Technical Support Document
Air Quality Construction Permit
Permit No. MIN-SM-27139R0001-2013-02

This document sets forth the legal and factual basis for permit conditions, with references to applicable statutory and regulatory provisions, including provisions under the federal tribal New Source Review program, 40 C.F.R. §§ 49.151 - 49.161.

1.0 GENERAL INFORMATION

(A). Applicant and Stationary Source Information

Owner	Facility (SIC Codes: 4911)
Shakopee Mdewakanton Sioux Community of Minnesota 2330 Sioux Trail NW Prior Lake, MN 55372	Mystic Lake Casino Hotel 2400 Mystic Lake Boulevard Prior Lake, MN 55372 Scott County

(B). Contact Information

Responsible Official: Charlie Vig, Tribal Chairman
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Prior Lake, MN 55372
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(C). Background and Facility Description

Shakopee Mdewakanton Sioux Community (SMSC) is a federally recognized Indian tribe. SMSC's reservation is located in Prior Lake, Minnesota and is comprised of approximately 3,300 acres. SMSC operates several businesses within the boundaries of its reservation, including two casinos, a fire department and a public works department. The Mystic Lake Casino is located on reservation lands held by the United States government in trust for the SMSC. The EPA retains responsibility for implementing the Clean Air Act within Indian country in Minnesota, including within the SMSC reservation.

The SMSC originally constructed the Mystic Lake Casino Hotel, 2400 Mystic Lake Boulevard, Prior Lake, Minnesota, in 1992. At that time, several diesel-fired engines were installed and operated as emergency generators. Emissions units 101, 102, 107 and 108 have been removed and were replaced by emissions units 116, 117 and 118. Emission unit 103 replaced an existing unit in 2004 and emission unit 104 replaced an existing unit in 2008. The SMSC added additional generators in 2006 (EU 111) and 2009 (EU 113, 114, and 115).

Facility Emissions:

Table 1. Total Facility Potential to Emit Summary

	PM Tpy	PM_{10} tpy	$PM_{2.5}$ tpy	SO_x tpy	NO_x tpy	CO tpy	VOC tpy	Lead tpy	Single HAP tpy	All HAPs tpy	CO_{2e} tpy
Total Facility Potential Emissions	23.8	23.8	23.8	1.7	2,140.8	232.3	50.7	0.0003	0.7	1.4	--
Total Facility Actual Emissions	0.3	0.3	0.3	0.01	26.1	2.9	0.6	0	0.007	0.01	189.48
Facility Permitted Emissions	1.6	1.6	1.6	1.57	167.2	13.8	3.7	0	0.08	0.11	12,127

(D). Area Classification

The facility is located in Scott County, which is designated attainment with National Ambient Air Quality Standards for all criteria pollutants. There are no Prevention of Significant Deterioration Class 1 areas within 100 kilometers of the Mystic Lake Casino Hotel Complex or the SMSC reservation.

2.0 PROCESS DESCRIPTION

(A). Description of Permit Action

SMSC installed eight diesel-fired generators at its Mystic Lake Casino Hotel without first obtaining permits to construct. The generators provided emergency backup power and peak load management for the casino and hotel under contract with the Minnesota Valley Electric Cooperative. The SMSC has applied for limits on the generators' fuel usage so that emissions from the project remain below major PSD thresholds. EPA is issuing this after-the-fact synthetic minor permit following SMSC and EPA's entry into a Consent Order.

(B). Table 2. Emission Unit Summary:

EU	Location	Make & Model	Serial number	Month/ Yr Mfg	Month/ Yr Installed	Primary Fuel	Rated kW	Horse Power	MMBtu/ hr
103	Hotel	Caterpillar 3516	1HZ02629	Oct-03	Jul-04	Diesel	2250	3196	21.65

104	Ent/Cab/MLM P-MSQ	Caterpillar 3516	SBJ00374	Mar-08	Dec-08	Diesel	2000	2937	19.68
109	Ent/Cab/MLM P-MSQ	Caterpillar 3516	025Z06281	Aug-98	May-99	Diesel	1600	2288	15.86
110	Ent/Cab/MLM P-MSQ	Caterpillar 3516	25Z05012	Sep-95	Jun-96	Diesel	1275	1825	12.87
111	Buffet	Caterpillar 3516B	GZS00745	Jul-05	Apr-06	Diesel	2000	2885	18.79
113	Roof-AA/DD/CC	Caterpillar 3516C	SBJ00774	Nov-08	Sep-09	Diesel	2000	2937	19.68
114	Roof-AA/DD/CC	Caterpillar 3516C	SBJ00775	Nov-08	Sep-09	Diesel	2000	2937	19.68
115	Roof-AA/DD/CC	Caterpillar 3516C	SBJ00776	Nov-08	Sep-09	Diesel	2000	2937	19.68

