

Date of Posting: December 15, 2025

Name of Permittee: NorthWestern Energy

Facility Name: Laurel Generating Station (Yellowstone County Generating Station)

Physical Site Location: Parcel 2, East of Sewer Plant Road, Laurel, Montana

Sent via email: sady.babcock@northwestern.com

RE: Draft Title V Operating Permit #OP5261-00

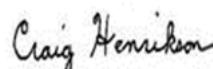
The Montana Department of Environmental Quality – Air Quality Bureau (DEQ) has prepared the attached Draft Operating Permit #OP5261-00, for NorthWestern Energy, located in Laurel, Montana. The cover page and associated Technical Review Document provide additional information regarding the current permit action.

If you have any questions contact the permitter, Craig Henrikson, as listed below.

Sincerely,



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AIR QUALITY OPERATING PERMIT #OP5261-00

Initial Application Received:	12/20/2024
Application Deemed Administratively Complete:	01/23/2025
Application Deemed Substantively Complete:	03/05/2025
Draft Issue Date:	12/15/2025
Proposed Issue Date:	
End of EPA 45-day Review:	
Date of Decision:	
Effective Date:	
Expiration Date:	
Complete Renewal Application Due:	
AFS Number:	030-111-0051

Northwestern Energy
Yellowstone County Generating Station
11 East Park Street
Butte Montana, 59701

NorthWestern Energy (NWE) is authorized by the Montana Department of Environmental Quality (DEQ) to operate a stationary source of air contaminants consisting of the emission units described in this permit (Montana Code Annotated (MCA) Sections 75-2-217 and 218, and the Administrative Rules of Montana (ARM) Title 17, Chapter 8, Subchapter 12, Operating Permit Program, ARM 17.8.1201, *et seq.*).

NWE is allowed to discharge air pollutants in accordance with the conditions of this permit until it expires, is modified, or is revoked. All conditions in this permit are federally and state enforceable unless otherwise specified. Requirements which are state-only enforceable are identified as such. A copy of this permit must be kept at the facility or a DEQ-approved location.

Permit Issuance and Appeal Process:

DEQ is providing a public comment period from December 15, 2025, through January 14, 2026, on this Draft Permit (ARM 17.8.1232). Written comments must be received by January 14, 2026. Comments may address DEQ's analysis and determination, or information submitted by the applicant. Requests for a public hearing must be made in writing during the public comment period.

DEQ intends to issue the Proposed Permit after the comment period has expired and after any required public hearing. The Proposed Permit will be sent to the United States Environmental Protection Agency (EPA). The EPA is then allowed a 45-day review of the permit.

After the EPA comment period has expired, DEQ intends to issue a Decision on the permit. DEQ's Decision to issue a permit will be effective 30 days after the date of the Decision (Section 75-2-218, MCA). An appeal of the Decision must be made to the Board of Environmental Review (Board) by filing a request for a hearing within 30 days of the issued Decision. For more information, contact DEQ at (406) 444-3490 or DEQAir@mt.gov

Montana Air Quality Operating Permit
Department of Environmental Quality

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Terms not otherwise defined in this permit or in the Definitions and Abbreviations Appendix of this permit have the meaning assigned to them in the referenced regulations.

SECTION I. GENERAL INFORMATION

The following general information is provided pursuant to ARM 17.8.1210(1).

Company Name: NorthWestern Energy

Mailing Address: 11 East Park Street

City: Butte State: Montana Zip: 59701

Plant Location: Parcel 2, East of Sewer Plant Road, Laurel, Montana

Responsible Official: Sady Babcock

Alternate Responsible Official:

Facility Contact Person: Jason Boeckel

Primary SIC Code: 4911- Electric Services

Nature of Business: Electricity Generation

Description of Process: Natural Gas-Fired Reciprocating Internal Combustion Engines

SECTION II. SUMMARY OF EMISSIONS UNITS

The emissions units regulated by this permit are the following (ARM 17.8.1211):

Emissions Unit ID	Description	Pollution Control Device/Practice
EU001	Caterpillar Natural Gas-Fired Reciprocating Internal Combustion Engine (RICE) Generator Set	Selective Catalytic Reduction (SCR) and Oxidation Catalyst
EU002	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU003	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU004	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU005	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU006	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU007	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU008	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU009	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU010	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU011	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU012	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU013	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU014	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU015	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU016	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU017	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU018	Caterpillar Natural Gas-Fired RICE Generator Set	SCR and Oxidation Catalyst
EU019	Emergency Power Diesel Engine (Gen Set) Up to a 2,682-brake horsepower (bhp) rating	40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
EU020	Emergency Engine for Fire Pump (Gen Set) Up to a 315 bhp rating	40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
EU021	Dew Point Heater up to 1.1 MMBtu/hr	Good Combustion Practices and only Pipeline Quality Natural Gas

SECTION III. PERMIT CONDITIONS

The following requirements and conditions are applicable to the facility or to specific emissions units located at the facility (ARM 17.8.1211, 1212, and 1213).

A. Facility-Wide

Conditions	Rule Citation	Rule Description	Pollutant/ Parameter	Limit
A.1	ARM 17.8.105	Testing Requirements	Testing Requirements	-----
A.2	ARM 17.8.304(1)	Visible Air Contaminants	Opacity	40%
A.3	ARM 17.8.304(2)	Visible Air Contaminants	Opacity	20%
A.4	ARM 17.8.308(1)	Particulate Matter, Airborne	Fugitive Opacity	20%
A.5	ARM 17.8.308(2)	Particulate Matter, Airborne	Reasonable Precautions	-----
A.6	ARM 17.8.308	Particulate Matter, Airborne	Reasonable Precaution, Construction	20%
A.7	ARM 17.8.309	Particulate Matter, Fuel Burning Equipment	Particulate Matter	$E = 0.882 * H^{-0.1664}$ Or $E = 1.026 * H^{0.233}$
A.8	ARM 17.8.310	Particulate Matter, Industrial Processes	Particulate Matter	$E = 4.10 * P^{0.67}$ or $E = 55 * P^{0.11} - 40$
A.9	ARM 17.8.322(4)	Sulfur Oxide Emissions, Sulfur in Fuel	Sulfur in Fuel (liquid or solid fuels)	1 lb/MMBtu fired
A.10	ARM 17.8.322(5)	Sulfur Oxide Emissions, Sulfur in Fuel	Sulfur in Fuel (gaseous)	50 gr/100 CF
A.11	ARM 17.8.324(3)	Hydrocarbon Emissions, Petroleum Products	Gasoline Storage Tanks	-----
A.12	ARM 17.8.324	Hydrocarbon Emissions, Petroleum Products	65,000 Gallon Capacity	-----
A.13	ARM 17.8.324	Hydrocarbon Emissions, Petroleum Products	Oil-effluent Water Separator	-----
A.14	ARM 17.8.342	NESHAPs General Provisions	SSM Plans	Submittal
A.15	ARM 17.8.1211(1)(c) and 40 CFR Part 98	Greenhouse Gas Reporting	Reporting	-----

A.16	ARM 17.8.1212	Reporting Requirements	Prompt Deviation Reporting	-----
A.17	ARM 17.8.1212	Reporting Requirements	Compliance Monitoring	-----
A.18	ARM 17.8.1207	Reporting Requirements	Annual Certification	-----

Conditions

A.1. Pursuant to ARM 17.8.105, any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of DEQ, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by DEQ.

Compliance demonstration frequencies that list “as required by DEQ” refer to ARM 17.8.105. In addition, for such sources, compliance with limits and conditions listing “as required by DEQ” as the frequency, is verified annually using emission factors and engineering calculations by DEQ’s compliance inspectors during the annual emission inventory review; in the case of Method 9 tests, compliance is monitored during the regular inspection by the compliance inspector.

A.2. Pursuant to ARM 17.8.304(1), NWE shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes, unless otherwise specified by rule or in this permit.

A.3. Pursuant to ARM 17.8.304(2), NWE shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes, unless otherwise specified by rule or in this permit.

A.4. Pursuant to ARM 17.8.308(1), NWE shall not cause or authorize the production, handling, transportation, or storage of any material unless reasonable precautions to control emissions of particulate matter are taken. Such emissions of airborne particulate matter from any stationary source shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes, unless otherwise specified by rule or in this permit.

A.5. Pursuant to ARM 17.8.308(2), NWE shall not cause or authorize the use of any street, road or parking lot without taking reasonable precautions to control emissions of airborne particulate matter, unless otherwise specified by rule or in this permit.

A.6. Pursuant to ARM 17.8.308, NWE shall not operate a construction site or demolition project unless reasonable precautions are taken to control emissions of airborne particulate matter. Such emissions of airborne particulate matter from any stationary source shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes, unless otherwise specified by rule or in this permit.

A.7. Pursuant to ARM 17.8.309, unless otherwise specified by rule or in this permit, NWE shall not cause or authorize particulate matter caused by the combustion of fuel to be discharged from any stack or chimney into the outdoor atmosphere in excess of the maximum allowable emissions of particulate matter for existing fuel burning equipment and new fuel burning equipment calculated using the following equations:

For existing fuel burning equipment (installed before November 23, 1968):

$$E = 0.882 * H^{-0.1664}$$

For new fuel burning equipment (installed on or after November 23, 1968):

$$E = 1.026 * H^{-0.233}$$

Where H is the heat input capacity in million BTU (MMBtu) per hour and E is the maximum allowable particulate emissions rate in pounds per MMBtu.

