity	2.70	MM Btu/hr
Limited Operating Hours	150	hr/yr
Maximum Operating Hours	500	hr/yr

HAP?	Pollutant	CAS No.	Em. Factor[1] (lb/MM Btu)	Max. Emission Rate (lb/hr)	Max. Emission Rate (ton/yr)
HAP	Benzene	71-43-2	9.33E-04	**2.52E-03**	**6.30E-04**
HAP	Toluene	108-88-3	4.09E-04	**1.10E-03**	**2.76E-04**
HAP	Xylenes	1330-207	2.85E-04	**7.70E-04**	**1.92E-04**
HAP	Propylene	115-07-1	2.58E-03	**6.97E-03**	**1.74E-03**
HAP	1,3 Butadiene	106-99-0	3.91E-05	**1.06E-04**	**2.64E-05**
HAP	Formaldehyde	50-00-0	1.18E-03	**3.19E-03**	**7.97E-04**
HAP	Acetaldehyde	75-07-0	7.67E-04	**2.07E-03**	**5.18E-04**
HAP	Acrolein	107-02-8	9.25E-05	**2.50E-04**	**6.24E-05**
HAP	Napthalene	91-20-3	8.48E-05	**2.29E-04**	**5.72E-05**
HAP, POM	Acenaphthylene	203-96-8	5.06E-06	**1.37E-05**	**3.42E-06**
HAP, POM	Acenaphthene	83-32-9	1.42E-06	**3.83E-06**	**9.59E-07**
HAP, POM	Fluorene	86-73-7	2.92E-05	**7.88E-05**	**1.97E-05**
HAP, POM	Phenanthrene	85-01-8	2.94E-05	**7.94E-05**	**1.98E-05**
HAP, POM	Anthracene	120-12-7	1.87E-06	**5.05E-06**	**1.26E-06**
HAP, POM	Fluoranthene	206-44-0	7.61E-06	**2.05E-05**	**5.14E-06**
HAP, POM	Pyrene	129-00-0	4.78E-06	**1.29E-05**	**3.23E-06**
HAP, POM	Benz(a)anthracene	56-55-3	1.68E-06	**4.54E-06**	**1.13E-06**
HAP, POM	Chrysene	218-01-9	3.53E-07	**9.53E-07**	**2.38E-07**
HAP, POM	Benzo(b)fluoranthene	205-99-2	9.91E-08	**2.68E-07**	**6.69E-08**
HAP, POM	Benzo(k)fluoranthene	207-08-9	1.55E-07	**4.19E-07**	**1.05E-07**
HAP, POM	Benzo(a)pyrene	50-32-8	1.88E-07	**5.08E-07**	**1.27E-07**
HAP, POM	Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	**1.01E-06**	**2.53E-07**
HAP, POM	Dibenzo(a,h)anthracene	53-70-3	5.83E-07	**1.57E-06**	**3.94E-07**
HAP, POM	Benzo(g,h,I)perylene	191-24-2	4.89E-07	**1.32E-06**	**3.30E-07**
HAP, POM	Polycyclic Organic Matter		8.33E-05	**2.25E-04**	**5.62E-05**
	Total HAPs			**1.74E-02**	**4.36E-03**

[1]Emission factors taken from "Compilation of Air Pollutant Emission Factors", AP-42, Sec. 3.3 Table 3.3-2, 10/96

Maximum Emissions = (Emis. factor, lb/MM BTU) x (MM BTU/hr) = lb/hr, (lb/hr) x (8760 hr/yr) / (2000 lb/ton) = ton/yr

EU007 Capacity	1.87	MM Btu/hr
Limited Operating Hours	500	hr/yr
Maximum Operating Hours	500	hr/yr

HAP?	Pollutant	CAS No.	Em. Factor[1] (lb/MM Btu)	Max. Emission Rate (lb/hr)	Max. Emission Rate (ton/yr)
HAP	Benzene	71-43-2	9.33E-04	**1.74E-03**	**4.36E-04**
HAP	Toluene	108-88-3	4.09E-04	**7.65E-04**	**1.91E-04**
HAP	Xylenes	1330-207	2.85E-04	**5.33E-04**	**1.33E-04**
HAP	Propylene	115-07-1	2.58E-03	**4.82E-03**	**1.21E-03**
HAP	1,3 Butadiene	106-99-0	3.91E-05	**7.31E-05**	**1.83E-05**
HAP	Formaldehyde	50-00-0	1.18E-03	**2.21E-03**	**5.52E-04**
HAP	Acetaldehyde	75-07-0	7.67E-04	**1.43E-03**	**3.59E-04**
HAP	Acrolein	107-02-8	9.25E-05	**1.73E-04**	**4.32E-05**
HAP	Napthalene	91-20-3	8.48E-05	**1.59E-04**	**3.96E-05**
HAP, POM	Acenaphthylene	203-96-8	5.06E-06	**9.46E-06**	**2.37E-06**
HAP, POM	Acenaphthene	83-32-9	1.42E-06	**2.66E-06**	**6.64E-07**
HAP, POM	Fluorene	86-73-7	2.92E-05	**5.46E-05**	**1.37E-05**
HAP, POM	Phenanthrene	85-01-8	2.94E-05	**5.50E-05**	**1.37E-05**
HAP, POM	Anthracene	120-12-7	1.87E-06	**3.50E-06**	**8.74E-07**
HAP, POM	Fluoranthene	206-44-0	7.61E-06	**1.42E-05**	**3.56E-06**
HAP, POM	Pyrene	129-00-0	4.78E-06	**8.94E-06**	**2.23E-06**
HAP, POM	Benz(a)anthracene	56-55-3	1.68E-06	**3.14E-06**	**7.85E-07**
HAP, POM	Chrysene	218-01-9	3.53E-07	**6.60E-07**	**1.65E-07**
HAP, POM	Benzo(b)fluoranthene	205-99-2	9.91E-08	**1.85E-07**	**4.63E-08**
HAP, POM	Benzo(k)fluoranthene	207-08-9	1.55E-07	**2.90E-07**	**7.25E-08**
HAP, POM	Benzo(a)pyrene	50-32-8	1.88E-07	**3.52E-07**	**8.79E-08**
HAP, POM	Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	**7.01E-07**	**1.75E-07**
HAP, POM	Dibenzo(a,h)anthracene	53-70-3	5.83E-07	**1.09E-06**	**2.73E-07**
HAP, POM	Benzo(g,h,I)perylene	191-24-2	4.89E-07	**9.14E-07**	**2.29E-07**
HAP, POM	Polycyclic Organic Matter		8.33E-05	**1.56E-04**	**3.89E-05**
	Total HAPs			**1.21E-02**	**3.02E-03**

[1]Emission factors taken from "Compilation of Air Pollutant Emission Factors", AP-42, Sec. 3.3 Table 3.3-2, 10/96

Maximum Emissions = (Emis. factor, lb/MM BTU) x (MM BTU/hr) = lb/hr, (lb/hr) x (8760 hr/yr) / (2000 lb/ton) = ton/yr

PTE Calculations - Fuel Gas Heater (SV 007)

Fuel Gas heater (EU 008) Fuel Usage:

Fuel Type	Rated Fuel Usage	Heating Value	Sulfur Content	Maximum Annual Fuel Usage Unlimited (8,760 hours)
Natural Gas	0.004 mmcfh 4.25 mmbtu/hr	1020 mmbtu/mmcf [(a)]	0.5 grains/hscf [(c)]	73 mmcf 74,460 mmbtu

Fuel Gas Heater Emission Controls:

There are no post-combustion emission controls for the Fuel Gas Heater (Control Efficiency = 0).

Fuel Gas heater (EU 008) Emissions:

Pollutant	Emission Factor (lb/kgal, lb/mmcf)	Emission Factor Source	Uncontrolled Emission Rate (lb/hr) [(d)]	Maximum Uncontrolled Emissions (tons/year) [(e)]	Air Permit No. 16300087 Emission Limits		Controlled Emission Rate (lb/hr) [(f)]	Unrestricted Controlled Emissions (tons/year) [(g)]	Limited Controlled Emissions (tons/year) [(h)]
					lb/mmbtu	lb/hr			
PM (total)	7.6	AP-42, 5th edition, Table 1.4-2	0.03	0.1			0.0317	0.1387	0.1387
PM_{10}	7.6		0.03	0.1			0.0317	0.1387	0.1387
$PM_{2.5}$	7.6		0.03	0.1			0.0317	0.1387	0.1387
SO_2	0.6	AP-42, 5th ed., Table 1.4-2	0.00	0.0			0.0025	0.0110	0.0110
NO_X	100	AP-42, 5th ed., Table 1.4-1 [(i)]	0.42	1.8			0.4167	1.8250	1.8250
VOC	5.5	AP-42, 5th ed., Table 1.4-2	0.02	0.1			0.0229	0.1004	0.1004
CO	84.0	AP-42, 5th ed., Table 1.4-1 [(i)]	0.35	1.5			0.3500	1.5330	1.5330
Pb	0.0005	AP-42, 5th ed., Table 1.4-2	0.000002	0.000009			0.000002	0.000009	0.000009

CO: 0.082352941 lb/MMBtu

Notes:

(a) Maximum heat input allowed by permit (8-hour block average) during natural gas firing.
(b) Natural gas heating value of 1,020 mmbtu/mmcf used for calculations per note a to Table 1.4-1 of AP-42.
(c) Maximum sulfur content allowed (0.5 grains/hscf) for pipeline natural gas.
(d) Uncontrolled Emission Rate = Emission Factor x Rated Fuel Usage (in applicable units)
(e) Maximum Uncontrolled Emissions = (8,760 hours/year) x (1 ton / 2000 lbs) x Uncontrolled Emission Rate (lb/hr)
(f) Controlled Emission Rate (lb/hr) takes into account emission control equipment and permit emission limits:
= maximum mass emission rate allowed by the permit, or
= Uncontrolled Emission Rate (lb/hr) x (1 - Control Efficiency), whichever is more restrictive.
(g) Unrestricted Controlled Emissions (tons/year) is the maximum controlled emissions without regard to permit limits on operations or fuel use:
= (8,760 hours/year) x (1 ton / 2000 lbs) x Controlled Emission Rate (lb/hr)
(h) Limited Controlled Emissions (tons/year) takes into account permit limits on operations and fuel use, if any.
(i) Emission factor for small (< 100 mmbtu/hr), uncontrolled boilers.

EU008

Maximum Rated Capacity: **4.3** MMBTU/hr

Fuel Type	% Sulfur	% Ash	Heat Value	Units	Maximum Fuel Consumption Rate	Units
Natural Gas	0.4 gr/100 scf	negligible	1,020	Btu/cf	0.00	MMcf/hr

Natural Gas Calculations

HAP Name (CAS)	Emission Factor (lbs/ton, lbs/gal, **lbs/MMcf**, etc)	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)
Benzene (71-43-2)	2.1E-03	8.75E-06	3.83E-05
Dichlorobenzene (25321-22-6)	1.2E-03	5.00E-06	2.19E-05
Formaldehyde (50-00-0)	7.5E-02	3.13E-04	1.37E-03
Hexane (110-54-3)	1.8E+00	7.50E-03	3.29E-02
Naphthalene (91-20-3)	6.1E-04	2.54E-06	1.11E-05
Toluene (108-88-3)	3.4E-03	1.42E-05	6.21E-05
Polycyclic Orgainc Matter (POM)[c]	8.8E-05	3.68E-07	1.61E-06
Arsenic (7440-38-2)	2.0E-04	8.33E-07	3.65E-06
Beryllium (744-43-0-9)	1.2E-05	5.00E-08	2.19E-07
Cadmium (7440-43-9)	1.1E-03	4.58E-06	2.01E-05
Chromium (7440-47-3)	1.4E-03	5.83E-06	2.56E-05
Cobalt (744-48-4)	8.4E-05	3.50E-07	1.53E-06
Manganese (74439-96-5)	3.8E-04	1.58E-06	6.94E-06
Mercury (7439-97-6)	2.6E-04	1.08E-06	4.75E-06
Nickel (7440-02-0)	2.1E-03	8.75E-06	3.83E-05
Lead	5.0E-04	2.08E-06	9.13E-06
Selenium (7782-49-2)	2.4E-05	1.00E-07	4.38E-07
Totals		**0.01**	**0.03**

All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion"(7/98).

Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

Total POM emission factor is equal to the sum of the individual POM compounds.

GHG POTENTIAL EMISSION ESTIMATE (GHG PTE)

FACILITY NAME: LSP - Cottage Grove Cogeneration Facility

	Unit Characteristics				GHG Emission Factors * (kg/MMBtu)														
	Unit ID	Fuel Type	Design Heat Input Rate (MMBtu/hr)	Fuel Annual Usage (MMBtu)	Fuel Default CO_2 Emission Factor	Fuel Default CH_4 Emission Factor	Fuel Default N_2O Emission Factor	CO_2 (lb/hr)	Max CO_2 (tons/year)	Limited CO_2 (tons/year)	CH_4 (lb/hr)	Max CH_4 (tons/year)	Limited CH_4 (tons/year)	N_2O (lb/hr)	Max N_2O (tons/year)	Limited N_2O (tons/year)	Max CO2e (tons/year)	Limited CO2e (tons/year)
Combustion Turbine Generator (8760 - 1700)	EU 001	PNG	1971	13915260	53.91	0.001	0.0001	2.34E+05			4.35E+00			4.35E-01				
Combustion Turbine Generator (1700 hrs/yr)	EU 001	FOIL2	1971	3350700	73.61	0.003	0.0006	3.20E+05			1.30E+01			2.61E+00				
EU001 Total								3.20E+05	1.40E+06	2.26E+05	1.30E+01	5.71E+01	5.44E+00	2.61E+00	1.14E+01	7.72E-01	1.41E+06	2.26E+05
Supplemental Duct Firing Burners (8760 hrs/yr)	EU 002	PNG	270	2365200	53.02	0.001	0.0001	3.16E+04	1.38E+05	1.38E+05	5.95E-01	2.61E+00	2.61E+00	5.95E-02	2.61E-01	2.61E-01	1.38E+05	1.38E+05
Auxiliary Boiler #1 (8760 - 1700)	EU 003	PNG	114	804840	53.02	0.001	0.0001	1.33E+04	5.84E+04		2.51E-01	1.10E+00		2.51E-02	1.10E-01			
Auxiliary Boiler #1 (1700 hrs/yr)		FOIL2	114	193800	73.96	0.003	0.0006	1.86E+04	8.14E+04		7.54E-01	3.30E+00		1.51E-01	6.60E-01			
EU003 total								1.86E+04	8.14E+04	1.29E+04	7.54E-01	3.30E+00	3.14E-01	1.51E-01	6.60E-01	4.46E-02	8.17E+04	1.29E+04
Auxiliary Boiler #2 (8760-1700)	EU 004	PNG	114	804840	53.02	0.001	0.0001	1.33E+04	5.84E+04		2.51E-01	1.10E+00		2.51E-02	1.10E-01		5.84E+04	
Auxiliary Boiler #2 (1700 hrs/yr)		FOIL2	114	193800	73.96	3.00E-03	6.00E-04	1.86E+04	8.14E+04		7.54E-01	3.30E+00		1.51E-01	6.60E-01		8.17E+04	
EU004 total								1.86E+04	8.14E+04	1.29E+04	7.54E-01	3.30E+00	3.14E-01	1.51E-01	6.60E-01	4.46E-02	8.17E+04	1.29E+04
Fuel Gas Heater (8760 hrs/yr)	EU 008	PNG	4.25	37230	53.02	1.00E-03	1.00E-04	4.97E+02	2.18E+03	2.18E+03	9.37E-03	4.10E-02	4.10E-02	9.37E-04	4.10E-03	4.10E-03	2.18E+03	2.18E+03
Diesel Fire Pump Engine (150 hrs/yr)	EU 005	FOIL2	2.70	405.0	73.96	3.00E-03	6.00E-04	4.40E+02	1.10E+02	3.30E+01	1.79E-02	4.46E-03	1.34E-03	3.57E-03	8.93E-04	2.68E-04	1.10E+02	3.31E+01
Emergency Diesel Generator (500 hrs/yr)	EU 007	FOIL2	1.87	935.0	73.96	3.00E-03	6.00E-04	3.05E+02	7.62E+01	7.62E+01	1.24E-02	3.09E-03	3.09E-03	2.47E-03	6.18E-04	6.18E-04	7.65E+01	7.65E+01