(C). Enforcement Issues

On February 27, 2012, EPA and the SMSC entered into an Administrative Consent Order (ACO) to resolve outstanding violations for constructing and operating multiple generators without a permit to construct. The ACO establishes a schedule for submittal of permit applications for the unpermitted generators at the SMSC with potential to emit greater than the major source thresholds for various criteria pollutants. Attachment A of the ACO requires permit applications for, among others, the generators identified as EU 103, 104, 109, 110, 111, 113, 114 and 115. Applications were to be submitted by May 31, 2012. This ACO deadline has been satisfied.

There are no other federal enforcement actions proceeding against SMSC at this time.

(D). Pollution Control Equipment

The proposed generators must be certified to meet New Source Performance Standards IIII Tier 2 emissions standards. The engines use a catalytic converter to reduce carbon monoxide (CO), nitrogen oxides (NO_x), and volatile organic compounds (VOC). This equipment is control equipment that is inherent to the generator and is not identified as add-on pollution control equipment.

APPLICABLE REQUIREMENTS

(A). Prevention of Significant Deterioration (PSD)

This source is subject to the requirements of 40 C.F.R. § 52.21 based on its potential to emit and the definition of "major source" in 40 C.F.R. § 52.21. The eight generators constitute a major stationary source, based upon their uncontrolled potential to emit. SMSC has requested that operating conditions be placed into the permit in order to avoid PSD applicability for the project. Minor source limitations are available under EPA's minor source program for Indian country, codified at 40 C.F.R. § 49.151, *et. seq.*

(B). Restrictions on Potential to Emit

"Potential to emit" is defined in 40 C.F.R. § 52.21 as the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any state or federal physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation, or the effect it would have on emissions, is enforceable as a practical matter. Although SMSC is subject to the requirements of the PSD permitting program based on its potential to emit, it has relatively low actual emissions. SMSC has requested that limits on its potential to emit for generators EU 103, 104, 109, 110, 111, 113, 114 and 115 be set in this after-the-fact construction permit to avoid major source modification regulatory requirements. In this permit, limits have been set to restrict fuel usage to below a certain number of gallons per year per unit, based on a 12 month rolling sum. The fuel usage restrictions per emission unit are listed in Table 3 below. All generators are equipped with fuel meters to monitor fuel usage. The fuel restrictions were based upon operation of each unit for fewer than 700 hours per year.[1] The type of fuel is also restricted to ultra low sulfur diesel fuel with a maximum sulfur content of 0.0015%. Restrictions on potential to emit will be monitored with monthly recordkeeping requirements and with testing requirements on the generators. Each generator will be required to be tested for NOx emissions once every 6 years, which is consistent with similar permits issued in non-Indian Country in Minnesota.

Table 3. Permitted Fuel Restrictions in comparison with Actual Usage and Limited NOx Emissions

Emission Unit	Permit Limits (gal/hr)	Permit Limits (gal/year)	Actual Usage 4/11-3/12 (gal/year)	Maximum Permitted NO_x Emissions (lb/hr)	Maximum Permitted NO_x Emissions (tons/year)
103	156.3	109,410	3,143	34.09	11.93
104	142.1	99,470	3,697	35.93	12.58
109	114.5	80,150	3,267	62.56	21.90
110	92.9	65,030	2,332	66.00	23.10
111	135.7	94,990	2,769	63.21	22.12
113	142.1	99,470	627	35.93	12.58
114	142.1	99,470	219	35.93	12.58
115	142.1	99,470	302	35.93	12.58

[1] The overall fuel limit is based upon total fuel use when operated at maximum load for 700 hours per year. 700 hours per year reflects the maximum utility peak shaving contract hours (600) combined with an assumed 100 hours emergency use and weekly maintenance maximum.

