

Technical Support Document (TSD)  
for  
Pender Municipal Power Plant  
Draft Synthetic Minor Source Permit  
Permit No. R7-TMNSR-2018-001

This document sets forth the legal and factual basis for permit conditions, with references to applicable Clean Air Act statutory and regulatory provisions, including provisions under the federal Tribal Minor New Source Review (TMNSR) program, 40 C.F.R. 49.151 - 49.161.

40 CFR Section 49.158 establishes a permitting program for air pollution sources located within Indian country to provide for the establishment of requirements that are Federally-enforceable and enforceable as a practical matter. The owner or operator of an air pollution source who wishes to obtain federally and practicably enforceable limitations on the source's actual emissions or potential to emit must submit an application to the Permitting Authority requesting such limitations. The United States Environmental Protection Agency (EPA) then develops the permit via a public process. The permit remains in effect until it is modified, revoked or terminated by the EPA in writing.

This technical support document fulfills the requirement of 40 CFR Section 49.158 (b) (4) by describing the proposed limitation and its effect on the potential to emit of the air pollution source. Unlike the Air Quality Permit, this Technical Support Document is not legally enforceable. The Permittee is obligated to follow the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the Permittee from the requirements of the permit.

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## 1.0 SOURCE DESCRIPTION AND CONTACT INFORMATION

### (A) Permit Applicant and Facility Information

Permit Applicant
Village of Pender P.O. Box 5 416 Main Street Pender, Nebraska 68047

Facility (SIC Code: 4911, electric generating facilities)
Pender Municipal Power Plant P.O. Box 5 205 North 3 <sup>rd</sup> St. (NE Corner of Ivan St. & N 3 <sup>rd</sup> St.) Pender, Nebraska 68047

### (B) Permit Applicant Contact Information

<b>Permit Applicant's Facility Contact:</b>
Mr. Bruce Paeper, Utilities Superintendent Village of Pender P.O. Box 5 416 Main Street Pender, Nebraska 68047 Email: <a href="mailto:villageofpender@abnebraska.com">villageofpender@abnebraska.com</a> Phone: 402-922-0999 Fax: 402-385-3862

### (C) Tribe Environmental Contact Information

<b>Tribe's Environmental Contact:</b>
Mr. Tim Grant, Environmental Director Omaha Tribe of Nebraska and Iowa P.O. Box 368 100 Main Street Macy, NE 68039 Email: <a href="mailto:tim.grant2@omahatribe.com">tim.grant2@omahatribe.com</a> Phone: 402-837-5391

#### **(D) Source Description**

The Pender Municipal Power Plant is in the Village of Pender, Nebraska and within the exterior boundaries of the Omaha Tribe's reservation. The boundaries were established by treaty with the United States in 1854. See *Nebraska v. Parker*, 136 S. Ct. 1072 (2016). The Omaha Tribe's reservation occupies the southern half of Thurston County, Nebraska.

The facility operates under standard industrial classification (SIC) code 4911 for Electric Services and the North American Industry Classification System (NAICS) code 221112 for Fossil Fuel Electric Power Generation. The facility is a municipal power plant owned and operated by the Village of Pender. The Village is under contract with Municipal Energy Agency of Nebraska (MEAN) to serve as a peaking/standby power plant throughout the year. Electrical power can be generated quickly during peak electrical energy demands or during emergencies. The Permit Applicant has a capacity lease agreement with MEAN for 3,955 kW. The MEAN capacity lease agreement is for the purpose of economic dispatching by MEAN electric power and energy from such generating facilities for the common benefit of all Participants and can also be used for distribution system-wide outage or blackout caused by the transmission interconnection or distribution system or weather. With advanced notice to MEAN, the excess generation, not leased to MEAN, is permitted to be utilized by the Village for any reason. During emergencies, the Participant can separate from the grid and begin to self-generate to stabilize the distribution system. An annual Uniform Rating of Generation Equipment (URGE) test and monthly testing and unit exercising is also completed to ensure the engine-generators can operate reliably if called upon. The current recordkeeping procedures for each engine-generator, on a monthly and annual basis include hours run, kilowatt-hours (kwh) generated, diesel consumed and natural gas consumed.

A permit application received by EPA on September 4, 2012, indicates that the Village of Pender currently operates a municipal power plant consisting of three (3) dual fuel and one (1) diesel-only, compression ignition (CI) engine-generators with a total capacity of approximately 5,080 kW (7,120 HP). Engine-generators included in the application are described in the table below.

Engine-generators						
Emission Unit	Unit 1	Unit 2	Unit 3	Unit 4	Retired	Total for Active Units
Unit Type	Dual-fuel Engine-generator	Diesel-only Engine-generator	Dual-fuel Engine-generator	Dual-fuel Engine-generator	Diesel-only Engine-generator	(3) Dual-fuel (1) Diesel-only Engine-generators
Manufacturer /Model	Fairbanks Morse/ 38TDD8 1/8	Fairbanks Morse/ 38TDD8 1/8	Fairbanks Morse/ 38DD8 1/8	Fairbanks Morse/ 38DD8 1/8	Fairbanks Morse/ 32-14x17	-
Serial #	38D867051TD FS9	38D872065TD FS12	967678	969829	780205	-
Install Year	1967	1972	1952	1961	1939	-
Crankshaft Speed	720 rpm	720 rpm	720 rpm	720 rpm	300 rpm	-
Operating Cycle	2-cycle	2-cycle	2-cycle	2-cycle	unknown	-
# Cylinders	9	12	5	8	5	34
Site-rated Horsepower Output	2,160 hp	2,880 hp	800 hp	1,280 hp	unknown	7,120 hp
Engine Rating in Application	1,550 kW or 1,600 kW	2,070 kW	560 kW	900 kW	250 kW	5,080 kW or 5,130 kW
Calculated Power Output*	1,611 kW	2,148 kW	596.6 kW	954.5 kW	unknown	5,310 kW
Flow rate in Application	110 gallons/hour	147 gallons/hour	40 gallons/hour	64 gallons/hour	unknown	361 gallons/hour
Engine Rating in Application	5.290 MMBtu/hour	7.065 MMBtu/hour	1.911 MMBtu/hour	3.072 MMBtu/hour	unknown	17.338 MMBtu/hour
Calculated Heat Input**	15.29 MMBtu/hour	20.43 MMBtu/hour	5.56 MMBtu/hour	8.90 MMBtu/hour	unknown	50.18 MMBtu/hour
Calculated Heat Input***	15.12 MMBtu/hour	20.16 MMBtu/hour	5.60 MMBtu/hour	8.96 MMBtu/hour	unknown	49.84 MMBtu/hour
Control Device / Efficiency	Oxidation Catalyst with CPMS / Reduce CO ≥ 70%	Oxidation Catalyst with CPMS / Reduce CO ≥ 70%	Oxidation Catalyst with CPMS / Reduce CO ≥ 70%	Oxidation Catalyst with CPMS / Reduce CO ≥ 70%	none	-

\* Calculated using site-rated horsepower specified in 40 CFR part 63, subpart ZZZZ notifications, and standard conversion factor: 1.0 Horsepower (hp) = 0.7457 Kilowatt (kW)

\*\* Heat Input calculated using flow rate (gallons/hour) multiplied by 0.139 MMBtu/gallon conversion factor for diesel fuel as specified in 2012 URGE test included in permit application.

\*\*\* Heat Input calculated using site-rated horsepower and conversion factor derived from AP42 Table 3.3-1: 1 hp = 0.007 MMBtu/hour, that equates to an energy conversion efficiency of approximately 36% from engine fuel input to power output.

The following two tables provide data on both diesel fuel oil operations and dual fuel operations and were derived from Emission Inventory reports submitted to the Nebraska Department of Natural Resources (NDEQ):

<b>Diesel Fuel Oil Only Operations</b>									
<b>Unit</b>	<b>Year</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
1	Run Time (hours)	0	4.5	1	7	4	2	4	1
1	Diesel (gal)	0	340	92	560	290	150	311	50
1	Diesel (MMBtu)	0.00	47.26	12.79	77.84	40.31	20.85	43.23	6.95
2	Run Time (hours)	26.5	28.5	12	36.6	13.2	4.9	3.1	6.5
2	Diesel (gal)	2,637	3,083	1,520	4,363	1,654	657	478	869
2	Diesel (MMBtu)	366.54	428.54	211.28	606.46	229.91	91.32	66.44	120.79
3	Run Time (hours)	11.5	4	6	0	0	0	0	3
3	Diesel (gal)	200	140	155	0	0	0	0	39
3	Diesel (MMBtu)	27.80	19.46	21.55	0.00	0.00	0.00	0.00	5.42
4	Run Time (hours)	0	8	6	3	11.8	5.1	6.3	3.6
4	Diesel (gal)	0	265	330	260	620	340	140	73
4	Diesel (MMBtu)	0.00	36.84	45.87	36.14	86.18	47.26	19.46	10.15

<b>Dual-fuel Operations</b>									
<b>Unit</b>	<b>Year</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
1	Run Time (hours)	15.5	10	11	28	11.9	3		2.5
1	Diesel (gal)	313	120	185	366	220	30		29
1	Diesel (MMBtu)	43.51	16.68	25.72	50.87	30.58	4.17		4.03
1	Natural Gas (MMBtu)	162	133	119	393	99	34		67
1	Total Fuel (MMBtu)	205.51	149.68	144.72	443.87	129.58	38.17		71.03
1	Ratio Diesel to Total Fuel	0.212	0.111	0.178	0.115	0.236	0.109		0.057
3	Run Time (hours)	9	10	16	14	14.5	5	4.1	
3	Diesel (gal)	77	90	160	83	160	50	40	
3	Diesel (MMBtu)	10.70	12.51	22.24	11.54	22.24	6.95	5.56	
3	Natural Gas (MMBtu)	44	46	84	53	69	19	15.5	
3	Total Fuel (MMBtu)	54.70	58.51	106.24	64.54	91.24	25.95	21.06	
3	Ratio Diesel to Total Fuel	0.196	0.214	0.209	0.179	0.244	0.268	0.264	
4	Run Time (hours)	55.5	6	12	16.2	2.9			0.7
4	Diesel (gal)	683	50	100	130	40			100
4	Diesel (MMBtu)	94.94	6.95	13.90	18.07	5.56			13.90
4	Natural Gas (MMBtu)	295.00	50.00	84.00	33.00	22.00			8.00
4	Total Fuel (MMBtu)	389.94	56.95	97.90	51.07	27.56			21.90
4	Ratio Diesel to Total Fuel	0.243	0.122	0.142	0.354	0.202			0.635

Unit 2 is an engine that combusts only diesel fuel. Unit 1, Unit 3, and Unit 4 are dual fuel engines with the capability to combust both natural gas and diesel fuel. Based on the definitions of spark ignition and compression ignition in 40 CFR 63.6675, the three dual fuel engines have been operated as CI engines. As dual fuel CI engines, diesel fuel is used for compression ignition and natural gas is used as the primary fuel at an annual average ratio of 2 parts or more diesel fuel to 100 parts total fuel on an energy equivalent basis. For each year since at least 2009 the Village of Pender has reported an annual average ratio of over two-parts diesel to 100-parts total fuel for each of the three dual fuel engines.

After noticing that the flow rate values for Unit 2 (147 gal/hr) and Unit 4 (64 gal/hour) provided in the 2012 permit application appear to be lower than the diesel fuel usage rates for those two units derived from several emissions reports (highest values found were 170 gal/hour for Unit 2 in 2012, and 86.67 gal/hour for Unit 4 in 2013), EPA requested that the Permit Applicant verify the maximum flow rates for each engine. The Permit Applicant's consultant responded indicating that the gallons of diesel fuel reported appear to have been overestimated. In 2017, diesel fuel day tanks and meters were installed for each engine-generator unit to better improve accuracy of fuel usage monitoring.

As described in the 2012 permit application, the Permit Applicant has retired a smaller 250 kW CI engine (Fairbank Morse Engine # 780205, Model 32-14X17, 5 cylinders) installed in 1939 that will no longer be operated to burn any fuel for electricity production.

