

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Permitting and Compliance Division
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**Northern Border Pipeline Company
Compressor Station No. 1
NE¼ of the SE¼, of Section 12, Township 33 North, Range 38 East
Valley County, Montana**

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		Portable analyzer
Ambient Monitoring Required		X	
COMS Required		X	
CEMS Required		X	
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		
Monthly Reporting Required		X	
Quarterly Reporting Required		X	
Applicable Air Quality Programs			
ARM Subchapter 7 Preconstruction Permitting	X		#2979-02
New Source Performance Standards (NSPS)	X		40 CFR 60, Subpart GG
National Emission Standards for Hazardous Air Pollutants (NESHAPS)		X	
Maximum Achievable Control Technology (MACT)		X	
Major New Source Review (NSR)		X	
Prevention of Significant Deterioration (PSD)		X	
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	
Compliance Assurance Monitoring (CAM)		X	
State Implementation Plan (SIP)	X		General SIP

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I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the Environmental Protection Agency (EPA) and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the letter submitted by Northern Border Pipeline Company (NBPL) on December 6, 2004.

B. Facility Location

NBPL owns and operates the Compressor Station No. 1. This facility is located at NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Section 12, Township 33 North, Range 38 East, in Valley County, Montana. This site is approximately 28 miles north of Glasgow Montana. Compressor Station No. 1 is located near Buggy Creek, in gently rolling terrain, about 42.5 miles northeast of Forsman Reservoir. From the intersection of Highway 2 and 24 travel north on Highway 24 to mile marker #34. Turn left (west) on the county road and travel 11 miles. Then turn southwest, the site is on the left approximately 5 miles. The total property area covered by this facility is 40 acres. Valley County is designated as an Unclassifiable/Attainment area for National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

C. Facility Background Information

Montana Air Quality Permit History

On December 23, 1996, NBPL submitted a complete permit application to construct and operate one 39,335-hp Cooper-Rolls natural gas turbine, one 300-kW emergency backup generator engine, one 1.706-MMBtu/hr heating boiler, and one 15-kW emergency backup generator engine. Permit #2979-00 became final on March 30, 1997.

On May 13, 1998, NBPL requested that Permit #2979-00 be modified to accurately reflect the emergency generator engine size of 245-kW. Also, the monitoring requirement in Section II.B.2 was changed from "after issuance of Permit #2979-00" to "after initial startup of the facility." Permit #2979-01 became final on June 19, 1998. Permit #2979-01 replaced Permit #2979-00.

On April 16, 2004, the Department of Environmental Quality (Department) received a complete permit application from NBPL for changes to air quality Permit #2979-01. The changes included a modification to the original nitrogen oxide (NO_x) Best Available Control Technology (BACT) determination by the Department. NBPL Source #01 (39,335-horsepower (hp) natural gas turbine) was unable to operate the dry low NO_x combustion system (DLE), determined by the Department to be BACT, every hour and at all conditions for which the turbine operates. The modification allowed NBPL to operate Source #01 up to 750 hours per year while the DLE was not in operation. Reasons for non-DLE operation shall include only start-up and shutdown, when operation is required during downstream maintenance requirements, and operation during low ambient temperatures at the site. New carbon monoxide (CO) emission limits for Source #01 of 460 lb/hr when the ambient temperature is 20 degrees Fahrenheit or colder, 56 lb/hr when the ambient temperature is 20 degrees Fahrenheit or warmer, and 109.5 tons per rolling 12-month time period replaced Section II.A.2 that limited the operation of Source #01 to running at 80% or

greater load when the ambient temperature is below 5 degrees Fahrenheit. The new 109.5 tons/year CO limit would be made enforceable by monitoring a combination of ambient and turbine parameters. Cooper-Rolls, the manufacturer of the turbine, will test the turbine under different operating scenarios to develop a correlation between the monitored parameters and CO emissions. The 15-kW emergency generator has been removed from the facility. Permit #**2979-02** replaces Permit #2979-01.

Title V Operating Permit History

On February 21, 1997, NBPL submitted a complete permit application to construct and operate Compressor Station No. 1 in Valley County, Montana. This facility would consist of one 39,335-hp Cooper-Rolls, 6562-DLE Coberra; one 300-kW emergency backup generator engine; one 1.706-MMBtu/hr hydronic boiler; and one 15-kW emergency backup generator. The application stated the estimated start date as 8/97 and the estimated completion date as 11/98. A preconstruction permit was issued for this facility on 4/30/97. This facility had the potential to emit greater than 100 tons per year of NO_x and was therefore required to obtain an operating permit. This facility was an NSPS Subpart GG affected source because the Cooper-Rolls Coberra meets the definition of a stationary gas turbine and was manufactured after October 3, 1997. The Cooper-Rolls Coberra will have an internal dry low NO_x combustion as its control device, which constitutes BACT for this facility.