*** Note: GHG Emission factors are from Table C-1 and C-2 of 40 CFR 98, except for the factors for EU 001 ~~& 002~~ which ~~are~~ is calculated by 40 CFR 75, Eqn. G-4 as follows;**

$$E.F. = 0.4536 \times F_c \times U_f \times MW_{CO2}$$

where:

- $E.F.$ = CO2 emission factor in kg/MMBTU
- 0.4536 = kg / lb
- F_c = 1040 scf/MMBTU for natural gas
- = 1420 scf/MMBTU for distillate fuel oil
- U_f = 0.0025974 lb-mole / scf CO2 @ 14.7 psia and 68 deg. F
- MW_{CO2} = 44 lb/lb-mole

FS001 - Cooling Towers
Emission Calculations

(from previous reissuance documentation)

POTENTIAL EMISSION CALCULATIONS

Cooling Tower Recirculation Flow = 66000 GPM = 3.96E+06 gal/hr
Makeup Mass Flow Rate = 3,960,000 gal/hr * 8.34 lb/gal = 3.30E+07 lbs/hr

TDS (TOTAL DISSOLVED SOLIDS) = 1140 ppm (based on vendor information)
Drift factor = 0.02%

Potential PM Emissions:

Total PM = Makeup (lbs/yr) * Drift Factor * TDS
Total PM = 33,026,400 lbs/hr * 0.0002 lbs drift/lbs makeup * 1,140 / 1000000 (lbs TDS/lbs drift)
Total PM = 7.53 lbs/hr = 32.98 tons/yr

Potential PM10 Emissions:

PM10 fraction derived for PM10 emission calculation procedure in "Calculating Realistic
PM10 Emissions from Cooling Towers," by Reisman and Frisbie, Environmental Progress, Vol. 21, No. 2.
PM10 Fraction = 0.25

PM10 = 7.53 lbs PM/hrr * 0.25 lbs PM10/lbs PM = 1.88 lbs/hr
PM10 = 32.98 tons PM/yr * 0.25 ton PM10/ton PM = 8.25 tons/yr

ACTUAL EMISSION CALCULATIONS

Cooling Tower Recirculation Flow = 66000 GPM = 3.96E+06 gal/hr
Makeup Mass Flow Rate = 3,960,000 gal/hr * 8.34 lb/gal = 3.30E+07 lbs/hr

TDS (TOTAL DISSOLVED SOLIDS) = 1140 ppm (based on vendor information)
Drift factor = 0.02%
Actual operating hours = 2905 hrs/yr

Actual PM Emissions:

Total PM = Makeup (lbs/yr) * Drift Factor * TDS
Total PM = 33,026,400 lbs/hr * 0.0002 lbs drift/lbs makeup * 1,140 / 1000000 (lbs TDS/lbs drift)
Total PM = 7.53 lbs/hr * 2,905 hrs/yr / 2000 lbs/ton = 10.94 tons/yr

Actual PM10 Emissions:

PM10 fraction derived for PM10 emission calculation procedure in "Calculating Realistic
PM10 Emissions from Cooling Towers," by Reisman and Frisbie, Environmental Progress, Vol. 21, No. 2.
PM10 Fraction = 0.25

PM10 = 7.53 lbs PM/hrr * 0.25 lbs PM10/lbs PM = 1.88 lbs/hr
PM10 = 10.94 tons PM/yr * 0.25 ton PM10/ton PM = 2.73 tons/yr

FS001 - Cooling Towers
Industrial Process Equipment Rule Emission Calculations

EMISSION CALCULATIONS Using Minn. R. 7011.0730, Table 1

Cooling Tower Recirculation Flow = 66000 GPM = 3.96E+06 gal/hr

Makeup Mass Flow Rate = 3,960,000 gal/hr * 8.34 lb/gal = 3.30E+07 lbs/hr

TDS (TOTAL DISSOLVED SOLIDS) = 1140 ppm (based on vendor information)

Drift factor = 0.02%

Allowable PM Emissions:

The cooling tower is not vented. Therefore, according to Table 1:

Allowable PM emissions (E):

E = 3.59 * (P/2000)^0.62

where P = 33,026,400 lbs Makeup Water/hr

E = 1479.6 lbs PM/hr

7.53 lbs PM/hr PTE is less than 1,479.6 lbs PM/hr 0.005089149

Potential emissions demonstrate compliance with the Minnesota Industrial Process Equipment Rule.

SOURCE_ID	SOURCE_NAME	PERMIT_TYPE	NAICS_CODE	INVENTORY_YEAR	EMISSION_UNIT_CODE	AMMONIA	CO
16300087	LSP Cottage Grove Cogeneration Facility	R	221122	2011	TON	0.002782	44.357203

LEAD	NOX	PM10FIL	PMCON	PMFIL	SO2	VOC
0.000005796	24.40459	0.561621	0.36929	0.35142	0.644396	0.78361247

Attachment 2

Facility Description & CD-01 Forms

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (ºF)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
1	SV 001	Active	PER 001				213	18		1262000	281	Manufacturer	Up, No Cap
2	SV 001	Active	PER 006			Combustion Turbine/Duct Burners	213	18		1262000	281	Manufacturer	Up, No Cap
3	SV 002	Active	PER 001				213	3.5		35376	329	Manufacturer	Up, No Cap
4	SV 002	Active	PER 006			Auxiliary Boiler #1	213	3.5		35376	329	Manufacturer	Up, No Cap
5	SV 003	Active	PER 001				213	3.5		35376	329	Manufacturer	Up, No Cap
6	SV 003	Active	PER 006			Auxiliary Boiler #2	213	3.5		35376	329	Manufacturer	Up, No Cap
7	SV 004	Active	PER 001				15	.5		1208	600	Manufacturer	Up, No Cap
8	SV 004	Active	PER 006			Emergency Diesel Fire Pump	15	.5		1208	600	Manufacturer	Up, No Cap
9	SV 005	Active	PER 001										
10	SV 005	Retired	PER 006										
11	SV 006	Active	PER 001				5	.5		1515	1130	Manufacturer	Up, No Cap
12	SV 006	Active	PER 006			Emergency Diesel Generator	5	.5		1515	1130	Manufacturer	Up, No Cap
13	SV 007	Active	PER 003				40	1.96		2136	733	Manufacturer	Up, With Cap
14	SV 007	Active	PER 006			Fuel Gas Heater	40	1.96		2136	733	Manufacturer	Up, With Cap

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collection Efficiency (%)	Afterburner Combustion Parameters
1	CE 001	Active	PER 001			019	Catalytic Afterburner	unknown	Unknown	CO	100	90	500-1200
2	CE 001	Active	PER 006			109	Catalytic Oxidizer	unknown	Unknown	CO VOC	100 100	90 1	500-1200
3	CE 002	Active	PER 001			065	Catalytic Reduction	unknown	Unkown				n/a
4	CE 002	Active	PER 006			139	SCR (Selective Catalytic Reduction)	unknown	Unkown	NOx	100	73	
5	CE 003	Active	PER 001			024	Modified Furnace or Burner Design	unknown	Unknown	NOx	100	20	n/a
6	CE 004	Active	PER 001			024	Modified Furnace or Burner Design	unknown	Unknown	NOx	100	20	n/a
7	CE 005	Active	PER 001			026	Flue Gas Recirculation	unknown	Unknown	NOx	100	20	n/a
8	CE 006	Active	PER 001			026	Flue Gas Recirculation	unknown	Unknown	NOx	100	20	n/a
9	CE 007	Active	PER 001			099	Other	unknown	Unknown	PM10	100	99	n/a
10	CE 007	Removed	PER 006			099	Other	unknown	Unknown	PM10	100	99	n/a
11	CE 008	Active	PER 001			099	Other	unknown	Unknown	NOx	100	20	n/a
12	CE 008	Removed	PER 006			099	Other	unknown	Unknown	NOx	100	20	n/a
13	CE 009	Removed	PER 003			-1	*Error						n/a
14	CE 010	Removed	PER 003			-1	*Error						n/a
15	CE 011	Active	PER 006			028	Steam or Water Injection	na	na	NOx	100	90	

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
1	EU 001	Active	PER 001		☐		SV 001 (M)	CE 001 CE 002	Combustion Turbine Generator	Westinghouse	501F	4911	245	Elect Energy	Mw		1971
2	EU 001	Active	PER 006		☐		SV 001 (M)	CE 001 CE 002 CE 011	Combustion Turbine Generator	Westinghouse	501F	4911	245	Elect Energy	Mw		1971
3	EU 002	Active	PER 001		☐		SV 001 (M)	CE 001 CE 002	Supplemental Duct Firing Burners	Coen or equivalent	Unknown	4911	270	Heat	Mmbtu	Hr	270
4	EU 003	Active	PER 001		☐		SV 002 (M)	CE 003 CE 005	Auxiliary Boiler #1	Nebraska or equivalent	Unknown	4911	90000	Steam	Lb	Hr	112.1
5	EU 004	Active	PER 001		☐		SV 003 (M)	CE 004 CE 006	Auxiliary Boiler #2	Nebraska or equivalent	Unknown	4911	90000	Steam	Lb	Hr	112.1
6	EU 005	Active	PER 001		☐		SV 004 (M)	CE 007 CE 008	Emergency Fire Pump Diesel Engine	Detroit or equivalent	Unknown	4911	280	Energy	Hp		2.7
7	EU 005	Active	PER 006		☐		SV 004 (M)		Emergency Fire Pump Diesel Engine	Detroit or equivalent	Unknown	4911	280	Energy	Hp		2.7
8	EU 006	Active	PER 001		☐		SV 005 (M)		Distillate Oil Strorage Tank Vents			4911					
9	EU 006	Removed	PER 006		☐				(TK001) Distillate Oil Strorage Tank Vents			4911					
10	EU 007	Active	PER 001		☐		SV 006 (M)		Emergency Diesel Generator	Onan	6CTA8.3-G Cummins E	4911	175	Energy	Kw		1.87
11	EU 008	Active	PER 001		☐		SV 007 (M)		Fuel Gas Heater	Gas Tech	None	4911	120000	Natural Gas	Lb	Each	4.25

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
1	EU 001	Active	PER 001	07/31/1995	01/01/1997					
2	EU 001	Active	PER 006	07/31/1995	01/01/1997					
3	EU 002	Active	PER 001	07/31/1995	01/01/1997					
4	EU 003	Active	PER 001	07/31/1995	01/01/1997					
5	EU 004	Active	PER 001	07/31/1995	01/01/1997					
6	EU 005	Active	PER 001	07/31/1995	01/01/1997					
7	EU 005	Active	PER 006	07/31/1995	01/01/1997					
8	EU 006	Active	PER 001							
9	EU 006	Removed	PER 006							
10	EU 007	Active	PER 001	07/31/1995	01/01/1997		*Error			
11	EU 008	Active	PER 001	07/31/1995	01/01/1997					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: GROUPS (GP)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Group Status	Added By (Action)	Retired By (Action)	Include in EI	Operator ID for Item	Group Description	Group Items
1	GP 001	Active	PER 001		☐		Auxiliary Boilers #1 and #2	EU 003, EU 004
2	GP 002	Active	PER 006		☐		CO Limit	EU 001, EU 002, EU 003, EU 004, EU 005, EU 007, EU 008
3	GP 003	Active	PER 006		☐		CEMS Required by NSPS	MR 001, MR 002, MR 006
4	GP 004	Active	PER 006		☐		CEMS Not Required by NSPS	MR 003, MR 007
5	GP 005	Active	PER 006		☐		COMS	MR 008, MR 009

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: STORAGE TANKS (TK)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Tank Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Control Equip. ID No(s).	Product Stored	Interior Height (ft.)	Interior Diameter (ft.)	Capacity (1000 gal)	Construction Type
1	TK 001	Active	PER 001		☐			No.2 Distillate fuel oil (CAS#68476-30-2	30	70	755	Fixed Roof
2	TK 002	Removed	PER 003		☐			Never Exsisted				

FACILITY DESCRIPTION: STORAGE TANKS (TK)

	ID No.	Tank Status	Added By (Action)	Support Type (floating roof only)	Column Count	Column Diameter (ft.)	Deck Type (floating roof only)	Seal Type (floating roof only)	Year Installed	Year Removed
1	TK 001	Active	PER 001							
2	TK 002	Removed	PER 003							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: FUGITIVE SOURCES (FS)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Fugitive Source Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Pollutant(s) Emitted	Control Equip. ID No(s).	Fugitive Source Description	Year Installed	Year Removed
1	FS 001	Active	PER 003		☐		PM10 PM		Cooling Tower		