A.8. Pursuant to ARM 17.8.310, unless otherwise specified by rule or in this permit, NWE shall not cause or authorize particulate matter to be discharged from any operation, process, or activity into the outdoor atmosphere in excess of the maximum hourly allowable emissions of particulate matter calculated using the following equations:

For process weight rates up to 30 tons per hour:

$$E = 4.10 * P^{0.67}$$

For process weight rates in excess of 30 tons per hour:

$$E = 55.0 * P^{0.11} - 40$$

Where E = rate of emissions in pounds per hour and P = process weight rate in tons per hour.

A.9. Pursuant to ARM 17.8.322(4), NWE shall not burn liquid or solid fuels containing sulfur in excess of 1 pound per million BTU fired, unless otherwise specified by rule or in this permit.

A.10. Pursuant to ARM 17.8.322(5), NWE shall not burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions, unless otherwise specified by rule or in this permit.

A.11. Pursuant to ARM 17.8.324(3), NWE shall not load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device or is a pressure tank as described in ARM 17.8.324(1), unless otherwise specified by rule or in this permit.

A.12. Pursuant to ARM 17.8.324, unless otherwise specified by rule or in this permit, NWE shall not place, store or hold in any stationary tank, reservoir or other container of more than 65,000 gallon capacity any crude oil, gasoline or petroleum distillate having a vapor pressure of 2.5 pounds per square inch absolute or greater under actual storage conditions, unless such tank, reservoir or other container is a pressure tank maintaining working pressure sufficient at all times to prevent hydrocarbon vapor or gas loss to the atmosphere, or is designed and equipped with a vapor loss control device, properly installed, in good working order and in operation.

A.13. Pursuant to ARM 17.8.324, unless otherwise specified by rule or in this permit, NWE shall not use any compartment of any single or multiple-compartment oil-effluent water separator,

which compartment receives effluent water containing 200 gallons a day or more of any petroleum product from any equipment processing, refining, treating, storing or handling kerosene or other petroleum product of equal or greater volatility than kerosene, unless such compartment is equipped with a vapor loss control device, constructed so as to prevent emission of hydrocarbon vapors to the atmosphere, properly installed, in good working order and in operation.

- A.14. Pursuant to ARM 17.8.302 and ARM 17.8.342, and 40 CFR 63.6, the owner or operator must maintain at the affected source a current startup, shutdown, and malfunction plan (if a plan is required by 40 CFR 63.6(e)(3) and the Table for General Provision Applicability of the appropriate subpart), meeting the requirements of 40 CFR 63.6, and must make the plan available upon request. In addition, if the startup, shutdown, and malfunction plan is subsequently revised, the owner or operator must maintain at the affected source each previous (i.e., superseded) version of the startup, shutdown, and malfunction plan, and must make each such previous version available for a period of 5 years after revision of the plan. The owner or operator shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in 40 CFR 63.10(d)(5).
- A.15. Pursuant to ARM 17.8.1211(1)(c) and 40 CFR Part 98, NWE shall comply with requirements of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting, as applicable (ARM 17.8.1211(1)(c), NOT an applicable requirement under Title V).
- A.16. NWE shall promptly report deviations from permit requirements including those attributable to upset conditions, as upset is defined in the permit. To be considered prompt, deviations shall be reported to DEQ using the schedule and content as described in Section V.E (unless otherwise specified in an applicable requirement) (ARM 17.8.1212).
- A.17. On or before February 15 and August 15 of each year, NWE shall submit to DEQ the compliance monitoring reports required by Section V.D. These reports must contain all information required by Section V.D, as well as the information required by each individual emissions unit. For the reports due by February 15 of each year, NWE may submit a single report, provided that it contains all the information required by Section V.B & V.D. Per ARM 17.8.1207,

any application form, report, or compliance certification submitted pursuant to ARM Title 17, Chapter 8, Subchapter 12 (including semiannual monitoring reports), shall contain certification by a responsible official of truth, accuracy and completeness. This certification and any other certification required under ARM Title 17, Chapter 8, Subchapter 12, shall state that, “based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.”
- A.18. By February 15 of each year, NWE shall submit to DEQ the compliance certification required by Section V.B. The annual certification required by Section V.B must include a statement of compliance based on the information available which identifies any observed, documented or otherwise known instance of noncompliance for each applicable requirement. Per ARM 17.8.1207,

any application form, report, or compliance certification submitted pursuant to ARM Title 17, Chapter 8, Subchapter 12 (including annual certifications), shall contain certification by a responsible official of truth, accuracy and completeness. This certification and any other certification required under ARM Title 17, Chapter 8, Subchapter 12, shall state that, “based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.”

B. EU001-EU018-Eighteen Natural Gas-Fired RICE:

Condition(s)	Pollutant/Parameter	Permit Limit	Compliance Demonstration Method	Frequency	Reporting Requirements
B.1.a, B.12, B.13, B.21, B.27, B.29, B.30	NOx	1.70 lb/hr	Method 7E	Every 8,760 hours of operation or 3 years, whichever comes first	Semiannual
B.1.b, B.12, B.13, B.21, B.27, B.29, B.30	CO	1.59 lb/hr	Method 10	Every 8,760 hours of operation or 3 years, whichever comes first	Semiannual
B.1.c, B.12, B.13, B.21, B.27, B.29, B.30	VOC	2.44 lb/hr	Method 25A	Every 8,760 hours of operation or 3 years, whichever comes first	Semiannual
B.2, B.14, B.22, B.23, B.29, B.30	PM, PM10 and PM2.5	Pipeline quality natural gas	Pipeline quality natural gas	Ongoing	Semiannual
B.3, B.15, B.24, B.29, B.30	Oxidation Catalyst for CO and VOC	Operate and Maintain the Oxidation Catalyst	Recordkeeping	Ongoing	Semiannual
B.4, B.15, B.24, B.29, B.30	SCR for NOx	Operate and Maintain the SCR	Recordkeeping	Ongoing	Semiannual
B.5, B.16, B.24, B.29, B.30	Limit total number of transient events (cold start-ups, warm start-ups, hot start-ups and shutdowns)	Cold start-ups: 13,140 Warm/Hot startups: 19,710 Shutdowns: 32,850	Recordkeeping	Ongoing	Semiannual
B.6, B.17, B.24, B.29, B.30	Good combustion practices to limit	Good combustion practices	Good Combustion Practices	Ongoing	Semiannual

	emissions during transient events				
B.7, B.14, B.22, B.24, B.29, B.30	Opacity	20%	Pipeline Quality natural gas	Ongoing	Semiannual
B.8, B.18, B.28, B.29, B.30	40 CFR 60, Subpart JJJJ	40 CFR 60, Subpart JJJJ	40 CFR 60, Subpart JJJJ	40 CFR 60, Subpart JJJJ	Semiannual
B.9, B.19, B.28, B.29, B.30	40 CFR 63, Subpart ZZZZ	40 CFR 63, Subpart ZZZZ	40 CFR 63, Subpart ZZZZ	40 CFR 63, Subpart ZZZZ	Semiannual
B.10, B.20, B.26, B.29	NOx CAM Plan	ARM 17.8.1506	Provisions of CAM Plan, Appendix E	Ongoing	Semiannual
B.11, B.20, B.26, B.29	CO CAM Plan	ARM 17.8.1506	Provisions of CAM Plan, Appendix F	Ongoing	Semiannual

Conditions

B.1. Emissions from each RICE generator set shall not exceed the following based on a 1-hour average during steady state operation when RICE are not in either cold start-up, warm start-up, hot start-up or shutdown mode. Cold start-up mode begins with “ignition to Minimum Emissions Compliance Load (MECL)” and lasts for 30 minutes. Warm start-ups and hot start-ups begin with ignition to MECL and lasts for 8 minutes. Shutdown runs from MECL to closure of the fuel supply and last 6.2 minutes (ARM 17.8.752 and ARM 17.8.1211).

- Nitrogen oxides (NOx) 1.70 pounds per hour (lb/hr) for each of the 18 RICE generator sets, using Method 7E.
- Carbon monoxide (CO) 1.59 lb/hr for each of the 18 RICE sets, using EPA Method 10.
- Volatile organic compounds (VOC) 2.44 lb/hr including formaldehyde for each of the 18 RICE generator sets, using EPA Method 25A.

B.2. NWE shall combust only pipeline quality natural gas for the RICE to minimize emissions of particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM10), and PM with an aerodynamic diameter of 2.5 microns or less (PM2.5) (ARM 17.8.752 and ARM 17.8.1211).

B.3. NWE shall install, operate, and maintain an oxidation catalyst on each RICE generator set for control of CO and VOCs (ARM 17.8.752 and ARM 17.8.1211).

B.4. NWE shall install, operate, and maintain Selective Catalytic Reduction (SCR) on each RICE generator set for control of NOx (ARM 17.8.752 and ARM 17.8.1211).

B.5. NWE shall limit the total number of transient events which include cold start-up, warm start-up, hot start-up and shutdown to the following event totals during any rolling 12-month time period (ARM 17.8.752 and ARM 17.8.1211):

- a. Cold start-ups: 13,140 events
- b. Warm/Hot start-ups: 19,710 events
- c. Shutdowns: 32,850 events.

B.6. NWE shall use good combustion practices during transient periods identified in Section III.B.5 to reduce emissions during these transient periods (ARM 17.8.752 and ARM 17.8.1211).

B.7. NWE shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

B.8. NWE shall comply with all applicable standards and limitations contained in 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (ARM 17.8.340, 40 CFR 60, Subpart JJJJ and ARM 17.8.1211).

B.9. NWE shall comply with all applicable standards and limitations contained in CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines including formaldehyde emissions being limited to 14 parts per million (ppmvd) at 15 % O₂ or a 93% CO emissions reduction for the Caterpillar RICE (ARM 17.8.342, 40 CFR 63, Subpart ZZZZ and ARM 17.8.1211).