Unit 5	Diesel Storage Tank	Year Installed 2016	5,000-gallon Capacity
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Not included in the 2012 permit application is a 5,000-gallon horizontal double-wall aboveground diesel storage tank installed outside the south side of the power plant building in 2016. Unit 5 is a Clawson Fireguard tank (serial No. 11618). The tank was included in a 2016 Annual Emissions Inventory for the facility submitted to the Nebraska Department of Environmental Quality. According to a 2004 EPA inspection report, diesel fuel was previously stored in three 12,000-gallon tanks. Actual emissions reported for 2016 from the storage tank due to breathing loss and working loss were 0.05 lbs./yr. (0.000025 tons/yr.) based on a throughput of 1,160 gallons. The emission factors used to calculate the reported actual VOC emissions were 0.04 lb./1,000 gal for breathing loss and 0.002 lb./gal for working loss. The emission factors used are one tenth of the uncontrolled VOC emission factors specified in Webfire for SCC 40301019 (0.4 lb./gal) and SCC 40301021 (0.02 lb./gal) associated with Petroleum and Solvent Evaporation > Petroleum Product Storage at Refineries > Fixed Roof Tanks (Varying Sizes) > Distillate Fuel #2. In 2017, the facility operated the engine-generators a total of 10 hours and used 1,371.2 gallons of diesel fuel.

Unit 6	Natural Gas Fired Water Heater	Year Installed <i>Unknown</i>	Heat Input: 0.528 MMBtu/hr
Unit 7	Natural Gas Fired Water Heater	Year Installed <i>Unknown</i>	Heat Input: 0.5 MMBtu/hr

Not included in the 2012 permit application are two low pressure boilers that do not produce steam observed during a July 31, 2018, onsite visit. Unit 6 is a Burnham Model 809B (serial #

7713615). Unit 7 is a Lochinvar Model CBN500 (Serial No. E06H00187278). They are used as hot water heaters during cold weather to warm units 1, 2, and 4 engine-generators by circulating hot water through them so they can be brought up to speed quickly. An electric heater is used to warm the unit 3 engine-generator.

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## 2.0 AIR POLLUTANT EMISSIONS AND REGULATORY ANALYSIS

Pollutants emitted at this facility include nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), sulfur oxides (SO<sub>x</sub>), volatile organic compounds (VOC), particulate matter (PM), PM with aerodynamic diameter equal to or less than 10 microns (PM<sub>10</sub>), and PM with aerodynamic diameter equal to or less than 2.5 microns (PM<sub>2.5</sub>), hazardous air pollutants (HAP), and greenhouse gases (GHG) emitted from combustion of natural gas and diesel fuel in internal combustion engines. The uncontrolled potential emissions for NO<sub>x</sub> and CO are above major source thresholds under Prevention of Significant Deterioration (PSD) permitting requirements and/or Title V (Part 71) permitting requirements.

On July 1, 2011, the United States Environmental Protection Agency (EPA) adopted regulations (76 FR 38748) codified at 40 CFR sections 49.151 through 49.161, establishing a Federal Implementation Plan (FIP) under the Clean Air Act for Indian country. This FIP includes federal Tribal Minor NSR (TMNSR) regulations for the protection of air resources in Indian country. The Omaha Indian Reservation is reservation land where the TMNSR program is applicable, see 40 CFR 49.151(c). The EPA is charged with direct implementation of the program regulations where there is no approved Tribal implementation plan. The Tribe has no such plan. This permit has been developed pursuant to 40 CFR 49.158 which creates an air permitting mechanism for major sources that wish to voluntarily limit emissions to become synthetic minor sources.

The TMNSR program requires preconstruction permitting for new and modified minor sources, and provides a mechanism for an otherwise major stationary source of regulated NSR pollutants to voluntarily accept restrictions on its potential to emit to become a synthetic minor source. This mechanism may also be used by an otherwise major source of hazardous air pollutants (HAP) to voluntarily accept restrictions on its potential to emit to become a synthetic minor HAP source. Such restrictions must be enforceable as a practical matter, and the reviewing authority has the discretion to require any additional requirements, including control technology requirements, based on the specific circumstances of the source.

The draft permit establishes restrictions to limit potential emissions for all criteria pollutants below PSD permitting requirements for major sources and Part 71 permitting requirements for major sources. These restrictions replace restrictions agreed to by the owner pursuant to the March 7, 1999, Potential to Emit (PTE) Transition Policy for Part 71 Implementation in Indian Country (50% PTE Transition Policy). A NO<sub>x</sub> emission limit of 95 tons per year for four existing engine-generators is established to avoid both PSD and Part 71 permitting requirements for major sources. Restrictions to reduce potential CO emissions for the existing engine-generators are established to avoid Part 71 permitting requirements for major sources.

## **(A) Synthetic Minor Source Permit Request**

In a letter received February 27, 2001, the Village of Pender indicated to EPA Region 7 that it would comply with the recordkeeping requirements of the 1999 Potential to Emit (PTE) transition policy by which EPA would treat a source as non-major for the purposes of the Title V program if it keeps records to show that its actual emissions are below 50 percent of the PTE thresholds for major source status.

The 1999 PTE transition policy specified that it would be implemented until EPA adopts and implements a mechanism that a source can use to limit its PTE. Since, a purpose of the Federal TMNSR program is to provide such a mechanism, its implementation terminates the PTE transition policy. Pursuant to 40 CFR 49.151(c)(1)(ii)(D) and 40 CFR 49.153(a)(3)(v), existing sources previously operating under a synthetic minor mechanism, such as the 1999 PTE transition policy, were required to submit an application pursuant to 40 CFR 49.158 for a synthetic minor source permit under this TMNSR program by September 4, 2012.

As the owner of an existing synthetic minor source established by the 1999 Potential to Emit (PTE) transition policy, the Village of Pender was required to submit an application pursuant to 40 CFR 49.158 for a synthetic minor source permit under this program by September 4, 2012.

TMNSR program overview applicability provision 40 CFR 49.151(c) (1) (ii) (D):

*If your existing synthetic minor source and/or synthetic minor HAP source was established through a mechanism other than those described in paragraphs (c)(1)(ii)(B) and (C) of this section, you must submit an application pursuant to 40 CFR 49.158 for a synthetic minor source permit under this program by September 4, 2012. The reviewing authority has the discretion to require any additional requirements, including control technology requirements, based on the specific circumstances of the source.*

EPA Region 7 received a synthetic minor permit application from the Village of Pender on September 4, 2012, for the continued operation of four existing engines. EPA Region 7 requested additional information from the Village of Pender's consultant Mr. David R. Peterson, PE in an email on November 1, 2012. On November 2, 2012, after Mr. Peterson responded providing additional information, EPA Region 7 acknowledged that the synthetic minor permit application was administratively complete pursuant to 40 CFR 49.154. Based upon information contained in the application and additional information, EPA Region 7 finds that absent any restrictions on its PTE, the source would have the potential to emit regulated NSR pollutants in amounts that are at or above those for major sources in the PSD program (40 CFR 52.21) and or the Title V program. Specifically, without restrictions that are enforceable as a practical matter, the source would otherwise have the potential to emit the NO<sub>x</sub> pollutants at major source levels, as defined by both the Title V and PSD programs. The synthetic minor permit application, as supplemented, proposed emissions limitations to keep NO<sub>x</sub> emissions below 95 tons per year by allowing each of the four engines at the facility to be operated a maximum of 1,200 hours with facility-wide fuel usage that does not exceed 433,426 gallons of diesel fuel on a 12-month rolling average.

EPA reviewed the calculations used in the supplemented permit application to derive the proposed emissions limitations to keep NOx emissions below 95 tons per year. EPA determined that the calculations use a NOx emission factor from AP-42, Table 3.4-1 for uncontrolled dual fuel fired engines that assumes the use of 95% natural gas and 5% diesel fuel.

As shown in the table below, the dual fuel operations at the facility have been using fuels with diesel fuel percentages that are higher than the 5% assumed by AP-42 for using the NOx emission factor for uncontrolled dual fuel fired engines.

Dual Fuel Operations									
Unit	Year	2009	2010	2011	2012	2013	2014	2015	2016
1	Ratio Diesel to Total Fuel	0.212	0.111	0.178	0.115	0.236	0.109		0.057
1	Ratio as multiple of 5% diesel	4.23	2.23	3.55	2.29	4.72	2.18		1.13
3	Ratio Diesel to Total Fuel	0.196	0.214	0.209	0.179	0.244	0.268	0.264	
3	Ratio as multiple of 5% diesel	3.91	4.28	4.19	3.58	4.88	5.36	5.28	
4	Ratio Diesel to Total Fuel	0.243	0.122	0.142	0.354	0.202			0.635
4	Ratio as multiple of 5% diesel	4.87	2.44	2.84	7.08	4.03			12.69

For each of the three dual fuel engines, the ratio of diesel to total fuel usage has been consistently above the 5% assumed by AP-42 for using the lower NOx EF. Out of the eight-year period reviewed, only one dual fuel engine was operated for a calendar year close to the 5% assumed by AP-42 for using the lower NOx EF. In 2016 Unit 1 was operated at 5.7% diesel (1.14 x 5%), the lowest percentage used by an engine in the 8-year period. In 2016 Unit 4 was operated at 63.5% diesel (12.7 x 5%), the highest percentage used by a dual fuel engine in a calendar year within the 8-year period.

The emission factors used in the Village of Pender's calculations for both Diesel Fuel Only and Dual Fuel operations are from AP-42 Chapter 3.4 Large Stationary Diesel and All Stationary Dual Fuel Engines, Table 3.4-1. Given that the dual fuel operations at the facility have been using fuels with diesel fuel percentages that are higher than the 5% assumed by AP-42 for using the NOx emission factor for uncontrolled dual fuel fired engines, EPA initially considered the use of the emission factor for uncontrolled Diesel fired engines to calculate NOx emissions from dual fuel operations. The following table shows EPA calculated NOx emission values for both types of operation using the uncontrolled NOx EF for Diesel Fuel (3.2 lbs./MMBtu) from AP-42, Table 3.4-1:

<b>Diesel Fuel Oil Only Operations Subtotals (using combined heat input of 50.18 MMBtu/hr)</b>									
<b>Units</b>	<b>Year</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
1,2,3&4	Run Time (hours)	38	45	25	46.6	29	12	13.4	14.1
1,2,3&4	Diesel (gal)	2,837	3,828	2,097	5,183	2,564	1,147	929	1031
1,2,3&4	Diesel (MMBtu)	394.34	532.09	291.48	720.44	356.40	159.43	129.13	143.31
1,2,3&4	NOx Emissions (lbs.)	1261.9	1702.7	932.8	2305.4	1140.5	510.2	413.2	458.6
1,2,3&4	NOx Emissions (tons)	0.63	0.85	0.47	1.15	0.57	0.26	0.21	0.23
<b>Dual Fuel Operations Subtotals (using combined heat input of 29.75 MMBtu/hr)</b>									
<b>Units</b>	<b>Year</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
1,3&4	Run Time (hours)	80	26	39	58.2	29.3	8	4.1	3.2
1,3&4	Diesel (gal)	1073	260	445	579	420	80	40	129
1,3&4	Diesel (MMBtu)	149.15	36.14	61.855	80.481	58.38	11.12	5.56	17.931
1,3&4	Natural Gas (MMBtu)	501	229	287	479	190	53	15.5	75
1,3&4	Total Fuel (MMBtu)	650.15	265.14	348.86	559.48	248.38	64.12	21.06	92.93
1,3&4	Ratio Diesel to Total Fuel	0.23	0.14	0.18	0.14	0.24	0.17	0.26	0.19
1,3&4	Ratio as multiple of 5% diesel	4.59	2.73	3.55	2.88	4.70	3.47	5.28	3.86
1,3&4	NOx Emissions (lbs.)	1752.4	768.9	980.3	1613.3	666.4	180.7	55.2	257.9
1,3&4	NOx Emissions (tons)	0.88	0.38	0.49	0.81	0.33	0.09	0.03	0.13
<b>Totals for both Diesel Fuel Only and Dual Fuel Operations</b>									
<b>Units</b>	<b>Year</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
1,2,3&4	NOx Emissions (lbs.)	3014.2	2471.6	1913.0	3918.7	1806.9	690.9	468.4	716.5
1,2,3&4	NOx Emissions (tons)	1.51	1.24	0.96	1.96	0.90	0.35	0.24	0.36

The Iowa Department of Natural Resources (IDNR) reviewed a preliminary-draft permit provided by EPA and commented that since AP-42 is based on the average of stack tests at other facilities, the use of an additional compliance margin should be considered when an AP-42 emission factor is used. Also, since the units in question are older than usual, with one installed as early as 1952, IDNR questioned whether the AP-42 factors are a good fit and whether stack testing of one of the older engines should be considered.