MINNESOTA POLLUTION CONTROL AGENCY
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FACILITY DESCRIPTION: CONTINUOUS MONITORS (MR)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Monitor Status	Added By (Action)	Retired By (Action)	Monitored Item (ID No(s).)	Operator ID for Item	Monitor Description	Manufacturer	Model Number	Serial Number	Parameters Monitored
1	MR 001	Active	PER 001		SV 001			Thermo Enviromental	42C	42CHL-55947-305	NOx
2	MR 001	Active	PER 006		SV 001		NOX CEMS	Thermo Enviromental	42C	42CHL-55947-305	NOx
3	MR 002	Active	PER 003		SV 001			Servomex	1400	01420B1906	O2
4	MR 002	Active	PER 006		SV 001		O2 CEMS	Servomex	1400	01420B1906	O2
5	MR 003	Active	PER 003		SV 001			Thermo Environmental	48C	48C-55895-305	CO
6	MR 003	Active	PER 006		SV 001		CO CEMS	Thermo Environmental	48C	48C-55895-305	CO
7	MR 004	Active	PER 003		EU 003			Thermo Environmental	400B	400B-55682-B84/305	Opacity
8	MR 004	Removed	PER 006				COMS	Thermo Environmental	400B	400B-55682-B84/305	Opacity
9	MR 005	Active	PER 005		EU 004			SICK Maihak	OMD41	0820-8037	Opacity
10	MR 005	Removed	PER 006				COMS	SICK Maihak	OMD41	0820-8037	Opacity
11	MR 006	Active	PER 003		SV 001			Thermo Environmental	42C	42CHL-55947-305	NOx
12	MR 006	Active	PER 006		SV 001		NOX CEMS	Thermo Environmental	42C	42CHL-55947-305	NOx
13	MR 007	Active	PER 003		SV 001			Thermo Environmental	48C	48C-55895-305	CO
14	MR 007	Active	PER 006		SV 001		CO CEMS	Thermo Environmental	48C	48C-55895-305	CO
15	MR 008	Active	PER 006		EU 003		COMS	SICK Maihak	OMD-041-M321 1018882	0746-8028	Opacity
16	MR 009	Active	PER 006		EU 004		COMS	SICK Maihak	OMD-041-M321 1018882	0820-8037	Opacity

FACILITY DESCRIPTION: CONTINUOUS MONITORS (MR)

	ID No.	Monitor Status	Added By (Action)	Span Value	System Full-Scale Value	Bypass Capa-bility?	Optical Path Length Ratio	Installation Date	Removal Date
1	MR 001	Active	PER 001	100	100	No			
2	MR 001	Active	PER 006	100	100	No			
3	MR 002	Active	PER 003	25	25	No			
4	MR 002	Active	PER 006	25	25	No			
5	MR 003	Active	PER 003	1500	1500	No			
6	MR 003	Active	PER 006	1500	1500	No			
7	MR 004	Active	PER 003	100	100	No	.5		
8	MR 004	Removed	PER 006	100	100	No	.5		06/19/2008
9	MR 005	Active	PER 005	100	100	No			
10	MR 005	Removed	PER 006	100	100	No			09/08/2008
11	MR 006	Active	PER 003	20	20	No			
12	MR 006	Active	PER 006	20	20	No			
13	MR 007	Active	PER 003	150	150	No			
14	MR 007	Active	PER 006	150	150	No			
15	MR 008	Active	PER 006	20	45	No	1	06/19/2008	
16	MR 009	Active	PER 006	20	45	No	1	09/08/2008	

MINNESOTA POLLUTION CONTROL AGENCY
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FACILITY DESCRIPTION: DATA ACQUISITION SYSTEMS (DA)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	DAS Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Data Acquisition System Description	Manufacturer	Model Number	Serial Number	Data Storage Medium	Installation Date	Removal Date
1	DA 001	Active	PER 003				Spectrum Systems	Spectraview	2020SPV75CG1	Electronic		

MINNESOTA POLLUTION CONTROL AGENCY
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21 March, 2013 15:28

FACILITY DESCRIPTION: CONTINUOUS MONITORING SYSTEMS (CM)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	CMS Status	Added By (Action)	Retired By (Action)	Monitor ID No(s).	DAS ID No(s).	Operator ID for Item	CMS Description	Parameter	Month/ Year Installed	Month/ Year Removed	Cert. Date	Cert. Basis
1	CM 001	Active	PER 001		MR 001 MR 002	DA 001		CT/HRSG: 4.5 ppm NOx @ 15% O2 (gas), SV001, 1-hr ave. CT/HRSG: 16.0 ppm NOx @ 15% O2 (oil), SV001, 1-hr ave.	Nitrogen Oxides			07/02/1997	40CFR75
2	CM 002	Active	PER 001		MR 001	DA 001		CT/HRSG: 36.5 lbs NOx/hr (gas), SV001, 30 DRA CT/HRSG: 139.9 lbs NOx/hr (oil), SV001, 30 DRA	Nitrogen Oxides			07/02/1997	40CFR75
3	CM 005	Active	PER 001		MR 003	DA 001		CT/HRSG: 1200 lbs CO/hr, SV001, 1-hr ave.	Carbon Monoxide			07/02/1997	40CFR60
4	CM 006	Active	PER 001		MR 004	DA 001		Aux Boiler 1: 20% Opacity, EU003, 6-min ave.	Opacity			02/02/1998	40CFR60
5	CM 006	Active	PER 006		MR 008	DA 001		Aux Boiler 1: 20% Opacity, EU003, 6-min ave.	Opacity			02/02/1998	40CFR60
6	CM 007	Active	PER 001		MR 005	DA 001		Aux Boiler 2: 20% Opacity, EU004, 6-min ave.	Opacity			02/02/1998	40CFR60
7	CM 007	Active	PER 006		MR 009	DA 001		Aux Boiler 2: 20% Opacity, EU004, 6-min ave.	Opacity			02/02/1998	40CFR60
8	CM 008	Active	PER 001			DA 001		Aux Boiler 1: 0.06 lbs NOx/mmBtu (gas), 0.12 lbs NOx/mmBtu (oil), EU003, 1-hr ave.	Nitrogen Oxides			03/14/1998	40CFR60
9	CM 009	Active	PER 001			DA 001		Aux Boiler 1: 6.9 lbs NOx/hr (gas), 13.4 lbs NOx/hr (oil), EU003, 30 DRA	Nitrogen Oxides			03/14/1998	40CFR60
10	CM 012	Active	PER 001			DA 001		Aux Boiler 2: 0.06 lbs NOx/mmBtu (gas), 0.12 lbs NOx/mmBtu (oil), EU004, 1-hr ave.	Nitrogen Oxides			03/14/1998	40CFR60
11	CM 013	Active	PER 001			DA 001		Aux Boiler 2: 6.9 lbs NOx/hr (gas), 13.4 lbs NOx/hr (oil), EU004, 30 DRA	Nitrogen Oxides			03/14/1998	40CFR60

MINNESOTA POLLUTION CONTROL AGENCY
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520 LAFAYETTE ROAD
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FACILITY DESCRIPTION: BUILDINGS (BG)

Show: Active and Pending Records
Action: PER 006
AQD Facility ID: 16300087
Facility Name: LSP Cottage Grove Cogeneration Facility

	ID No.	Added By (Action)	Retired By (Action)	Operator ID for Item	Length (feet)	Width (feet)	Roof Height from Ground (feet)	Description/Comment	Building Status
1	BG 001	PER 006			80	44.3	15.5	Administration Building	Active
2	BG 002	PER 006			96.3	44.6	21.5	Maintenance Shop/Warehouse	Active
3	BG 003	PER 006			67.7	26.3	22	Cycle Make-Up	Active
4	BG 004	PER 006			84.4	11.8	13.3	Control Room	Active
5	BG 005	PER 006			158.5	105	50	Generation Building	Active
6	BG 006	PER 006			83.5	56.1	34.3	Auxiliary Boiler Building	Active
7	BG 007	PER 006			37.2	31.3	20.8	Cooling Tower Building	Active
8	BG 008	PER 006			70.3	24	28.3	Boiler Feed Pump Building	Active

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **Total Facility**

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	SOURCE-SPECIFIC REQUIREMENTS
2.0		CD	40 CFR Section 72.6(a)(3)	This facility is subject to US EPA's Acid Rain Program codified at 40 CFR pts. 72, 73, 75, 77, and 78. Certain Acid Rain Program requirements are included in Tables A and/or B of this permit for MPCA tracking purposes. All other Acid Rain Program requirements are referenced in the Phase II Permit Application attached to this permit in Appendix C.
3.0		S/A	40 CFR Section 72.30	Application for Permit Reissuance: due 180 days before expiration of Existing Permit. This is the application for Acid Rain Permit Reissuance. The deadline is actually 6 months prior to permit expiration. Note that this deadline may differ from the deadline for application for Part 70 permit reissuance.
4.0		CD	Minn. R. 7007.0800, subp. 2	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices B and C. Modeling parameters in Appendix D are included for reference only as described elsewhere in Table A.
5.0		CD	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080	The parameters used in CO modeling 16300087-004 are listed in Appendix D 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.
6.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); To avoid major source status under 40 CFR Part 51, Appendix S; Minn. R. 7007.4000; Minn. R. 7007.0800, subp. 2	All CO and PM10 emission factors for which performance testing is required, shall be revised based on the results of each performance test. The Permittee shall use the most recent performance test-revised emission factor for calculating CO emissions, and the average of the last three test revised emission factors for calculating PM10 emissions. The use of the updated emission factors shall commence upon rececipt of written notification from the MPCA that the performance testing results were valid. The Permittee shall use the most current fuel parameters determined by fuel sampling or fuel supplier certification, as applicable and as required in Table A of this permit.
7.0		CD	hdr	DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NSR
8.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2	These requirements apply if a reasonable possibility (RP) as defined in 40 CFR Section 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at Section 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of Section 52.21(r)(6)(vi)(b). 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.

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Facility Name: LSP Cottage Grove Cogeneration Facility

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9.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.1200, subp. 4; Minn. R. 7007.0800, subps. 4 & 5	Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following: 1. Project description 2. Identification of any emission unit (EU) whose emissions of an NSR pollutant could be affected 3. Pre-change potential emissions of any affected existing EU, and the projected post-change potential emissions of any affected existing or new EU. 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 EU 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.
10.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5	The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions in the hybrid test. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if the hybrid test was used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project.
11.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6)(ii); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5	Before beginning actual construction of any project which includes any electric utility steam generating unit (EUSGU), the Permittee shall submit a copy of the preconstruction documentation (items 1-4 under Preconstruction Documentation, above) to the Agency.
12.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5	For any project which includes any EUSGU, the Permittee must submit an annual report to the Agency, within 60 days after the end of the calendar year. 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 quantified annual emissions analyzed using the ATPA test, plus the potential emissions associated with the same project analyzed as part of a hybrid test. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection, if that is the case.
13.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5	For any project which does not include any EUSGU, the Permittee must submit a report to the Agency if the annual summed (actual, plus potential used in hybrid test) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain: a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The annual emissions (actual, plus potential if any part of the project was analyzed using the hybrid test) for each pollutant for which the preconstruction projection and significant emissions rate is exceeded. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection.
14.0		CD	hdr	OPERATIONAL REQUIREMENTS
15.0		CD	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080	The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.
16.0		CD	Minn. R. 7011.0020	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.

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17.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, except as specified at Subject Item EU001.
18.0		CD	Minn. R. 7007.0800, subps. 14 and 16(J)	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.
19.0		CD	Minn. R. 7019.1000, subp. 4	Operation Changes: In any shutdown, breakdown, or deviation covered by Minn. R. 7019.1000, subpart 1, 2, or 3, the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.
20.0		CD	Minn. R. 7011.0150	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.
21.0		CD	Minn. R. 7030.0010 - 7030.0080	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
22.0		CD	Minn. R. 7007.0800, subp. 9(A)	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).
23.0		CD	Minn. R. 7007.0800, subp. 16	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.
24.0		CD	hdr	PERFORMANCE TESTING
25.0		CD	Minn. R. ch. 7017	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.
26.0		CD	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2	Performance Test Notifications and Submittals: Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.
27.0		CD	Minn. R. 7017.2025, subp. 3	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.
28.0		CD	hdr	MONITORING REQUIREMENTS
29.0		CD	Minn. R. 7007.0800, subp. 4(D)	Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).
30.0		CD	Minn. R. 7007.0800, subp. 4(D)	Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, 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.

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31.0		CD	hdr	RECORDKEEPING
32.0		CD	Minn. R. 7007.0800, subp. 5(C)	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).
33.0		CD	Minn. R. 7007.0800, subp. 5(B)	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.
34.0		CD	Minn. R. 7007.1200, subp. 4	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.
35.0		CD	hdr	REPORTING/SUBMITTALS
36.0		CD	Minn. R. 7019.1000, subp. 3	Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3, or for a shutdown of EU001 that meets the definition of "shutdown" provided with the Carbon Monoxide limit at Subject Item SV001. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.
37.0		CD	Minn. R. 7019.1000, subp. 2	Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.
38.0		CD	Minn. R. 7019.1000, subp. 1	Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.
39.0		CD	Minn. R. 7019.1000, subp. 1	Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.

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40.0		S/A	Minn. R. 7007.0800, subp. 6(A)(2)	Semiannual Deviations Report: due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.
41.0		CD	Minn. R. 7007.1150 - 7007.1500	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.
42.0		S/A	Minn. R. 7007.0400, subp. 2	Application for Permit Reissuance: due 180 days before expiration of Existing Permit
43.0		CD	Minn. R. 7007.1400, subp. 1(H)	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).
44.0		S/A	Minn. R. 7007.0800, subp. 6(C)	Compliance Certification: due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.
45.0		CD	Minn. R. 7019.3000 - 7019.3100	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.
46.0		CD	Minn. R. 7002.0005 - 7002.0095	Emission Fees: due 60 days after receipt of an MPCA bill.
47.0		S/A	Minn. R. 7019.2000, subp. 1; 40 CFR Section 60.7(c) and 60.49b(h)	Excess Emissions/Downtime Reports (EER's): due 30 days after end of each calendar quarter starting 11/10/1998 (Submit Deviations Reporting Form DRF-1 as amended). The EER must contain all of the information requested in 40 CFR Section 60.7(c) for the PEMS. The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.
48.0		CD	hdr	NONROAD ENGINES
49.0		CD	Minn. R. 7007.0800, subp. 4 and 5	The Permittee shall keep records for each nonroad engine that will include: 1) Date that the nonroad engine is brought onsite. 2) Date that the nonroad engine is taken offsite and/or moved to a different location. 3) Identification number. 4) Rated capacity of the nonroad engine. 5) The model year and date of manufacture (as defined by the applicable nonroad engine rule). 6) Which nonroad provision that the nonroad engine is certified under. 7) Rental company information. 8) Function of the nonroad engine. While on site, each engine shall be labeled in such way that it can be determined that it is a nonroad engine and not one of the permitted engines covered by this air permit.
50.0		CD	40 CFR Section 1068.30, "Nonroad engines", (2)(iii)	The Permittee shall not have nonroad engines in one location for more than 12 consecutive months. Any engine, or engines, that replaces an engine at a location and that is intended to perform the same or similar function as the engine it replaced will be included in calculating the consecutive time period.
51.0		CD	40 CFR Section 1068.101(b)(3)	For a nonroad engine that is excluded from any requirements of 40 CFR Part 1068 because it is a stationary engine, the Permittee may not move it or install it in any mobile equipment, except as allowed by the provisions of 40 CFR Part 1068. The Permittee may not circumvent or attempt to circumvent the residence-time requirements of paragraph (2)(iii) of the nonroad engine definition in 40 CFR Section 1068.30.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **GP 001 Auxiliary Boilers #1 and #2**