B.10. NWE shall provide a reasonable assurance of compliance with emission limitations or standards for the anticipated range of operations of each of the natural gas RICE generator sets for NO_x (ARM 17.8.1504 and ARM 17.8.1211).

B.11. NWE shall provide a reasonable assurance of compliance with emission limitations or standards for the anticipated range of operations of each of the natural gas RICE generator sets for CO (ARM 17.8.1504 and ARM 17.8.1211).

Compliance Demonstration

B.12. After the initial source test, NWE shall test each natural gas RICE generator set for NO_x, CO, and VOC concurrently, every 8,760 hours of operation or 3 years, whichever comes first or according to another testing/monitoring schedule as may be approved by the Department. Methods used for demonstration shall include EPA Method 7E, EPA Method 10 and EPA Method 25A (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and ARM 17.8.1213).

B.13. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

B.14. NWE shall burn only pipeline quality natural gas in each of the natural gas RICE generator sets to monitor compliance with the PM/PM₁₀/PM_{2.5} and opacity emission limitations in Sections III.B.2 and III.B.7 (ARM 17.8.1213).

B.15. NWE shall prepare a preventive maintenance schedule to manage the SCR and oxidation catalysts consistent with the manufacturer's recommendations for proper operation and

maintenance incorporating operational time of the SCR and oxidation catalysts being in service managed by RICE unit (ARM 17.8.1211).

B.16. NWE shall document, by month, the total number of transient events (cold startups, warm/hot startups, and shutdowns) of the natural gas RICE generator sets collected in the SCADA system. By the 25th day of each month, NWE shall total the transient events by category for the natural gas RICE for the previous month.

The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section III.B.5. The information for each of the previous months shall be submitted in the semiannual monitoring report (ARM 17.8.1213).

B.17. NWE shall have documented procedures in place for cold-start-ups, warm/hot start-ups and shutdowns that follow the manufacturer's recommendations for good combustion practices (ARM 17.8.1211).

B.18. NWE shall monitor compliance as required in 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (ARM 17.8.340 and 40 CFR 60, Subpart JJJJ and ARM 17.8.1212).

B.19. NWE shall monitor compliance as required in 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ARM 17.8.342, 40 CFR 63, Subpart ZZZZ and ARM 17.8.1212).

B.20. NWE shall monitor compliance by following both the NOx and CO Compliance Assurance Monitoring CAM plans (Appendices E and F) (ARM 17.8.1213 and ARM 17.8.1503).

Recordkeeping Requirements

B.21. All source testing recordkeeping shall be performed in accordance with the Source Test Protocol and Procedures Manual and shall be maintained on site (ARM 17.8.106).

B.22. NWE shall maintain a log that indicates any circumstances in which a fuel other than pipeline quality natural gas was burned in the natural gas RICE generator sets. The log should include date, time, duration of fuel usage, reason for non- pipeline quality natural gas usage (if available from the supplier), and the operator's initials (ARM 17.8.1212).

B.23. NWE shall provide annual documentation of the sulfur content within the natural gas supply pipeline either through documentation from the supplier or via sample taken and tested at the site. The sulfur content shall be below 0.005 grains per standard cubic foot (gr/scf) which is the supply for the RICE (ARM 17.8.749 and ARM 17.8.1212).

B.24. NWE shall maintain records as required under Sections B.15, B.16, and B.17, ARM 17.8.1212).

B.25. NWE shall comply with all applicable recordkeeping requirements contained in 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, and 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ARM 17.8.340, ARM 17.8.342, 40 CFR 60, Subpart JJJ, 40 CFR 63, Subpart ZZZZ and ARM 17.8.1212).

B.26. Records shall be prepared and data kept in accordance with 40 CFR Part 64 and the CAM Plans for NOx and CO (Appendices E and F of this permit) (ARM 17.8.1212 and 40 CFR 64).

Reporting

B.27. Any compliance source test shall be submitted in accordance with the Montana Source Test Protocol and Procedures Manual. (ARM 17.8.106).

B.28. NWE shall comply with all reporting requirements contained in 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, and 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, for any applicable natural gas fueled engine (ARM 17.8.340, ARM 17.8.342, 40 CFR 60, Subpart JJJJ, 40 CFR 63, Subpart ZZZZ and ARM 17.8.1212)

B.29. The annual compliance certification report required by Section V.B must contain a certification statement for the above applicable requirements, including a summary of the annual documentation of the sulfur content within the natural gas supply pipeline (ARM 17.8.1213).

B.30. The semiannual reporting shall provide (ARM 17.8.1212);

- A summary of results of any source test that was performed during the reporting period;
- A summary of the log for any instance of fuel use other than pipeline quality natural gas in the RICE generator sets during the reporting period; and
- A summary of the total number of transient events (cold startups, warm/hot startups, and shutdowns) of the natural gas RICE generator sets during the reporting period, including the 12-month rolling period events.

C. EU019-EU020: Emergency Diesel Generator Sets

EU019-Emergency Generator 2,682-brake horsepower, bhp

EU020 Emergency Fire Pump Engine 315-bhp

Condition(s)	Pollutant/Parameter	Permit Limit	Compliance Demonstration Method	Frequency	Reporting Requirements
C.1, C.3, C.5, C.8	Hours of Operation	300 hours per rolling 12-month time period per unit	Recordkeeping	Ongoing	Semiannual
C.2, C.4, C.6, C.7	40 CFR 60, Subpart IIII	40 CFR 60, Subpart IIII	40 CFR 60, Subpart IIII	40 CFR 60, Subpart IIII	40 CFR 60, Subpart IIII

C.2, C.4, C.6, C.7	40 CFR 63, Subpart ZZZZ				
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Conditions

- C.1. The emergency generator engine and fire pump engine shall be used for emergency or back-up operations only and shall each be limited to 300 hours of operation during any rolling 12-month time period. Preventative maintenance activities shall be included in the 300 hours of operation during any rolling 12-month time period (ARM 17.8.749).
- C.2. NWE shall comply with all applicable recordkeeping requirements contained in 40 CFR 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, and 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ARM 17.8.340, ARM 17.8.342, 40 CFR 60, Subpart III, and 40 CFR 63, Subpart ZZZZ).

Compliance Demonstration

- C.3. NWE shall document, by month, the hours and type of operation (emergency or backup) of the emergency diesel engine/generator set and emergency diesel-fire pump. By the 25th day of each month, NWE shall total the hours of operation of the emergency diesel engine/generator set for the previous month. The information for each of the previous months shall be submitted in the semiannual monitoring report (ARM 17.8.749 and ARM 17.8.1212).
- C.4. NWE shall monitor compliance as required in 40 CFR 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ARM 17.8.340, ARM 17.8.342, 40 CFR 60, Subpart III, and 40 CFR 63, Subpart ZZZZ).

Recordkeeping Requirements

- C.5. NWE shall maintain records as required under Sections III.C.3 (ARM 17.8.1212).
- C.6. NWE shall all comply with applicable recordkeeping requirements in 40 CFR 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ARM 17.8.340, ARM 17.8.342, 40 CFR 60, Subpart III, and 40 CFR 63, Subpart ZZZZ).

Reporting

- C.7. NWE shall comply with all reporting requirements contained in 40 CFR 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, and 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ARM 17.8.340, ARM 17.8.342, 40 CFR 60, Subpart III, and 40 CFR 63, Subpart ZZZZ).

C.8. The semiannual reporting shall provide a summary of the hours of operation log for both units for the current 12-month rolling period (ARM 17.8.1212).

D. EU021: Natural Gas-Fired Dew Point Heater

EU021-1.11 million British Thermal Units per hour, MMBtu/hr

Condition(s)	Pollutant/Parameter	Permit Limit	Compliance Demonstration Method	Frequency	Reporting Requirements
D.2, D.3, D.4, D.5, D.6, D.7	PM, PM10, and PM2.5	Pipeline quality natural gas	Pipeline quality natural gas	Ongoing	Semiannual
D.2, D.3, D.4, D.5, D.6, D.7	Opacity	20%	Pipeline quality natural gas	Ongoing	Semiannual

Conditions

D.1. NWE shall combust only pipeline quality natural gas for the dew point heater to minimize emissions of PM, PM10, and PM2.5 (ARM 17.8.752).

D.2. NWE shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

Compliance Demonstration

D.3. NWE shall burn only pipeline quality natural gas in the dew point heater to monitor compliance with the PM/PM₁₀/PM_{2.5} and opacity emission limitations in Sections III.D.1, and III.D.2 (ARM 17.8.1213).

Recordkeeping Requirements

D.4. NWE shall maintain a log that indicates any circumstances in which a fuel other than pipeline quality natural gas was burned in the dew point heater. The log should include date, time, duration of fuel usage, reason for non-pipeline quality natural gas usage (if available from the supplier), and the operator's initials (ARM 17.8.1212).

D.5. NWE shall provide annual documentation of the sulfur content within the natural gas supply pipeline either through documentation from the supplier or via sample taken and tested at the site. The sulfur content shall be below 0.005 gr/scf which is the supply for the dew point heater (ARM 17.8.749 and ARM 17.8.1212).

Reporting

D.6. The annual compliance certification report required by Section V.B must contain a certification statement for the above applicable requirements, including a summary of the annual documentation of the sulfur content within the natural gas supply pipeline (ARM 17.8.1213)

D.7. The semiannual reporting shall provide a summary of the log for any instance of fuel use other than pipeline quality natural gas in the dew point heater during the reporting period (ARM 17.8.1212).