(C). New Source Performance Standards (NSPS)

The New Source Performance Standards, 40 C.F.R. Part 60, Subpart IIII applies to generators ordered after July 11, 2005 and manufactured after April 1, 2006. Generators 104, 113, 114, and 115 were ordered after July 11, 2005 and manufactured after April 1, 2006 and therefore, are subject to the NSPS. These emissions units were manufactured to meet NSPS IIII EPA Tier 2 emissions standards. As mentioned above, EU 104, 113, 114, and 115 were all installed in 2008. NSPS applicability is based on these dates. EU 104, 113, 114 and 115 are non-emergency, stationary, compression-ignition (CI) internal combustion engines (ICE) with a displacement of less than 30 liters per cylinder. The following conditions apply to EU 104, 113, 114 and 115:

i. The emission standards referred to in 40 C.F.R. § 60.4201(a) apply because EU 104, 113, 114, and 115 are subject to 40 C.F.R. § 60.4204(b). The manufacturer is required to certify that the engine meets the emissions standards listed in 40 C.F.R. §§ 89.112 and 89.113.

ii. The emission standards in 40 C.F.R. § 60.4204(b) apply because EU 104, 113, 114, and 115 are non-emergency, stationary, compression-ignition, internal combustion engines with displacement of less than 30 liters per cylinder.

iii. 40 C.F.R. § 60.4206 applies because EU 104, 113, 114, and 115 are CI ICE that must achieve the emission standards in 40 C.F.R. § 60.4204(b). This condition requires the engine to achieve the required emission standards throughout the life of the engine.

iv. The fuel standards of 40 C.F.R. § 60.4207 apply because EU 104, 113, 114, and 115 are CI ICE with displacement of less than 30 liters per cylinder. The effective date of this condition (October 1, 2010) has already passed.

v. The monitoring requirements of 40 C.F.R. § 60.4209 apply because the Permittee owns and operates EU 104, 113, 114, and 115. The only applicable requirement is to comply with 40 C.F.R. §60.4211.

vi. The compliance requirements of 40 C.F.R. § 60.4211(a) apply because the Permittee must comply with the emission standards listed in 40 C.F.R. § 60.4204(b).

vii. The compliance requirements of 40 C.F.R. § 60.4211(c) apply because the Permittee owns and operates EU 104, 113, 114, and 115. This requires the Permittee to purchase an engine that has been certified to meet the emission requirements in 40 C.F.R. § 60.4204(b).

viii. 40 C.F.R. § 60.4218 applies because the Permittee is subject to 40 C.F.R. Part 60, Subpart IIII. Conditions in Table 8 to 40 C.F.R. Part 60, Subpart IIII, apply to the Permittee as listed.

(D). National Emissions Standards for Hazardous Air Pollutants (NESHAP) – 40 C.F.R. Part 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal combustion Engines (RICE MACT)

In accordance with 40 C.F.R. § 63.6585, a source is subject to the RICE MACT if it operates a stationary reciprocating internal combustion engine (RICE) at an area source of hazardous air pollutant (HAP) emissions. The facility is an area source for HAP emissions, as defined in 40 C.F.R. § 63.6675, because it emits less than 10 tpy of any single HAP and emits less than 25 tpy of total HAPs. For the purpose of this subpart, each of the four RICE emissions units 104, 113, 114 and 115 are existing, non-emergency, non-black start, compression ignition RICE as defined in 40 C.F.R. §§ 63.6590 and 63.6675.

Generators 104, 113, 114 and 115 are compression ignition engines that were manufactured after June 12, 2006. Therefore, these engines are new stationary RICE sources and must meet the requirements of the RICE MACT by meeting the requirements of 40 CFR Part 60, Subpart IIII. These units were manufactured to meet the NSPS Subpart IIII standards.

Generators 103, 109, 110 and 111 are existing compression ignition engines because they were manufactured and constructed prior to June 12, 2006 and are located at an area source of HAP emissions.

(E). Monitoring

Monitoring and testing to assure compliance with the hourly limits in the permits has been established (performance testing and adherence to an Operation and Maintenance manual). An initial performance test for the emissions units is required within 180 days of issuance of this permit. Subsequent performance testing for the units is required once every five years. The performance testing interval is set at once per five years. This is adequate for emissions units such as 104, 113, 114, and 115, that are designed to operate as load shed and/or peak shaving generators. Additionally, the facility has submitted an Operation and Maintenance plan that will be followed to assure that the units are maintained to operate at their optimum performance. The combination of a performance test every five years, along with adherence to an Operation and Maintenance plan is a sufficient mean of demonstrating compliance with the applicable hourly limits.

(F). Endangered Species Act

According to U.S. Fish and Wildlife distribution lists, there are no endangered or threatened species or critical habitat present in Scott County. Therefore, further analysis and consultation is not required under Section 7(a) of the Endangered Species Act.