Associated Items: EU 003 Auxiliary Boiler #1

EU 004 Auxiliary Boiler #2

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION LIMITS (see also Subject Item GP002 for additional requirements)
2.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Total Particulate Matter: less than or equal to 0.005 lbs/million Btu heat input using 3-hour Average when combusting natural gas. This limit applies individually to both EU003 and EU004.
3.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Total Particulate Matter: less than or equal to 0.061 lbs/million Btu heat input using 3-hour Average when combusting distillate fuel oil. This limit applies individually to both EU003 and EU004.
4.0		LIMIT	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	PM < 10 micron: less than or equal to 0.005 lbs/million Btu heat input using 3-hour Average when combusting natural gas. This limit applies individually to both EU003 and EU004.
5.0		LIMIT	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	PM < 10 micron: less than or equal to 0.061 lbs/million Btu heat input using 3-hour Average when combusting distillate fuel oil. This limit applies individually to both EU003 and EU004.
6.0		LIMIT	40 CFR Sections 60.43b(f) and (g); 40 CFR Section 60.46b(a); 40 CFR Section 60.2; Minn. R. 7011.0565	Opacity: less than or equal to 20 percent opacity except for one 6-minute period per hour of not more than 27 percent opacity. The opacity standard applies at all times except during startup, shutdown, or malfunction. Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. This limit applies individually to both EU003 and EU004.
7.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Sulfur Dioxide: less than or equal to 5.7 lbs/hour using 1-Hour Average . This limit applies individually to both EU003 and EU004. The Sulfur Dioxide limit is met by complying with the fuel restrictions and fuel sulfur content limits.
8.0		LIMIT	40 CFR Section 60.42b(a), (e), and (g); 40 CFR Section 60.45b(a); Minn. R. 7011.0565	Sulfur Dioxide: less than or equal to 0.20 lbs/million Btu heat input using 30-day Rolling Average . This limit applies to EU003 and EU004 individually, and applies at all times including periods of startup, shutdown, and malfunction. The Sulfur Dioxide limit is met by complying with the fuel restrictions and fuel sulfur content limits.
9.0		LIMIT	40 CFR Section 60.44b(a)(1)(ii); 40 CFR Section 60.44b(h) and (i); 40 CFR Section 60.46b(a); Minn. R. 7011.0565	Nitrogen Oxides: less than or equal to 0.20 lbs/million Btu heat input using 30-day Rolling Average . This limit applies to EU003 and EU004 individually, and applies at all times including periods of startup, shutdown, and malfunction.
10.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Nitrogen Oxides: less than or equal to 6.9 lbs/hour using 30-day Rolling Average when combusting natural gas. This limit applies individually to both EU003 and EU004, and applies at all times including periods of startup, shutdown, and malfunction.
11.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Nitrogen Oxides: less than or equal to 13.4 lbs/hour using 30-day Rolling Average when combusting distillate fuel oil. This limit applies individually to both EU003 and EU004, and applies at all times including periods of startup, shutdown, and malfunction.
12.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000.	Nitrogen Oxides: less than or equal to 0.06 lbs/million Btu heat input using 1-Hour Average when combusting natural gas. This limit applies individually to both EU003 and EU004, and applies at all times including periods of startup, shutdown, and malfunction.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

13.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000.	Nitrogen Oxides: less than or equal to 0.12 lbs/million Btu heat input using 1-Hour Average when combusting distillate fuel oil. This limit applies individually to both EU003 and EU004, and applies at all times including periods of startup, shutdown, and malfunction.
14.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Carbon Monoxide: less than or equal to 5.6 lbs/hour using 1-Hour Average . This limit applies individually to both EU003 and EU004.
15.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Volatile Organic Compounds: less than or equal to 0.005 lbs/million Btu heat input using 3-hour Average when combusting natural gas. This limit applies individually to both EU003 and EU004.
16.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Volatile Organic Compounds: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Average when combusting distillate fuel oil. This limit applies individually to both EU003 and EU004.
17.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Sulfuric Acid Mist: less than or equal to 0.000026 lbs/million Btu heat input using 3-hour Average when combusting natural gas. This limit applies individually to both EU003 and EU004. The Sulfuric Acid Mist limit is met by complying with the fuel restrictions and fuel sulfur content limits.
18.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Sulfuric Acid Mist: less than or equal to 0.0025 lbs/million Btu heat input using 3-hour Average when combusting distillate fuel oil. This limit applies individually to both EU003 and EU004. The Sulfuric Acid Mist limit is met by complying with the fuel restrictions and fuel sulfur content limits.
19.0		CD	hdr	OPERATIONAL REQUIREMENTS
20.0		LIMIT	Title I Conditions: To avoid major source status under 40 CFR pt. 51 Appendix S; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Operating Hours: less than or equal to 3,400 hours/year using 365-day Rolling Sum when combusting distillate fuel oil. This limit applies to the total combined operating hours of the two boilers on distillate fuel oil.
21.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	When boiler load is above 25 percent, maintain Oxygen: greater than or equal to 1.7 percent by volume and less than or equal to 10 percent by volume
22.0		LIMIT	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient SO2 concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; 40 CFR Section 60.42b(j); Minn. R. 7011.0565	Fuel Use Restriction: Fuel is limited to pipeline natural gas, as defined in 40 CFR Section 72.2 and distillate fuel oil with a Sulfur Content of Fuel: less than or equal to 0.05 percent by weight
23.0		LIMIT	Minn. R. 7017.2025, subp. 3	Heat Input: less than or equal to 113.1 million Btu/hour using 8-hour Block Average in EU003 while combusting natural gas. The eight-hour block average shall be calculated by dividing the heat input by the total operating time in each eight-hour block. Down time of 15 minutes or more is not to be included as operating time. This limit will be amended as specified in Minn. R. 7017.2025 upon completion of subsequent performance tests.
24.0		LIMIT	Minn. R. 7017.2025, subp. 3	Heat Input: less than or equal to 114.8 million Btu/hour using 8-hour Block Average in EU004 while combusting natural gas. The eight-hour block average shall be calculated by dividing the heat input by the total operating time in each eight-hour block. Down time of 15 minutes or more is not to be included as operating time. This limit will be amended as specified in Minn. R. 7017.2025 upon completion of subsequent performance tests.
25.0		CD	hdr	MONITORING AND RECORDKEEPING REQUIREMENTS
26.0		CD	Minn. R. 7007.0800, subp. 4	Emissions Monitoring: The owner or operator shall use a COMS to measure opacity emissions from EU003 and EU004. See Requirements under Subject Item GP004 and Table B.
27.0		CD	Minn. R. 7007.0800, subp. 5.	Recordkeeping: The owner or operator must retain records of all COMS 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.

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28.0		CD	Title I Condition: 40 CFR Section 52.21(j) (BACT) for H2SO4; Section 2.3 of Appendix D to 40 CFR pt.75; Minn. R. 7007.3000	Pipeline Natural Gas Sulfur Content: Maintain records of a purchase contract, tariff sheet, or pipeline transportation contract documenting that the natural gas either consists of at least 70 percent methane by volume or has a GCV between 950 and 1100 Btu per scf, and has a sulfur content of less than or equal to 0.5 gr/100 scf. or; Sample the natural gas annually to determine the sulfur content and GCV and/or percentage by volume of methane.
29.0		CD	Title I Condition: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); To avoid major source status under 40 CFR pt. 51 App. S; Minn. R. 7007.4000; 40 CFR Section 60.48b(j)(2); 40 CFR Section 60.49b(r); Minn. R. 7011.0565	Monitoring of fuel parameters: obtain fuel oil supplier receipts for each delivery certifying that the oil meets the definition of distillate oil in 40 CFR Section 60.41b, that the sulfur content does not exceed 0.05% by weight, and specifying the density and high heating value (HHV). As an alternative, determine the sulfur content in percent by weight, HHV, and density of distillate fuel oil by sampling and analyzing fuel oil according to the requirements in 40 CFR pt. 75, Appendix D section 2.2., and obtain fuel supplier receipts for each delivery certifying that the oil meets the definition of distillate oil in 40 CFR Section 60.41b. Obtain HHV of natural gas from the fuel supplier. Maintain records of fuel parameters for a minimum of five years from the date of receipt of parameter information.
30.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); To avoid major source status under 40 CFR pt. 51 App. S; Minn. R. 7007.4000	Monitoring of EU003 Fuel Usage: once each hour, record the EU003 usage of natural gas (mcf/hr) and distillate fuel oil (gal/hr) during the previous hour. Records shall specify the hour, date, and type of fuel for each hourly fuel usage value.
31.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); To avoid major source status under 40 CFR pt. 51 App. S; Minn. R. 7007.4000	Monitoring of EU004 Fuel Usage: once each hour, record the EU004 usage of natural gas (mcf/hr) and distillate fuel oil (gal/hr) during the previous hour. Records shall specify the hour, date, and type of fuel for each hourly fuel usage value.
32.0		CD	Title I Conditions: To avoid major source status under 40 CFR pt. 51 Appendix S; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Daily Recordkeeping: Once each calendar day, calculate and record the daily GP001 distillate fuel oil combustion hours, by summing the hours that EU003 and EU004 combusted distillate fuel oil during the previous day. Once each calendar day, calculate and record the 365-day rolling sum hours of distillate fuel oil combustion for GP001 by summing the daily GP001 distillate fuel oil combustion hours for the previous 365 days.
33.0		CD	Minn. R. 7007.0800, subp. 2	Monitoring of EU003 Heat Input: once each hour, record the heat input to EU003 based on the usage of natural gas (mcf/hr) and distillate fuel oil (gal/hr) during the previous hour. Records shall specify the hour, date, and type of fuel for each hourly heat input value.
34.0		CD	Minn. R. 7007.0800, subp. 2	Monitoring of EU004 Heat Input: once each hour, record the heat input to EU004 based on the usage of natural gas (mcf/hr) and distillate fuel oil (gal/hr) during the previous hour. Records shall specify the hour, date, and type of fuel for each hourly heat input value.
35.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; 40 CFR Section 60.49b(c); Minn. R. 7011.0565	Monitoring and recordkeeping for EU003 and EU004 NOx emissions: The Permittee shall use the Predictive Emissions Monitoring System (PEMS) (Permit Appendix E), to measure NOx emissions, according to the plan submitted to the Administrator under 40 CFR Section 60.49b(c). NOx emission rates shall be calculated and recorded for each hour of operation, in units of lb/mmBtu and lb/hr. Once each day, the Permittee shall calculate the 30-day rolling average lb/hr NOx emission rate by averaging all hourly lb/hr emission rates from the previous 30-day period. The permittee shall include all nonoperating periods when calculating emissions. Record all calculations at the time of calculation.

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Facility Name: LSP Cottage Grove Cogeneration Facility

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36.0		CD	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Monitoring and recordkeeping for EU003 carbon monoxide emissions: when EU003 is combusting natural gas, calculate the carbon monoxide emission rate on a 1-hour average basis, once each hour, using Equation 5 in Appendix B. When EU003 is combusting distillate fuel oil, calculate the carbon monoxide emission rate on a 1-hour average basis, once each hour, using Equation 6 in Appendix B. Record all hourly emission rates at the time of calculation.
37.0		CD	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Monitoring and recordkeeping for EU004 carbon monoxide emissions: when EU004 is combusting natural gas, calculate the carbon monoxide emission rate on a 1-hour average basis, once each hour, using Equation 5 in Appendix B. When EU004 is combusting distillate fuel oil, calculate the carbon monoxide emission rate on a 1-hour average basis, once each hour, using Equation 6 in Appendix B. Record all hourly emission rates at the time of calculation.
38.0		CD	Title I Condition: To avoid status as a major source under 40 CFR pt. 51 Appendix S; Minn. R. 7007.4000	Daily Recordkeeping: Calculate the EU003 and EU004 daily CO emissions once each day by summing the 24 hourly average CO emission rates for the previous calendar day. Record the daily emissions sum at the time of calculation.
39.0		CD	40 CFR Section 60.7(b)	Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility, any malfunction of the air pollution control equipment, or any periods during which a continuous monitoring system or monitoring device is inoperative.
40.0		CD	40 CFR Section 60.49b(d)(1); Minn. R. 7011.0565	Daily Recordkeeping: maintain records of the type and amount of each fuel combusted each day; calculate the annual capacity factor for each fuel for each calendar quarter. Annual capacity factor is calculated on a 12-month rolling average basis at the end of each calendar month.
41.0		S/A	40 CFR Section 60.49b(r)(1); Minn. R. 7011.0565	Quarterly Report: due 30 days after end of each calendar quarter starting 11/10/1998 certifying that all fuel oil combusted met the definition of distillate oil in 40 CFR Section 60.41b.
42.0		CD	hdr	PREDICTIVE EMISSIONS MONITORING SYSTEM (PEMS) (See Permit Appendix E)
43.0		CD	40 CFR Section 60.48b(g)(2); Minn. R. 7011.0565; Minn. R. 7007.0800, subp. 2	PEMS Monitoring Plan for Nitrogen Oxides. The PEMS Monitoring Plan shall include the required items identified in 40 CFR Section 60.49b(c)(1), (2), and (3). If at any time the Permittee discovers that the approved PEMS Monitoring Plan no longer provides valid emissions data, the Permittee shall make corrections and revise the PEMS Monitoring Plan within 30 days of discovery. See Appendix E for a copy of the PEMS plan. Incorporation of revisions to the PEMS Monitoring Plan may require a permit amendment.
44.0		CD	Minn. R. 7007.0800, subp. 2	PEMS Relative Accuracy Test Audit (RATA): due before end of each 24 months following PEMS Certification Test. Each RATA shall be conducted at an interval not to exceed 24 months.
45.0		CD	Minn. R. 7007.0800, subp. 2	Relative Accuracy Test Audit (RATA) Notification: due 30 days before PEMS Relative Accuracy Test Audit (RATA).
46.0		CD	Minn. R. 7007.0800, subp. 2	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calender quarter in which the CEMS RATA was conducted.
47.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; 40 CFR Section 60.49b(c); Minn. R. 7011.0565; Minn. R. 7007.0800, subp. 2	Continuous Operation: Except for system breakdowns, repairs, and calibration checks, the PEMS shall be in continuous operation.
48.0		CD	40 CFR Sections 60.7(c) and 60.49b(c)(3); Minn. R. 7011.0565; Minn. R. 7007.0800, subp. 5	Recordkeeping: The owner or operator must retain records of all PEMS 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 and include predicted NOx emission rates and the monitored operating conditions, including steam generating unit load, identified in the PEMS Monitoring Plan
49.0		CD	hdr	TESTING REQUIREMENTS