SECTION IV. NON-APPLICABLE REQUIREMENTS

Air Quality Administrative Rules of Montana (ARM) and Federal Regulations identified as not applicable to the facility or to a specific emissions unit at the time of the permit issuance are listed below (ARM 17.8.1214). The following list does not preclude the need to comply with any new requirements that may become applicable during the permit term.

The applicant did not identify a full list of non-applicable requirements within the application. DEQ prepared this preliminary non-applicable list.

A. Facility-Wide

The following table contains non-applicable requirements which are administrated by the Air Quality Bureau of the Department of Environmental Quality (DEQ).

Rule Citation	Reason
ARM 17.8.610	These requirements are not applicable because the facility is not in this source category.
40 CFR 53 40 CFR 58	These requirements are not applicable because this facility does not have any ambient air monitoring or surveillance requirements.
40 CFR 59 40 CFR 60, Subparts C, Cb, Cc, Cd, Ce 40 CFR 60, Subparts D, Da, Db, Dc 40 CFR 60, Subparts E-Z 40 CFR 60, Subparts AA-EE 40 CFR 60, Subparts GG-XX 40 CFR 60, Subparts AAA-BBB 40 CFR 60, Subpart DDD 40 CFR 60, Subparts FFF-LLL 40 CFR 60, Subparts NNN-XXX 40 CFR 60, Subparts AAAA-FFFF 40 CFR 60, Subparts KKKK-MMMM 40 CFR 60, Subparts QQQQ-OOOO 40 CFR 60, Subpart QQQQ 40 CFR 61, Subparts B-F 40 CFR 61, Subparts H-I 40 CFR 61, Subparts K-R 40 CFR 61, Subparts T 40 CFR 61, Subparts W 40 CFR 61, Subparts Y 40 CFR 61, Subparts BB 40 CFR 61, Subparts FF 40 CFR 63, Subparts F 40 CFR 63, Subparts L-O 40 CFR 63, Subparts Q-U 40 CFR 63, Subparts W-Y 40 CFR 63, Subparts AA-EE 40 CFR 63, Subpart GG-NN 40 CFR 63, Subparts CCC-EEE 40 CFR 63, Subparts GGG-JJJ 40 CFR 63, Subparts LLL-RRR	These requirements are not applicable because the facility is not an affected source as defined in these regulations.

Rule Citation	Reason
40 CFR 63, Subparts TTT-VVV 40 CFR 63, Subparts XXX 40 CFR 63, Subpart AAAA 40 CFR 63, Subparts CCCC-YYYY 40 CFR 63, Subparts AAAAA-NNNNNN 40 CFR 63, Subparts PPPPP-UUUUU 40 CFR 63, Subparts WWWWW 40 CFR 63, Subparts YYYYY-ZZZZZ 40 CFR 63, Subparts BBBBBB-HHHHHH 40 CFR 63, Subparts LLLLLL-TTTTTT 40 CFR 63, Subparts VVVVVV-EEEEEE 40 CFR 63, Subpart HHHHHH	
40 CFR 72-78 ARM 17.8.1234	These requirements are not applicable because the facility is not an affected source as defined by the acid rain regulations.

B. Emissions Units

The permit application identified applicable requirements: non-applicable requirements for individual or specific emissions units were not fully listed. DEQ has listed all non-applicable requirements in Section IV.A, these requirements relate to each specific unit, as well as facility wide.

SECTION V. GENERAL PERMIT CONDITIONS

A. Compliance Requirements

ARM 17.8, Subchapter 12, Operating Permit Program §1210(2)(a)-(c)&(e), §1206(6)(c)&(b)

1. The permittee must comply with all conditions of the permit. Any noncompliance with the terms or conditions of the permit constitutes a violation of the Montana Clean Air Act, and may result in enforcement action, permit modification, revocation and reissuance, or termination, or denial of a permit renewal application under ARM Title 17, Chapter 8, Subchapter 12.
2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
3. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. If appropriate, this factor may be considered as a mitigating factor in assessing a penalty for noncompliance with an applicable requirement if the source demonstrates that both the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations, and that such health, safety or environmental impacts were unforeseeable and could not have otherwise been avoided.
4. The permittee shall furnish to DEQ, within a reasonable time set by DEQ (not to be less than 15 days), any information that DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee shall also furnish to DEQ copies of those records that are required to be kept pursuant to the terms of the permit. This subsection does not impair or otherwise limit the right of the permittee to assert the confidentiality of the information requested by DEQ, as provided in 75-2-105, MCA.
5. Any schedule of compliance for applicable requirements with which the source is not in compliance with at the time of permit issuance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it was based.
6. For applicable requirements that will become effective during the permit term, the source shall meet such requirements on a timely basis unless a more detailed plan or schedule is required by the applicable requirement or DEQ.

B. Certification Requirements

ARM 17.8, Subchapter 12, Operating Permit Program §1207 and §1213(7)(a)&(c)-(d)

1. Any application form, report, or compliance certification submitted pursuant to ARM Title 17, Chapter 8, Subchapter 12, shall contain certification by a responsible official of truth, accuracy and completeness. This certification and any other certification required under ARM Title 17, Chapter 8, Subchapter 12, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

2. Compliance certifications shall be submitted by February 15 of each year, or more frequently if otherwise specified in an applicable requirement or elsewhere in the permit. Each certification must include the required information for the previous calendar year (i.e., January 1 – December 31).
3. Compliance certifications shall include the following:
 - a. The identification of each term or condition of the permit that is the basis of the certification;
 - b. The identification of the method(s) or other means used by the owner or operator for determining the status of compliance with each term and condition during the certification period, consistent with ARM 17.8.1212;
 - c. The status of compliance with each term and condition for the period covered by the certification, *including whether compliance during the period was continuous or intermittent* (based on the method or means identified in ARM 17.8.1213(7)(c)(ii), as described above); and
 - d. Such other facts as DEQ may require to determine the compliance status of the source.
4. All compliance certifications must be submitted to the Environmental Protection Agency, as well as to DEQ, at the addresses listed in the Notification Addresses Appendix of this permit.

C. Permit Shield

ARM 17.8, Subchapter 12, Operating Permit Program §1214(1)-(4)

1. The applicable requirements and non-federally enforceable requirements are included and specifically identified in this permit and the permit includes a precise summary of the requirements not applicable to the source. Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements and any non-federally enforceable requirements as of the date of permit issuance.
2. The permit shield described in 1 above shall remain in effect during the appeal of any permit action (renewal, revision, reopening, or revocation and reissuance) to the Board of Environmental Review (Board), until such time as the Board renders its final decision.
3. Nothing in this permit alters or affects the following:
 - a. The provisions of Sec. 7603 of the FCAA, including the authority of the administrator under that section;
 - b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 - c. The applicable requirements of the Acid Rain Program, consistent with Sec. 7651g(a) of the FCAA;

- d. The ability of the administrator to obtain information from a source pursuant to Sec. 7414 of the FCAA;
- e. The ability of DEQ to obtain information from a source pursuant to the Montana Clean Air Act, Title 75, Chapter 2, MCA;
- f. The emergency powers of DEQ under the Montana Clean Air Act, Title 75, Chapter 2, MCA; and
- g. The ability of DEQ to establish or revise requirements for the use of reasonably available control technology (RACT) as defined in ARM Title 17, Chapter 8. However, if the inclusion of a RACT into the permit pursuant to ARM Title 17, Chapter 8, Subchapter 12, is appealed to the Board, the permit shield, as it applies to the source's existing permit, shall remain in effect until such time as the Board has rendered its final decision.

- 4. Nothing in this permit alters or affects the ability of DEQ to take enforcement action for a violation of an applicable requirement or permit term demonstrated pursuant to ARM 17.8.106, Source Testing Protocol.
- 5. Pursuant to ARM 17.8.132, for the purpose of submitting a compliance certification, nothing in these rules shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance. However, when compliance or noncompliance is demonstrated by a test or procedure provided by permit or other applicable requirements, the source shall then be presumed to be in compliance or noncompliance unless that presumption is overcome by other relevant credible evidence.
- 6. The permit shield will not extend to minor permit modifications or changes not requiring a permit revision (see Sections I & J).
- 7. The permit shield will extend to significant permit modifications and transfer or assignment of ownership (see Sections K & O).

D. Monitoring, Recordkeeping, and Reporting Requirements
ARM 17.8, Subchapter 12, Operating Permit Program §1212(2)&(3)

- 1. Unless otherwise provided in this permit, the permittee shall maintain compliance monitoring records that include the following information:
 - a. The date, place as defined in the permit, and time of sampling or measurement;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of such analyses; and

- f. The operating conditions at the time of sampling or measurement.
2. The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. All monitoring data, support information, and required reports and summaries may be maintained in computerized form at the plant site if the information is made available to DEQ personnel upon request, which may be for either hard copies or computerized format. Strip-charts must be maintained in their original form at the plant site and shall be made available to DEQ personnel upon request.
3. The permittee shall submit to DEQ, at the addresses located in the Notification Addresses Appendix of this permit, reports of any required monitoring by February 15 and August 15 of each year, or more frequently if otherwise specified in an applicable requirement or elsewhere in the permit. The monitoring report submitted on February 15 of each year must include the required monitoring information for the period of July 1 through December 31 of the previous year. The monitoring report submitted on August 15 of each year must include the required monitoring information for the period of January 1 through June 30 of the current year. All instances of deviations from the permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official, consistent with ARM 17.8.1207.