EPA agrees with IDNR's preliminary-draft permit comments questioning the reliability of AP-42 factors given the age of the engine-generators. Rather than requesting site-specific NOx emission testing, EPA is proposing a NOx emission factor based on performance testing of a similar engine-generator operating on diesel fuel at a Minnesota municipal power plant (Litchfield-MN). The performance tested Litchfield-MN engine-generator is the same site rated horsepower and make/model and as Pender Unit 2: 2,880 hp Fairbanks-Morse 38TDD8 1/8. The Litchfield-MN engine-generator was installed in 1962. The 1962 install date for the Litchfield-MN engine-generator is midrange between the 1952 install date of the oldest Pender engine (Unit 3) and the 1972 install date of the newest Pender engine (Unit 2). The performance testing of the Litchfield-MN engine-generator performed on September 22, 2009, resulted in an average NOx emission rate of 13.20 g/bhp-hr.

EPA considered the Village of Pender's proposed emissions limitations to keep NOx emissions below 95 tons per year by allowing each of the four engines at the facility to be operated a maximum of 1,200 hours with facility-wide fuel usage that does not exceed 433,426 gallons of diesel fuel on a 12-month rolling average. While use of a gallon limit on the use of diesel fuel may provide flexibility for engine operations, a gallon limit alone will not prevent NOx emissions from exceeding the Title V major source threshold of 100 tons per year since it does not consider the heat input contribution of natural gas contributing to NOx emissions during dual fuel operations. Limiting the annual operating time for each engine to 1,200 hours would provide less operational flexibility than monthly NOx calculations for all engines (for example allowing one or more engines to operate more than 1,200 hours when one or more engines is shut down for maintenance).

EPA is proposing an annual NOx emission limit of 95 tons per year on a 12-month rolling sum basis as determined by monthly calculations of NOx emissions from all engines using the equation specified in the draft permit with the site-rated horsepower, the number of hours each engine is operated, and an emission factor in lbs./hp-hr. Should an hour meter fail for any individual engine, monthly NOx emissions from all engines will be calculated using the equation specified in the draft permit with monitored diesel and natural gas fuel usage, heat content conversion values for both types of fuels, and an emission factor in lbs./MMBtu.

The draft permit's annual NOx emission limit of 95 tons per year on a 12-month rolling sum basis provides flexibility for engine operations, and together with the draft permit's monitoring, recordkeeping, and reporting requirements, effectively limits the facility's potential to emit NOx to below the major source thresholds.

## **(B) Control technology review and Synthetic Minor Limit Determination**

EPA Region 7 conducted a case-by-case control technology review that considered the following factors:

### **(1) Local air quality conditions.**

The Pender Municipal Power Plant is in the Village of Pender, Nebraska and within the exterior boundaries of the Omaha Tribe's reservation. The Omaha Tribe's reservation occupies the southern half of Thurston County, Nebraska.

Based on monitoring data and all other available information, Thurston County is currently unclassifiable or in attainment with the national ambient air quality standards for all criteria pollutants [see Clean Air Act Section 107(d) (1) (A)]. An area is unclassifiable when there is insufficient monitoring data. Ambient air quality designations are presented in 40 CFR Part 81. Areas of the country where air pollution levels exceed the national ambient air quality standards may be designated "nonattainment." Pender Municipal Power Plant is not located in a designated nonattainment area.

If EPA has a reason to be concerned that new construction would cause or contribute to a National Ambient Air Quality Standard (NAAQS) or PSD increment violation 40 CFR 49.154(d) provides that a modeling analysis (AQIA) of proposed emissions may be required to be performed by the Permittee. EPA does not believe there is reason to be concerned that the facility is causing or contributing to a NAAQS or PSD increment violation, and EPA has not requested that the Permittee conduct an AQIA of proposed emissions, since the proposed CAA Synthetic Minor Source permit action does not authorize new construction. The facility is not located in a designated nonattainment area. The permit establishes restrictions to limit potential emissions for all criteria pollutants below major source applicability thresholds from existing emissions units that have a history of low past actual emissions. Actual NO<sub>x</sub> emissions from the facility have been less than three tons per year over at least an 8-year period.

### **(2) Typical control technology or other emissions reduction measures used by similar sources in surrounding areas.**

As described in the table below, EPA Region 7 researched surrounding government websites for similar existing non-emergency CI engine-generators that sought and obtained permits with synthetic minor limits.

Permitting Authority – Permit Description	Facility	Description of Existing {year installed} Stationary CI Engine-Generators	Control Technology - Other Emissions Reduction Measures
Iowa DNR – 2016 Construction Permit (revised) to add oxidation catalyst	Swiss Valley Farms Cooperative - Luana	<b>One (1) Existing Non-Emergency 1,848 bhp {1999} Max Rated Capacity 91.8 gal/hr., Diesel Only</b> $91.8 \text{ gal/hr.} \times 0.137 \text{ MMBtu/gal} \times 3.2 \text{ lbs./MMBtu} = 40.25 \text{ lbs./hr.}$ <i>(hourly-uncontrolled emissions) = 176.3 tons per year (yearly-uncontrolled emissions)</i> <i>Permit limit: 41 lbs./hr. of NOx (hourly-controlled emissions)</i> $41 \text{ lbs./hr.} \times 500 \text{ hrs./yr.} \times 1 \text{ ton}/2,000 \text{ lbs} = 10.25 \text{ tons/yr.}$ (potential annual emissions)	oxidation catalyst - MACT ZZZZ requirements for both limited use and not limited use. $\leq 500$ operating hours per rolling twelve (12) month period. Monthly: (1) Determine the total hours of operation and (2) Determine annual hours of operation on rolling 12-month basis.
Missouri DNR – 2016 Title V Permit with synthetic minor NOx limit for six existing engines	City of Shelbina Power Plant	<b>One (1) Existing Emergency &amp; five (5) Existing Non-Emergency, not limited use</b> (1) G1A: Emergency 4,191 HP {1981} Fairbanks-Morse 38D879029TDFS12, 27.8 MMBtu/hr, dual fuel (1) G2A: Non-Emergency 2,306 hp {1989} Caterpillar 3516 Genset, 13.4 MMBtu/hr, Diesel Only (3) G3A-G5A: each Non-Emergency 2,306 hp {1992} Caterpillar 3516 Genset, 13.4 MMBtu/hr, Diesel Only (1) G6A: Non-Emergency 2,628 hp {1999} Caterpillar 3516 Genset, 17.84 MMBtu/hr, Diesel Only	oxidation catalyst - MACT ZZZZ requirements for emergency and non-emergency. $\text{NOx} \leq 95.0 \text{ tons per twelve (12) consecutive months from all engines (G1A-G6A). NOx Compliance Worksheet: Diesel throughput (1,000 gal) * 604 lbs./1000gal + Natural Gas throughput (MMCF) * 2,840 lbs./MMCF * ton}/2000 \text{ lbs} = \text{Monthly NOx Emissions}$
Nebraska DEQ – 2016 Class II Operating Permit Renewal	Tecumseh Municipal Power Plant	<b>Five (5) Existing Non-Emergency; 10,115 HP Total; 70.81 MMBtu/hr Total</b> EP 1: 1,075 HP {1949} Cooper Bessemer JS8-DGT, Diesel Only EP 2: 2,160 HP {1968} Fairbanks Morse 38TDD8-1/8, 15.12 MMBtu/hr, dual fuel EP 3: 1,600 HP {1952} Fairbanks Morse 38DD8-1/8, 11.20 MMBtu/hr, dual fuel EP 4: 1,920 HP {1961} Fairbanks Morse 38DD8-1/8, 13.44 MMBtu/hr, dual fuel EP 5: 3,360 HP {1965} Fairbanks Morse 38TDD8-1/8, 23.52 MMBtu/hr, dual fuel	oxidation catalyst - MACT ZZZZ requirements and each engine equipped with a non-resettable hour meter for classifying as limited use or non-limited use. $\leq 6,456,600 \text{ kWh}$ per any period of twelve consecutive rolling calendar months (equivalent of 95 tpy NOx) flow meters for both NG and Diesel “shall be read and recorded <b>daily</b> for each unit in operation”
South Dakota DENR – 2015 Title V renewal with NOx limit for one existing engine	North-western Energy – Yankton	<b>Four (4) Existing Non-Emergency</b> #1: 2,889 HP {1971} Fairbanks Morse 38TDD8-1/8, 21 MMBtu/hr, dual fuel #2: 3,976 HP {1971} Fairbanks Morse 38TDD8-1/8, 28.9 MMBtu/hr, Diesel Only #3: 9,177 HP {1974} Fairbanks Morse PC-2, 66.7 MMBtu/hr, dual fuel #4: 2,917 HP {1989} Fairbanks Morse 38TD8 V8-1/8, 21.2 MMBtu/hr, Diesel Only  Annual records - Calculate and record: 1. Hours Units #1, #2, #3 and #4 operated; 2. Natural gas consumed (MCF) in Units #1 and #3; 3. Distillate oil consumed (gal) in Units #1, #2, #3 and #4; and 5. NOx, SO2, and CO emitted from Unit #4, in tons.	oxidation catalyst - MACT ZZZZ requirements for non-emergency limited use. NOx, SO2, CO for Unit #4: $\leq 38 \text{ ton}/12\text{-month rolling total};$ $\leq 67.0 \text{ lbs. NOx/hr.}$ $\leq 1,120 \text{ hours}$ each during any 12-month rolling period. Quarterly Reporting: 1. Facility name, permit #, reference to this permit, condition, ID submittal as a quarterly report, and calendar dates covered in reporting period; 2. Hours Unit #4 operated during each month, and during the 12-month rolling period for that month; and 3. The sulfur content of distillate oil.
Minnesota MPCA – 2013 Total Facility Operating Permit – Reissuance	City of Litchfield Municipal Power Plant	<b>Seven (7) existing Non-Emergency</b> GP001: two (2) 2,880 hp {1962} Fairbanks M 38TDD8 1/8 dual fuel, Maximum Heat Input Diesel: 19.6 MMBtu/hr {Note - NOx EFs derived from hourly limits: $87.3 \text{ lbs./hr} \div 2880 \text{ HP} = 0.03031 \text{ lbs./hp-hr}$ } GP002: Five (5) 3,292 HP {2008} Caterpillar 3516 Diesel Only, Maximum Heat Input Diesel: 22.2 MMBtu/hr EU010: One (1) 3.2 MMBtu/hr {1979} Bryan Boiler L48S-15-G-FE Natural Gas fired used for building heat.  NOx emissions formula includes following inputs: - maximum HP; - hours of operation input; - average NOx emission factor during the most recent performance test	<b>for GP001:</b> oxidation catalyst - MACT ZZZZ requirements for non-emerg limited use. $\leq 69.3 \text{ tons NOx} / 12\text{-month rolling Sum};$ $\leq 87.3 \text{ lbs. NOx/hr.}$ Monthly Recordkeeping - NOx Emissions: 1) Calculate the total NOx emissions of each engine in the group for the previous calendar month using formula. 2) The total GP 001 NOx emissions for the previous month. 3) The 12-month GP 001 rolling sum NOx emissions for the previous 12-month period by summing the monthly NOx emissions data for the previous 12 months.