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50.0		S/A	Title I Conditions: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each 60 months starting 06/01/1997 to measure PM and VOC emissions while combusting natural gas, and to measure PM, PM10 and VOC emissions while combusting distillate oil. Testing will be conducted on the emission unit that was not tested during the previous performance test. Tests shall be conducted at an interval not to exceed 60 months between test dates.
51.0		S/A	Title I Conditions: 40 CFR Section 52.21(j) (BACT) and Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each year starting 06/01/98 to measure PM10 emissions while combusting natural gas, on the emission unit that was not tested the previous year. Tests shall be conducted at an interval not to exceed 12 months between test dates.
52.0		S/A	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each year starting 06/01/1998 to measure the CO emission factor for each permitted fuel. Each annual test shall be composed of two seperate tests (one for each permitted fuel), conducted on the emission unit that was not tested the previous year, and at an interval not to exceed 12 months between test dates. Testing frequency for each permitted fuel may be relaxed from every 12 months to once every 36 months according to the following equation and conditions: X = ([A - | (A-T) |] x 1/A) x 100% A = emission factor in Appendix B in this permit T = emission factor measured during testing If X is greater than or equal to 90% for two or more consecutive 12-month performance testing cycles, then the test frequency may be reduced to once every 36 months. If a subsequent performance test results in X < 90%, the testing frequency shall revert back to the original 12-month basis until subsequent 12-month testing produces two consecutive tests meeting the above criteria for a 36-month test frequency.
53.0		CD	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2.	CO Test Frequency If the CO emission factor test frequency is reduced from 12 months to once every 36 months (as allowed if "X" is greater than or equal to 90% for two consecutive 12-month CO tests), instead of submitting the CO emission factor performance test notification, the permittee shall submit a notification indicating the 12-month CO test will not be conducted because the criteria have been met. In addition, the notification shall specify the value of "X" for the previous two consecutive 12-month CO emission factor tests. When the permittee provides notification that the 12-month CO test will not be conducted because permit criteria are met for a 36-month test frequency, the test plan, pre-test meeting, test report, and microfiche copy of the test report requirements are waived for that 12-month CO emission factor test.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **GP 002 CO Limit**

Associated Items: EU 001 Combustion Turbine Generator

EU 002 Supplemental Duct Firing Burners

EU 003 Auxiliary Boiler #1

EU 004 Auxiliary Boiler #2

EU 005 Emergency Fire Pump Diesel Engine

EU 007 Emergency Diesel Generator

EU 008 Fuel Gas Heater

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Title I Condition: To avoid classification as a major source under 40 CFR pt. 51 Appendix S; Minn. R. 7007.4000	Carbon Monoxide: less than or equal to 99.0 tons/year using 365-day Rolling Sum calculated daily.
2.0		CD	Title I Condition: To avoid classification as a major source under 40 CFR pt. 51 Appendix S; Minn. R. 7007.4000	Daily Recordkeeping: Once each calendar day, calculate and record the total facility CO emissions for the previous calendar day. The daily total facility CO emissions are calculated by summing the calendar-day CO emissions from SV001 (EU001 and EU002), EU003, EU004, EU005, EU007, and EU008 for the previous day. Once each calendar day calculate the 365-day rolling sum CO emissions for the total facility. The 365-day rolling sum is calculated each day by summing the daily CO emissions for the previous 365 days.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **GP 003 CEMS Required by NSPS**

Associated Items: MR 001 NOX CEMS

MR 002 O2 CEMS

MR 006 NOX CEMS

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	Additional monitoring requirements are located in Table B.
2.0		CD	hdr	The CEMS requirements listed below outline the typical standards of 40 CFR pt. 60 when combined with Minn. R. Additional monitoring requirements may also apply to the Facility based on this combination of standards and it is the responsibility of the Facility to meet all applicable requirements.
3.0		CD	40 CFR Section 60.13(e)(2)	CEMS Monitor Design: Each CEMS shall be designed to complete a minimum of one cycle of sampling, analyzing, and data recording in each 15-minute period.
4.0		CD	Minn. R. 7017.1040, subp. 1	Installation Notification: due 60 days before CEMS installation. The notification shall include plans and drawings of the system.
5.0		CD	40 CFR Section 60.13(b); Minn. R. 7017.1050, subp. 1	CEMS Certification Test: due 120 days after the first calendar quarter following CEMS Installation. (This requirement is as stringent as that of Minn. R. 7017.1050, subp. 1 requiring testing within 90 days after the due date of the first excess emissions report required for the CEMS or COMS)
6.0		CD	40 CFR Section 60.7(a)(5); Minn. R. 7017.1060, subp. 1-3; Minn. R. 7017.1080, subp. 1-4	CEMS Certification Test Plan: due 30 days before CEMS Certification Test CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test CEMS Certification Test Report: due 45 days after CEMS Certification Test CEMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.1120, subp. 2
7.0		CD	40 CFR Section 60.13(e); Minn. R. 7017.1090	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.
8.0		CD	40 CFR pt. 60, Appendix F; Section 3; Minn. R. 7017.1170, subp. 2	QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR Part 60, Appendix F, Section 3. The plan shall 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.
9.0		CD	40 CFR pt. 60, Appendix F; 40 CFR Section 60.13(a)	CEMS QA/QC: The owner or operator of an affected facility is subject to the performance specifications listed in 40 CFR pt. 60, Appendix B and shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 60, Appendix F as amended and maintain a written QA/QC program available in a form suitable for inspection.
10.0		CD	40 CFR pt. 60, Appendix F, Section 4.1; 40 CFR Section 60.13(d)(1); Minn. R. 7017.1170, subp. 3	CEMS Daily Calibration Drift Test: Check the zero (low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily. The zero and span must, at a minimum, be adjusted whenever the drift exceeds two times the limit specified in 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, Section 4.3.1 shall be used to determine out-of-control periods for CEMS.
11.0		CD	40 CFR pt. 60, Appendix F, section 5.1.2; Minn. R. 7017.1170, subp. 4	CEMS Cylinder Gas Audit (CGA): Due before the end of each three of four calendar quarters following Permit Issuance but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.
12.0		CD	40 CFR pt. 60, Appendix F, Section 5.1.1	CEMS Relative Accuracy Test Audit (RATA): due before end of every one of four calendar quarters following Permit Issuance.
13.0		CD	Minn. R. 7017.1180, subp. 2	Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS RATA.

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14.0		CD	Minn. R. 7017.1130; 40 CFR Section 60.7(f)	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.
15.0		CD	40 CFR Section 60.13(h) regarding continuous monitoring systems other than COMS.	Monitoring Data: Reduce all NSPS-required continuous monitoring systems other than COMS data to 1-hour averages, in accordance with 40 CFR Section 60.13(h).

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Subject Item: **GP 004 CEMS Not Required by NSPS**

Associated Items: MR 003 CO CEMS

MR 007 CO CEMS

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	Additional monitoring requirements are located in Table B.
2.0		CD	Minn. R. 7017.1040, subp. 1	Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system.
3.0		CD	Minn. R. 7017.1050, subp. 1	CEMS Certification Test: due 120 days after the first calendar quarter following CEMS Installation. (This requirement is as stringent as that of Minn. R. 7017.1050, subp. 1 requiring testing within 90 days after the due date of the first excess emissions report required for the CEMS or COMS.)
4.0		CD	Minn. R. 7017.1060, subps. 1-3; Minn. R. 7017.1080, subps. 1-4	CEMS Certification Test Plan: due 30 days before CEMS Certification Test CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test CEMS Certification Test Report: due 45 days after CEMS Certification Test CEMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.1120, subp. 2
5.0		CD	Minn. R. 7017.1090	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 as defined at Minn. R. 7017.1090, subpart 2. 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.
6.0		CD	Minn. R. 7017.1160, subp. 1 and 2	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. In order for an hour of data to be considered, 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.
7.0		CD	Minn. R. 7017.1170, subp. 2	QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR pt. 60, Appendix F, Section 3. The plan shall 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.
8.0		CD	Minn. R. 7017.1170, subp. 3	CEMS Daily Calibration Drift (CD) Test: The CD shall 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) and 40 CFR Section 60.13(d)(1) for each pollutant concentration, each diluent monitor, and for each monitor range. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. If no span value is specified in the applicable requirement or in a compliance document, the Permittee shall use a span value equivalent to 1.5 times the emission limit. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.
9.0		CD	Minn. R. 7017.1170, subp. 4	Cylinder Gas Audit (CGA): due before end of each calendar half-year following Permit Issuance, except that a CGA is not required during any calendar half year in which a RATA was performed. The initial CGA must be performed within 180 days following certification of the CEMS. The CGAs shall be conducted at least three months apart but no more than eight months apart. A CGA shall be conducted according to the procedures in 40 CFR pt. 60, Appendix F, Section 5.1.2. If the monitored emission unit was operated for less than 24 hours during the calendar half year, a CGA is not required for that calendar half year.

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10.0		CD	Minn. R. 7017.1170, subp. 5	CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following Permit Issuance. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart and according to 40 CFR pt. 60, Appendix F, Section 5.1.1.
11.0		CD	Minn. R. 7017.1180, subp. 2	Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA).
12.0		CD	Minn. R. 7017.1130	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.

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Subject Item: **GP 005 COMS**

Associated Items: MR 008 COMS

MR 009 COMS

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	Additional monitoring requirements are located in Table B.
2.0		CD	Minn. R. 7017.1200, subp. 1, 2 & 3	Monitoring Data: All COMS data must be reduced to six-minute averages. A six minute average is valid only if it contains data from at least five minutes within the averaging period. COMS data shall be reduced and calculated as outlined in Minn. R. 7017.1200, subp. 3.
3.0		CD	Minn. R. 7017.1040, subp. 1	Installation Notification: due 60 days before COMS installation. The notification shall include plans and drawings of the system.
4.0		CD	Minn. R. 7017.1050, subp. 1	CEMS Certification Test: due 120 days after the first calendar quarter following COMS Installation. (This requirement is as stringent as that of Minn. R. 7017.1050, subp. 1 requiring testing within 90 days after the due date of the first excess emissions report required for the CEMS or COMS.)
5.0		CD	Minn. R. 7017.1060, subp. 1-3; Minn. R. 7017.1080, subp. 1-4	COMS Certification Test Plan: due 30 days before COMS Certification Test COMS Certification Test Pretest Meeting: due 7 days before COMS Certification Test COMS Certification Test Report: due 45 days after COMS Certification Test COMS Certification Test Report - Microfiche Copy: due 105 days after COMS Certification Test The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.1120, subp. 2
6.0		CD	Minn. R. 7017.1090, subp. 1	Continuous Operation: COMS 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 COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.
7.0		CD	Minn. R. 7017.1210, subp. 1	QA Plan: Develop and implement a written quality assurance plan that covers each COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by Minn. R. 7017.1210, subp. 1. The plan shall include the manufacturer's spare parts list for each COMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list.
8.0		CD	Minn. R. 7017.1210, subp. 2	COMS Daily Calibration Drift Test: The owner or operator of a COMS shall conduct a daily zero and upscale calibration drift assessment and adjustments according to the requirements of 40 CFR pt. 60.13(d)(2). The zero and upscale calibration levels must be determined by using the span value specified in the applicable requirement. If the applicable requirement does not specify a span value, a span value of 60, 70, or 80 percent opacity must be used unless an alternative span value is approved by the commissioner.
9.0		CD	Minn. R. 7017.1210, subp. 3	COMS Calibration Error Audit: due before the end of each calendar half-year following Permit Issuance. Audits are to be at least three months apart but no more than eight months apart except that a calibration error audit need not be conducted during any semiannual period in which the emission unit operated less than 24 hours. The calibration error audit shall be conducted according to the procedures in 40 CFR pt. 60, Appendix B, PS. 1.
10.0		CD	Minn. R. 7017.1210, subp. 4	COMS Attenuator Calibration: The Permittee shall semiannually have an independent testing company conduct calibrations of each of the neutral density filters used in the calibration error audit according to the procedure in 40 CFR pt. 60, Appendix B.
11.0		CD	Minn. R. 7017.1180, subp. 2	COMS Calibration Error Audit Notification: due 30 days before the COMS Calibration Error Audit.
12.0		CD	Minn. R. 7017.1130	Recordkeeping: The owner or operator must retain records of all COMS 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.

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Subject Item: **SV 001 Combustion Turbine/Duct Burners**

Associated Items: EU 001 Combustion Turbine Generator

EU 002 Supplemental Duct Firing Burners

MR 001 NOX CEMS

MR 002 O2 CEMS

MR 003 CO CEMS

MR 006 NOX CEMS

MR 007 CO CEMS

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION LIMITS
2.0		LIMIT	Title I Condition: 40 CFR section 52.21(j) (BACT); Minn. R. 7007.3000	Total Particulate Matter: less than or equal to 0.0089 lbs/million Btu heat input using 3-hour Average when EU001 is combusting natural gas.
3.0		LIMIT	Title I Condition: 40 CFR section 52.21(j) (BACT); Minn. R. 7007.3000	Total Particulate Matter: less than or equal to 0.0327 lbs/million Btu heat input using 3-hour Average when EU001 is combusting distillate fuel oil.
4.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	PM < 10 micron: less than or equal to 0.0089 lbs/million Btu heat input using 3-hour Average when EU001 is combusting natural gas.
5.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	PM < 10 micron: less than or equal to 0.0327 lbs/million Btu heat input using 3-hour Average when EU001 is combusting distillate fuel oil.
6.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Particulate Matter < 10 micron: less than or equal to 73.3 lbs/hour using 24-hour Rolling Average .
7.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Sulfur Dioxide: less than or equal to 99.3 lbs/hour using 3-hour Rolling Average . The Sulfur Dioxide limit is met by complying with the fuel restrictions and fuel sulfur content limits.
8.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Sulfur Dioxide: less than or equal to 59.6 lbs/hour using 24-hour Rolling Average . The Sulfur Dioxide limit is met by complying with the fuel restrictions and fuel sulfur content limits.
9.0		CD	40 CFR Section 72.9(c)(1)(ii); 40 CFR Section 72.9(g)(4)	Comply with the applicable Acid Rain emissions limitation for sulfur dioxide.
10.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Nitrogen Oxides: less than or equal to 4.5 parts per million dry volume at 15 percent oxygen on a 1-hour average basis when EU001 is combusting natural gas. This limit does not apply during startup or shutdown (as defined under SV001 in Table A of this permit) of EU001.
11.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Nitrogen Oxides: less than or equal to 36.5 lbs/hour using 30-day Rolling Average when EU001 is combusting natural gas.
12.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) BACT limit; Minn. R. 7007.3000	Nitrogen Oxides: less than or equal to 16.0 parts per million dry volume at 15 percent oxygen on a 1-hour average basis when EU001 is combusting distillate fuel oil. This limit does not apply during startup or shutdown (as defined under SV001 in Table A of this permit) of EU001.
13.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Nitrogen Oxides: less than or equal to 139.9 lbs/hour using 30-day Rolling Average when EU001 is combusting distillate fuel oil.