E. Prompt Deviation Reporting

ARM 17.8, Subchapter 12, Operating Permit Program §1212(3)(b)

The permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. To be considered prompt, deviations shall be reported to DEQ within the following timeframes (unless otherwise specified in an applicable requirement):

1. For deviations which may result in emissions potentially in violation of permit limitations:
 - a. An initial phone notification (or faxed or electronic notification) describing the incident within 24 hours (or the next business day) of discovery; and,
 - b. A follow-up written, faxed, or electronic report within 30 days of discovery of the deviation that describes the probable cause of the reported deviation and any corrective actions or preventative measures taken.
2. For deviations attributable to malfunctions, deviations shall be reported to DEQ in accordance with the malfunction reporting requirements under ARM 17.8.110; and
3. For all other deviations, deviations shall be reported to DEQ via a written, faxed, or electronic report within 90 days of discovery (as determined through routine internal review by the permittee).

Prompt deviation reports do not need to be resubmitted with regular semiannual (or other routine) reports but may be referenced by the date of submittal.

F. Emergency Provisions

ARM 17.8, Subchapter 12, Operating Permit Program §1201(13), §1214(5)-(8), and §1224(6)

In July 2023, EPA rescinded the emergency affirmative defense from its Title V regulations, arguing it was inconsistent with the Clean Air Act because it could limit a court's authority over remedies and potentially violate the continuous nature of emission standards. In response, each state which had emergency provisions within their title V operating permit program, including Montana, was required to remove the affected provisions from their operating permit program rules and from affected Title V operating permits at renewal or during permit revisions.

Montana officially removed the affected affirmative defense provisions cited here from the Administrative Rules of Montana (ARM), Title 17, Chapter 8, Subchapter 12.

Subsequently, in September 2025, the D.C. Circuit Court of Appeals reinstated the Clean Air Act emergency affirmative defense, reversing the EPA's 2023 rescission of the rule that provides a defense against liability for excess emissions during sudden, unforeseeable emergencies. The court found the EPA's rescission unlawful because an affirmative defense does not interfere with the court's authority to determine liability and does not exempt a source from continuous emission standards. In response, EPA will need to add the affirmative defense provisions back into its Title V, Part 70 regulations. If this reinstatement does occur, Montana will also add the affected provisions back into its Title V operating permit program and maintain the affected regulations in Title V operating permits

G. Inspection and Entry

ARM 17.8, Subchapter 12, Operating Permit Program §1213(3)&(4)

1. Upon presentation of credentials and other requirements as may be required by law, the permittee shall allow DEQ, the administrator, or an authorized representative (including an authorized contractor acting as a representative of DEQ or the administrator) to perform the following:
 - a. Enter the premises where a source required to obtain a permit is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
 - c. Inspect at reasonable times any facilities, emission units, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - d. As authorized by the Montana Clean Air Act and rules promulgated thereunder, sample or monitor, at reasonable times, any substances or parameters at any location for the purpose of assuring compliance with the permit or applicable requirements.
2. The permittee shall inform the inspector of all workplace safety rules or requirements at the time of inspection. This section shall not limit in any manner DEQ's statutory right of entry and inspection as provided for in 75-2-403, MCA.

H. Fee Payment

ARM 17.8, Subchapter 12, Operating Permit Program §1210(2)(f) and ARM 17.8, Subchapter 5, Air Quality Permit Application, Operation, and Open Burning Fees §505(3)-(5) (STATE ONLY)

1. The permittee must pay application and operating fees, pursuant to ARM Title 17, Chapter 8, Subchapter 5.
2. Annually, DEQ shall provide the permittee with written notice of the amount of the fee and the basis for the fee assessment. The air quality operation fee is due 30 days after receipt of the notice, unless the fee assessment is appealed pursuant to ARM 17.8.511. If any portion of the fee is not appealed, that portion of the fee that is not appealed is due 30 days after receipt of the notice. Any remaining fee, which may be due after the completion of an appeal, is due immediately upon issuance of the Board's decision or upon completion of any judicial review of the Board's decision.
3. If the permittee fails to pay the required fee (or any required portion of an appealed fee) within 90 days of the due date of the fee, DEQ may impose an additional assessment of 15% of the fee (or any required portion of an appealed fee) or \$100, whichever is greater, plus interest on the fee (or any required portion of an appealed fee), computed at the interest rate established under 15-31-510(3), MCA.

I. Minor Permit Modifications

ARM 17.8, Subchapter 12, Operating Permit Program §1226(3)&(11)

1. An application for a minor permit modification need only address in detail those portions of the permit application that require revision, updating, supplementation, or deletion, and may reference any required information that has been previously submitted.
2. The permit shield under ARM 17.8.1214 will not extend to any minor modifications processed pursuant to ARM 17.8.1226.

J. Changes Not Requiring Permit Revision

ARM 17.8, Subchapter 12, Operating Permit Program §1224(1)-(3), (5)&(6)

1. The permittee is authorized to make changes within the facility as described below, provided the following conditions are met:
 - a. The proposed changes do not require the permittee to obtain a Montana Air Quality Permit under ARM Title 17, Chapter 8, Subchapter 7;
 - b. The proposed changes are not modifications under Title I of the FCAA, or as defined in ARM Title 17, Chapter 8, Subchapters 8, 9, or 10;
 - c. The emissions resulting from the proposed changes do not exceed the emissions allowable under this permit, whether expressed as a rate of emissions or in total emissions;
 - d. The proposed changes do not alter permit terms that are necessary to enforce applicable emission limitations on emission units covered by the permit; and

- e. The facility provides the administrator and DEQ with written notification at least 7 days prior to making the proposed changes.
2. The permittee and DEQ shall attach each notice provided pursuant to 1.e above to their respective copies of this permit.
3. Pursuant to the conditions above, the permittee is authorized to make Section 502(b)(10) changes, as defined in ARM 17.8.1201(30), without a permit revision. For each such change, the written notification required under 1.e above shall include a description of the change within the source, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.
4. The permittee may make a change not specifically addressed or prohibited by the permit terms and conditions without requiring a permit revision, provided the following conditions are met:
 - a. Each proposed change does not weaken the enforceability of any existing permit conditions;
 - b. DEQ has not objected to such change;
 - c. Each proposed change meets all applicable requirements and does not violate any existing permit term or condition; and
 - d. The permittee provides contemporaneous written notice to DEQ and the administrator of each change that is above the level for insignificant emission units as defined in ARM 17.8.1201(22) and 17.8.1206(3), and the written notice describes each such change, including the date of the change, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.
5. The permit shield authorized by ARM 17.8.1214 shall not apply to changes made pursuant to ARM 17.8.1224(3) and (5), but is applicable to terms and conditions that allow for increases and decreases in emissions pursuant to ARM 17.8.1224(4).

K. Significant Permit Modifications

ARM 17.8, Subchapter 12, Operating Permit Program §1227(1), (3)&(4)

1. The modification procedures set forth in 2 below must be used for any application requesting a significant modification of this permit. Significant modifications include the following:
 - a. Any permit modification that does not qualify as either a minor modification or as an administrative permit amendment;
 - b. Every significant change in existing permit monitoring terms or conditions;

- c. Every relaxation of permit reporting or recordkeeping terms or conditions that limit DEQ's ability to determine compliance with any applicable rule, consistent with the requirements of the rule; or
 - d. Any other change determined by DEQ to be significant.
 2. Significant modifications shall meet all requirements of ARM Title 17, Chapter 8, including those for applications, public participation, and review by affected states and the administrator, as they apply to permit issuance and renewal, except that an application for a significant permit modification need only address in detail those portions of the permit application that require revision, updating, supplementation or deletion.
 3. The permit shield provided for in ARM 17.8.1214 shall extend to significant modifications.

L. Reopening for Cause

ARM 17.8, Subchapter 12, Operating Permit Program §1228(1)&(2)

This permit may be reopened and revised under the following circumstances:

1. Additional applicable requirements under the FCAA become applicable to the facility when the permit has a remaining term of 3 or more years. Reopening and revision of the permit shall be completed not later than 18 months after promulgation of the applicable requirement. No reopening is required under ARM 17.8.1228(1)(a) if the effective date of the applicable requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms or conditions have been extended pursuant to ARM 17.8.1220(12) or 17.8.1221(2);
2. Additional requirements (including excess emission requirements) become applicable to an affected source under the Acid Rain Program. Upon approval by the administrator, excess emission offset plans shall be deemed incorporated into the permit;
3. DEQ or the administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit; or
4. The administrator or DEQ determines that the permit must be revised or revoked and reissued to ensure compliance with the applicable requirements.

M. Permit Expiration and Renewal

ARM 17.8, Subchapter 12, Operating Permit Program §1210(2)(g), §1220(11)&(12), and §1205(2)(c)

1. This permit is issued for a fixed term of 5 years.
2. Renewal of this permit is subject to the same procedural requirements that apply to permit issuance, including those for application, content, public participation, and affected state and administrator review.
3. Expiration of this permit terminates the permittee's right to operate unless a timely and administratively complete renewal application has been submitted consistent with ARM

17.8.1221 and 17.8.1205(2)(d). If a timely and administratively complete application has been submitted, all terms and conditions of the permit, including the application shield, remain in effect after the permit expires until the permit renewal has been issued or denied.

4. For renewal, the permittee shall submit a complete air quality operating permit application to DEQ not later than 6 months prior to the expiration of this permit, unless otherwise specified. If necessary to ensure that the terms of the existing permit will not lapse before renewal, DEQ may specify, in writing to the permittee, a longer time period for submission of the renewal application. Such written notification must be provided at least 1 year before the renewal application due date established in the existing permit.

N. Severability Clause

ARM 17.8, Subchapter 12, Operating Permit Program §1210(2)(i)&(l)

1. The administrative appeal or subsequent judicial review of the issuance by DEQ of an initial permit under this subchapter shall not impair in any manner the underlying applicability of all applicable requirements, and such requirements continue to apply as if a final permit decision had not been reached by DEQ.
2. If any provision of a permit is found to be invalid, all valid parts that are severable from the invalid part remain in effect. If a provision of a permit is invalid in one or more of its applications, the provision remains in effect in all valid applications that are severable from the invalid applications.

