TECHNICAL SUPPORT DOCUMENT
For
DRAFT/PROPOSED AIR EMISSION PERMIT NO. 14500008-005

This technical support document (TSD) is intended for all parties interested in the draft/proposed 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: 8221)
Order of St. Benedict/St. John's Abbey Attn: Power Plant 31802 County Road 159 Collegeville, MN 56321	Order of St. Benedict/St. John's Abbey 31802 County Road 159 Collegeville, MN 56321 Stearns County
Contact: Thomas R. Vogel Phone: 320-363-2541	

1.2 Facility Description

The Order of St. Benedict/St. John's Abbey is a higher education facility in Collegeville, Minnesota. St. John's currently has six boilers and four electrical generators. Of the six boilers, three are coal-fired and three are natural gas-fired. Fuel oil may be used as a back-up for two of the natural gas fired boilers. In addition to these units are a number of units counted as insignificant activities, including the following: laboratories, emergency generators, ash handling systems, kilns, parts washer, spray booth, and fly ash silo. In late 1997, a boiler that fired a mixture of wood waste and campus waste was shut down and removed from the facility. A baghouse is used to control emissions from coal fired Boiler No. 4.

Currently, St. John's is not burning coal in the coal-fired boilers (EU 001, EU 002, EU 004). When not burning coal, these boilers are idle. The facility plans to burn only natural gas with fuel oil as a back-up through October 2015. St. John's would like to be able to switch back to burning coal in the future if needed.

1.3 Description of any Changes Allowed with this Permit Issuance

No changes to the facility are authorized under this reissuance permit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	lb/MMBtu, Opacity $\leq$ 20% (Minn. R. 7011.2300 and Minn. R. ch. 7009) Operating hours $\leq$ 300 hours per year and $\leq$ 12 hours per day (40 CFR Section 52.21; Minn. R. 7007.3000)	fuel supplier certification and operating hours	are not likely to be exceeded. Since the units are peaking generators, a limit on hours of operation is contained in the permit.
GP 003	$SO_2 \leq 0.05$ lb/MMBtu, Opacity $\leq$ 20% (Minn. R. 7011.2300) Operating hours $\leq$ 500 hours per year (Minn. R. 7007.0800)	Recordkeeping of fuel supplier certification and operating hours	Units burn distillate oil and the emission limits are not likely to be exceeded. Since the units are emergency generators, and EPA considers the maximum hours for an emergency unit to be 500 per year, a requirement for recordkeeping of the actual hours of operation is included in the permit.
GP 005	Hg ≤ 4.8E-06 lb/mmBtu CO ≤ 400 ppmv on dry basis corrected to 3% O_2 (40 CFR pt. 63,	Continuous oxygen monitor, performance testing, fuel sampling, recordkeeping of fuel usage and type	The compliance demonstration is specified in the NESHAP.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	subp. JJJJJJ)		
EU 001	PM $\leq$ 0.6 lb/MMBtu Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0510)	Daily opacity observations and stack emission testing	Boiler 1 (coal fired) could potentially exceed the emission limits set by the performance standard. Past performance testing has demonstrated that the emission limits have been met. See Table 7 for past test results. Performance testing is required every 5 years when burning coal to confirm that emission limits are being met.
EU 002	PM $\leq$ 0.6 lb/MMBtu Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0510)	Daily opacity observations and stack emission testing	Boiler 2 (coal fired) could potentially exceed the emission limits set by the performance standard. Past performance testing has demonstrated that the emission limits have been met. See Table 7 for past test results. Performance testing is required every 5 years when burning coal to confirm that emission limits are being met.
EU 003	PM < 0.6 lb/MMBtu Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0510)	Daily opacity observations	The gas/oil boilers are not likely to exceed the emission limits set by the performance standard.
EU 004	PM < 0.051 lb/MMBtu Opacity $\leq$ 20% with exceptions $SO_2 \leq$ 1.2 lb/MMBtu, (40 CFR Part 60, Subp. Dc; Minn. R. 7011.0570) Cl content of coal $\leq$ 0.07% wt	Pressure drop across baghouse monitoring, inspections, performance testing, fuel sampling; complies with CAM	Much of the compliance demonstration is specified in the NSPS. Added to the permit is a requirement to stack test for emission factors to use in assuring that the source remains minor for HAP emissions. Stack emission testing for HCl and Cl is required if the chlorine content of coal is above 0.07% wt. Supplier certification of coal stating its chlorine content is required.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(Title I Condition: limit to avoid major source classification under 40 CFR Section 63.2)		
EU 005	PM $\leq$ 0.6 lb/MMBtu Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0510)	Daily opacity observations	The gas/oil boilers are not likely to exceed the emission limits set by the performance standard.
EU 009	PM $\leq$ 0.4 lb/MMBtu Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0515)	Daily opacity observations	Limited to natural gas. Unlikely to violate limits burning natural gas. This unit is also very small. Past actual emissions are 0.0005 tpy of NO_x in 2010 and 0 tpy in 2011.
EU 010	PM $\leq$ 0.4 lb/MMBtu Opacity $\leq$ 20% with exceptions $PM_{10} \leq 0.83$ lb/hr based on a 24 hr avg. (Minn. R. 7011.0515 and Minn. R. ch. 7009)	Wood burning, permit requires opacity observations while in operation	If opacity is observed the Permittee is required to adjust combustion conditions such that the problems are resolved. Past actual emissions are 0 tpy for CO in 2011 and 0.09 tpy in 2010.
EU 013	Sulfur content of fuel $\leq$ 0.05% Opacity $\leq$ 20%	Natural gas and distillate oil, performance testing	Standard of performance requires monitoring of fuel sulfur content. It is unlikely that the opacity limit would be violated burning either fuel. This