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14.0		CD	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Calculate and record the prorated 30-day rolling average NOx emission limit in lb/hr for SV001 once each day for the previous 30-day period, when both distillate oil and natural gas were fired during the previous 30-day period, using the following formula: Limit = ([Toil * 139.9 lb/hr] + [Tgas * 36.5 lb/hr])/total operating hours during the previous 30-day period Toil = total operating hours on distillate fuel oil during the previous 30-day period Tgas = total operating hours on natural gas during the previous 30-day period.
15.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Carbon Monoxide: less than or equal to 1900 lbs/hour using 1-Hour Average . This limit applies only during EU001 startup and shutdown. Startup is defined as the initial 120 minutes of operation of EU001 after any time during which operation of EU001 ceased for more than 60 consecutive minutes. Shutdown is defined as the final 60 minutes of operation of EU001 immediately preceding the time that fuel flow is shut off to EU001. Operation of EU001 is defined as whenever there is any fuel flow to EU001.
16.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Volatile Organic Compounds: less than or equal to 0.008 lbs/million Btu heat input using 3-hour Average when EU001 is combusting natural gas.
17.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Volatile Organic Compounds: less than or equal to 0.009 lbs/million Btu heat input using 3-hour Average when EU001 is combusting distillate fuel oil.
18.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Sulfuric Acid Mist: less than or equal to 0.0002 lbs/million Btu heat input using 3-hour Average when EU001 is combusting natural gas. The Sulfuric Acid Mist limit is met by complying with the fuel restrictions and fuel sulfur content limits.
19.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Sulfuric Acid Mist: less than or equal to 0.017 lbs/million Btu heat input using 3-hour Average when EU001 is combusting distillate fuel oil. The Sulfuric Acid Mist limit shall be met by complying with the fuel restrictions and fuel sulfur content limits.
20.0		CD	hdr	OPERATIONAL LIMITS
21.0		CD	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Fuel Use: EU001 and EU002 are restricted to using pipeline natural gas as defined in 40 CFR Section 72.2 and distillate fuel oil.
22.0		LIMIT	Title I Condition: To maintain ambient SO2 concentrations below the significant level under 40 CFR Section 51.165(b)(2); 40 CFR Sections 60.333(b); Minn. R. 7007.4000; Minn. R. 7011.2350	Sulfur Content of Fuel: less than or equal to 0.05 percent by weight for distillate fuel oil.
23.0		CD	hdr	POLLUTION CONTROL EQUIPMENT REQUIREMENTS (See also Subject Items CE001 and CE002)
24.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient CO concentrations below significance levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Operate and maintain CE001 and CE002 at all times that EU001 and/or EU002 are operating, except during startup or shutdown.
25.0		LIMIT	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient CO concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Temperature: greater than or equal to 450 degrees F for SV001 flue gas downstream of CE001 and upstream of CE002, except during startup or shutdown.
26.0		CD	hdr	MONITORING AND RECORDKEEPING REQUIREMENTS

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27.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient CO concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Monitoring and record keeping of SV001 flue gas temperature: Monitor and record SV001 flue gas temperature dowstream of CE001 whenever EU001 is operating, including during startup and shutdown. A minimum of four equally spaced data points shall be used to determine a one-hour average. If EU001 operates for less than 60 minutes in a one-hour period, use at least one data point for each 15-minute period during which there was any operation, to determine the one-hour average. SV001 flue gas temperature will be used as an indicator of CO emissions during SV001 CO CEM downtime.
28.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain thermocouples for measuring the temperatures as required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever the monitored control equipment is required to be operated.
29.0		CD	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient CO concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; Minn. R. 7007.0800, subp. 4 and 5	The Permittee shall maintain a continuous hard copy readout or computer disk file of the inlet and outlet temperatures
30.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; 40 CFR Section 60.334(b); 40 CFR Section 75.10; Minn. R. 7011.2350	NOX Monitoring: Use a NOx CEMS to measure NOx emissions from SV001 in ppm. Calculate hourly emission rates in units of lb/hr and ppm dry volume at 15 percent oxygen. The NOX CEMS is also to be used to demonstrate compliance with the NOX limit under 40 CFR Section 60.44Da(a)(1), as described at Subject Item EU002. See Subject Item GP003 for CEMS operating requirements.
31.0		CD	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	CO Monitoring: Use a CO CEM to measure CO emissions from SV001. Calculate hourly emission rates in units of lb/hr. See Subject Item GP003 for CEMS operating requirements.
32.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; 40 CFR pt. 75, Appendix D section 2.1	Fuel usage: when EU001 and/or EU002 are combusting fuel, measure the hourly quantity of each fuel combusted with an in-line fuel meter and automatically record the fuel usage, according to the procedures in 40 CFR part 75, Appendix D section 2.1.
33.0		CD	40 CFR pt. 75, Appendix D, section 3.4	Heat Input: Each hour, calculate the hourly heat input according to the procedures in 40 CFR pt. 75, Appendix D section 3.4.
34.0		CD	Minn. R. 7007.0800, subp. 4	By January 30 of each year, calculate and record the following: -- The annual EU001 distillate fuel oil heat input as a percent of total SV001 heat input, for the previous calendar year. -- The 3-year rolling average EU001 distillate fuel oil heat input as a percent of total SV001 heat input. The 3-year rolling average is determined by summing the EU001 distillate fuel oil heat input percentages for the previous three years, and dividing by three.
35.0		CD	Title I Conditions: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; 40 CFR part 75, Appendix D; 40 CFR Section 60.334(h)(3)(i); Minn. R. 7011.2350	Fuel Oil Sampling: Sample and analyze fuel oil in accrodane with the applicable methods specified in 40 CFR part 75, Appendix D, section 2.2.
36.0		CD	40 CFR part 75, Appendix D, sections 2.1.5 and 2.1.6	Fuel meter calibration: Calibrate the distillate fuel oil and natural gas flow meters for EU001 and EU002, as specified in 40 CFR part 75, Appendix D sections 2.1.5 and 2.1.6.

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37.0		CD	Title I Conditions: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	PM10 Emission Calculations: when EU001 combusts natural gas, calculate the PM10 emission rate once each hour for the previous hour, using Equation 1 in Appendix B. When EU001 combusts distillate fuel oil, calculate the PM10 emission rate once each hour for the previous hour, using Equation 2 in Appendix B. Once each hour, calculate the PM10 emission rate on a 24-hour rolling average basis, by averaging the previous 24 hourly emission rates determined using Equations 1 and/or 2. The permittee shall include all nonoperating periods when calculating emissions. Record all calculations at the time of calculation.
38.0		CD	Title I Condition: To avoid major source status under 40 CFR pt. 51 Appendix S; Minn. R. 7007.4000	CO Emission Calculations: Once each day, the Permittee shall calculate the SV001 daily CO emissions by summing the 24 one-hour average CO emission rates for the previous calendar day. Record the daily emissions sum at the time of calculation.
39.0		CD	Title I Conditions: To maintain ambient concentrations below significant level under 40 CFR Section 51.165(b)(2); To avoid major source status under 40 CFR pt. 51 Appendix S; Minn. R. 7007.4000	Missing CO Data Procedures: If emission data is not available from the CO CEM for a given hour, use substitute CO emission data for each hour of downtime determined as follows: 1. If temperature upstream of CE001 is equal to or greater than 450 F during downtime, use the highest CO value measured during the hour before or after downtime. 2. If while combusting natural gas the temperature upstream of CE001 is less than 450 F during downtime, use the highest of the following values: 600 lb/hr, the 1-hour average before downtime, or the 1-hour average after downtime; 3. If while combusting distillate oil the temperature upstream of CE001 is less than 450 F during downtime, use the highest of the following values: 1200 lb/hr, the 1-hour average before downtime, or the 1-hour average after downtime.
40.0		CD	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	NOX Emission Calculations: Once each day, the Permittee shall calculate the 30-day rolling average lb/hr NOx emission rate by averaging all hourly lb/hr emission rates from the previous 30-day period. The Permittee shall include all nonoperating periods when calculating emissions. Record all calculations at the time of calculation.
41.0		CD	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000; 40 CFR pt. 75, Appendix D section 3	SO2 Emission Calculations: when EU001 combusts natural gas, calculate the SO2 emission rate once each hour for the previous hour, using Equation 3 in Appendix B. When EU001 combusts distillate fuel oil, calculate SO2 emission rate once each hour for the previous hour, using Equation 4 in Appendix B. Once each hour, calculate the SO2 emission rate on a 3-hour rolling average basis, by averaging the previous 3 hourly emission rates determined using Equations 3 and/or 4. Once each hour, calculate the SO2 emission rate on a 24-hour rolling average basis, by averaging the previous 24 hourly emission rates determined using Equations 3 and/or 4. The permittee shall include all nonoperating periods when calculating emissions. Record all calculations at the time of calculation.
42.0		CD	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; 40 CFR Part 75, Appendix D	Pipeline Natural Gas Sulfur Content: Maintain records of a purchase contract, tariff sheet, or by a pipeline transportation contract documenting that the natural gas either consists of at least 70 percent methane by volume or have a GCV between 950 and 1100 Btu per scf, and has a sulfur content of less than or equal to 0.5 gr/100 scf. or; Sample the natural gas annually to determine the sulfur content and GCV and/or percentage by volume of methane.
43.0		CD	40 CFR part 75, Appendix D, section 2.4	Missing Data Procedures: when sulfur content data is not available, provide substitute data according to the procedures in 40 CFR part 75, Appendix D section 2.4.
44.0		CD	Minn. R. 7007.0800, subp. 5; 40 CFR Section 75.50	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.

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45.0		CD	Minn. R. 7007.0800, subp. 5	Keep records of the following: -- All periods of all startups and shutdowns of EU001. The records shall specify the occurence and duration of each period of startup and shutdown of EU001. The records shall also specify the date and time (to the nearest minute), that fuel flow stops to EU001. -- All occurrences of any malfunction of EU001, EU002, CE001, or CE002. -- All tim periods during which CE001 or CE002 were not in operation during the operation of EU001.
46.0		CD	hdr	PERFORMANCE TEST REQUIREMENTS
47.0		S/A	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1	Initial Performance Test: due 180 days after Initial Startup of EU001 on distillate oil, to measure PM, PM10 and VOC emissions while EU001 is combusting distillate oil. EU002 shall be operated during all performance tests.
48.0		S/A	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each 60 months starting 06/01/1997 to measure PM and VOC emissions while EU001 is combusting natural gas. EU002 shall be operated during all performance tests. Tests shall be conducted at intervals not to exceed 60 months between test dates.
49.0		S/A	Title I Conditions: 40 CFR Section 52.21(j) (BACT); Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each year starting 06/01/1998 to measure PM10 emissions while EU001 is combusting natural gas. Both EU001 and EU002 shall be operated during all performance tests. Testing frequency for natural gas may be relaxed from every 12 months to once every 36 months according to the following equation and conditions: X = ([A - | (A-T) |] x 1/A) x 100% A = emission factor in Appendix B in this permit T = emission factor measured during testing If X is greater than or equal to 90% for two or more consecutive 12-month performance testing cycles, then the test frequency may be reduced to once every 36 months. If a subsequent performance test results in X < 90%, the testing frequency shall revert back to the original 12-month basis until subsequent 12-month testing produces two consecutive tests meeting the above criteria for a 36-month test frequency.
50.0		CD	Minn. R. 7017.2030, subp. 1	If the PM10 test frequency for natural gas is reduced from 12 months to once every 36 months (as allowed if "X" is greater than or equal to 90% for two consecutive 12-month PM10 tests for the same fuel), instead of submitting the PM10 performance test notification, the permittee shall submit a notification indicating the 12-month PM10 test for natural gas will not be conducted because the criteria have been met. In addition, the notification shall specify the value of "X" for the previous two consecutive 12-month PM10 emission factor tests. When the permittee provides notification that the 12-month PM10 test will not be conducted because permit criteria are met for a 36-month test frequency, the test plan, pre-test meeting, test report, and microfiche copy of the test report requirements are waived for that 12-month PM10 emission factor test.
51.0		CD	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2	Performance Test Notifications and Submittals: Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test
52.0		S/A	Minn. R. 7017.2020, subp. 1	Testing Frequency Plan: due 60 days after Initial Performance Test for PM, PM10, and VOC emissions while combusting distillate oil. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA.

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Subject Item: **EU 001 Combustion Turbine Generator**

Associated Items: CE 001 Catalytic Oxidizer

CE 002 SCR (Selective Catalytic Reduction)

CE 011 Steam or Water Injection

GP 002 CO Limit

SV 001 Combustion Turbine/Duct Burners

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION AND OPERATIONAL LIMITS (see also Subject Items SV001 and GP002 for additional requirements)
2.0		LIMIT	40 CFR Section 60.332(a)(1); 40 CFR Section 60.332(b); Minn. R. 7011.2350	Nitrogen Oxides: less than or equal to 0.0107 percent by volume using 3-hour Average (106.8 ppmv) at 15 percent oxygen on a dry basis when combusting natural gas. Compliance with this limit shall be demonstrated through compliance with the more restrictive BACT limit shown at SV001.
3.0		LIMIT	40 CFR Section 60.332(a)(1); 40 CFR Section 60.332(b); Minn. R. 7011.2350	Nitrogen Oxides: less than or equal to 0.00994 percent by volume using 3-hour Average (99.4 ppmv) at 15 percent oxygen on a dry basis when combusting distillate fuel oil. Compliance with this limit shall be demonstrated through compliance with the more restrictive BACT limit shown at SV001.
4.0		LIMIT	40 CFR Section 60.333(b); Minn. R. 7011.2350	Sulfur Content of Fuel: less than or equal to 0.8 percent by weight . Compliance with this limit is demonstrated through compliance with the more restrictive Title I limit on sulfur content shown at SV001.
5.0		LIMIT	Minn. R. 7011.2300, subp. 2	Sulfur Dioxide: less than or equal to 0.50 lbs/million Btu heat input . The potential to emit from the unit is 0.05 lb/MMBtu due to equipment design and allowable fuels. (See more restrictive limit that applies to both EU001 and EU002, as subject Item SV001.)
6.0		LIMIT	Minn. R. 7011.2300, subp. 1	Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.
7.0		LIMIT	Title I Conditions: To avoid major source status under 40 CFR pt. 51 Appendix S; To maintain ambient SO2 concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Operating Hours: less than or equal to 1700 hours/year using 365-day Rolling Sum when combusting distillate fuel oil.
8.0		CD	Title I Conditions: To avoid major source status under 40 CFR pt. 51 Appendix S; To maintain ambient SO2 concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Recordkeeping: Once each calendar day: - Record the total hours that distillate fuel oil was combusted during the previous day - Calculate and record the 365-day rolling sum hours of distillate fuel oil combustion for EU001 by summing the daily EU001 distillate fuel oil combustion hours for the previous 365 days.
9.0		CD	hdr	CONTROL EQUIPMENT REQUIREMENTS (See also Subject Items CE001, CE002 and CE011)
10.0		CD	Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain CE011 any time that EU001 is in operation and combusting fuel oil, except as allowed under 40 CFR Section 60.332(f). when ice fog is deemed a traffic hazard by the owner or operator of the gas turbine. The Permittee shall document periods of non-operation of CE011.
11.0		CD	Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain CE001 and CE002 any time that EU001 is in operation. The Permittee shall document periods of non-operation of the control equipment.
12.0		CD	hdr	MONITORING REQUIREMENTS - See Subject Items SV001 and GP003
13.0		CD	hdr	ACID RAIN REQUIREMENTS
14.0		CD	40 CFR Section 72.6(a)(3)(i)	This unit is a new unit as defined in 40 CFR Section 72.2 and therefore is an affected unit according to 40 CFR Section 72.6(a)(3)(i).