Operating Permit **OP2979-00** established the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit for this facility. The document was intended for reference during review of the permit by the EPA and the public. It was also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the operating permit. Conclusions in this document were based on information provided in the original operating permit application submitted by Northern Border Pipeline Company (NBPL) and received by the Department on February 11, 1997.

On February 15, 2001, NBPL submitted a request for the Department to revise the permitted custom fuel monitoring schedule and equipment for Compressor Station No. 1 Located in Valley County, MT. An H₂S and Total Sulfur Analyzer replaced the chromatograph. The custom fuel schedule was structured to allow a representative sample to be recorded every 2 weeks with an option of extending the sampling schedule to once every 6 months upon approval by the Department. Operating Permit **OP2979-01** replaced Operating Permit OP2979-00.

On October 9, 2001, the Department received a request from NBPL for a modification to Operating Permit OP2979-01. The modification was an administrative amendment, which changed the responsible official for the facility. Operating Permit **OP2979-02** replaced Permit #OP2979-01.

On February 3, 2003, the Department received a request from NBPL for an administrative amendment to Operating Permit OP2979-02. The administrative amendment changed the responsible official and the corporate office address for the facility. Operating Permit **OP2979-03** replaced Operating Permit OP2979-02.

On February 3, 2003, the Department received a request from NBPL for a modification to Operating Permit OP2979-03. The modification is an administrative amendment. The responsible officials name was changed in error on Operating Permit OP2979-03. Operating Permit OP2979-04 changed the responsible official from Jay Muschenheim back to Randy Rice and changed the facility contact from Ruth Jensen to Jay Muschenheim. Operating Permit **OP2979-04** replaced Operating Permit OP2979-03.

On October 17, 2003, the Department received a request from NBPL for the administrative amendment of OP2979-04 to update Section V.B.3 of the General Conditions incorporating changes to federal Title V rules 40 CFR 70.6(c)(5)(iii)(B) and 70.6(c)(5)(iii)(C) (to be incorporated into Montana's Title V rules at ARM 17.8.1213) regarding Title V annual compliance certifications. Operating Permit **OP2979-05** replaced Operating Permit OP2979-04.

On March 11, 2003, the Department received a renewal application from NBPL. The Department had been in the process of permitting action #2979-02 and waited until the completion of permitting action #2979-02 to proceed with the renewal. Permit action #2979-02 was final June 18, 2004. Operating Permit **OP2979-06** replaced Operating Permit OP2979-05.

D. Current Permit Action

On December 6, 2004, the Department received a request from NBPL for an administrative amendment to Operating Permit OP2979-06. The administrative amendment changed the responsible official from Randy Rice to Michel E. Nelson. Operating Permit **OP2979-07** replaces Operating Permit OP2979-06.

E. Taking and Damaging Analysis

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 105, MCA, the Department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications. The checklist was completed on October 20, 2003.

F. Compliance Designation

The facility was inspected July 23, 2003, based on the results of the inspection and all the material reviewed in the Department's files indicates that the facility appears to be in compliance with all the applicable requirements.

II. SUMMARY OF EMISSION UNITS

A. Facility Process Description

The NBPL Compressor Station No. 1 is a natural gas pipeline transmission station with one Cooper-Rolls Coberra natural gas fired turbine. A hot water boiler provides the heat to the various station facilities.

The Standard Industrial Classification (SIC) for this facility is a Natural Gas Transmission@ which has an SIC Code of 4922.

B. Emission Units and Pollution Control Device Identification

The NBPL Compressor Station No. 1 application identified one 39,335-hp Cooper-Rolls Coberra 6562 Compressor Turbine, one 245-kW emergency backup generator engine, and one 1.706 MMBtu/hr hydronic boiler.

The Cooper-Rolls Coberra will contain a dry low NO_x combustion system, as part of the turbine design, this design and operating practice constitutes BACT for this facility. No pollution control devices exist on the two emergency backup generator engines or the hydronic boiler.

C. Categorically Insignificant Sources/Activities

The Administrative Rules of Montana (ARM) 17.8.120 (22)(a) defines an insignificant emission unit as one that emits less than 5 tons per year of any regulated pollutant, has the potential to emit less than 500 pounds per year of lead or any Hazardous Air Pollutant (HAP), and is not regulated by an applicable requirement other than a generally applicable requirement.

