

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

**Air, Energy & Mining Division
1520 E. Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901**

**Montana-Dakota Utilities Co.
Lewis and Clark Station
Southwest 1/4, Section 9, Township 22 North, Range 59 East
400 North Fourth Street
Bismarck, ND 58501**

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		Methods 5, 7, 9, 10, and 25A
Ambient Monitoring Required		X	NA
Continuous Opacity Monitoring System (COMS) Required	X		Predictive
Continuous Emission Monitoring System (CEMS) Required	X		SO ₂ and NO _x (and Mercury Emissions Monitoring System under 17.8.771)
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		As Applicable
Monthly Reporting Required		X	
Quarterly Reporting Required	X		Reporting per Appendices E, F, G, and J
Applicable Air Quality Programs			
ARM Subchapter 7 Montana Air Quality Permitting	X		Montana Air Quality Permit (MAQP) #0691-06
New Source Performance Standards (NSPS)	X		40 CFR 60, Subpart JJJJ, Subpart IIII
National Emission Standards for Hazardous Air Pollutants (NESHAPS)	X		40 CFR 61, Subpart M
Maximum Achievable Control Technology (MACT)	X		40 CFR 63, Subpart ZZZZ; 40 CFR 63 Subpart UUUUU; 40 CFR 63, Subpart CCCCCC
Major New Source Review (NSR)	X		This source is a Major Stationary Source
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV	X		Appendix H
State Implementation Plan (SIP)	X		General SIP

Compliance Assurance Monitoring (CAM)	X	Appendix I and L
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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emissions units affected by the operating permit proposed for this facility. The document is intended for reference during review of the draft and proposed permits by the United States 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 original application submitted by Montana-Dakota Utilities (Montana-Dakota) on June 10, 1996; additional submittals on October 10, 1996, and April 11, 1997; the permit renewal application submitted June 26, 2002; the CAM Plan submittal on September 15, 2003; the permit renewal application submitted October 9, 2008; and the Montana Air Quality Permit (MAQP) application for mercury control requirements deemed complete on November 26, 2008; the administrative amendment requests received on May 24, 2010 and August 31, 2010; the Compliance Extension Request for the Federal Mercury Air Toxic Standards Rule made on November 24, 2014 including the supplemental information on January 6, 2015 and Department response on January 30, 2015; a permit modification received on December 5, 2016 to incorporate new equipment and modify permit language; and supporting correspondence. MAQP modifications request on January 2, 2019, and July 29, 2020. Title V renewal request received on December 9, 2019.

B. Facility Location

Montana-Dakota operates the Lewis and Clark Station consisting of a tangential coal fired boiler capable of burning coal or natural gas and associated equipment for generation of electricity. The facility also includes two 20V34SG Wärtsilä natural gas reciprocating internal combustion engine (RICE) generator sets, an indirect fired fuel heater (gas line heater) and associated building heating, ventilating and air condition units for the purpose of providing peaking generation capability. The Montana-Dakota Lewis and Clark Station is located in the Southwest ¼ of Section 9, Township 22 North, Range 59 East, Richland County, Montana.

C. Facility Background Information

Montana Air Quality Permit (MAQP) History

Montana-Dakota received a Montana air quality permit given number 691-031074 issued February 14, 1974. This permit authorized the construction of a wet scrubber for the boiler (Unit 1). The scrubber constructed was a venturi flooded disc scrubber.

On February 25, 2009, the Department of Environmental Quality (Department) issued **MAQP #0691-00**. Unit 1 and associated equipment are not required to have an MAQP as defined in Administrative Rules of Montana (ARM) 17.8.743. Unit 1 was in operation before November 23, 1968, and has not undergone modification resulting in an increase of the potential to emit of more than 25 tons per year (tpy) of any regulated airborne pollutant. However, the facility is subject to mercury emission limitations under ARM 17.8.771. MAQP #0691-00 establishes a mercury emission limit and associated operating

requirements for the boiler in order to comply with ARM 17.8.771.

On March 27, 2009, the Department received a request from Montana-Dakota to amend Attachment 2 of MAQP #0691-00. Subsequent to the issuance of MAQP #0691-00, the Department determined that additional changes to Attachment 2 may be appropriate based on further consideration and internal discussion of Montana-Dakota's previous comments, as well as the Department's needs with respect to the mercury monitoring requirements as listed in Attachment 2. Specifically, the current permit action amends Attachment 2 to remove the requirements to report the total ounces of mercury (for both the reporting quarter and the calendar year to date) as well as the total heat input of the Boiler for each month of the quarter and the calendar year to date. **MAQP #0691-01** was final on April 25, 2009, and replaced MAQP #0691-00.