EPA Region 5 -2015 After-The-Fact Construction Permit with Synthetic Minor Limits	Mystic Lake Casino Hotel - Prior Lake, Minnesota	<p><b>Four (4) Existing Non-Emergency</b>  EU103: one (1) 3196 HP {2004} Caterpillar 3516 Diesel Only, Maximum Heat Input Diesel: 21.65 MMBtu/hr;  EU109: one (1) 2288 HP {1999} Caterpillar 3516 Diesel Only, Maximum Heat Input Diesel: 15.86 MMBtu/hr;  EU110: one (1) 1825 HP {1996} Caterpillar 3516 Diesel Only, Maximum Heat Input Diesel: 12.87 MMBtu/hr;  EU111: one (1) 2885 HP {2006} Caterpillar 3516 Diesel Only, Maximum Heat Input Diesel: 18.79 MMBtu/hr;</p> <p><b>Recordkeeping:</b>  - Fuel usage  - Fuel supplier certification  - Hours of operation  - Operations and Maintenance Manual;  - Records of maintenance  - Standard operation &amp; maintenance procedures for each emission unit.</p>	oxidation catalyst - <i>MACT ZZZZ</i> requirements for non-emerg limited use. <b>NOx and Fuel Usage Limits:</b> EU103: $\leq 35.93$ lbs./hr; $\leq 22.41$ tpy; $\leq 108,000$ gal/12-month rolling sum EU109: $\leq 62.56$ lbs./hr; $\leq 21.90$ tpy; $\leq 80,150$ gal/12-month rolling sum EU110: $\leq 66$ lbs./hr; $\leq 23.10$ tpy; $\leq 65,030$ gal/12-month rolling sum EU111: $\leq 63.21$ lbs./hr; $\leq 22.12$ tpy; $\leq 94,990$ gal/12-month rolling sum <b>Monitoring:</b> - fuel meter and a runtime meter - monthly NOx emissions calculations using fuel input (MMBtu), NOx emission factor from periodic performance test (lbs./MMBtu) - If fuel meter fails on any individual generator, monthly NOx emissions calculated using operating hours. - EPA approved O&M Manual
EPA Region 7 – 2018 proposed synthetic minor permit	Pender Municipal Power Plant	<p><b>Four (4) Existing Non-Emergency; 7,120 hp Total; 50.18 MMBtu/hr Total</b>  EU1 - 2,160 hp {1967} Fairbanks M 38TDD8 1/8 dual fuel, Calculated Heat Input: 15.29 MMBtu/hr {using NOx EF: 62.86 lbs./hr}  EU2 - 2,880 hp {1972} Fairbanks M 38TDD8 1/8 Diesel Only, Calculated Heat Input: 20.43 MMBtu/hr; {using NOx EF: 83.81 lbs./hr}  EU3 - 800 hp {1952} Fairbanks M 38DD8 1/8 dual fuel, Calculated Heat Input: 5.56 MMBtu/hr; {using NOx EF: 23.28 lbs./hr}  EU4 - 1,280 hp {1961} Fairbanks M 38DD8 1/8 dual fuel, Calculated Heat Input: 8.90 MMBtu/hr; {using NOx EF: 37.25 lbs./hr}</p>	oxidation catalyst - <i>MACT ZZZZ</i> requirements for both limited use and not limited use. $\leq 95$ tons per year on a 12-month rolling sum basis. <b>Monitoring:</b> - hour meters and diesel flow meters for each engine; single natural gas meter - monthly NOx emissions calculations using the hours of operation, hp output capacity and emission factor for diesel derived from performance testing of similar engine-generator. - If hour meter fails on any individual generator, monthly NOx emissions calculated using monitored fuel usages and lb./MMBtu emission factor. Annual Reporting.

Each of the government issued permits listed above set NOx emissions limits below the major source threshold, require compliance with applicable MACT ZZZZ requirements (including a requirement to either limit the concentration of CO in the stationary RICE exhaust or reduce CO emissions), and limit one or more of the following: hours of operation, fuel usage, and electrical power output.

### (3) Anticipated economic growth in the area.

Pender Municipal Power Plant is in the Village of Pender, Nebraska and within the exterior boundaries of the Omaha Tribe’s reservation. The Omaha Tribe’s reservation occupies the southern half of Thurston County, Nebraska. The Village of Pender is located an estimated 80 miles northwest of Omaha, Nebraska and approximately 35 miles southwest of South Sioux City, Nebraska.

In conducting the control technology review, EPA considered the anticipated growth rate of the source. Considering economic development information for the Village of Pender available at <http://penderthurston.com>, the Permittee’s history of operating each engine-



generator under 100 hours annually, and the Permittee's recent decision to reclassify the existing engine-generators as "limited use," under the MACT ZZZZ requirements for Stationary Reciprocating Internal Combustion Engines, EPA does not anticipate that any emissions increases resulting from economic growth in the area will pose unique or additional impacts on air quality in the foreseeable future that might warrant more stringent requirements to control emissions than those contained in the proposed permit.

**(4) Cost-effective emission reduction alternatives.**

The proposed emission limitations are consistent with control technologies or other emissions reduction measures used by similar sources in surrounding areas with the same attainment status for all criteria pollutants as where the source is located. EPA believes that, because these control measures are currently used by other similar sources in surrounding areas, they are technically and economically feasible, and cost effective.

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### (C) Potential and Allowable Emissions

Engine-generators				
Emission Unit	Site-Rated Horsepower	Flow Rate (gallons/hour)	Hourly Heat Input Capacity (MMBtu/hour)	Annual Heat Input Capacity (MMBtu/year)
EU-1-EG	2,160	110	15.3	134,000
EU-2-EG	2,880	147	20.4	179,000
EU-3-EG	800	40	5.56	48,700
EU-4-EG	1,280	64	8.9	78,000
<b>Total</b>	<b>7,120</b>	<b>361</b>	<b>50.16</b>	<b>439,700</b>

*Hourly Heat Input calculated using flow rate from application (gallons/hour) multiplied by 0.139 MMBtu/gallon conversion factor for diesel fuel as specified in 2012 URGE test included in permit application.*

Potential emissions are calculated using either the total site-rated horsepower or the total heat input capacity from all engines (see table above), multiplied by an emission factor for each regulated NSR pollutant (shown in the table below). For example, without the restrictions established by the permit to limit emissions to below major source thresholds, the engines have a potential to emit 907 tons per year of NO<sub>x</sub>:

$$\begin{aligned}\text{Potential NO}_x \text{ Emissions} &= 7,120 \text{ hp} * 0.0291 \text{ lbs./hp-hr} = 207 \text{ lbs./hour} \\ &= 207 \text{ lbs./hour} * 8760 \text{ hours /year} * 1 \text{ ton}/2000 \text{ lbs.} \\ &= 907 \text{ tons NO}_x \text{ /year}\end{aligned}$$

or

$$\begin{aligned}\text{Potential NO}_x \text{ Emissions} &= 50.16 \text{ MMBtu/hr} * 4.13 \text{ lbs./MMBtu} = 207 \text{ lbs./hour} \\ &= 207 \text{ lbs./hour} * 8760 \text{ hours /year} * 1 \text{ ton}/2000 \text{ lbs.} \\ &= 907 \text{ tons NO}_x \text{ /year}\end{aligned}$$

The Limited Annual Heat Input required to keep NO<sub>x</sub> emissions below 95 tons per year is determined by the NO<sub>x</sub> limit converted to lbs./year divided by the NO<sub>x</sub> emission factor (lbs./MMBtu):

$$\begin{aligned}\text{Limited Annual Heat Input} &= 95 \text{ tons/year} * 2000 \text{ lbs./ 1 ton} \div 4.13 \text{ lb./MMBtu} \\ &= 46,000 \text{ MMBtu/year}\end{aligned}$$

By limiting NO<sub>x</sub> emissions from the engines to 95 tons per year, emissions of all other pollutants are also restricted to allowable levels below major source thresholds. Allowable emissions of all other pollutants are calculated using an emission factor for each pollutant and the Limited Annual Heat Input required to keep NO<sub>x</sub> emissions below 95 tons per year. For example, the following is the calculation for allowable VOC emissions:

$$\begin{aligned}\text{Allowable VOC Emissions} &= 46,000 \text{ MMBtu/year} * 0.2 \text{ lbs./MMBtu} * 1 \text{ ton}/2000 \text{ lbs.} \\ &= 4.6 \text{ tons VOC /year}\end{aligned}$$

The table below shows the potential and allowable emissions calculated for the four engine-generators along with the major and minor source thresholds.

Engine-generators							
Regulated NSR Pollutant	Emission Factor *	Emission Factor Source	Potential Emissions (lbs./hour) ***	Potential Emissions (tons/yr) ***	Allowable Emissions (tons/yr) ****	Minor NSR Source Threshold (tons/yr)	Major Source Threshold (tons/yr)
NOx	0.0291 lb/hp-hr or 4.13 lb/MMBtu	performance testing of similar engine-generator for diesel fuel**	207	907	95	10	100 or 250
CO	1.16 lb/MMBtu	AP-42 Table 3.4-1 for dual fuel	58.2	255	8 *****	10	100 or 250
VOC	0.2 lb/MMBtu	AP-42 Table 3.4-1 for dual fuel	10	44	4.6	5	100 or 250
PM	0.062 lb/MMBtu	AP-42 Table 3.4-2 for diesel fuel	3.11	13.6	1.42	10	100 or 250
PM <sub>10</sub>	0.0573 lb/MMBtu	AP-42 Table 3.4-2 for diesel fuel	2.88	12.6	1.32	5	100 or 250
PM <sub>2.5</sub>	0.0556 lb/MMBtu	AP-42 Table 3.4-2 for diesel fuel	2.79	12.2	1.28	3	100 or 250
SO <sub>2</sub>	0.00152 lb/MMBtu *****	AP-42 Table 3.4-1 for diesel fuel	0.076	0.334	0.035	10	100 or 250

\* Emission Factors determined using the largest emission factor (for burning either diesel or dual fuel) to calculate the worst-case scenario

\*\* NOx emission factor based on performance testing of a similar engine-generator operating on diesel fuel at a municipal power plant located in Litchfield, MN. The performance testing results are referenced in an air permit available at <https://www.pca.state.mn.us/sites/default/files/09300001-003-aqpermit.pdf>. The performance tested Litchfield-MN engine-generator is the same site rated horsepower and make/model as Pender Unit 2: 2,880 hp Fairbanks-Morse 38TDD8 1/8. The 1962 install date for the Litchfield-MN engine-generator is midrange between the 1952 install date of the oldest Pender engine (Unit 3) and the 1972 install date of the newest Pender engine (Unit 2). The performance testing of the Litchfield-MN engine-generator performed on September 22, 2009, resulted in an average NOx emission rate of 13.20 g/bhp-hr (0.0291 lbs./hp-hr) for burning diesel. 4.13 lbs./MMBtu = 907 tons/year \* [2000 lbs./ton] \* [year/439,700 MMBtu]

\*\*\* Potential emissions for each pollutant determined using the Annual Heat Input Capacity and the largest emission factor for burning either diesel or dual fuel to calculate the worst-case scenario with all four engines operating 8,760 hours per year. For example:

**Potential CO Emissions calculation:**

$$1.16 \text{ lbs./MMBtu} * 439,700 \text{ MMBtu/year} * \text{ton}/2000 \text{ lbs.} = 255 \text{ tons CO /year}$$

\*\*\*\* Allowable emissions for each pollutant calculated using worst-case emission factor for each pollutant and the Limited Annual Heat Input required to keep NOx emissions below 95 tons per year. For example, the following is the calculation for allowable VOC emissions:

**Allowable VOC Emissions calculation:**

$$46,000 \text{ MMBtu/year} * 0.2 \text{ lbs./MMBtu} * 1 \text{ ton}/2000 \text{ lbs.} = 4.6 \text{ tons VOC /year}$$

\*\*\*\*\* Given the restrictions of CO emissions caused by the 95 tons/year NOx limit and 70% the reduction in CO to comply with MACT ZZZZ, the engines have allowable CO emissions of 8 tons per year:

CO Emissions calculation (without MACT ZZZZ compliance):

$$1.16 \text{ lbs./MMBtu} * 46,000 \text{ MMBtu/year} * \text{ton}/2000 \text{ lbs.} = 26.68 \text{ tons CO /year}$$

**Allowable CO Emissions calculation (with MACT ZZZZ 70% reduction):**

$$26.68 \text{ tons CO /year} * 0.3 = 8.00 \text{ tons CO /year}$$

\*\*\*\*\* SO2 EF derived using Equation:  $1.01 S1 = 0.00152$ , assuming  $S1 = 0.0015$   
 {per MACT ZZZZ the maximum sulfur content for NR diesel fuel is 15 ppm}

Unit 5	Diesel Storage Tank	Year Installed 2016	5,000-gallon Capacity
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Given the low volatility of diesel fuel and assuming the new storage tank is well designed, operated and maintained, potential emissions are expected to be relatively low. The Limited Annual Heat Input for the engine-generators is the equivalent of 331,000 gallons of diesel fuel usage per year:

$$46,000 \text{ MMBtu/year} * 1 \text{ gallons}/0.139 \text{ MMBtu} = 331,000 \text{ gallons/year}$$

Allowable VOC emissions from the diesel storage tank are 13.9 lbs./year (0.00695 tons/year), calculated using Limited Annual Heat Input equivalent of 331,000 gallons/year multiplied by the sum of the VOC emission factors provided in the 2016 emissions inventory report (0.04 lbs./1,000 gal for breathing loss and 0.002 lbs./1,000 gal for working loss).

$$\begin{aligned} \text{Storage Tank Allowable VOC emissions} &= 331,000 \text{ gal/year} * 0.042 \text{ lbs./1,000 gal.} \\ &= 13.9 \text{ lbs./year} * 1 \text{ ton}/2,000 \text{ lbs.} \\ &= 0.00695 \text{ tons/year} \end{aligned}$$

Unit 6	NG Fired Water Heater	Year Installed <i>Unknown</i>	Heat Input Capacity 0.528 MMBtu/hour	Natural Gas Throughput Capacity 2.19 MMscf/year
Unit 7	NG Fired Water Heater	Year Installed <i>Unknown</i>	Heat Input Capacity 0.5 MMBtu/hour	Natural Gas Throughput Capacity 2.19 MMscf/year

Potential emissions from both water heaters combined are provided in the table below.