O. Transfer or Assignment of Ownership

ARM 17.8, Subchapter 12, Operating Permit Program §1225(2)&(4)

1. If an administrative permit amendment involves a change in ownership or operational control, the applicant must include in its request to DEQ a written agreement containing a specific date for the transfer of permit responsibility, coverage and liability between the current and new permittee.
2. The permit shield provided for in ARM 17.8.1214 shall not extend to administrative permit amendments.

P. Emissions Trading, Marketable Permits, Economic Incentives

ARM 17.8, Subchapter 12, Operating Permit Program §1226(2)

Notwithstanding ARM 17.8.1226(1) and (7), minor air quality operating permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in the Montana State Implementation Plan or in applicable requirements promulgated by the administrator.

Q. No Property Rights Conveyed

ARM 17.8, Subchapter 12, Operating Permit Program §1210(2)(d)

This permit does not convey any property rights of any sort, or any exclusive privilege.

R. Testing Requirements

ARM 17.8, Subchapter 1, General Provisions §105

The permittee shall comply with ARM 17.8.105.

S. Source Testing Protocol

ARM 17.8, Subchapter 1, General Provisions §106

The permittee shall comply with ARM 17.8.106.

T. Malfunctions

ARM 17.8, Subchapter 1, General Provisions §110

The permittee shall comply with ARM 17.8.110.

U. Circumvention

ARM 17.8, Subchapter 1, General Provisions §111

The permittee shall comply with ARM 17.8.111.

V. Motor Vehicles

ARM 17.8, Subchapter 3, Emission Standards §325

The permittee shall comply with ARM 17.8.325.

W. Annual Emissions Inventory

ARM 17.8, Subchapter 5, Air Quality Permit Application, Operation and Open Burning Fees §505 (STATE ONLY)

The permittee shall supply DEQ with annual production and other information for all emission units necessary to calculate actual or estimated actual amount of air pollutants emitted during each calendar year. Information shall be gathered on a calendar-year basis and submitted to DEQ by the date required in the emission inventory request, unless otherwise specified in this permit. Information shall be in the units required by DEQ.

X. Open Burning

ARM 17.8, Subchapter 6, Open Burning §604, 605 and 606

The permittee shall comply with ARM 17.8.604, 605 and 606.

Y. Montana Air Quality Permits

ARM 17.8, Subchapter 7, Permit, Construction and Operation of Air Contaminant Sources §745 and 764

1. Except as specified, no person shall construct, install, modify or use any air contaminant source or stack associated with any source without first obtaining a permit from DEQ or Board. A permit is not required for those sources or stacks as specified by ARM 17.8.744(1)(a)-(k).
2. The permittee shall comply with ARM 17.8.743, 744, 745, 748, and 764.

3. ARM 17.8.745(1) specifies de minimis changes as construction or changed conditions of operation at a facility holding a Montana Air Quality Permit (MAQP) issued under Chapter 8 that does not increase the facility's potential to emit by more than 5 tons per year of any pollutant, except:
 - a. Any construction or changed condition that would violate any condition in the facility's existing MAQP or any applicable rule contained in Chapter 8 is prohibited, except as provided in ARM 17.8.745(2);
 - b. Any construction or changed conditions of operation that would qualify as a major modification under Subchapters 8, 9 or 10 of Chapter 8;
 - c. Any construction or changed condition of operation that would affect the plume rise or dispersion characteristic of emissions that would cause or contribute to a violation of an ambient air quality standard or ambient air increment as defined in ARM 17.8.804;
 - d. Any construction or improvement project with a potential to emit more than 5 tons per year may not be artificially split into smaller projects to avoid Montana Air Quality Permitting; or
 - e. Emission reductions obtained through offsetting within a facility are not included when determining the potential emission increase from construction or changed conditions of operation, unless such reductions are made federally enforceable.
4. Any facility making a de minimis change pursuant to ARM 17.8.745(1) shall notify DEQ if the change would include a change in control equipment, stack height, stack diameter, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1).

Z. National Emission Standard for Asbestos

40 CFR, Part 61, Subpart M

The permittee shall not conduct any asbestos abatement activities except in accordance with 40 CFR 61, Subpart M (National Emission Standard for Hazardous Air Pollutants for Asbestos).

AA. Asbestos

ARM 17.74, Subchapter 3, General Provisions and Subchapter 4, Fees

The permittee shall comply with ARM 17.74.301, *et seq.*, and ARM 17.74.401, *et seq.* (State only)

BB. Stratospheric Ozone Protection – Servicing of Motor Vehicle Air Conditioners

40 CFR, Part 82, Subpart B

If the permittee performs a service on motor vehicles and this service involves ozone-depleting substance/refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR 82, Subpart B.

CC. Stratospheric Ozone Protection – Recycling and Emission Reductions
40 CFR, Part 82, Subpart F

The permittee shall comply with the standards for recycling and emission reductions in 40 CFR 82, Subpart F, except as provided for MVACs in Subpart B.

DD. Emergency Episode Plan

The permittee shall comply with the requirements contained in Chapter 9.7 of the State of Montana Air Quality Control Implementation Plan.

Each major source emitting 100 tons per year located in a Priority I Air Quality Control Region, shall submit to DEQ a legally enforceable Emergency Episode Action Plan (EEAP) that details how the source will curtail emissions during an air pollutant emergency episode. The industrial EEAP shall be in accordance with DEQ's EEAP and shall be submitted according to a timetable developed by DEQ, following Priority I reclassification.

EE. Definitions

Terms not otherwise defined in this permit or in the Definitions and Abbreviations Appendix of this permit, shall have the meaning assigned to them in the referenced regulations.

APPENDICES

Appendix A INSIGNIFICANT EMISSIONS UNITS

Disclaimer: The information in this appendix is not State or Federally enforceable, but is presented to assist NWE, the permitting authority, inspectors, and the public.

Pursuant to ARM 17.8.1201(22)(a), an insignificant emission unit means any activity or emissions unit located within a source that: (i) has a potential to emit less than five tons per year of any regulated pollutant; (ii) has a potential to emit less than 500 pounds per year of lead; (iii) has a potential to emit less than 500 pounds per year of hazardous air pollutants listed pursuant to section 7412 (b) of the FCAA; and (iv) is not regulated by an applicable requirement, other than a generally applicable requirement that applies to all emission units subject to Subchapter 12.

List of Insignificant Activities:

The following table of insignificant sources and/or activities were provided by NWE.

The application identified the Line Heater as an insignificant emitting unit. While the Line Heater has the potential to emit less than five tons per year of any regulated air pollutant and less than 500 pounds of potential lead and HAPs emissions, it does have an applicable BACT requirement for clean burning fuels. The Line Heater meets three of the four requirements for being considered an insignificant emitting unit; however, given the ARM 17.8.752 reference and associated applicable BACT requirement, it does not meet the final requirement for an insignificant emitting unit. Therefore, the applicable requirements for the Line Heater are included in Section III.D of this operating permit.

No other insignificant emitting units were presented by NWE.

Emissions Unit ID	Description

Appendix B DEFINITIONS and ABBREVIATIONS

"Act" means the Clean Air Act, as amended, 42 U.S. 7401, *et seq.*

"Administrative permit amendment" means an air quality operating permit revision that:

- (a) corrects typographical errors;
- (b) identifies a change in the name, address or phone number of any person identified in the air quality operating permit, or identifies a similar minor administrative change at the source;
- (c) requires more frequent monitoring or reporting by NWE;
- (d) requires changes in monitoring or reporting requirements that DEQ deems to be no less stringent than current monitoring or reporting requirements;
- (e) allows for a change in ownership or operational control of a source if DEQ has determined that no other change in the air quality operating permit is necessary, consistent with ARM 17.8.1225; or
- (f) incorporates any other type of change which DEQ has determined to be similar to those revisions set forth in (a)-(e), above.

"Applicable requirement" means all of the following as they apply to emissions units in a source requiring an air quality operating permit (including requirements that have been promulgated or approved by DEQ or the administrator through rule making at the time of issuance of the air quality operating permit, but have future-effective compliance dates, provided that such requirements apply to sources covered under the operating permit):

- (a) any standard, rule, or other requirement, including any requirement contained in a consent decree or judicial or administrative order entered into or issued by DEQ, that is contained in the Montana state implementation plan approved or promulgated by the administrator through rule making under Title I of the FCAA;
- (b) any federally enforceable term, condition or other requirement of any Montana Air Quality Permit issued by DEQ under Subchapters 7, 8, 9 and 10 of this chapter, or pursuant to regulations approved or promulgated through rule making under Title I of the FCAA, including parts C and D;
- (c) any standard or other requirement under Section 7411 of the FCAA, including Section 7411(d);
- (d) any standard or other requirement under Section 7412 of the FCAA, including any requirement concerning accident prevention under Section 7412(r)(7), but excluding the contents of any risk management plan required under Section 7412(r);
- (e) any standard or other requirement of the acid rain program under Title IV of the FCAA or regulations promulgated thereunder;
- (f) any requirements established pursuant to Section 7661c(b) or Section 7414(a)(3) of the FCAA;
- (g) any standard or other requirement governing solid waste incineration, under Section 7429 of the FCAA;
- (h) any standard or other requirement for consumer and commercial products, under Section 7511b(e) of the FCAA;
- (i) any standard or other requirement for tank vessels, under Section 7511b(f) of the FCAA;

- (j) any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the FCAA, unless the administrator determines that such requirements need not be contained in an air quality operating permit;
- (k) any national ambient air quality standard or increment or visibility requirement under part C of Title I of the FCAA, but only as it would apply to temporary sources permitted pursuant to Section 7661c(e) of the FCAA; or
- (l) any federally enforceable term or condition of any air quality open burning permit issued by DEQ under Subchapter 6.