On November 7, 2014, the Department received an application to modify MAQP #0691-01 to construct, operate and maintain two 20V34SG Wärtsilä natural gas RICE generator sets (with an engine horsepower (hp) rating of approximately 12,526 hp), an indirect fired fuel heater (1.2 MMBtu/hr natural gas line heater), and associated building heating, ventilating and air condition (HVAC) units, for the purpose of generating electricity at the Lewis & Clark Station. **MAQP #0691-02** replaced MAQP #0691-01.

On May 4, 2015, the Department of Environmental Quality (Department) received a request to administratively amend Montana-Dakota's MAQP#0691 to change the wording of the condition requiring that they install and operate an oxidizing agent injection (OAI) system and an activated carbon injection (ACI) system to achieve compliance with their mercury emissions limit. The proposed language maintains the requirement that Montana-Dakota utilize activated carbon injection as well as an oxidizing agent for mercury control and provides for some operational flexibility to optimize that control over the full range of load conditions. **MAQP #0691-03** replaced MAQP #0691-02.

On June 24, 2016, the Department received an application to modify MAQP #0691-03 in accordance with the requirements of ARM 17.8.771(9) to establish a revised mercury emission limit. ARM 17.8.771(9) requires that no later than 10 years after issuance of a permit establishing a mercury emission limit under ARM 17.8.771(1)(b)(i), and every 10 years thereafter, the affected facility must file an application to establish a revised mercury emission limit. Montana-Dakota received their initial MAQP establishing a mercury emissions limit for Unit 1 on February 25, 2009 and this application was intended to fulfill the ARM 17.8.771(9) requirement. The application included a review of mercury control information for other lignite units in the United States and the control system in place at Lewis & Clark Station. Montana-Dakota proposed to change the mercury emission limit from 1.5 pounds per trillion British thermal units (lb/TBtu) on a rolling 12-month average basis to 2.8 lb/TBtu on a rolling 12-month average basis.

ARM 17.8.771 and ARM 17.8.772 were established in 2006 and are collectively referred to as the Montana Mercury Rule. When these rules were crafted, mercury control technology was in the early development stages for electricity generating units and there was uncertainty that sources could reliably achieve the applicable mercury emission limits. The Montana Mercury Rule contemplated this uncertainty and included "soft landing" provisions for sources that failed to achieve the applicable mercury emission limit under normal operation, despite properly implementing a mercury control strategy that was approved according to the rule. These provisions offer an avenue to establish a less-stringent alternative mercury emission limit in association with a revised mercury control strategy. The revised mercury control

strategy must demonstrate how compliance with ARM 17.8.771(1)(b) is projected to be achieved as soon as reasonably practicable but no later than 2018. The level of this alternative mercury emission limit has an upper bound as well as an expiration date of January 1, 2018. A lignite-combusting source which had been granted an alternative mercury emission limit could potentially seek a revised alternative mercury emission limit not to exceed 2.8 lb/TBtu on a rolling 12-month average basis effective after January 1, 2018 (ARM 17.8.771(8)(a)). The Montana-Dakota application sought to establish an alternative mercury emission limit at this level.

Due to the characteristics of the lignite coal, Montana-Dakota must rely on an aggressive application of the oxidizing agent calcium bromide (CaBr₂) to the coal feed prior to combustion. The CaBr₂ is highly corrosive and results in accelerated wear on the coal feeding equipment; primarily the air heater baskets, coal feeder pipes, and coal mills. Montana-Dakota must repair and replace these components on a much more frequent basis than before the mercury control system was operating. By achieving a mercury emission rate of 2.8 lb/TBtu on a rolling 12-month average basis rather than 1.5 lb/TBtu, Montana-Dakota could potentially reduce the rate of CaBr₂ application and reduce the rate of corrosion on the coal feeding equipment. The application indicated that compliance with the proposed 2.8 lb/TBtu on a rolling 12-month basis would also comply with the federal regulation 40 CFR 63, Subpart UUUUU – National Emissions Standard for Hazardous Air Pollutants: Coal and Oil-Fired Electric Utility Steam Generating Units, commonly referred to as the Mercury and Air Toxics Standard (MATS).

The Department determined that while the Montana Mercury Rule includes provisions for establishing an alternative mercury emission limit, it is dependent on the source not being able to reliably achieve the applicable limit found in ARM 17.8.771(1)(b) under normal operation. The Lewis & Clark Station has been achieving the applicable mercury emission limit in accordance with the rule and therefore did not meet the criteria for seeking an alternative mercury emission limit. The Department did not issue MAQP #0691-04 and MAQP #0691-03 remained in place.

On January 2, 2019, the Department received a complete MAQP application in accordance with the requirements of ARM 17.8.771(9) to establish a revised mercury emission limit. ARM 17.8.771(9) requires that no later than 10 years after issuance of a permit containing a mercury emission limit under ARM 17.8.771(1)(b)(i), and every 10 years thereafter, the affected facility must file an application to establish a revised mercury emission limit. Montana-Dakota received their initial MAQP establishing a mercury emissions limit for Unit 1 on February 25, 2009 and this application was intended to fulfill the ARM 17.8.771(9) requirement. Montana-Dakota proposed to retain the mercury emission limit of 1.5 lb/TBtu on a rolling 12-month basis as the revised mercury emission limit. **MAQP #0691-05** replaced MAQP #0691-03.