<b>Water Heaters</b>		
Pollutant	Emission Factor (lbs./MMscf)	Potential emissions (tons/year)
NO <sub>x</sub>	100	0.450
CO	84	0.378
VOC	5.5	0.0248
PM	1.9	0.00856
PM <sub>10</sub>	7.6	0.0342
PM <sub>2.5</sub>	7.6	0.0342
SO <sub>x</sub>	0.6	0.00270

*Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2*

*1.028 MMBtu/hour \* [1 MMscf/1,000 MMBtu] = 0.001028 MMscf/hour*

*0.001028 MMscf/hour \* [8760 hours/year] = 9.01 MMscf/year*

## **(D) Other EPA Regulations**

### **General Permit Option for Stationary Compression Ignition (CI) Engines**

On October 14, 2016, EPA finalized general permit options in Indian country for new or modified true and synthetic minor sources. The general permit option for stationary CI engines requires that each affected non-emergency CI engine, excluding nonroad mobile engines, be model year 2014 or later and be certified by the manufacturer to the applicable Tier 4 standards equipped with add-on controls for CO and NOx (and certified by the manufacturer to the applicable standards in 40 CFR 1039.101 through 1039.104, for all pollutants, for the same model year and maximum engine power). Since each of the stationary non-emergency CI engines at Pender Power Plant are existing and are not undergoing modification as defined in 40 CFR 49.152(d), those engines do not qualify for coverage under a general permit.

### **New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP)**

NSPS regulations promulgated under CAA Section 111 and NESHAP regulations promulgated under CAA Section 112 may be applicable to the emission units at the Pender Municipal Power Plant independent of this permit. EPA Region 7 reviewed these regulations as part of this synthetic minor permitting action in developing emission limitations that assure that each affected emissions unit will comply with all requirements of 40 CFR parts 60, 61 and 63 that apply to the unit. For this synthetic minor permit, EPA Region 7 considered the following regulations:

#### 40 CFR Part 60, Subpart Dc - New Source Performance Standards for Small Industrial-Commercial- Institutional Steam Generating Units

This subpart does not apply to any boilers or hot water heaters with a maximum heat input capacity of less than 10 MMBtu/hour. Since the small natural gas fired 250,000 BTU boiler does not generate steam and does not have a maximum heat input capacity of more than 10 MMBtu/hour, this subpart does not apply.

#### 40 CFR Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

This subpart is applicable to owners and operators of stationary CI internal combustion engines (ICE) and other persons who construct, reconstruct, or modify an engine after July 11, 2005. Subpart IIII is not applicable because each of the existing engines were constructed prior to July 11, 2005. If any of the engines are modified or reconstructed in the future as described in Part 60, Subpart A, then these engines would become subject to this subpart.

#### 40 CFR Part 60, Subpart Kb: 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.

This subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters that is used to store volatile organic liquids for which construction,

reconstruction, or modification is commenced after July 23, 1984. Since the diesel fuel storage tank currently in use at the facility has a capacity of 5,000 gallons (18.93 cubic meters), this subpart does not apply.

40 CFR Part 63, Subpart JJJJJ - NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources

As provided by 63.11195(f), a hot water heater is not subject to this subpart. Per 63.11237, hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in the definition of a hot water heater. The 250,000 Btu/hr natural gas fired boiler meets the definition of a hot water heater, therefore this subpart does not apply.

40 CFR Part 63, Subpart ZZZZ – MACT ZZZZ requirements for Stationary Reciprocating Internal Combustion Engines

MACT ZZZZ applies to existing, new, or reconstructed stationary reciprocating internal combustion engines (RICE) located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand [63.6590(a)]. The four engines are existing stationary RICE since they were constructed before June 12, 2006 [63.6590(a)(1)(iii)]. As an existing stationary CI RICE located at an area source of HAP emissions, the applicable emission limitations, operating limitations, and other requirements were required to be complied with no later than May 3, 2013 [63.6595(a)].

The Initial Notification form, received April 10, 2012, identified the four engines as “non-limited use” engines. To comply with the emission standards in Table 2d of MACT ZZZZ, an oxidation catalyst was installed on each of the four engines by the end of 2012. The initial performance testing of the engines was conducted on April 18, 2013 to demonstrate compliance with the outlet concentration limit of < 23 ppm @ 15% O<sub>2</sub>, or a 70% or greater reduction of CO emissions as specified in MACT ZZZZ Table 2d-3. A report of the April 18, 2013 test results demonstrating compliance was received on June 10, 2013.

In a letter received on March 30, 2016, the facility notified EPA that the engines would be reclassified from “non-limited use” engines to “limited use” engines and indicated that should the engines be required to operate for more than 100 hours per year in the future, the facility will notify EPA Region 7 within 15 days to reclassify the engines as “non-limited use” and will conduct performance testing within 90 days of exceeding 100 hours per year of operation, unless the previous performance testing was conducted less than three years prior to the exceedance of the 100 hours per year threshold. In that case, the testing will be conducted within three years of the previous testing. Also, if the engines exceed 100 hours per year of operation, compliance reporting will be done semi-annually instead of annually.

As defined in 63.6675, a limited use stationary RICE means any stationary RICE that operates less than 100 hours per year. Since at least 2009, the facility has reported that each engine has been operated less than 100 hours per calendar year.

The proposed permit requires that the four engines comply with all applicable MACT ZZZZ emission limitations and operating limitations, as well as, all applicable MACT ZZZZ Compliance, Testing, Notifications, Reports, and Records requirements.

TSD Appendix A provides a detailed list of the MACT ZZZZ requirements that are applicable to each of the four engines based on the following descriptive categories:

existing non-emergency,  
non-black start,  
CI stationary RICE,  
with a site rating of more than 500 brake HP,  
with a displacement of less than 30 liters per cylinder,  
that uses diesel fuel,  
that is not equipped with a closed crankcase ventilation system,  
that is located at an area source of HAP emissions,  
that is complying with the requirement to limit or reduce the concentration of CO  
and using an oxidation catalyst  
and using a Continuous Parametric Monitoring System (CPMS),  
not using a Continuous Emissions Monitoring System (CEMS).

Per 63.6675 definition of Spark Ignition: Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

If a dual fuel engine is operated as a spark ignition engine, a reduced set of MACT ZZZZ requirements would apply.

#### 40 CFR Part 63, Subpart A – General Provisions

This subpart applies because each engine is subject to MACT ZZZZ. Table 8 of MACT ZZZZ specifies which of the General Provisions apply.

If the source should add or change equipment or change processes such that a NSPS or NESHAP subpart becomes an applicable requirement, then it is the source's obligation to comply with that subpart and applicable requirements whether or not they are identified in this permitting action



## **(E) Other Federal Requirements**

### **(1) Endangered Species Act (ESA) Impacts.**

The EPA is obligated to consider the impact that a federal project may have on listed species or critical habitats. Section 7 of the ESA [16 U.S.C. 1531 et seq.] outlines the procedures for Federal interagency cooperation to conserve Federally listed species and designated critical habitats. Section 7 of the ESA requires the EPA, as a federal agency, to use its authority to conserve listed endangered and threatened species. To support this requirement, section 7 (a) (2) of the ESA requires the EPA to ensure that an agency action, such as the issuance of air construction permits, is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat for such species. The facility occupies approximately 13,000 square feet of land in a developed area two blocks north of Main Street and includes two existing brick buildings with a total footprint of approximately 6,000 square feet.

The proposed CAA Synthetic Minor Source permit action covers four existing Engine-Generators and two existing small natural gas fired boilers. The permit action also includes a new horizontal 5,000-gallon diesel storage tank that replaced a vertical 12,000-gallon diesel storage tank in 2016. The 5,000-gallon tank installation did not increase emissions and appears to have expanded the structural footprint of the existing facility by roughly 270 square feet.

As observed during the July 31, 2018 onsite visit, the new horizontal 5,000-gallon tank (8.5 feet in diameter and 14 feet long) with a footprint of roughly 125 square feet was constructed between two existing cooling units. The old vertical 12,000-gallon storage tank (footprint roughly 10 feet in diameter or 80 square feet), has been removed and a metal building (footprint roughly 15' x 15' or 225 square feet) containing a new fuel metering system with day tanks to supply diesel to the engine-generators was constructed at the old storage tank location.

The proposed permit action does not authorize any emission increases from existing units. The permit action will have the beneficial effect of controlling air pollution by establishing emissions limits below major source thresholds for all non-exempt operations currently at the facility.

In complying with its duty under ESA, the EPA, as the action agency, examined the potential effects on listed species and designated critical habitat relating to issuing a CAA synthetic minor source permit in Indian country.

### ***Permit Request***

The EPA received a CAA permit application from the Village of Pender Municipal Power Plant, requesting voluntarily restrictions on its potential to emit to become a synthetic minor source. The facility is in the Village of Pender, Nebraska and within the exterior boundaries of the Omaha Tribe's reservation. The Omaha Tribe's reservation occupies the southern half of Thurston County, Nebraska.

EPA intends to issue a synthetic minor source permit, which includes permit requirements based on the tribal minor NSR provisions, for all non-exempt emissions units at the facility for which information has been received, as of the date of the permit issuance. If this facility were allowed to operate without the control equipment required by the proposed permit, it would have potential emissions of air pollutants at levels triggering major source Prevention of Significant Deterioration (PSD) and Title V permitting. The applicant is requesting permit conditions to establish legally and practically enforceable restrictions on NO<sub>x</sub> emissions to avoid PSD and Title V major source permitting requirements found at 40 CFR Parts 52 and 71, respectively. The proposed permit includes monitoring, recordkeeping and reporting requirements necessary to assure compliance with each limit. To provide legally and practically enforceable permit conditions to reduce potential emissions to levels below the major source thresholds for PSD and Title V requirements, the proposed permit requires monthly calculations of emissions.

### ***Hydrology***

The facility is located approximately 20 straight line miles west of the Missouri River. Surface drainage from the facility grounds travels toward Logan Creek Dredge with a grain storage facility in between. Logan Creek Dredge is classified as Riverine R2UBGx and is approximately 260 straight line feet northeast from the northeast corner of the facility. From that location, Logan Creek Dredge is approximately 60 miles upstream of the Elkhorn River. A National Wetlands Inventory map providing an aerial view of the Village of Pender Municipal Power Plant facility showing surrounding structures and measured distance to nearby Logan Creek Dredge is provided below:



February 4, 2018

**Wetlands**

Estuarine and Marine Deepwater	Freshwater Emergent Wetland	Lake
Estuarine and Marine Wetland	Freshwater Forested/Shrub Wetland	Other
	Freshwater Pond	Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)  
This page was produced by the NWI mapper

### *Threatened and Endangered Species*

The EPA accessed U.S. Fish and Wildlife Service (FWS) websites for information on threatened and endangered species and designated critical habitat for those species. FWS maintains a website titled Environmental Conservation Online System (<http://ecos.fws.gov/ecp/>) that provides access to databases for:

1. Threatened and endangered species that may be present within the proposed permit action area and
2. Designated critical habitat for threatened and endangered species.