"DEQ" means the Montana Department of Environmental Quality.

"Emissions unit" means any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant or any pollutant listed under Section 7412(b) of the FCAA. This term is not meant to alter or affect the definition of the term "unit" for purposes of Title IV of the FCAA.

"FCAA" means the Federal Clean Air Act, as amended.

"Federally enforceable" means all limitations and conditions which are enforceable by the administrator, including those requirements developed pursuant to 40 CFR Parts 60 and 61, requirements within the Montana state implementation plan, and any permit requirement established pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51, Subpart I, including operating permits issued under an EPA approved program that is incorporated into the Montana state implementation plan and expressly requires adherence to any permit issued under such program.

"Fugitive emissions" means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

"General air quality operating permit" or **"general permit"** means an air quality operating permit that meets the requirements of ARM 17.8.1222, covers multiple sources in a source category, and is issued in lieu of individual permits being issued to each source.

"Hazardous air pollutant" means any air pollutant listed as a hazardous air pollutant pursuant to Section 112(b) of the FCAA.

"Non-federally enforceable requirement" means the following as they apply to emissions units in a source requiring an air quality operating permit:

- (a) any standard, rule, or other requirement, including any requirement contained in a consent decree, or judicial or administrative order entered into or issued by DEQ, that is not contained in the Montana state implementation plan approved or promulgated by the administrator through rule making under Title I of the FCAA;
- (b) any term, condition or other requirement contained in any Montana Air Quality Permit issued by DEQ under Subchapters 7, 8, 9 and 10 of this chapter that is not federally enforceable;
- (c) does not include any Montana ambient air quality standard contained in Subchapter 2 of this chapter.

"Permittee" means the owner or operator of any source subject to the permitting requirements of this subchapter, as provided in ARM 17.8.1204, that holds a valid air quality operating permit or has submitted a timely and complete permit application for issuance, renewal, amendment, or modification pursuant to this subchapter.

"Regulated air pollutant" means the following:

- (a) nitrogen oxides or any volatile organic compounds;
- (b) any pollutant for which a national ambient air quality standard has been promulgated;
- (c) any pollutant that is subject to any standard promulgated under Section 7411 of the FCAA;
- (d) any Class I or II substance subject to a standard promulgated under or established by Title VI of the FCAA; or
- (e) any pollutant subject to a standard or other requirement established or promulgated under Section 7412 of the FCAA, including but not limited to the following:
 - (i) any pollutant subject to requirements under Section 7412(j) of the FCAA. If the administrator fails to promulgate a standard by the date established in Section 7412(e) of the FCAA, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established in Section 7412(e) of the FCAA;
 - (ii) any pollutant for which the requirements of Section 7412(g)(2) of the FCAA have been met but only with respect to the individual source subject to Section 7412(g)(2) requirement.

"Responsible official" means one of the following:

- (a) For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - (ii) the delegation of authority to such representative is approved in advance by DEQ.
- (b) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
- (c) For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a regional administrator of the environmental protection agency).
- (d) For affected sources: the designated representative in so far as actions, standards, requirements, or prohibitions under Title IV of the FCAA or the regulations promulgated thereunder are concerned, and the designated representative for any other purposes under this subchapter.

Abbreviations:

ARM	Administrative Rules of Montana
BACT	Best Available Control Technology
Bhp	Brake horsepower
BTU	British Thermal Unit
CAM	Compliance assurance monitoring
CFR	Code of Federal Regulations
CH ₄	Methane
CI	Compression Ignition
CO	carbon monoxide
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DEQ	Department of Environmental Quality
dscf	dry standard cubic foot
dscfm	dry standard cubic foot per minute
EEAP	Emergency Episode Action Plan
EPA	U.S. Environmental Protection Agency
EPA Method	Test methods contained in 40 CFR 60, Appendix A
EU	emissions unit
FCAA	Federal Clean Air Act
gr	grains
HAP	hazardous air pollutant
IEU	insignificant emissions unit
MAQP	Montana Air Quality Permit
MACT	Maximum Achievable Control Technology
MAAQS	Montana Ambient Air Quality Standards
Method 5	40 CFR 60, Appendix A, Method 5
Method 9	40 CFR 60, Appendix A, Method 9
MMBTU	million British Thermal Units
MW	Megawatt
MWe	Megawatt-hours
NG	natural as
N2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAA	Non-attainment area
NESHAP	National Emission Standards for Hazardous Air Pollutants
NWE	NorthWestern Energy
NOx	oxides of nitrogen
NO ₂	nitrogen dioxide
O ₂	oxygen
Pb	lead
PM	particulate matter
PM10	particulate matter less than 10 microns in size
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RICE	Reciprocating Internal Combustion Engine
psi	pounds per square inch

scf	standard cubic feet
SIC	Source Industrial Classification
SO ₂	sulfur dioxide
SO _x	oxides of sulfur
tpy	tons per year
U.S.C.	United States Code
VE	visible emissions
VOC	volatile organic compound

Appendix C NOTIFICATION ADDRESSES

Compliance Notifications:

Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau
P.O. Box 200901
Helena, MT 59620-0901

Enforcement and Compliance Assurance Division
Air Enforcement Branch
US EPA Region VIII, Montana Office
10 West 15th Street, Suite 3200
Helena, MT 59626

Permit Modifications:

Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau
P.O. Box 200901
Helena, MT 59620-0901

Air and Radiation Division
Permit and Monitoring Branch
US EPA Region VIII, 8ARD-PM
1595 Wynkoop Street
Denver, CO 80202-1129

Appendix D AIR QUALITY INSPECTOR INFORMATION

Disclaimer: The information in this appendix is not State or Federally enforceable, but is presented to assist NWE, permitting authority, inspectors, and the public.

1. Direction to Plant:

The facility is located directly west of the South Strauch road running north and south. South Strauch road is accessed from East Railroad Street which runs east out of Laurel Montana. The parking lot is located on the east side of the generating station site.

2. Safety Equipment Required:

All visitors are required to check in when arriving on site. Hard hats, steel toed boots, and safety glasses are required at all times except in office areas. All visitors are required to be accompanied by plant personnel.

Hard hats and safety glasses are available if needed.

3. Facility Plot Plan: A Plot plan was not provided but an ESRI aerial has been inserted.



Appendix E NOx CAM Plan for RICE Generator Sets

INTRODUCTION

NWE operates and maintains eighteen 9.7-MWe natural gas fired Caterpillar RICE generator sets. The Caterpillar RICE generator sets incorporate lean-burn design for primary NOx control. In addition to lean-burn design, each unit is equipped with a SCR system using up to 19% aqueous ammonia as the reaction agent in the final NOx control process, and an oxidation catalyst for control of CO and VOCs. SCR represents state-of-the-art controls for lean-burn four-stroke engine NOx removal. Each RICE has its own exhaust stack.

Each of the natural gas-fired RICE drives a generator to produce electrical power in simple cycle mode; i.e., no heat recovery from the engine exhaust is used to augment engine electricity production or generate steam in a combined heat and power plant. The Caterpillar RICE are natural gas-fired, lean-burn, compression ignition engines where natural gas and air are premixed in a low fuel/air ratio before being supplied to the cylinders. The lean-burn process efficiently reduces thermal NOx emissions due to lower combustion temperatures. The engines are highly efficient (up to 46% electrical efficiency at ISO conditions), medium-speed units with low emissions and low water usage. The Caterpillar RICE have rapid-starting capability and fast response times providing the dynamic operation necessary for critical grid regulation flexibility, dispatchable capacity, and ancillary services.

SCR is an add-on/post-combustion technology that has been shown to be effective in reducing NOx in exhaust from RICE. This SCR system consists of an ammonia (NH₃) storage, feed, injection system, and a catalyst with catalyst housing. The SCR system selectively reduces NOx emissions by injecting ammonia into the exhaust gas upstream of the catalyst. NOx, NH₃, and oxygen (O₂) react on the surface of the catalyst to form nitrogen (N₂) and water (H₂O). For the SCR system to operate properly, the exhaust gas must be within a particular temperature range (typically between 325°C and 500°C). The temperature range is dictated by the catalyst (typically made of noble metals, base metal oxides such as vanadium and titanium, and zeolite-based material). Exhaust gas temperatures greater than the upper limit (500°C) will pass the NOx and NH₃ unreacted through the catalyst prior to the reaction.

Each of the Caterpillar RICE generators are limited to 1.7 lb/hr of NOx during normal operation by Montana Air Quality Permit (MAQP) #5261-00. The limitation represents an approximate 90-94% reduction in NOx emissions. Transient events (cold start-ups, warm/hot start-ups, and shutdowns) are limited in MAQP #5261-00. Only normal, steady state operations are described in this analysis.

JUSTIFICATION

I. Background

The pollutant-specific emissions units are the eighteen 9.7-MWe natural gas fired Caterpillar RICE generator sets. NOx is controlled by an SCR system on each unit.

II. Rational for Selection of Performance Indicators

- A. Ceramic Element (Catalyst) Exhaust Gas Temperature (Note: the catalyst layers for both the SCR and catalytic oxidation are side by side, see Figure 1)

The temperature at the catalyst exhaust provides a good indication of catalytic reduction performance because it indicates that the gas stream is at sufficient temperature to initiate reduction of NO_x on the catalyst. Too high of a temperature may cause NO_x generation in the SCR rather than NO_x reductions. Too low of a temperature reduces catalyst activity and ammonia slip increases. The indicator range for the temperature at the catalyst exit is between 325°C and 500°C (~617°F and 932°F). Therefore, less than 325°C and greater than 500°C would be defined as excursions.