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15.0		S/A	40 CFR Section 75.64	Acid Rain Program Electronically Submitted Quarterly Report: due 30 days after end of each calendar quarter starting 01/01/2000
16.0		CD	40 CFR Section 72.21	Certify Acid Rain Program Submittals: Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.
17.0		CD	40 CFR Section 72.9(c)(1)(i); 40 CFR Section 72.9(g)(4)	Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year.
18.0		CD	40 CFR Section 75.14(c)	Opacity Monitoring Exemption: The owner or operator of an affected unit that qualifies as gas-fired, as defined in Section 72.2 of this chapter, based on information submitted by the designated representative in the monitoring plan is exempt from the opacity monitoring requirements of this part. Whenever a unit previously categorized as a gas-fired unit is recategorized as another type of unit by changing its fuel mix, the owner or operator shall install, operate, and certify a continuous opacity monitoring system as required by paragraph (a) of 40 CFR Section 75.14, by December 31 of the following calendar year.
19.0		S/A	Minn. R. 7007.0800, subp. 6	Initial Startup on Distillate Oil: Notification of the Actual Date of Initial Startup: due 15 days after Initial Startup

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Subject Item: **EU 002 Supplemental Duct Firing Burners**

Associated Items: CE 001 Catalytic Oxidizer

CE 002 SCR (Selective Catalytic Reduction)

GP 002 CO Limit

SV 001 Combustion Turbine/Duct Burners

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION AND OPERATIONAL LIMITS (see also Subject Items SV001 and GP002 for additional requirements)
2.0		LIMIT	40 CFR Section 60.43Da(b)(2) and (g); 40 CFR Section 60.48Da(a) and (b); Minn. R. 7011.0560	Sulfur Dioxide: less than or equal to 0.20 lbs/million Btu heat input using 30-day Rolling Average . This limit applies at all times except during periods of startup, shutdown, or malfunction. Potential emissions based on equipment capacity when combusting pipeline natural gas is 0.0006 lb/mmbtu.
3.0		LIMIT	40 CFR Section 60.44Da(a)(1); 40 CFR Section 60.48Da(a) and (b); Minn. R. 7011.0560	Nitrogen Oxides: less than or equal to 0.20 lbs/million Btu heat input using 30-day Rolling Average . This limit applies at all times except during periods of startup, shutdown, or malfunction.
4.0		CD	40 CFR Section 60.48Da(b); Minn. R. 7011.0560	Compliance with the SO2 emission limit is based on the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day, and a new 30-boiler operating day rolling average emission rate is calculated.
5.0		CD	40 CFR Section 60.48Da(d); Minn. R. 7011.0560	Complance with the 30-boiler operating day rolling average SO2 and NOX emission limits is determined by calculating the arithmetic average of all hourly emission rates for SO2 and NOX for the 30 successive boiler operating days, except for data obtained during startup, shutdown, or malfunction.
6.0		CD	40 CFR Section 60.48Da(j)(1); Minn. R. 7011. 0560	The Permittee may elect to determine compliance by using the CEMS specified under 40 CFR Section 60.49Da for measuring NOX and oxygen (O2) (or carbon dioxide (CO2)) and meet the requirements of 40 CFR Section 60.49Da. Alternatively, data from a NOX emission rate (i.e., NOX-diluent) CEMS certified according to the provisions of 40 CFR Section 75.20(c) and appendix A to 40 CFR Part 75, and meeting the quality assurance requirements of 40 CFR Section 75.21 and appendix B to 40 CFR Part 75, may be used, with the following caveats. Data used to meet the requirements of 40 CFR Section 60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of 40 CFR Part 75, nor shall the data have been bias adjusted according to the procedures of 40 CFR Part 75. The sampling site shall be located at the outlet from the steam generating unit. The NOX emission rate at the outlet from the steam generating unit shall constitute the NOX emission rate from EU002.
7.0		CD	hdr	CONTROL EQUIPMENT REQUIREMENTS (See also Subject Items CE001 and CE002)
8.0		CD	Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain CE001 and CE002 any time that EU001 is in operation. The Permittee shall document periods of non-operation of the control equipment.
9.0		CD	hdr	MONITORING REQUIREMENTS - See Subject Items SV001 and GP003
10.0		CD	hdr	RECORDKEEPING
11.0		CD	40 CFR Section 60.7(b)	Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.

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Subject Item: **EU 005 Emergency Fire Pump Diesel Engine**

Associated Items: GP 002 CO Limit

SV 004 Emergency Diesel Fire Pump

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	See Subject Item GP002 for Additional Requirements
2.0		CD	hdr	EMISSION LIMITS
3.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Total Particulate Matter: less than or equal to 0.26 lbs/million Btu heat input
4.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT) Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	PM < 10 micron: less than or equal to 0.26 lbs/million Btu heat input
5.0		LIMIT	Minn. R. 7011.2300, subp. 1	Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.
6.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Sulfur Dioxide: less than or equal to 0.14 lbs/hour . The Sulfur Dioxide limit is met by complying with the fuel restrictions and fuel sulfur content limits.
7.0		LIMIT	Minn. R. 7011.2300, subp. 2	Sulfur Dioxide: less than or equal to 0.50 lbs/million Btu heat input . The Sulfur Dioxide limit is met by complying with the fuel restrictions and fuel sulfur content limits.
8.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Nitrogen Oxides: less than or equal to 1.85 lbs/million Btu heat input . This is the potential to emit of the engine at equipment capacity and using allowed fuel.
9.0		LIMIT	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Carbon Monoxide: less than or equal to 5.0 lbs/hour using 1-Hour Average . Potential emissions based on capacity, allowed fuel, and published emission factors is approximately 2.6 lb/hr.
10.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Volatile Organic Compounds: less than or equal to 0.71 lbs/million Btu heat input . Potential emissions based on capacity, allowed fuel, and published emission factors is approximately 0.35 lb/MMBtu.
11.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Sulfuric Acid Mist: less than or equal to 0.0017 lbs/million Btu heat input . The Sulfuric Acid Mist limit is met by complying with the fuel restrictions and fuel sulfur content limits.
12.0		CD	hdr	OPERATIONAL LIMITS
13.0		CD	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000; To maintain ambient SO2 concentrations below significant levels under 40 CFR Section 51.165(b)(2); 7007.4000	Fuel use is limited to distillate oil with a maximum sulfur content of 0.05 percent by weight.
14.0		CD	Title I Condition: To avoid classification as a major source under 40 CFR part 51, Appendix S; Minn. R. 7007.4000	Operating Hours: less than or equal to 150 hours/year using 365-day Rolling Sum, calculated daily.
15.0		CD	hdr	MONITORING AND RECORDKEEPING REQUIREMENTS

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16.0		CD	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000	Monitoring of fuel parameters: obtain distillate fuel oil vendor certification for each delivery stating that the sulfur content does not exceed 0.05% by weight, and specifying the density and high heating value (HHV). As an alternative, determine the sulfur content in percent by weight, HHV, and density of distillate fuel oil by sampling and analyzing fuel oil according to the requirements in 40 CFR pt. 75, Appendix D section 2.2. Maintain records of fuel parameters for a minimum of five years from the date of receipt of parameter information.
17.0		CD	Title I Conditions: To maintain ambient SO2 concentrations below significant levels under 40 CFR Section 51.165(b)(2); To avoid major source status under 40 CFR pt. 51, Appendix S; Minn. R. 7007.4000	Recordkeeping: record total hours of operation, once each day for the previous calendar day. Once each day, calculate and record the 365-day rolling sum hours of operation by summing the daily hours of operation for the previous 365 days.
18.0		CD	Title I Condition: To maintain ambient concentrations below significant levels under 40 CFR Section 51.165(b)(2); Minn. R. 7007.4000	Monitoring and recordkeeping: once each hour calculate the EU005 carbon monoxide emissions (in lb/hr), using Equation 7 in Appendix B. Once each day, calculate and record the EU005 carbon monoxide emissions for the previous calendar day (in lb/day) by summing the 24 one-hour emision rates determined by Equation 7, from the previous day.
19.0		CD	hdr	NESHAP SUBPART ZZZZ REQUIREMENTS
20.0		CD	40 CFR Section 63.6595(a)(1); Minn. R. 7011.8150	EU005 must be in compliance with the applicable emission limitations and operating limitations of Subpart ZZZZ no later than May 3, 2013
21.0		CD	40 CFR Section 63.6603(a); Minn. R. 7011.8150	The following requirements must be met except during periods of startup: a) Change oil and filter every 500 hours or operation or annually, whichever comes first; b) Inspect air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; c) Inspect all hoese and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
22.0		CD	40 CFR Section 63.6603(a); Minn. R. 7011.8150	If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of Subpart ZZZZ, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has been abated. The management practice shoudl be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State, or local law under which the risk was deemed unacceptable.
23.0		CD	40 CFR Section 63.6625(i); Minn. R. 7011.8150	The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified above for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. (continued below)
24.0		CD	40 CFR Section 63.6625(i); Minn. R. 7011.8150	continued from above: If any of the limits are exceeded, the Permittee must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the Permittee must change the oil within 2 days or before commencing operation, whichever is later. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

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25.0		CD	40 CFR Section 63.6605; Minn. R. 7011.8150	a) The Permittee must be in compliance with the applicable emission limitations, operating limitations, and other requirements of Subpart ZZZZ at all times. b) At all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
26.0		CD	40 CFR Section 63.6625(e); Minn. R. 7011.8150	Operate and maintain the stationary RICE according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
27.0		CD	40 CFR Section 63.6625(f); Minn. R. 7011.8150	The Permittee must install a non-resettable hour meter if one is not already installed.
28.0		CD	40 CFR Section 63.6625(h); Minn. R. 7011.8150	The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
29.0		CD	40 CFR Section 63.6640(a); Minn. R. 7011.8150	The Permittee must demonstrate continuous compliance with Subpart ZZZZ by: i) Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions, OR ii) Developing and following a maintenance plan which must provide, to the extent possible, for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
30.0		CD	40 CFR Section 63.6640(b); Minn. R. 7011,8150	The Permittee must report each instance in which the applicable emission limitation or operating limitation was not met. These instances are deviations from the emission and operating limitations in Subpart ZZZZ. These deviations must be reported according to the requirements in 40 CFR Section 63.6650.
31.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	The Permittee must operate the emergency stationary RICE according to the requirements in 40 CFR Section 63.6640(f)(1) - (4). In order for the engine to be considered an emergency stationary RICE under Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR Section 63.6640(f)(1) - (4), is prohibited. If the engine is not operated according to the requirements in 40 CFR Section 63.6640(f)(1) - (4), the engine will not be considered an emergency engine under Subpart ZZZZ and must meet all requirements for non-emergency engines.
32.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (1) There is no time limit on the use of emergency stationary RICE in emergency situations. (2) The emergency stationary RICE may be operated for any combination of the purposes specified in 40 CFR Section 63.6640(f)(2)(i) - (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR Section 63.6640(f)(3) and (4) counts as part of the 100 hours per calendar year allowed by 40 CFR Section 63.6640(f)(2). (continued below)

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33.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. (continued below)
34.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (see 40 CFR Section 63.14), or other authorized entity has determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. (iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. (continued below)
35.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (3) <applies only to major sources> (4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in 40 CFR Section 63.6640(f)(2). Except as provided in 40 CFR Section 63.6640(f)(4)(i) and (ii), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. (continued below)
36.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or nonemergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system. (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator. (continued below)

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37.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. (D) The power is provided only to the facility itself or to support the local transmission and distribution system. (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.
38.0		CD	40 CFR Section 63.6650(f); Minn. R. 7011.8150	Report all deviations as defined in Subpart ZZZZ in the semiannual monitoring report required by 40 CFR Section 70.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of Subpart ZZZZ along with, or as part of, the seminannual monitoring report required by 40 CFR Section 70.6(a)(3)(iii)(A), and teh Compliance report includes all required information concerning deviations from any emission or operation limitation in Subpart ZZZZ, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.
39.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	The owner or operater of an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR Section 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in 40 CFR Section 63.6640(f)(4)(ii), must submit an annual report according to the requirements in 40 CFR Section 63.6650(h)(1) - (3). (1) The report must contain the following information: (i) Company name and address where the engine is located. (ii) Date of the report and beginning and ending dates of the reporting period. (iii) Engine site rating and model year. (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. (continued below)
40.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	continued from above: (v) Hours operated for the purposes specified in 40 CFR Sections 63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR Sections 63.6640(f)(2)(ii) and (iii). (vi) Number of hours the engine is contractually obligated to be available for the purposes specified in 40 CFR Sections 63.6640(f)(2)(ii) and (iii). (vii) Hours spent for operation for the purpose specified in 40 CFR Section 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR Section 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine. (continued below)

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41.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	continued from above: (viii) If there were no deviations from the fuel requirements in 40 CFR Section 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period. (ix) If there were deviations from the fuel requirements in 40 CFR Section 63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken. (2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. (continued below)
42.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	continued from above: (3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to Subpart ZZZZ is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR Section 63.13.
43.0		CD	40 CFR Section 63.6655(d); Minn. R. 7011.8150	Keep the records required in Table 6 of Subpart ZZZZ to show continuous compliance with each emission or operating limitation that applies.
44.0		CD	40 CFR Section 63.6655(e); Minn. R. 7011.8150	Keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for demand response operation, the Permittee must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.
45.0		CD	40 CFR Section 63.6660; Minn. R. 7011.8150	a. Records must be in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1). b. As specified in 40 CFR Section 63.10(b)(1), keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. c. Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR Section 63.10(b)(1).
46.0		CD	40 CFR Section 63.6665; 40 CFR Section 63.6640(e); Minn. R. 7011.8150	The following sections of the General Provisions apply. Report all deviations from the requirements of the General Provisions. 63.1 - 63.5; 63.6(a); 63.6(b)(1)-(5); 63.6(b)(7); 63.6(c)(1)-(2); 63.6(c)(5); 63.6(f)(2)-(3); 63.6(g)(1)-(3); 63.6(i)-(j); 63.7(a)(3); 63.7(e)(4); 63.7(f); 63.9(a); 63.9(i)-(j); 63.10(a); 63.10(b)(1); 63.10(b)(2)(vi)-(xii); 63.10(b)(2)(xiv); 63.10(b)(3); 63.10(d)(1); 63.10(d)(4); 63.10(f); 63.12 - 63.15

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Facility Name: LSP Cottage Grove Cogeneration Facility

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Subject Item: **EU 007 Emergency Diesel Generator**

Associated Items: GP 002 CO Limit

SV 006 Emergency Diesel Generator

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	See Subject Item GP002 for Additional Requirements
2.0		LIMIT	Minn. R. 7011.2300, subp. 2	Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . Uncontrolled potential emissions are equal to 0.29 lbs/million Btu heat input.
3.0		LIMIT	Minn. R. 7011.2300, subp. 1	Opacity: less than or equal to 20 percent opacity once operating temperatures have been obtained.
4.0		CD	Minn. R. 7007.0800, subp. 2	Fuel use is limited to distillate fuel oil.
5.0		LIMIT	Minn. R. 7007.0800, subp. 2	Sulfur Content of Fuel: less than or equal to 0.05 percent by weight
6.0		CD	Minn. R. 7007.0800, subp. 2	Monitoring of fuel parameters: obtain distillate fuel oil vendor certification for each delivery stating that the sulfur content does not exceed 0.05% by weight, and specifying the density and high heating value (HHV). As an alternative, determine the sulfur content in percent by weight, HHV, and density of distillate fuel oil by sampling and analyzing fuel oil according to the requirements in 40 CFR pt. 75, Appendix D section 2.2. Maintain records of fuel parameters for a minimum of five years from the date of receipt of parameter information.
7.0		CD	Title I Condition: To avoid major source status under 40 CFR part 51, Appendix S; Minn. R. 7007.4000	Recordkeeping: once each hour calculate the EU007 carbon monoxide emissions (in lb/hr) using Equation 8 in Appendix B. Once each day, calculate and record the EU007 carbon monoxide emissions for the previous calendar day (in lb/day) by summing the 24 one-hour emission rates determined by Equation 8, from the previous day.
8.0		CD	hdr	NESHAP SUBPART ZZZZ REQUIREMENTS
9.0		CD	40 CFR Section 63.6595(a)(1); Minn. R. 7011.8150	EU005 must be in compliance with the applicable emission limitations and operating limitations of Subpart ZZZZ no later than May 3, 2013
10.0		CD	40 CFR Section 63.6603(a); Minn. R. 7011.8150	The following requirements must be met except during periods of startup: a) Change oil and filter every 500 hours or operation or annually, whichever comes first; b) Inspect air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; c) Inspect all hoese and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
11.0		CD	40 CFR Section 63.6603(a); Minn. R. 7011.8150	If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of Subpart ZZZZ, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has been abated. The management practice shoudl be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State, or local law under which the risk was deemed unacceptable.