The EPA accessed the FWS Information, Planning, and Conservation System (IPaC) database (<http://ecos.fws.gov/ipac>) to identify species listed as threatened and endangered that have been documented as being present in facility area, and received the official species list from the FWS

Nebraska Ecological Services Field Office on February 9, 2018. There are no critical habitats within the facility area.

The official species list from FWS stated that the following threatened or endangered species may be found in the facility area:

**Least Tern (*Sterna antillarum*)**

**Listing Status: Endangered**

**Piping Plover (*Charadrius melodus*)**

**Listing Status: Threatened**

**Pallid Sturgeon (*Scaphirhynchus albus*)**

**Listing Status: Endangered**

**Western Prairie Fringed Orchid**

**(*Platanthera praeclara*)**

**Listing Status: Threatened**

**Northern Long-eared Bat (*Myotis***

***septentrionalis*)**

**Listing Status: Threatened**

**Least Tern**

Listing Status: Endangered

Effects Determination: No Effect

The interior least tern is migratory and its breeding range extends from Texas to Montana and from eastern Colorado and New Mexico to northern Indiana. They were declared endangered in 1985 (50 Federal Register 21792; May 28, 1985.) Interior least terns nest in riparian areas with sparsely vegetated sand and gravel bars within a wide, unobstructed river channel or salt flats along lake shorelines, at higher elevations away from the water's edge. The primary food is small fishes, but it also eats shrimp and occasionally other invertebrates. The least tern is known to use the Missouri River corridor for nesting and as a migratory corridor. The facility is located approximately 20 straight line miles west of the Missouri River. Given the location of the facility within a developed industrial area, apparent lack of habitat within the facility area, the proposed permitting action for the operation of existing facility will have no effect on the least tern.

**Piping Plover**

Listing Status: Threatened

Effects Determination: No Effect

The piping plover was declared threatened in 1985 (50 Federal Register 50733; December 11, 1985.)

It is a small shorebird that inhabits barren sand and gravel shores of rivers and lakes. The main foods taken are freshwater invertebrates washed up on shore, terrestrial, and benthic invertebrates. The Northern Great Plains population of piping plovers nest on the shorelines and islands of alkali (salty) lakes in North Dakota and Montana. They nest on sandbar islands and reservoir shorelines along the Missouri River and reservoirs in Montana, North Dakota, South Dakota, and Nebraska. In Nebraska, they nest on the Platte River system, Niobrara, Loup, and Elkhorn Rivers. The facility is located approximately 20 straight line miles west of the Missouri River. Given the location of the facility within a developed industrial area,

apparent lack of habitat within the facility area, the proposed permitting action for the operation of existing facility will have no effect on the piping plover.

### **Pallid Sturgeon**

Listing Status: Endangered

Effects Determination: No Effect

The pallid sturgeon was federally listed as an endangered species on September 6, 1990. In Nebraska, the pallid sturgeon is found in the Missouri and lower Platte Rivers. Floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters formed the large river ecosystem that provided macrohabitat requirements for the pallid sturgeon, a species that is associated with diverse aquatic habitats. The expected occurrence of the pallid sturgeon is in the Lower Platte River and Missouri River. The Missouri River is approximately 20 straight line miles away from the facility, and the Lower Platte is even farther away from the facility. Thus, no potential habitat occurs within the facility area.

### **Western Prairie Fringed Orchid (WPFO)**

Listing Status: Threatened

Effects Determination: No Effect

The western and eastern prairie fringed orchids were added to the U.S. List of Endangered and Threatened Wildlife and Plants on September 28, 1989. The WPFO, federally listed as threatened, inhabits tall-grass calcareous silt loam or sub-irrigated sand prairies. In eastern Nebraska, they are found in upland prairies and loess soils. In central and northeast Nebraska, they occur in wet prairies and meadows.

The location of the facility is within a developed industrial area. The facility occupies approximately 13,000 square feet of land in a developed industrial area two blocks north of Main Street and includes two buildings with a total footprint of approximately 6,000 square feet. The recent tank installation did not increase emissions. The footprint of the existing facility was not expanded and the tank installation would likely not have involved removing or disturbing native vegetation. Therefore, the proposed permit action is considered to have no effect on the WPFO.

### **Northern Long-eared Bat (NLEB)**

Listing Status: Threatened

Effects Determination: No Effect

On April 2, 2015, the USFWS listed the northern long-eared bat as a threatened species. NLEB are very useful because they feed on spiders, beetles, and flying insects (such as mosquitoes). The primary factor threatening the northern long-eared bat is white-nose syndrome. However, because populations of the bat are depressed by this disease, human activities that were not significant before may be so now. In the final listing rule for the northern long-eared bat, USFWS states that critical habitat is not determinable at this time and plans to propose and determine appropriate critical habitat within one year of the final listing.

NLEB have been found in 39 states, including Nebraska. However, no potential habitat appears to occur within the facility area.

### ***EPA Determination of ESA Impacts***

The CAA Synthetic Minor Source permit action will have the beneficial effect of controlling air pollution by establishing emissions limits below major source thresholds for all non-exempt operations currently at the facility. Based on information we have researched and reviewed, the EPA has concluded that the proposed permit action will have “no effect” on the Least Tern, Piping Plover, Pallid Sturgeon, Western Prairie Fringed Orchid, and Northern Long-Eared Bat. As the lead federal agency for Section 7(a)(2) compliance and given our determination that the proposed action will have “no effect” on listed species or critical habitat, EPA is not consulting with the FWS Nebraska Ecological Services Field Office. A Federal agency is not required to consult with the FWS if it determines an action will not affect listed species or critical habitat.

The EPA gathered information on listed species from the following sources:

1. Thompson, Bruce C., Jerome A. Jackson, Joanna Burger, Laura A. Hill, Eileen M. Kirsch and Jonathan L. Atwood. 1997. Least Tern (*Sternula antillarum*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/290> doi:10.2173/bna.290
2. U.S. Fish and Wildlife Service, 2009. *Piping Plover 5-Year Review: Summary and Evaluation*: [http://www.fws.gov/northeast/endangered/PDF/Piping\\_Plover\\_five\\_year\\_review\\_and\\_summary.pdf](http://www.fws.gov/northeast/endangered/PDF/Piping_Plover_five_year_review_and_summary.pdf)
3. Elliott-Smith, Elise and Susan M. Haig. 2004. Piping Plover (*Charadrius melodus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/002> doi:10.2173/bna.2
4. United States. U.S. Fish and Wildlife Service. *Pallid Sturgeon 5-Year Review*; U.S. Fish and Wildlife Service, 2007. Retrieved from [http://ecos.fws.gov/docs/five\\_year\\_review/doc1059.pdf](http://ecos.fws.gov/docs/five_year_review/doc1059.pdf)
5. U.S. Fish and Wildlife Service. January 2014. Revised RECOVERY PLAN for the Pallid Sturgeon (*Scaphirhynchus albus*). [http://ecos.fws.gov/docs/recovery\\_plan/Pallid%20Sturgeon%20Recovery%20Plan%20Final%20Revision%20signed%20version%20012914\\_3.pdf](http://ecos.fws.gov/docs/recovery_plan/Pallid%20Sturgeon%20Recovery%20Plan%20Final%20Revision%20signed%20version%20012914_3.pdf)
6. U.S. Fish and Wildlife Service. 2009. Western Prairie Fringed Orchid (*Platanthera praeclara*) 5-Year Review: Summary and Evaluation. 37 pp. [http://www.fws.gov/midwest/endangered/plants/pdf/wpfo\\_5YrReview2009.pdf](http://www.fws.gov/midwest/endangered/plants/pdf/wpfo_5YrReview2009.pdf)
7. Western Prairie Fringed Orchid Fact Sheet. U.S. Fish and Wildlife Service, Ecological Services Field Offices in the Upper Midwest. 2011.
8. General NPDES Permit Number NER900000 for Storm Water Discharges from Industrial Activity to Waters of the State of Nebraska

[http://www.deq.state.ne.us/publica.nsf/23e5e39594c064ee852564ae004fa010/9c04cb7b875b5a0b8625687400613d3b/\\$FILE/ISW-%20General%20Permit.pdf](http://www.deq.state.ne.us/publica.nsf/23e5e39594c064ee852564ae004fa010/9c04cb7b875b5a0b8625687400613d3b/$FILE/ISW-%20General%20Permit.pdf)

9. 80 FR 17973 18033 – April 2, 2015 - Threatened Species Status for the Northern Long-Eared Bat with 4(d) Rule <https://www.gpo.gov/fdsys/pkg/FR-2015-04-02/pdf/2015-07069.pdf>
10. U.S. Fish and Wildlife Service. 2016. Northern Long-Eared Bat (*Myotis septentrionalis*) Status: Threatened with 4(d) Rule <http://www.fws.gov/midwest/endangered/mammals/nleb/>

## **(2) National Environmental Policy Act (NEPA) Review.**

Under Section 793(c) of the Energy Supply and Environmental Coordination Act of 1974, no action taken under the Clean Air Act shall be deemed a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. The proposed permitting action is taken under regulations implementing the Clean Air Act and is therefore exempt from the NEPA. See Section 7(c) of the Energy Supply and Environmental Coordination Act of 1974, 15 U.S.C. 793(c) (1).

## **(3) National Historic Preservation Act (NHPA).**

Section 106 of the NHPA requires that the EPA consider the effect of any action undertaken by the EPA, such as issuing air construction permits, on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. The EPA consults with the state historical preservation officer (SHPO), the tribal historical preservation officer (THPO), and members of the public to receive and consider their views and concerns about historic preservation during projects and activities that are considered covered undertakings. Since the Omaha Tribe has assumed the SHPO's responsibilities for Section 106 under Section 101(d) (2) of NHPA, thereby having a THPO, the EPA is consulting with the THPO in lieu of the SHPO.

The Village of Pender Municipal Power Plant is located at 205 North 3rd St. (NE Corner of Ivan St. & N 3rd St.) Pender, Nebraska 68047. The location is two blocks north of Main Street. According to the Thurston County Assessor's Office, Lots 3 and 4, Block 9 is the exact plot location within the Village of Pender.

The EPA considered whether issuing the proposed synthetic minor permit might affect historic properties. EPA searched the National Park Service National Register of Historic Places website <http://focus.nps.gov/nrhp> and found six National Register Sites listed for Thurston County. Two sites listed are within the Village of Pender.

First Thurston County Courthouse located at 400-412 Main Street is approximately 500 straight line feet southwest of the Village of Pender Municipal Power Plant.

Thurston County Courthouse (second) located between 5th & 6th Streets is approximately 1,000 straight line feet southwest of the Village of Pender Municipal Power Plant.

The proposed CAA Synthetic Minor Source permit action covers four existing Engine-Generators installed between 1952 and 1972. The facility is operated as a peak/standby plant. Electrical power can be generated quickly during peak electrical energy demands or during emergencies. The Village has a capacity lease agreement with Municipal Energy Agency of Nebraska (MEAN) for 3,955 kW.

In 2016 a 5,000-gallon diesel storage tank was installed to replace an old 12,000-gallon diesel storage tank. During a July 31, 2018, on-site visit EPA observed the new 5,000-gallon diesel storage tank installed outside the south side of the power plant building between two existing cooling units. The double-wall aboveground Clawson-manufactured "Fireguard" diesel storage tank replaced an old 12,000-gallon vertical aboveground tank. Given the low volatility of diesel fuel and assuming the new storage tank is well designed, operated and maintained, potential air emissions are expected to be relatively low. EPA estimates that compliance with the draft air permit will allow up to 13.9 pounds per year of volatile organic compounds (VOC) emissions from the new diesel storage tank. Actual VOC emissions reported for 2016 from the storage tank due to breathing loss and working loss were 0.05 pounds per year based on a throughput of 1,160 gallons. In 2017, the facility operated the engine-generators a total of 10 hours and used 1,371.2 gallons of diesel fuel.