On July 29, 2020, the Department received a request to modify MAQP #0691-05 to allow construction and operation of one diesel-fired emergency generator (Caterpillar Model 3561B) of no more than 3,285 hp and its associated 1,250 gallon diesel fuel storage tank. The status of the construction is not known and new conditions from the MAQP have not been incorporated at this time. **MAQP #0691-06** replaced MAQP #0691-05.

Title V Operating Permit History

On January 1, 1998, Montana-Dakota was issued final and effective, **Operating Permit #OP0691-00**. The permit expired on December 31, 2002.

On June 26, 2002, the Department received an application from Montana-Dakota for permit renewal. The application was deemed administratively and technically complete on July 26, 2002.

After review of the application for permit renewal and in accordance with current Department protocol for Title V operating permit rules and requirements, the Department determined that several emitting units included in Operating Permit #OP0691-00 as significant emitting units are actually insignificant emitting units subject to only generally applicable requirements. Therefore, the following significant emitting units, as cited in Operating Permit #OP0691-00, were placed on the insignificant emitting unit list for Operating Permit renewal #OP0691-01:

- IEU02 – Heating Boiler
- IEU03 – Diesel Fire Pump Engine
- IEU04 – Emergency Generator
- IEU06 – Fuel Storage Tank
- IEU09 – Coal Tripper House
- IEU10 – Lime Storage Silo
- IEU11 – Plant Roads

Permit #OP0691-01 was drafted on May 9, 2003. On September 15, 2003, the Department received a Compliance Assurance Monitoring Plan (CAM Plan) from Montana-Dakota as specified in ARM 17.8.1507 and 17.8.1508.

Because this applicable requirement was not included in the Draft #OP0691-01, the permit was redrafted as Permit #OP0691-02. **Operating Permit #OP0691-02** replaced Operating Permit #OP0691-00.

On October 6, 2008, the Department received an application for renewal of Operating Permit #OP0691-02. The renewal application was assigned Operating Permit #OP0691-03. In addition, this action includes the significant modification to Montana-Dakota's Title V Operating Permit with respect to the mercury emission requirements included in MAQP #0691-00 and #0691-01. The significant modification was assigned Operating Permit #OP0691-04. Therefore, the current permit action combines #OP0691-03 and #OP0691-04 to renew Operating Permit #OP0691-02 and incorporate new applicable requirements with respect to mercury. The current permit action will be issued as Operating Permit #OP0691-04. **Operating Permit #OP0691-04** replaced Operating Permit #OP0691-02.

On May 24, 2010, the Department received a letter from Montana-Dakota requesting clarifications and correction of typographical errors. Montana-Dakota requested the removal of an opacity compliance requirement in the Operating Permit for Emitting Unit #06, a small gasoline storage tank. Montana-Dakota also requested clarification of the QA/QC practices of Indicator #5, Flue Gas Temperature, in the CAM Plan summarized in Table 1 of Appendix I of the Operating Permit. Montana-Dakota also requested that typographical errors be corrected. The requirements in Section III.D.8.b and Section III.E.8.b reference requirements in Section III.C.5 and Section III.D.5, respectively. Montana-Dakota requested these references be changed to Section III.D.5 and III.E.5, respectively, as well as correcting the numbering of Section V to begin with the letter A, and

then proceed alphabetically thereafter.

The Department agreed with all requests. With applicable opacity requirements already listed in the Facility Wide permit conditions, the Department agreed that addition of the requirement in Section III.C, specific to the storage tank, is unnecessary. The QA/QC requirements for Indicator #5 of the CAM plan was updated to specify that “an outage” was intended to mean “one outage per year”, and the typographical errors were fixed as requested. The Department determined all requests were Administrative in nature. **Operating Permit #OP0691-05** replaced Operating Permit #OP0691-04.

On February 20, 2014, the Department received from Montana-Dakota an application for renewal of the Title V Operating Permit. The Department sent correspondence to Montana-Dakota indicating the application was deemed administratively complete on March 20, 2014. This action renewed the Title V operating permit, added MACT ZZZZ as an applicable requirement, and added MACT UUUUU as an applicable requirement with the conditions of the compliance extension granted on January 30, 2015. While not required by 40 CFR 63 Subpart A as part of the granting of a compliance deadline extension for a new emissions standard, the Department announced its intention to conditionally approve the compliance deadline extension request for non-mercury HAP metals from MACT UUUUU via public notice in the January 14, 2015 edition of the *Sidney Herald*. The Department accepted public comment on the proposed Title V permit conditions from January 14 to January 29, 2015. Over 20 letters in support of granting the extension were received and no letters of opposition. Only minor edits to clarify certain terms were made to the proposed permit conditions based on comments submitted by Montana-Dakota. The Montana mercury rule of ARM 17.8.771 and the associated monitoring plan described in Appendix J of the permit remains at this time. **Operating Permit #OP0691-06** replaced Operating Permit #OP0691-05.