This facility has a 1.706 MMBtu/hr Hydronic Boiler, used for heating buildings and fuel preheat as needed. This boiler meets the definition of insignificant emission unit.

Emissions Unit ID	Description
IEU01	1.67-MMBtu/hr natural gas fired heater boiler
IEU02	In-plant vehicle traffic
IEU03	Fugitive emissions

III. PERMIT TERMS

A. Emission Limits and Standards

Emission limits for the 39,335 hp Cooper-Rolls Coberra Compressor Turbine were established by a BACT determination under the authority of ARM 17.8.715 (the predecessor to ARM 17.8.752). The Cooper Rolls natural gas turbine shall be operated properly by maintaining the dry low NO_x combustion system that is part of the turbine design. Minimum stack height for the Cooper Rolls natural gas turbine shall be 55 feet above ground level. The compressor turbine has an emission limit of 40 ppm_{v,d} and 50.0 lb/hr for NO_x and 3.00 lb/hr for VOC. Sulfur content in the fuel shall not exceed 0.08% by weight and sulfur dioxide content in the fuel shall not exceed 0.015% by volume at 15% oxygen on a dry basis. The emergency generator engine is limited to 500 hours of operation per year in order to comply with the EPA definition of an "emergency back up generator."

NBPL shall comply with all applicable standards, limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR Part 60, Subpart GG, unless otherwise specified (ARM 17.8.340 and 40 CFR Part 60).

The emission units at this facility are not subject to any current MACT or NESHAP standards. This facility is not subject to PSD regulations.

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements are contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance does not require the permit to impose the same level of rigor for all emission units. Furthermore, it does not require extensive testing or monitoring to assure compliance with the applicable requirements for emission units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions.

When compliance with the underlying applicable requirement for a insignificant emissions unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (**i.e., no monitoring**) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emission units.

The permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

D. Recordkeeping Requirements

The permittee is required to keep all records listed in the operating permit as a permanent business record for at least five years following the date of the generation of the record.

E. Reporting Requirements

Reporting requirements are included in the permit for each emissions unit and Section V of the operating permit "General Conditions" explains the reporting requirements. However, the permittee is required to submit semi-annual and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limit and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

IV. NON-APPLICABLE REQUIREMENTS ANALYSIS

Section IV of the operating permit "Non-applicable Requirements" contains the requirements that the Department determined were non-applicable. The following table summarizes the requirements that NBPL identified as non-applicable and contains the reasons that the Department did not include these requirements as non-applicable in the permit.

Requirements Not Identified in the Operating Permit

Applicable Requirement	Reason
Subchapter 1 General Provisions	
ARM 17.8.101 Definitions	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.102 Incorporation by Reference - Publication Dates and Availability of Referenced Documents	
ARM 17.8.103 Incorporation by Reference	
Subchapter 2 Ambient Air Quality	
ARM 17.8.201 Definitions	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.202 Incorporation by Reference	
ARM 17.8.205 Enforceability	These rules are always applicable to a major source and may contain specific requirements for compliance. However, these rules have been excluded as an applicable requirement (ARM 17.8.1202).
ARM 17.8.206 Methods and Data	
ARM 17.8.210 Ambient Air Quality Standard for Sulfur Dioxide	
ARM 17.8.211 Ambient Air Quality Standard for Nitrogen Dioxide	
ARM 17.8.212 Ambient Air Quality Standard for Carbon Monoxide	
ARM 17.8.213 Ambient Air Quality Standard for Ozone	
ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide	
ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter	
ARM 17.8.221 Ambient Air Quality Standard for Visibility	
ARM 17.8.222 Ambient Air Quality Standard for Lead	
ARM 17.8.223 Ambient Air Quality Standard for PM ₁₀	
ARM 17.8.230 Fluoride in Forage	
Subchapter 3 Emission Standards	
ARM 17.8.326 Prohibited Materials for Wood or Coal Residential Stoves	This regulation may not be applicable to the source at this time; however, it may become applicable during the life of the permit.
ARM 17.8.330 Definitions	This rule consists of either a statement of purpose, applicability statement, regulatory definition or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.