The new horizontal 5,000-gallon cylindrical storage tank (8.5 feet in diameter and 14 feet long) has a footprint of roughly 125 square feet. The old vertical 12,000-gallon cylindrical tank had a 10-foot diameter with a structural footprint of roughly 80 square feet. A new metal building containing a new fuel metering system with day tanks for monitoring the supply of diesel to the power plant's four existing engine-generators was constructed at the old storage tank location. The new metal building has a structural footprint of roughly 15 feet by 15 feet, or 225 square feet. Based on the footprints associated with the 2016 installation of the new tank and 2017 installation of the new metal building, minus the footprint associated with the removal of the old tank, the facility's total structural footprint appears to have expanded roughly 270 square feet.

The proposed permit action does not authorize any emission increases from existing units, nor does it otherwise authorize any other physical modifications to the facility or its operations. The permit action will have the beneficial effect of controlling air pollution by establishing emissions limits below major source thresholds for all non-exempt operations currently at the facility. EPA considers the permit action the type of activity that does not have the potential to cause effects on historic properties.

#### **(4) Environmental Justice (EJ).**

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies. Meaningful involvement means that people have an opportunity to participate in decisions about activities that may affect their environment and/or health; the public's contribution can influence the regulatory agency's decision; their concerns will be



considered in the decision-making process; and the decision makers seek out and facilitate the involvement of those potentially affected. EPA's goal is to provide an environment where all people enjoy the same degree of protection from environmental and health hazards and equal access to the decision-making process to maintain a healthy environment in which to live, learn, and work.

EPA has developed an EJ mapping and screening tool called EJSCREEN. It is based on nationally consistent data and an approach that combines environmental and demographic indicators in maps and reports. The Pender Municipal Power Plant is in the Village of Pender, Nebraska and within the exterior boundaries of the Omaha Tribe's reservation. EPA reviewed screen reports for the half-mile and one-mile radius around the facility, as well as one for the census block group.

EJ areas of concern are determined by examining various environmental, demographic, and economic indicators. With EJSCREEN, EPA primarily looks at the EJ indicators. EPA uses an 80th percentile threshold to evaluate the potential for EJ concerns in a community, so if an area of interest exceeds the 80th percentile for one or more of the 11 EJ indicators, EPA considers that area to have a high potential for EJ concerns. In this case none of the EJ indicators exceeded the 80th percentile for this location. So, EPA would not consider this location as one that would have a high potential for EJ concerns.

The EPA is seeking input regarding possible EJ concerns and whether this proposed permit action, establishing emissions limits below major source thresholds for the operation of existing equipment at the facility, might cause a disproportionately high environmental or public health impact to a low income or minority population.

#### **(5) Consultation with the Omaha Tribe of Nebraska and Iowa.**

As part of EPA Region 7's federal program implementation and oversight responsibilities, EPA Region 7's policy is to consult on a government-to-government basis with federally recognized tribal governments. EPA Region 7 consulted with the Omaha Tribe regarding the issuance of this synthetic minor source permit for the Village of Pender Municipal Power Plant via written correspondence. The tribal point of contact for the consultation provided information to the agency supporting the issuance of this permit. See administrative record.

#### **(6) Public participation requirements.**

EPA Region 7 is soliciting public input to be considered prior to final decision-making regarding the issuance of the proposed synthetic minor source permit consistent with the 40 CFR 49.157 Public participation requirements.

EPA Region 7 is providing notice of the proposed permit action in the Pender Times. EPA Region 7 is making relevant information, for example, the draft permit and support materials, including this TSD, at the EPA website: <https://www.epa.gov/caa-permitting/status-tribal-air-permits-region-7>.

The comment period for the Public Notice (PN) of this draft permit starts with the date noted on the PN and ends 30 calendar-days later. The PN requests comments from interested individuals or organizations. A written request for a public hearing on the draft permit may also be submitted. Any request for a hearing must state the nature of the issues that the requestor proposes to raise at the hearing. In accordance with 40 CFR 49.157 (c) (1), the EPA will consider all comments submitted before the end of the public comment period. If there is a significant degree of public interest in a draft permit, a public hearing will be held on the contents of the draft permit. See 40 CFR 49.157(c) (4). The final permit will be issued in accordance with the provisions of 40 CFR 49.159.

Draft

## TSD Appendix A – 40 CFR Part 63, Subpart ZZZZ (MACT ZZZZ) Requirements

MACT ZZZZ Requirements for Pender Power Plant
<b>63.6585 Am I subject to this subpart?</b>
63.6585 - applies: owner or operator of a stationary RICE at an area source of HAP emissions
<b>63.6590 What parts of my plant does this subpart cover?</b>
63.6590 (a) (1) (iii) - applies to affected existing stationary RICE at an area source of HAP emissions constructed before June 12, 2006.
<b>63.6595 When do I have to comply with this subpart?</b>
63.6595 (a) - <b>*** Already Completed before May 3, 2013 deadline ***</b> If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013.
63.6595 (c) - If you own or operate an affected source, you must meet the applicable notification requirements in <b>63.6645</b> and in <b>40 CFR part 63, subpart A</b> .
<b>63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?</b>
63.6603 Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in <b>63.6620</b> and <b>Table 4</b> to this subpart.
63.6603 (a) If you own/operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in <b>Table 2d</b> to this subpart & the operating limitations in <b>Table 2b</b> to this subpart that apply to you.
<b>63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?</b>
63.6604 (a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in <b>40 CFR 80.510(b)</b> for nonroad diesel fuel.
<b>63.6605 What are my general requirements for complying with this subpart?</b>
63.6605 (a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.
63.6605 (b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard 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.
<b>63.6612 *** Already Completed before May 3, 2013 deadline *** By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate ... an existing stationary RICE located at an area source of HAP emissions?</b>
63.6612 <b>*** Already Completed before May 3, 2013 deadline ***</b> If you own or operate an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.
63.6612 (a) <b>*** Already Completed before May 3, 2013 deadline ***</b> You must conduct any initial performance test or other initial compliance demonstration according to <b>Tables 4 and 5</b> to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in <b>63.6595</b> and according to the provisions in <b>63.7(a)(2)</b> .
<b>63.6615 When must I conduct subsequent performance tests?</b>
63.6615 If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in <b>Table 3</b> of this subpart.
<b>63.6620 What performance tests and other procedures must I use?</b>
63.6620 What performance tests and other procedures must I use?
(a) You must conduct each performance test in <b>Tables 3 and 4</b> of this subpart that applies to you.
63.6620 (b) Each performance test must be conducted according to the requirements that this subpart specifies in <b>Table 4</b> to this subpart.
63.6620 (d) You must conduct three separate test runs for each performance test required in this section, as specified in <b>63.7(e) (3)</b> . Each test run must last at least 1 hour, unless otherwise specified in this subpart.
<b>63.6620 (e) (1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:</b>
$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 1})$
Where:
Ci = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet, Co = concentration of CO, THC, or formaldehyde at the control device outlet, and R = percent reduction of CO, THC, or formaldehyde emissions.

63.6620 (e) (2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO<sub>2</sub>). If pollutant concentrations are to be corrected to 15 percent oxygen and CO<sub>2</sub> concentration is measured in lieu of oxygen concentration measurement, a CO<sub>2</sub> correction factor is needed. Calculate the CO<sub>2</sub> correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific Fo value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209 F_d}{F_c} \quad (\text{Eq. 2})$$

Where:

Fo = Fuel factor based on the ratio of oxygen volume to the ultimate CO<sub>2</sub> volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

Fd = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm<sup>3</sup>/J (dscf/106 Btu).

Fc = Ratio of the volume of CO<sub>2</sub> produced to the gross calorific value of the fuel from Method 19, dsm<sup>3</sup>/J (dscf/106 Btu)

(ii) Calculate the CO<sub>2</sub> correction factor for correcting measurement data to 15 percent O<sub>2</sub>, as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \quad (\text{Eq. 3})$$

Where:

XCO<sub>2</sub> = CO<sub>2</sub> correction factor, percent.

5.9 = 20.9 percent O<sub>2</sub>—15 percent O<sub>2</sub>, the defined O<sub>2</sub> correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O<sub>2</sub> using CO<sub>2</sub> as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \quad (\text{Eq. 4})$$

Where:

Cadj = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O<sub>2</sub>.

Cd = Measured concentration of CO, THC, or formaldehyde, uncorrected.

XCO<sub>2</sub> = CO<sub>2</sub> correction factor, percent.

%CO<sub>2</sub> = Measured CO<sub>2</sub> concentration measured, dry basis, percent.

63.6620 (i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

**63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?**

63.6625 (b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section.

63.6625 (b) (1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in 63.8(d). As specified in 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

63.6625 (b) (1) (i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

63.6625 (b) (1) (ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;

63.6625 (b) (1) (iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

63.6625 (b) (1) (iv) Ongoing operation and maintenance procedures in accordance with provisions in 63.8(c)(1)(ii) and (c)(3); and

63.6625 (b) (1) (v) Ongoing reporting and recordkeeping procedures in accordance with provisions in 63.10(c), (e)(1), and (e)(2)(i).

63.6625 (b) (2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site specific monitoring plan.

63.6625 (b) (3) The CPMS must collect data at least once every 15 minutes (see also 63.6635).

63.6625 (b) (4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

63.6625 (b) (5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

63.6625 (b) (6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

63.6625 (g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase

ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements.
63.6625 (g) (1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or
63.6625 (g) (2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.
63.6625 (h) If you operate a <del>new, reconstructed, or</del> existing stationary engine, you 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, after which time the emission standards applicable to all times other than startup in <del>Tables 1a, 2a, 2c, and 2d</del> to this subpart apply.
<b>63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?</b>
63.6630 (a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to <del>Table 5</del> of this subpart.
63.6630 (b) During the initial performance test, you must establish each operating limitation in <del>Tables 1b and 2b</del> of this subpart that applies to you.
63.6630 (c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in <del>63.6645</del> .
<b>63.6635 How do I monitor and collect data to demonstrate continuous compliance?</b>
63.6635 (a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.
63.6635 (b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
63.6635 (c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.
<b>63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?</b>
63.6640 (a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in <del>Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d</del> to this subpart that apply to you according to methods specified in <del>Table 6</del> to this subpart.
63.6640 (b) You must report each instance in which you did not meet each emission limitation or operating limitation in <del>Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d</del> to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in <del>63.6650</del> . If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.
<b>63.6645 What notifications must I submit and when?</b>
63.6645 (a) (2) You must submit all of the notifications in <del>63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h)</del> that apply to you by the dates specified if you own or operate... (2) An existing stationary RICE located at an area source of HAP emissions.
63.6645 (g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in <del>63.7(b)(1)</del> .
63.6645 (h) If you are required to conduct a performance test or other initial compliance demonstration as specified in <del>Tables 4 and 5</del> to this subpart, you must submit a Notification of Compliance Status according to <del>63.9(h)(2)(ii)</del> .
63.6645 (h) (2) For each initial compliance demonstration required in <del>Table 5</del> to this subpart that includes a performance test conducted according to the requirements in <del>Table 3</del> to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to <del>63.10(d)(2)</del> .
<b>63.6650 What reports must I submit and when?</b>
63.6650 (a) You must submit each report in <del>Table 7</del> of this subpart that applies to you.
63.6650 (b) Unless the Administrator has approved a different schedule for submission of reports under <del>63.10(a)</del> , you must submit each report by the date in <del>Table 7</del> of this subpart and according to the requirements in paragraphs <del>(b)(1) through (b)(9)</del> of this section.
63.6650 (b) (1) For semiannual Compliance reports, <del>the first Compliance report</del> must cover the period beginning on the compliance date that is specified for your affected source in <del>63.6595</del> and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in <del>63.6595</del> .
63.6650 (b) (2) For semiannual Compliance reports, <del>the first Compliance report</del> must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in <del>63.6595</del> .
63.6650 (b) (3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
63.6650 (b) (4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.
63.6650 (b) (5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii) (A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs <del>(b)(1) through (b)(4)</del> of this section.