On December 5, 2016, the Department received an application from Montana-Dakota for a permit modification to Operating Permit #OP0691-06. In November 2014, Montana-Dakota proposed to construct, operate, and maintain two (2) 20V34SG Wärtsilä natural gas reciprocating, internal combustion engine (RICE) generator sets, indirect fired fuel heaters, and associated building heating, ventilation, and air conditioning (HVAC) units for the purpose of providing peaking generation capability. The Department issued MAQP #0691-02 on January 22, 2015 authorizing the construction and operation of the project and Montana-Dakota commenced operation of the RICE and associated equipment on December 14, 2015.

This permit modification made the necessary changes to Title V Operating Permit #OP0691-06 to incorporate the appropriate conditions, compliance demonstrations, recordkeeping, and reporting requirements for the two (2) Wärtsilä natural gas RICE generator sets and the natural gas line heating and HVAC units. The modification also incorporated language changes requested by Montana-Dakota as well as updates the permit to reflect NSPS applicability. **Operating Permit #OP0691-07** replaced Operating Permit #OP0691-06.

D. Current Permit Action

On December 9, 2019, the Department received an application from Montana-Dakota for a renewal to Operating Permit #OP0691-07. The application was deemed both

administratively and substantively complete on December 9, 2019. **Operating Permit #OP0691-08** replaces Operating Permit #OP0691-07.

E. Taking and Damaging Analysis

House Bill (HB) 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency’s 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 2-10-105, Montana Code Annotated (MCA), the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

F. Compliance Designation

The facility was last inspected on October 9, 2018. Based upon the information gathered during the facility inspection, the observations made at the facility, and the review of facility records, the Department believed the facility to be in compliance with applicable

requirements. The last FCE was completed on September 24, 2019 with a review period from August 25, 2016, to August 23, 2019.

SECTION II. SUMMARY OF EMISSION UNITS

A. Facility Process Description

Montana-Dakota – Lewis and Clark Station operates a tangential coal and natural gas fired boiler capable of burning coal or natural gas and associated equipment for the generation of electricity. In addition, Montana-Dakota operates two 20V34SG Wärtsilä natural gas RICE generator sets and associated equipment to provide peaking generation capability.

B. Emission Units and Pollution Control Device Identification

Emissions Unit ID	Description	Pollution Control Device/Practice
EU01	Tangential Coal and Natural Gas Fired Boiler	Multi-Cyclone and Flooded Disc Wet Scrubber (Activated Carbon and Oxidizing Agent Injection utilized for Mercury Control)
EU06	Fuel (gasoline) Storage Tank	40 CFR 63 Subpart CCCCC
EU07	Coal Storage Piles	Water-dust suppression
EU08	Fugitive Coal Ash & Lime Handling Emissions	Enclosure/Fabric filter baghouse
EU09	Emergency Units	40 CFR 63 Subpart ZZZZ
EU10	20V34SG Wärtsilä Natural Gas RICE Generator Sets	Selective Catalytic Reduction System using Urea Injection and Oxidation Catalyst
EU11	Natural Gas Line Heating and HVAC Units	Pipeline Quality Natural Gas Combustion or Natural Gas Combustion

EU01 (Tangential Coal and Natural Gas Fired Boiler) has burned mostly lignite coal and natural gas in the past, but can burn a mixture of coals. There are no applicable requirements that limit the type of coal combusted in the unit. Before 1996, the boiler exhaust gases could exhaust through the main stack or in cases as necessary through a bypass stack. Montana-Dakota locked off the bypass stack in 1995 and no longer uses it since the bypass stack does not have the required 40 CFR 75 monitors. This has resulted in the operation procedure that when the scrubber trips, the boiler shuts down. EU01 utilizes an oxidizing agent injection (OAI) system and an activated carbon injection (ACI) system to maintain compliance with the 1.5 pounds mercury per trillion British thermal units (lb/TBtu) mercury emission limit. Montana-Dakota installed a mist eliminator retrofit and sieve tray to improve the particulate control efficiency of the wet scrubber to achieve compliance with 40 CFR 63 Subpart UUUUU.

EU06 (Fuel Storage Tank) is considered a significant emission unit because the unit is subject to applicable requirements contained in 40 CFR 63 Subpart CCCCC. It meets the definition of a gasoline dispensing facility with a monthly throughput of less than 10,000 gallons.