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12.0		CD	40 CFR Section 63.6625(i); Minn. R. 7011.8150	The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified above for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. (continued below)
13.0		CD	40 CFR Section 63.6625(i); Minn. R. 7011.8150	continued from above: If any of the limits are exceeded, the Permittee must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the Permittee must change the oil within 2 days or before commencing operation, whichever is later. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
14.0		CD	40 CFR Section 63.6605; Minn. R. 7011.8150	a) The Permittee must be in compliance with the applicable emission limitations, operating limitations, and other requirements of Subpart ZZZZ at all times. b) At all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
15.0		CD	40 CFR Section 63.6625(e); Minn. R. 7011.8150	Operate and maintain the stationary RICE according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
16.0		CD	40 CFR Section 63.6625(f); Minn. R. 7011.8150	The Permittee must install a non-resettable hour meter if one is not already installed.
17.0		CD	40 CFR Section 63.6625(h); Minn. R. 7011.8150	The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
18.0		CD	40 CFR Section 63.6640(a); Minn. R. 7011.8150	The Permittee must demonstrate continuous compliance with Subpart ZZZZ by: i) Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions, OR ii) Developing and following a maintenance plan which must provide, to the extent possible, for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
19.0		CD	40 CFR Section 63.6640(b); Minn. R. 7011,8150	The Permittee must report each instance in which the applicable emission limitation or operating limitation was not met. These instances are deviations from the emission and operating limitations in Subpart ZZZZ. These deviations must be reported according to the requirements in 40 CFR Section 63.6650.
20.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	The Permittee must operate the emergency stationary RICE according to the requirements in 40 CFR Section 63.6640(f)(1) - (4). In order for the engine to be considered an emergency stationary RICE under Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR Section 63.6640(f)(1) - (4), is prohibited. If the engine is not operated according to the requirements in 40 CFR Section 63.6640(f)(1) - (4), the engine will not be considered an emergency engine under Subpart ZZZZ and must meet all requirements for non-emergency engines.

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21.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (1) There is no time limit on the use of emergency stationary RICE in emergency situations. (2) The emergency stationary RICE may be operated for any combination of the purposes specified in 40 CFR Section 63.6640(f)(2)(i) - (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR Section 63.6640(f)(3) and (4) counts as part of the 100 hours per calendar year allowed by 40 CFR Section 63.6640(f)(2). (continued below)
22.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. (continued below)
23.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (see 40 CFR Section 63.14), or other authorized entity has determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. (iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. (continued below)
24.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (3) <applies only to major sources> (4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in 40 CFR Section 63.6640(f)(2). Except as provided in 40 CFR Section 63.6640(f)(4)(i) and (ii), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. (continued below)

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25.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or nonemergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system. (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator. (continued below)
26.0		CD	40 CFR Section 63.6640(f); Minn. R. 7011.8150	continued from above: (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. (D) The power is provided only to the facility itself or to support the local transmission and distribution system. (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.
27.0		CD	40 CFR Section 63.6650(f); Minn. R. 7011.8150	Report all deviations as defined in Subpart ZZZZ in the semiannual monitoring report required by 40 CFR Section 70.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of Subpart ZZZZ along with, or as part of, the seminannual monitoring report required by 40 CFR Section 70.6(a)(3)(iii)(A), and teh Compliance report includes all required information concerning deviations from any emission or operation limitation in Subpart ZZZZ, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.
28.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	The owner or operater of an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR Section 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in 40 CFR Section 63.6640(f)(4)(ii), must submit an annual report according to the requirements in 40 CFR Section 63.6650(h)(1) - (3). (1) The report must contain the following information: (i) Company name and address where the engine is located. (ii) Date of the report and beginning and ending dates of the reporting period. (iii) Engine site rating and model year. (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. (continued below)

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29.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	continued from above: (v) Hours operated for the purposes specified in 40 CFR Sections 63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR Sections 63.6640(f)(2)(ii) and (iii). (vi) Number of hours the engine is contractually obligated to be available for the purposes specified in 40 CFR Sections 63.6640(f)(2)(ii) and (iii). (vii) Hours spent for operation for the purpose specified in 40 CFR Section 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR Section 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine. (continued below)
30.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	continued from above: (viii) If there were no deviations from the fuel requirements in 40 CFR Section 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period. (ix) If there were deviations from the fuel requirements in 40 CFR Section 63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken. (2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. (continued below)
31.0		CD	40 CFR Section 63.6650(h); Minn. R. 7011.8150	continued from above: (3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to Subpart ZZZZ is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR Section 63.13.
32.0		CD	40 CFR Section 63.6655(d); Minn. R. 7011.8150	Keep the records required in Table 6 of Subpart ZZZZ to show continuous compliance with each emission or operating limitation that applies.
33.0		CD	40 CFR Section 63.6655(e); Minn. R. 7011.8150	Keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for demand response operation, the Permittee must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.
34.0		CD	40 CFR Section 63.6660; Minn. R. 7011.8150	a. Records must be in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1). b. As specified in 40 CFR Section 63.10(b)(1), keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. c. Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR Section 63.10(b)(1).
35.0		CD	40 CFR Section 63.6665; 40 CFR Section 63.6640(e); Minn. R. 7011.8150	The following sections of the General Provisions apply. Report all deviations from the requirements of the General Provisions. 63.1 - 63.5; 63.6(a); 63.6(b)(1)-(5); 63.6(b)(7); 63.6(c)(1)-(2); 63.6(c)(5); 63.6(f)(2)-(3); 63.6(g)(1)-(3); 63.6(i)-(j); 63.7(a)(3); 63.7(e)(4); 63.7(f); 63.9(a); 63.9(i)-(j); 63.10(a); 63.10(b)(1); 63.10(b)(2)(vi)-(xii); 63.10(b)(2)(xiv); 63.10(b)(3); 63.10(d)(1); 63.10(d)(4); 63.10(f); 63.12 - 63.15

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **EU 008 Fuel Gas Heater**

Associated Items: GP 002 CO Limit

SV 007 Fuel Gas Heater

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	See Subject Item GP002 for Additional Requirements
2.0		LIMIT	Minn. R. 7011.0515, subp. 1	Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input . The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels.
3.0		LIMIT	Minn. R. 7011.0515, subp. 2	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.
4.0		CD	Minn. R. 7007.0800, subp. 2	Fuel use is limited to natural gas.
5.0		CD	Title I Condition: To avoid classification as a major source under 40 CFR part 51, Appendix S; Minn. R. 7007.4000	Recordkeeping: once each hour calculate and record the EU008 carbon monoxide emissions (in lb/hr) using Equation 9 in Appendix B. Once each day, calculate and record the EU008 carbon monoxide emissions for the previous calendar day (in lb/day) by summing the 24 one-hour emission rates determined with Equation 9, from the previous day.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **CE 001 Catalytic Oxidizer**

Associated Items: EU 001 Combustion Turbine Generator

EU 002 Supplemental Duct Firing Burners

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain CE001 in accordance with the Operation and Maintenance (O&M) Plan. The Permittee shall keep copies of the O&M Plan available for use by staff and MPCA.
2.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Continuous Monitoring: The CO CEMS (MR003 and/or MR007) shall be used to assess proper operation of the catalytic oxidizer. (See Subject Item GP003 for specific CEMS operating requirements.)
3.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Periodic Inspections: At least once per calendar year, or more frequently if required by the manufacturer specifications, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.
4.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if either of the following occur: - the recorded flue gas temperature downstream of CE001 and upstream of CE002 is below the minimum specified in this permit (see Subject Item SV001); or - the catalytic oxidizer or any of its components are found during the inspections to need repair. Corrective actions shall return the temperature to within the permitted range, 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 O & M Plan for the catalytic oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken for CE001.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **CE 002 SCR (Selective Catalytic Reduction)**

Associated Items: EU 001 Combustion Turbine Generator

EU 002 Supplemental Duct Firing Burners

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain CE002 in accordance with the Operation and Maintenance (O&M) Plan. The Permittee shall keep copies of the O&M Plan available for use by staff and MPCA.
2.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Continuous Monitoring: The NOX CEMS (MR001 and/or MR006) shall be used to assess proper operation of the SCR. (See Subject Item GP003 for specific CEMS operating requirements.)
3.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Periodic Inspections: At least once per calendar year, or more frequently if required by the manufacturer specifications, the Permittee shall inspect the control equipment internal and external system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.
4.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if either of the following occur: - The recorded NOX emission rate exceeds the hourly emission rate allowed in this permit (see Subject Item SV001); or - the SCR or any of its components are found during the inspections to need repair. Corrective actions shall return the NOX emissions to within the permitted range, 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 O & M Plan for the SCR. The Permittee shall keep a record of the type and date of any corrective action taken for CE002.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **CE 011 Steam or Water Injection**

Associated Items: EU 001 Combustion Turbine Generator

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain CE011 in accordance with the Operation and Maintenance (O&M) Plan. The Permittee shall keep copies of the O&M Plan available for use by staff and MPCA.
2.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Continuous Monitoring: The NOX CEMS (MR001 and/or MR006) shall be used to assess proper operation of the NOX controls. (See Subject Item GP003 for specific CEMS operating requirements.)
3.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Periodic Inspections: At least once per calendar year, or more frequently if required by the manufacturer specifications, the Permittee shall inspect the control equipment internal and external system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.
4.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if either of the following occur: - The recorded NOX emission rate during fuel oil combustion exceeds the hourly emission rate allowed in this permit (see Subject Item SV001); or - the steam/water injection system or any of its components are found during the inspections to need repair. Corrective actions shall return the NOX emissions to within the permitted range, 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 O & M Plan for CE011. The Permittee shall keep a record of the type and date of any corrective action taken for CE011.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: TK 001 No.2 Distillate fuel oil (CAS#68476-30-2

	NC/ CA	Type	Citation	Requirement
1.0		CD	40 CFR Section 60.110b(b)	Vapor Pressure: less than or equal to 3.5 kPa to avoid requirements of 40 CFR pt. 60 subpart Kb.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: FS 001 Cooling Tower

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0715, subp. 1(A)	Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. Potential emissions based on equipment capacity are approximately 7.53 lb/hr.
2.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **MR 001 NOX CEMS**

Associated Items: CM 001 CT/HRSG: 4.5 ppm NOx @ 15% O2 (gas), SV001, 1-hr ave. CT/HRSG: 16.0 ppm NOx @ 15% O2 (oil), SV0

CM 002 CT/HRSG: 36.5 lbs NOx/hr (gas), SV001, 30 DRA CT/HRSG: 139.9 lbs NOx/hr (oil), SV001, 30 DRA

GP 003 CEMS Required by NSPS

SV 001 Combustion Turbine/Duct Burners

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7017.1180, subp.1	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a CGA was conducted.
2.0		S/A	Minn. R. 7017.1180, subp.3	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a RATA was conducted.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **MR 002 O2 CEMS**

Associated Items: CM 001 CT/HRSG: 4.5 ppm NOx @ 15% O2 (gas), SV001, 1-hr ave. CT/HRSG: 16.0 ppm NOx @ 15% O2 (oil), SV0

GP 003 CEMS Required by NSPS

SV 001 Combustion Turbine/Duct Burners

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7017.1180, subp.1	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a CGA was conducted.
2.0		S/A	Minn. R. 7017.1180, subp.3	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a RATA was conducted.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **MR 003 CO CEMS**

Associated Items: CM 005 CT/HRSG: 1200 lbs CO/hr, SV001, 1-hr ave.

GP 004 CEMS Not Required by NSPS

SV 001 Combustion Turbine/Duct Burners

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7017.1180, subp.1	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a CGA was conducted.
2.0		S/A	Minn. R. 7017.1180, subp.3	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a RATA was conducted.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **MR 006 NOX CEMS**

Associated Items: GP 003 CEMS Required by NSPS

SV 001 Combustion Turbine/Duct Burners

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7017.1180, subp.1	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a CGA was conducted.
2.0		S/A	Minn. R. 7017.1180, subp.3	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a RATA was conducted.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **MR 007 CO CEMS**

Associated Items: GP 004 CEMS Not Required by NSPS

SV 001 Combustion Turbine/Duct Burners

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7017.1180, subp.1	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a CGA was conducted.
2.0		S/A	Minn. R. 7017.1180, subp.3	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which a RATA was conducted.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **MR 008 COMS**

Associated Items: CM 006 Aux Boiler 1: 20% Opacity, EU003, 6-min ave.

EU 003 Auxiliary Boiler #1

GP 005 COMS

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7017.1220	COMS Calibration Error Audit Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which the COMS calibration error audit was completed.

COMPLIANCE PLAN CD-01

Facility Name: LSP Cottage Grove Cogeneration Facility

Permit Number: 16300087 - 006

Subject Item: **MR 009 COMS**

Associated Items: CM 007 Aux Boiler 2: 20% Opacity, EU004, 6-min ave.

EU 004 Auxiliary Boiler #2

GP 005 COMS

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7017.1220	COMS Calibration Error Audit Results Summary: due 30 days after end of each calendar quarter following Permit Issuance in which the COMS calibration error audit was completed.