63.6650 (b) (6) For annual Compliance reports, <b>the first Compliance report</b> must cover the period beginning on the compliance date that is specified for your affected source in 63.6595 and ending on December 31.
63.6650 (b) (7) For annual Compliance reports, <b>the first Compliance report</b> must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in 63.6595.
63.6650 (b) (8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.
63.6650 (b) (9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.
63.6650 (c) The Compliance report must contain the information in paragraphs <b>(c)(1) through (6)</b> of this section.
63.6650 (c) (1) Company name and address.
63.6650 (c) (2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.
63.6650 (c) (3) Date of report and beginning and ending dates of the reporting period.
63.6650 (c) (4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with <b>63.6605(b)</b> , including actions taken to correct a malfunction.
63.6650 (c) (5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.
63.6650 (c) (6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in <b>63.8(c)(7)</b> , a statement that there were no periods during which the CMS was out-of-control during the reporting period.
63.6650 (e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs <b>(c)(1) through (4) and (e)(1) through (12)</b> of this section. (1) The date and time that each malfunction started and stopped. (2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks. (3) The date, time, and duration that each CMS was out-of-control, including the information in <b>63.8(c)(8)</b> . (4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period. (5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period. (6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes. (7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period. (8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE. (9) A brief description of the stationary RICE. (10) A brief description of the CMS. (11) The date of the latest CMS certification or audit. (12) A description of any changes in CMS, processes, or controls since the last reporting period.
63.6655 What records must I keep?
63.6655 (a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs <b>(a)(1) through (a)(5), and (b)(1) through (b)(3) and (e)</b> of this section.
63.6655 (a) (1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in <b>63.10(b)(2)(xiv)</b> . (2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. (3) Records of performance tests and performance evaluations as required in <b>63.10(b)(2)(viii)</b> . (4) Records of all required maintenance performed on the air pollution control and monitoring equipment. (5) Records of actions taken during periods of malfunction to minimize emissions in accordance with <b>63.6605(b)</b> , including actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
63.6655 (b) (1) Records described in <b>63.10(b)(2)(vi) through (xi)</b> . (2) Previous (i.e., superseded) versions of the performance evaluation plan as required in <b>63.8(d)(3)</b> . (3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in <b>63.8(f)(6)(i)</b> , if applicable.
63.6655 (d) You must keep the records required in <b>Table 6</b> of this subpart to show continuous compliance with each emission or operating limitation that applies to you.
63.6660 In what form and how long must I keep my records?
63.6660 (a) Your records must be in a form suitable and readily available for expeditious review according to <b>63.10(b)(1)</b> .
63.6660 (b) As specified in <b>63.10(b)(1)</b> , you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
63.6660 (c) You must 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 <b>63.10(b)(1)</b> .
<b>63.6665</b> What parts of the General Provisions apply to me?
<b>Table 8</b> to this subpart shows which parts of the General Provisions in <b>63.1 through 63.15</b> apply to you.
<b>63.6670</b> Who implements and enforces this subpart?
<b>63.6675</b> What definitions apply to this subpart?
<b>Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for ... Existing CI Stationary RICE &gt;500 HP</b>
<b>Table 2b - As stated in 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640</b> , you must comply with the following operating limitations for existing CI stationary RICE >500 HP: 2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.
<b>Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions</b>
<b>Table 2d - As stated in 63.6603 and 63.6640</b> , you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions: 3. Non-Emergency, non-black start CI stationary RICE >500 HPs a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O <sub>2</sub> ; or b. Reduce CO emissions by 70 percent or more.
<b>Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests</b>
<b>Table 3 - As stated in 63.6615 and 63.6620</b> , you must comply with the following subsequent performance test requirements: 4. For each existing non-emergency, non-black start CI stationary RICE >500 HP that are <b>not limited use</b> stationary RICE, complying with the requirement to <b>Limit or reduce CO emissions and not using a CEMS</b> , must <b>Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first</b> . 5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are <b>limited use</b> stationary RICE, complying with the requirement to <b>Limit or reduce CO emissions and not using a CEMS</b> , must <b>Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first</b> .

**Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests**

As stated in 63.6610, 63.6611, **63.6620**, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

For each ...	Complying with the Requirement to ...	You must ...	Using ...	According to the following requirements ...
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Select the sampling port location and the number/ location of traverse points at the inlet and outlet of the control device; and		(a) For CO and O <sub>2</sub> measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter and the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Measure the O <sub>2</sub> at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM Method D6522-00 (Reapproved 2005)ac (heated probe not necessary)	b) Measurements to determine O <sub>2</sub> must be made at the same time as the measurements for CO concentration.
		iii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005)abc (heated probe not necessary) or Method 10 of 40 CFR part 60, appendix A-4	(c) The CO concentration must be at 15 percent O <sub>2</sub> , dry basis.
3. Stationary RICE	a. limit the concentration of	i. Select the sampling port location and the number/ location of		(a) For formaldehyde, CO, O <sub>2</sub> , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in

	formaldehyde or CO in the stationary RICE exhaust	traverse points at the exhaust of the stationary RICE; and		diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter and the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A. If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O2 concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM Method D6522-00 (Reapproved 2005)a (heated probe not necessary)	a) Measurements to determine O2 concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A-3, or Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03a	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03a, provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. measure CO at the exhaust of the stationary RICE	(1) Method 10 of 40 CFR part 60, appendix A-4, ASTM Method D6522-00 (2005)ac, Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03a	(a) CO concentration must be at 15 percent O2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

<sup>a</sup>You may also use Methods 3A and 10 as options to ASTM-D6522-00 (2005). You may obtain a copy of ASTM-D6522-00 (2005) from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

<sup>b</sup>You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[79 FR 11290, Feb. 27, 2014]



**Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements**

As stated in 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

For each . . .	Complying with the Requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed nonemergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 63.6625 (b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 63.6625 (b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.

[78 FR 6712, Jan. 30, 2013]

**Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance with Emission Limitations, and Other Requirements**

As stated in 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and ii. Collecting the catalyst inlet temperature data according to 63.6625 (b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and ii. Collecting the catalyst inlet temperature data according to 63.6625 (b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.

[78 FR 6715, Jan. 30, 2013]

**Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports**

As stated in 63.6650, you must comply with the following requirements for reports:

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
<p>1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE &gt;500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE &gt;500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE &gt;300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE &gt;500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP</p>	<p>Compliance report</p>	<p>a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or</p>	<p>i. Semiannually according to the requirements in 63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in 63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.</p>
		<p>b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in 63.8(c)(7), the information in 63.6650(e); or</p>	<p>i. Semiannually according to the requirements in 63.6650(b).</p>
		<p>c. If you had a malfunction during the reporting period, the information in 63.6650(c)(4).</p>	<p>i. Semiannually according to the requirements in 63.6650(b).</p>

[78 FR 6719, Jan. 30, 2013]

**Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.**  
As stated in 63.6665, you must comply with the following applicable general provisions.

**General provisions citation** | **Subject of citation** | **Applies to subpart (Yes/No)** | **Explanation**

§63.1	General applicability of the General Provisions	Yes.	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and abbreviations	Yes.	
§63.4	Prohibited activities and circumvention	Yes.	
§63.5	Construction and reconstruction	Yes.	
§63.6(a)	Applicability	Yes.	
§63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§63.6(b)(5)	Notification	Yes.	
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§63.6(c)(3)-(4)	[Reserved]		
§63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§63.6(d)	[Reserved]		
§63.6(e)	Operation and maintenance	No.	
§63.6(f)(1)	Applicability of standards	No.	
§63.6(f)(2)	Methods for determining compliance	Yes.	
§63.6(f)(3)	Finding of compliance	Yes.	
§63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§63.6(h)	Opacity and visible emission standards	No.	Subpart ZZZZ does not contain opacity or visible emission standards.
§63.6(i)	Compliance extension procedures and criteria	Yes.	
§63.6(j)	Presidential compliance exemption	Yes.	
§63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§63.6610, 63.6611, and 63.6612.
§63.7(a)(3)	CAA section 114 authority	Yes.	
§63.7(b)(1)	Notification of performance test	Yes	Except that §63.7(b)(1) only applies as specified in §63.6645.
§63.7(b)(2)	Notification of rescheduling	Yes	Except that §63.7(b)(2) only applies as specified in §63.6645.
§63.7(c)	Quality assurance/test plan	Yes	Except that §63.7(c) only applies as specified in §63.6645.
§63.7(d)	Testing facilities	Yes.	
§63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at §63.6620.
§63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at §63.6620.
§63.7(e)(3)	Test run duration	Yes.	
§63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§63.7(f)	Alternative test method provisions	Yes.	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§63.7(h)	Waiver of tests	Yes.	
§63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at §63.6625.
§63.8(a)(2)	Performance specifications	Yes.	
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring for control devices	No.	
§63.8(b)(1)	Monitoring	Yes.	
§63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	
§63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§63.8(c)(1)(i)	Routine and predictable SSM	No	
§63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§63.8(d)	CMS quality control	Yes.	
§63.8(e)	CMS performance evaluation	Yes	Except for §63.8(e)(5)(ii), which applies to COMS. Except that §63.8(e) only applies as specified in §63.6645.
§63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that §63.8(f)(4) only applies as specified in §63.6645.
§63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that §63.8(f)(6) only applies as specified in §63.6645.
§63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§63.6635 and 63.6640.
§63.9(a)	Applicability and State delegation of notification requirements	Yes.	

- §63.9(b)(1)-(5) Initial notifications **Yes** Except that §63.9(b)(3) is reserved. Except that §63.9(b) only applies as specified in §63.6645.
- §63.9(c) Request for compliance extension **Yes** Except that §63.9(c) only applies as specified in §63.6645.
- §63.9(d) Notification of special compliance requirements for new sources **Yes** Except that §63.9(d) only applies as specified in §63.6645.
- §63.9(e) Notification of performance test **Yes** Except that §63.9(e) only applies as specified in §63.6645.
- §63.9(f) Notification of visible emission (VE)/opacity test **No** Subpart ZZZZ does not contain opacity or VE standards.
- §63.9(g)(1) Notification of performance evaluation **Yes** Except that §63.9(g) only applies as specified in §63.6645.
- §63.9(g)(2) Notification of use of COMS data **No** Subpart ZZZZ does not contain opacity or VE standards.
- §63.9(g)(3) Notification that criterion for alternative to RATA is exceeded **Yes** If alternative is in use. Except that §63.9(g) only applies as specified in §63.6645.
- §63.9(h)(1)-(6) Notification of compliance status **Yes** Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations.
- §63.9(h)(4) is reserved. Except that §63.9(h) only applies as specified in §63.6645.
- §63.9(i) Adjustment of submittal deadlines **Yes**.
- §63.9(j) Change in previous information **Yes**.
- §63.10(a) Administrative provisions for recordkeeping/reporting **Yes**.
- §63.10(b)(1) Record retention **Yes** Except that the most recent 2 years of data do not have to be retained on site.
- §63.10(b)(2)(i)-(v) Records related to SSM **No**.
- §63.10(b)(2)(vi)-(xi) Records **Yes**.
- §63.10(b)(2)(xii) Record when under waiver **Yes**.
- §63.10(b)(2)(xiii) Records when using alternative to RATA **Yes** For CO standard if using RATA alternative.
- §63.10(b)(2)(xiv) Records of supporting documentation **Yes**.
- §63.10(b)(3) Records of applicability determination **Yes**.
- §63.10(c) Additional records for sources using CEMS **Yes** Except that §63.10(c)(2)-(4) and (9) are reserved.
- §63.10(d)(1) General reporting requirements **Yes**.
- §63.10(d)(2) Report of performance test results **Yes**.
- §63.10(d)(3) Reporting opacity or VE observations **No** Subpart ZZZZ does not contain opacity or VE standards.
- §63.10(d)(4) Progress reports **Yes**.
- §63.10(d)(5) Startup, shutdown, and malfunction reports **No**.
- §63.10(e)(1) and (2)(i) Additional CMS Reports **Yes**.
- §63.10(e)(2)(ii) COMS-related report **No** Subpart ZZZZ does not require COMS.
- §63.10(e)(3) Excess emission and parameter exceedances reports **Yes**. Except that §63.10(e)(3)(i) (C) is reserved.
- §63.10(e)(4) Reporting COMS data **No** Subpart ZZZZ does not require COMS.
- §63.10(f) Waiver for recordkeeping/reporting **Yes**.
- §63.11 Flares **No**.
- §63.12 State authority and delegations **Yes**.
- §63.13 Addresses **Yes**.
- §63.14 Incorporation by reference **Yes**.
- §63.15 Availability of information **Yes**.