EU07 (Coal Storage Piles), both active and inactive, are considered significant emitting units because the potential to emit is greater than 5 tons per year. The control practice for the coal storage piles (both active and reserve) is water-dust suppression.

EU08 (Fugitive Coal, Ash & Lime Handling Emissions), has the potential to emit greater than 5 tons per year of fugitive emissions, therefore, is considered a significant emissions unit. The control measures are enclosures and a fabric filter baghouse in a closed loop system.

EU09 represents emergency engines. There is one 1957 185-horsepower natural gas fired emergency generator, and a 1984 355-horsepower diesel fired fire pump engine. Because these units are subject to 40 CFR 63 Subpart ZZZZ, these units are considered significant emission units.

EU10 (Wärtsilä RICE generator sets) are considered to be significant emission units because each unit has the potential to emit more than 5 tons per year of particulate, they are subject to applicable requirements including limits under ARM 17.8.752, and are subject to applicable requirements contained in 40 CFR 60, Subpart JJJJ as well as 40 CFR 63, Subpart ZZZZ. Both engines meet the definition of a Stationary Spark Ignition Reciprocating Internal Combustion Engine.

EU11 (Natural Gas Line Heating and HVAC Units) do not have the potential to emit more than 5 tons per year. However, they are subject to an applicable requirement that limits the total maximum heat input of those units associated with the RICE project. That limit is not a pollution control device, but was added for the purposes of practical enforceability for the overall PSD avoidance limit that was taken for particulate matter during the permitting of this project in MAQP #0691-02.

C. Categorically Insignificant Sources/Activities

ARM 17.8.1201(22)(a) defines an insignificant emissions 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, and is not regulated by any applicable requirement other than a generally applicable requirement. The following is a list of the emission units that are included as insignificant in Montana-Dakota’s draft operating permit.

Emissions Unit ID	Description
IEU02	Heating Boiler
IEU05	Miscellaneous Space Heaters
IEU09	Coal Tripper House
IEU10	Lime Storage Silo
IEU11	Plant Roads
IEU12	Vehicle Air Conditioning
IEU13	Activated Carbon Injection Silo
IEU14	Coal Conveyor Dust Collection Devices

IEU02 (Natural Gas Heating Boiler) in the original application was listed as a significant emitting unit presumably for total particulate PTE of 16.6 tpy. After recalculating the PTE, using emission factors from AP-42, Table 1.4-2, the Department determined the natural gas heating boiler to be an insignificant emitting unit based on the PTE of 0.028 tons per year.

IEU05 (Miscellaneous Space Heaters) is considered insignificant since each heater has emission well below 5 tons per year of criteria pollutants and 1 pound per year of HAPS. The heaters are each less than 500,000 BTU per hour. The only rules that apply are ARM 17.8.304, 309, and 322, but due to the combustion of natural gas, the emissions are minimal.

IEU09 (Coal Bunker System) in the original application was included with EU05. Since the emissions unit is controlled by a baghouse, it was determined the unit was a distinct unit and should be treated as a separate emissions unit. In the supplemental information to the application, Montana-Dakota provided the necessary information to determine which applicable requirements apply to this emissions unit. The coal bunker system consists of the enclosure directly above the three coal storage bunkers known as the Coal Tripper House. The enclosure is penetrated by the head end of conveyor #2 to the south. The discharge of the baghouse is into the enclosed structure above the storage silos. The baghouse has a force air filtration system, which pulls the displaced air from the silos and the conveyor area to control particulate emissions.

IEU10 (Lime Storage Silo) was included in the supplementary information submitted by Montana-Dakota on April 11, 1997. The unit is controlled by a baghouse in a closed-loop system, and by enclosures. Montana-Dakota receives approximately 150 tons per month of lime.

IEU11 (Plant Roads) emissions do not include any emissions for transferring coal.

IEU12 was included in the application as a significant emissions unit based on information received April 11, 1997. For purposes of the operating permit, the requirements that pertain to the IEU12 are contained in Section V., General Conditions under the stratospheric ozone requirements. Therefore, IEU12 does not have a table or associated conditions in Section III of the operating permit. At Montana-Dakota, the maintenance of vehicles is performed by a certified dealer for repair and the building system repairs are contracted with a local certified repair service.

IEU13 (Activated Carbon Injection Silo)

IEU14 (Coal Conveyor Dust Collection Devices)

The coal hauling operations are not included in the operating permit. These operations are performed by an independent company. The independent company provides all the equipment necessary to deliver the coal and place it on the active stockpile. All trucks, unloading hopper, and stockpile conveyor are owned by the independent company. Montana-Dakota takes ownership of the coal from the active coal stockpile and transports the coal to the plant. Montana-Dakota's coal handling activities are addressed as part of EU8.