Applicable Requirement	Reason
Subchapter 4 Stack Heights	
ARM 17.8.401 Definitions	This rule consists of either a statement of purpose, applicability statement, regulatory definition or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.402 Requirements ARM 17.8.403 Exemptions	These are procedural rules that have specific requirements that may become relevant to a major source during the permit span.
Subchapter 5 Air Quality Permit Application, Operation and Open Burning Fees	
ARM 17.8.504 Air Quality Permit Application Fees ARM 17.8.514 Air Quality Open Burning Fees ARM 17.8.515 Air Quality Open Burning Fees for Conditional, Emergency, Christmas Tree Waste, and Commercial Film Production Open Burning Permits	These are procedural rules that have specific requirements that may become relevant to a major source during the permit span
Subchapter 6 Open Burning	
ARM 17.8.606 Minor Open Burning Requirements ARM 17.8.611 Emergency Open Burning Permits ARM 17.8.612 Conditional Air Quality Open Burning Permits	The following regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
Subchapter 7 Permit, Construction and Operation of Air Contaminant Sources	
ARM 17.8.740 <i>et seq.</i> Permit, construction and operation of air contaminant sources	The following regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
Subchapter 8 Prevention of Significant Deterioration	
ARM 17.8.825 Sources Impacting Federal Class I Areas Additional Requirements ARM 17.8.826 Public Participation	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source.
ARM 17.8.804 Ambient Air Increments	The following regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit
Subchapter 9 Permit Requirements for Major Stationary Sources or Major Modifications Located Within Nonattainment Areas	
ARM 17.8.901 Definitions ARM 17.8.902 Incorporation by Reference	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.904 When Air Quality Preconstruction Permit Required ARM 17.8.905 Additional Conditions of Air Quality Preconstruction Permit ARM 17.8.906 Baseline for Determining Credit for Emissions and Air Quality Offsets	These regulations are state regulations, which may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
Subchapter 10 Montana Air Quality Permit Requirements for Major Stationary Sources or Major	

Applicable Requirement	Reason
Modifications Located Within Attainment or Unclassified Areas	
ARM 17.8.1001 Definitions ARM 17.8.1002 Incorporation by Reference	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.1004 When Air Quality Preconstruction Permit Required ARM 17.8.1005 Additional Conditions of Air Quality Preconstruction Permit ARM 17.8.1006 Review of Specified Sources for Air Quality Impact ARM 17.8.1007 Baseline for Determining Credit for Emissions and Air Quality Offsets	These regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
Subchapter 11 Visibility Impact Assessment	
ARM 17.8.1101 Definitions ARM 17.8.1103 Applicability --Visibility Requirements	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.1108 Notification of Permit Application ARM 17.8.1109 Adverse Impact and Federal Land Management	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source.
Federal Requirements	
40 CFR 50 National Primary and Secondary Ambient Air Quality Standards 40 CFR 51 Requirements for Preparation, Adoption, and Submittal of Implementation Plans 40 CFR 58 Ambient Air Quality Surveillance	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source
40 CFR 52 Approval and Promulgation of Implementation Plans 40 CFR 62 Approval and Promulgation of State Plans for Designated Facilities and Pollutants 40 CFR 70 and 71 State Operating Permit Programs and EPA Regulations on Federal Operating Permit Programs	These rules contain requirements for regulatory authorities and not major sources; these rules can be used to impose specific requirements on a major source.
40 CFR 60.11 Compliance with Standards and Maintenance Requirements 40 CFR 60.14 Modification 40 CFR 60.15 Reconstruction	These regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
40 CFR 61, Subpart M National Emissions Standards for Hazardous Air Pollutants - Asbestos	This is a federal regulation that has specific procedural requirements that may become relevant to the major source during the permit term.
40 CFR 63, Subpart A General Provisions	These federal regulations consist of an applicability statement. These regulations may not be applicable to the source at this time; however, these regulations may become

Applicable Requirement	Reason
	applicable during the life of the permit.

V. FUTURE PERMIT CONSIDERATIONS

A. MACT/NESHAP Standards

As of the date of decision of OP2979-07, the Department is unaware of any future MACT Standards that may be promulgated that will affect this facility.

B. NESHAP Standards

As of the date of decision of OP2979-07, the Department is unaware of any future NESHAP Standards that may be promulgated that will affect this facility.

C. NSPS Standards

As of the date of decision of OP2979-07, this facility is subject to 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines.

D. Risk Management Plan

As of the date of decision of OP2979-07, the Risk Management Plan definition of stationary source (40 CFR 68.3) excludes transportation facilities subject to oversight or regulation under 49 CFR, Part 192. Compressor Station No. 1 is subject to regulation under 40 CFR, Part 192. Consequently, this facility is not required to submit a Risk Management Plan.