B. Ammonia Injection Rate (Deviation Between Indicated and Expected Flow)

The NH₃ injection rate is a good performance indicator because the ratio of NH₃ to NO_x controls the NO_x reduction efficiency. The ratio of NH₃ to NO_x should be optimized; too much NH₃ can result in excess “ammonia slip” and too little NH₃ results in increased NO_x emissions. The Supervisory Control and Data Acquisition System (SCADA) records the deviation between the indicated and expected flow. An excursion is defined as an indicated NH₃ injection rate greater than plus or minus 8 gallons per hour (± 8 gph) from the expected flow.

C. Catalyst Activity

Catalyst activity is a good performance indicator because the NO_x reductions rely on effective catalyst action. Catalyst deactivation would result in increases in NO_x emissions and NH₃ emissions through NH₃ slip. Periodically checking the catalyst provides an indication of fouling or masking. Catalysts must be periodically cleaned and/or replaced to ensure emission reductions are occurring. The inspections will be performed per manufacturer’s requirements. An excursion will be defined as no indicated reduction in NO_x emissions while NH₃ flow is existent.

III. Rationale for Catalyst Exhaust Temperature, Ammonia Injection Rate, and Catalyst Activity across the Indicator Ranges.

The temperature and NH₃ flow rate were provided in the manufacturer’s technical manual and verified through performance testing and operations since startup in March of 2024. The periodic catalyst activity inspection is also specified by the manufacturer’s technical manual.

IV. Excursion Reporting

Semiannual excursion reports will be submitted in accordance with 40 CFR §64.9. These reports will include:

- The number, duration, and cause of excursions, and the corrective actions taken; and
- The number, duration, and cause of monitor downtime incidents

Figure 1 – Catalyst Configuration Associated with Controls on Each Engine

SCR row

Catalyst element for the catalytic reduction of nitrogen oxides - also known as denitrification.

NOx reduction.

ROM row

In the ROM-row, excess ammonia NH₃ is converted to water and nitrogen.

NH₃ oxidation, NOx reduction

OXI row

Ceramic element for the catalytic post-combustion of exhaust gases. By a catalytic post-combustion, partly burned- or unburned components of the exhaust gas are further oxidized with the help of the rest-oxygen within the exhaust gas.

HC and CO oxidation

Rows of ceramic elements

Pos. Designation

01 SCR row (RFV)

02 ROM row (OCT+RFV)

03 OXI row (OCT)

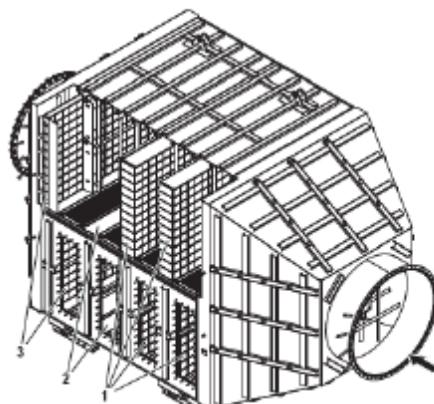
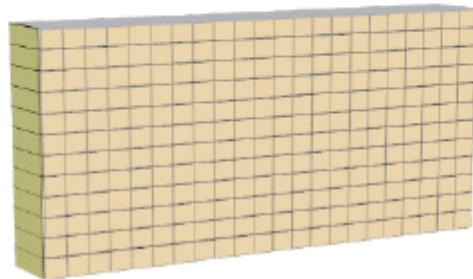


Table 2: CAM MONITORING APPROACH for RICE NO_x

	Indicator #1	Indicator #2	Indicator #3
I. Indicator Measurement Approach	<p>Temperature at catalyst exhaust</p> <p>Operate and maintain a temperature sensor to continuously record the temperature at the catalyst exhaust of each RICE.</p>	<p>Rate of Ammonia Injection</p> <p>Operate and maintain a flow indicator to continuously record the ammonia sent to the SCR bed of each RICE. Record the deviation between indicated and expected flow.</p>	<p>Catalyst Activity</p> <p>Periodically inspect the catalyst bed of each SCR per manufacturer's requirements</p>
II. Indicator Range	Except during periods of start-up ¹ , an excursion is defined as temperature less than 325°C and greater than 500°C.	Except during periods of start-up ¹ , an excursion is defined as an NH ₃ injection rate deviation during steady state operation of ± 8 gph from the expected flow.	Except during periods of start-up ¹ , an excursion is defined as no indicated reduction in NO _x emissions while ammonia flow is indicated.
III. Performance Criteria			
A. Data Representative ness	The temperature sensor is located at the catalyst exhaust.	The flow indicator is located in the ammonia injection line. The SCADA system calculates an ammonia demand and the deviation to the indicated flow.	The catalyst bed is inspected per manufacturer's requirements.
B. Verification of Operation Status	The temperature sensor is an existing device currently operating.	The flow indicator is an existing device currently operating.	Inspection is performed per manufacturer's requirements
C. QA/QC Practices and Criteria	The accuracy of the temperature sensor is verified by temperature sensors upstream and downstream of the catalyst elements.	The flow indicator is calibrated annually.	Inspection is performed per manufacturer's requirements
D. Monitoring Frequency	Readings are collected instantaneously.	Readings are collected instantaneously.	Inspections take place annually, at minimum.
E. Data Collection Procedures	The SCADA system collects the data.	The SCADA system collects the data.	Inspection logs are maintained with the RICE maintenance log system.
F. Averaging Period.	Not Applicable.	Monthly.	Not Applicable.

¹. The CAM analysis reflects normal, steady state operations.

Appendix F CO CAM Plan for RICE Generator SETS

INTRODUCTION

NWE operates and maintains eighteen 9.7-MWe natural gas fired Caterpillar RICE generator sets. The Caterpillar RICE generator sets incorporate combustion control to prevent CO formation. Further, an oxidation catalyst is included as add-on control for CO and VOC emissions.

Each of the natural gas-fired RICE drives a generator to produce electrical power in simple cycle mode; i.e., no heat recovery from the engine exhaust is used to augment engine electricity production or generate steam in a combined heat and power plant. The Caterpillar RICE are natural gas-fired, lean-burn, compression ignition engines where natural gas and air are premixed in a low fuel/air ratio before being supplied to the cylinders. The engines are highly efficient (up to 46% electrical efficiency at ISO conditions), medium-speed units with low emissions and low water usage. The Caterpillar RICE have rapid-starting capability and fast response times providing the dynamic operation necessary for critical grid regulation flexibility, dispatchable capacity and ancillary services.

Oxidation catalysts are a post-combustion technology that does not rely on the introduction of additional chemicals for a reaction to occur. The oxidation of CO to CO₂ utilizes excess air present in the engine exhaust; the activation energy required for the reaction to proceed is lowered in the presence of a catalyst. Products of combustion are introduced into a catalytic bed, with the optimum temperature range in general for these systems being between 600°F and 900°F.

Each of the Caterpillar RICE generators are limited to 1.59 lb/hr of CO during normal operation by MAQP #5261-00 (soon to be incorporated into the Montana Operating Permit #OP5261-00). The limitation represents an approximate 90-94% reduction in CO emissions. Transient events (cold start-ups, warm/hot start-ups, and shutdowns) are limited in MAQP #5261-00. Only normal, steady state operations are described in this analysis.

JUSTIFICATION

I. Background

The pollutant-specific emissions units are the eighteen 9.7-MWe natural gas fired Caterpillar RICE generator sets. CO is controlled by an oxidation catalyst system on each unit.

II. Rational for Selection of Performance Indicators

A. Ceramic Element (Catalyst) Exhaust Gas Temperature (as previously noted the catalyst layers for both the SCR and catalytic oxidation are side by side)

The temperature at the catalyst exhaust provides a good indication of catalytic reduction performance because it indicates that the gas stream is at sufficient temperature to initiate reduction of CO on the catalyst. Too high of a temperature may cause CO generation rather than CO reductions. Too low of a temperature reduces catalyst activity. The indicator range for the temperature at the catalyst exit is between 325°C and 500°C (~617°F and 932°F). Therefore, less than 325°C and greater than 500°C would be defined as excursions.

B. CO Emissions Rate

The instantaneous CO emissions rate is collected as a part of a closed loop control system. That rate is a good performance indicator because it is a direct measurement of control operations and effectiveness. The SCADA system records the deviation between the indicated and expected rate. An excursion is defined as a measured CO rate greater than 50 ppm from the expected rate.

C. Catalyst Activity

Catalyst activity is a good performance indicator because the CO reductions rely on effective catalyst action. Catalyst deactivation would result in increases in CO emissions and VOC emissions. Periodically checking the catalyst provides an indication of fouling or masking. Catalysts must be periodically cleaned and/or replaced to ensure emission reductions are occurring. The inspections will be performed per manufacturer's requirements. An excursion will be defined as no indicated reduction in CO emissions at normal operating conditions.

VII. Rationale for Catalyst Exhaust Temperature, CO Emissions Rate, and Catalyst Activity across the Indicator Ranges.

The temperature and CO emissions rate were provided in the manufacturer's technical manual and verified through performance testing and operations since startup in March of 2024. The periodic catalyst activity inspection is also specified by the manufacturer's technical manual.

VIII. Excursion Reporting

Semiannual excursion reports will be submitted in accordance with 40 CFR §64.9. These reports will include:

- The number, duration, and cause of excursions, and the corrective actions taken; and
- The number, duration, and cause of monitor downtime incidents