SECTION III. PERMIT TERMS

A. Emission Limits and Standards

The following is a discussion of some applicable requirements:

1. The Phase II Acid Rain permit requirements for SO₂ are included in this operating permit.
2. Montana-Dakota submitted a Phase I Acid Rain Permit Application, NO_x Compliance Plan to EPA Region VIII in October 1996. The application was submitted according to the requirements of 40 CFR §76.9 for an early election unit with a deadline of submittal of January 1, 1997. The Montana-Dakota - Lewis and Clark Station boiler is a Group 1, Phase II boiler. Montana-Dakota will be required to comply with the emission limit of 0.45 lb/MMBtu of heat input on an annual average basis for tangentially fired boilers (40 CFR §76.5) beginning January 1, 1997, and ending on December 31, 2007.

In accordance with 40 CFR §76.8(d)(1)(ii), EPA is responsible for issuing the early NO_x reduction permit. The state has not been delegated this authority. Under 40 CFR §72.73(b)(2), the Department is required to include not later than January 1, 1999, the acid rain permit requirements for nitrogen oxides. Since these requirements have already been incorporated into the initial operating permit, the Department will not need to re-open the acid rain/operating permit. The company under the current requirements of 40 CFR §76.9(b) must still submit a Phase II NO_x permit application by January 1, 1998.

Although not included in the operating permit, the permitting must still comply with the requirements contained in the Phase I early election permit issued by EPA Region VIII until its expiration date. Compliance with the Phase I permit will be handled by EPA.

Montana-Dakota demonstrated compliance with the applicable emissions limitations during the Early Election Program, which expired December 31, 2007. In accordance with 40 CFR 76.7, the NO_x emission limit beginning January 1, 2008 is 0.40 lb/MMBtu on an annual average basis. Compliance with the limit is demonstrated through the use of a CEMS.

3. Montana-Dakota is required by 40 CFR Part 51, Appendix P to monitor opacity. Since the boiler is controlled with a wet scrubber, it was determined an opacity monitor would not provide accurate data. As an alternative, Montana-Dakota developed a predictive opacity procedure and submitted the final report and equations on April 23, 1991. The key aspects of the plan are contained in the Predictive Opacity Appendix to the operating permit. As part of the plan developed to monitor opacity, Montana-Dakota performs calculations to determine the “cleanness” of the disk based on predicted disk position. Deviations from the predicted disk position flags when increased emissions are probable due to a suspected ash buildup around the flooded disk. The information from the disk position is used internally by Montana-Dakota.

The equations to calculate the cleanliness of the disk were modified in April 1997 to address changes due to the low NOx modifications, which occurred the end of 1996. Montana-Dakota uses the scrubber differential pressure and to calculate the predicted opacity for compliance with the opacity requirement. These equations are not included in the operating permit since they are subject to change. The permit requires that prior to making a change to the equations; Montana-Dakota must notify the Department. This will assure the Department is aware of any changes and has an opportunity to review the changes made.

4. Montana-Dakota is required by the operating permit and a letter of agreement from the Department to use the continuous emissions monitoring system (CEMS) on the exhaust gas stream from the EU01 to determine compliance with ARM 17.8.322. The rule limits the amount of sulfur in the fuel to 1 lb of sulfur/MMBTU. The Department will allow Montana-Dakota to measure the exhaust gas stream and demonstrate compliance with the limit by showing emissions do not exceed 2 lbs. of SO₂/MMBtu from the emissions unit. The SO₂ monitor on EU01 has a dual span of 0 ppm to 30 ppm and 0 ppm to 500 ppm. The dual range for the monitor is 0 ppm to 24 ppm and 0 ppm to 400 ppm. Montana-Dakota performed the high end calibration at 24 ppm 400 ppm. This range and span was agreed to by the Department and the EPA because the wet scrubber scrubs 100% of the flue gas 100% of the time. For the first quarter of 1996, the maximum concentration measured by the monitor was approximately 320 ppm and the average monitored value was 141 ppm. These values have remained fairly consistent over the entire year and into 1997. The new second low SO₂ span was established on April 19, 2016 after the scrubber modification, for Mercury and Air Toxic Standards (MATS) Rule, was completed. For the first quarter of 2016, the maximum concentration measured by the monitor was approximately 166 ppm and the average monitored value was 8 ppm. These values have remained fairly consistent over the entire year and into 2017.

The flow monitor on the EU01 stack has a range of 18,000,000 scfh. Based on calculations of the normal volume, Montana-Dakota has the potential to exceed the range of the SO₂ monitor. The following calculations show that the potential exceedance could in theory occur.

$$(2 \text{ lbs of SO}_2/\text{MMBtu}) (600 \text{ MMBtu/hr}) = 1,200 \text{ lbs of SO}_2 / \text{hr}$$

$$(1,200 \text{ lbs of SO}_2/\text{hr}) / [(\text{molecular weight of SO}_2)(\text{volume})(28.317 \text{ liters/cubic feet})$$

$$(1 \text{ mole}/24.04 \text{ liters})(1 \text{ liter}/1,000,000 \text{ micro liters})(1 \text{ lb}/453.6 \text{ grams})] = \text{ppm}$$

$$(1,200 \text{ lbs of SO}_2/\text{hr}) / [(64)(13,500,000)(28.317)(1/24.04)(1/1,000,000)(1/453.6)] = 583.9 \text{ ppm}$$

Montana-Dakota and the Department do not expect to see any exceedances of the monitor range due to the design of the boiler and scrubber. Since the monitor may not be able to measure a violation of 2 lbs of SO₂/mmBtu, the Department has required that any exceedance of the monitor range be considered an SO₂ emission violation. Montana-Dakota has agreed to this requirement and it is contained in the SO₂ appendix to the operating permit. If in the future, Montana-Dakota changes the range on the monitor and requests a change to the permit, the Department will review the request.

5. Montana-Dakota is required by ARM 17.8.771 to meet a 1.5 lb/TBtu emission limit. To meet this limit, Montana-Dakota is required to operate an oxidizing agent injection (OAI) system and an activated carbon injection (ACI) system. In addition, Montana-Dakota will monitor compliance with the mercury emission limit with a mercury emissions monitoring system (MEMS).

B. Monitoring Requirements

ARM 17.8.1212(1) requires monitoring be contained in the permit. It requires the monitoring required under an applicable requirement or when the applicable requirement does not contain periodic monitoring, it requires the use of monitoring “sufficient to yield reliable data” that are representative of the source’s compliance with the air quality operating permit. ARM 17.8.1213(7) provides that each permit must contain requirements for certification of compliance with “the terms and conditions contained in the permit.” The operating permit shield provides that compliance with the monitoring requirements in the operating permit constitute compliance with all monitoring requirements of the FCAA. The permittee can rely on the results of periodic monitoring to certify compliance, but this does not prohibit the use of other approved methods for determining compliance with an applicable emission limit or requirement.

ARM 17.8, Subchapter 15, Compliance Assurance Monitoring (CAM) applies to Montana-Dakota’s Lewis and Clark Station facility. As indicated in ARM 17.8.1503(2)(c), the CAM rule for EU1 is satisfied for NO_x and SO₂ under the Acid Rain provisions set forth in Appendix H of Montana-Dakota’s Title V Operating Permit. However, Montana-Dakota Lewis & Clark EU1 is subject to CAM for PM as set forth in the CAM plan submitted by Montana-Dakota. Appendix I of Montana-Dakota’s Title V Operating Permit summarizes the CAM plan. EU10, the two 20V34SG Wärtsilä Natural Gas RICE Generator Sets, are subject to CAM for NO_x.

ARM 17.8.771, Mercury Emission Standards for Mercury-Emitting Generating Units, applies to the Montana-Dakota Lewis and Clark Station EU1. This rule requires mercury monitoring be conducted by Montana-Dakota. Mercury monitoring provisions are contained in the Title V operating permit and outlined in Appendix J of the Operating Permit. Specific to Mercury, all references to 40 CFR 75 refers to what can be found in the 2005 annual edition of the CFR.

C. Test Methods and Procedures

This operating permit contains requirements for performing Method 9 and Method 5 tests as required by the Department. Method 9 and Method 5 tests must be performed in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106). Each observation period must be a minimum of 6 minutes unless any one reading is 20% or greater, then the observation period must be a minimum of 20 minutes or until a violation of the standard has been documented, whichever is a shorter period of time.

D. Recordkeeping Requirements

The recordkeeping provisions shall be sufficient to meet the provisions of the monitoring requirements and shall include, as necessary, the installation, use, and maintenance of the monitoring equipment or methods.

The following information shall also be provided as necessary; the date the analyses were performed, the place and time of the sampling, the company or entity performing the sampling, the analytical techniques or methods used, the results of such analyses, and the operating conditions at the time of the analyses. Retention of the records of all required monitoring data and support information shall be for a period of at least five years from the date of measurement. Support information includes all calibration and maintenance records and copies of all reports required by the permit.

E. Reporting Requirements

Montana-Dakota is required to submit, to the Department, reports of any required monitoring at least every 6 months and to annually certify compliance with the applicable requirements contained in the permit. All deviations from permit requirements must be clearly identified in these reports. All reports must be certified by a responsible official. The permittee is also required to promptly report any deviations from the permit requirements due to upset conditions and the probable cause of the upset condition along with any corrective actions or preventive measures taken.

F. Public Notice

The Department made public notice in the Wednesday, January 13, 2021 edition of the *Sidney Herald*, a newspaper in general circulation in the town of Sidney, Montana, to provide notification regarding the public comment period open on the Draft of the renewal Title V Permit for this facility.

Summary of Public Comments

(None Received)

Person/Group Commenting	Comment	Department Response

G. Draft Permit Comments

Summary of Permittee Comments

(None Received)

Permit Reference	Permittee Comment	Department Response

Summary of EPA Comments

(If received)

Permit Reference	EPA Comment	Department Response

SECTION IV. NON-APPLICABLE REQUIREMENTS ANALYSIS

Section IV of the operating permit, “Non-applicable Requirements”, contains the requirements that the Department determined were non-applicable. This section typically outlines those requirements for which the applicant requested a shield, but no shield was provided for.

Applicable Requirement	Reason
Sub-Chapter 1 General Provisions	
ARM 17.8.120 to 121 Variance Procedures ARM 17.8.130 and ARM 17.8.131 Enforcement Procedures – Appeal to Board ARM 17.8.140 Rehearing Procedures – Form and Filing of Petition ARM 17.8.141 Rehearing Procedures – Filing Requirements	These are procedural rules that have specific requirements that may become relevant to a major source during the permit span.
ARM 17.8.142 Rehearing Procedures – Board Review	These rules contain requirements for the regulatory authorities and not major sources; however, they can be used as authority to impose specific requirements on a major source.
Sub-Chapter 5 Air Quality Permit Application, Operation and Open Burning Fees	
ARM 17.8.510 Annual Review	This rule contains requirements for the regulatory authorities and not major sources; however, it can be used as authority to impose specific requirements on a major source.
ARM 17.8.511 Air Quality Permit Application/Operation Fee Assessment Appeal Procedures 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.
Sub-Chapter 6 Open Burning	
ARM 17.8.611 Emergency Open Burning Permits ARM 17.8.612 Conditional Air Quality Open Burning Permits ARM 17.8.613 Christmas Tree Waste Open Burning Permits ARM 17.8.614 Commercial Film Production Open Burning Permits ARM 17.8.615 Firefighter Training	These are procedural rules that have specific requirements that may become relevant to a major source during the permit span.
Sub-Chapter 8 Prevention of Significant Deterioration	
ARM 17.8. Subchapter 8	These are rules that 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.
Sub-Chapter 9 Permit Requirements for Major Stationary Sources or Major Modifications Located Within Nonattainment Areas	

Applicable Requirement	Reason
ARM 17.8. Subchapter 9	These are rules that 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.
Sub-Chapter 10 Preconstruction Permit Requirements for Major Stationary Sources or Major Modifications Located Within Attainment or Unclassified Areas	
ARM 17.8. Subchapter 10	These are rules that 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.
Sub-Chapter 11 Visibility Impact Assessment	
ARM 17.8 Subchapter 11	These are rules that 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.
Sub-Chapter 15 Compliance Assurance Monitoring	
ARM 17.8.1501 <i>et seq.</i>	These regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.

Applicable Requirement	Reason
40 CFR 50 National Primary and Secondary Ambient Air Quality Standard for Sulfur Oxides, PM10, PM2.5, Carbon Monoxide, Ozone, Nitrogen Dioxide, Lead 40 CFR 51 , Requirements for Preparation, Adoption, and Submittal of Implementation Plans 40 CFR 53 , Ambient Air Monitoring Reference and Equivalent Methods 40 CFR 54 , Prior Notice of Citizen Suits 40 CFR 56 , Regional Consistency 40 CFR 58 , Ambient Air Quality Surveillance 40 CFR 67 , EPA Approval of State Noncompliance Penalty Program 40 CFR 81 , Designation of Areas for Air Quality Planning Purposes	These rules contain requirements for the regulatory authorities and not major sources; however, they can be used as authority to impose specific requirements on a major source.
40 CFR 60 , Subpart A General Provisions 40 CFR 61 , Subpart A General Provisions 40 CFR 63 , Subpart B Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)	These are procedural rules that have specific requirements that may become relevant to a major source during the permit span.

Applicable Requirement	Reason
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 66 , Assessment and Collection of Noncompliance Penalties by EPA Programs	These rules do not have specific requirements but may or may not be relevant to a major source.
40 CFR 82 , Subpart F Recycling and Emissions Reduction	These are rules that are always applicable to a major source and may contain specific requirements for compliance.
40 CFR 63, Subpart C, List of Hazardous Air Pollutants, Petition Process, Lesser Quantity Designations, Source Category List	These are rules that 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.

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards

This facility is subject to 40 CFR 63 Subpart UUUUU – National Emission Standards for Hazardous Air Pollutants for Coal and Oil-Fired Electric Utility Steam Generating Units. This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from coal- and oil-fired electric utility steam generating units (EGUs) as defined in §63.10042 of this subpart. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations. Pursuant to Section 112(i)(3)(B) and 40 CFR 63.6(i)(4)(A), Montana-Dakota requested a one-year extension of the MATS compliance date to complete the installation of controls at the Lewis & Clark Station. The controls were necessary to comply with the filterable particulate non-mercury metal standards. In a letter dated January 30, 2015, the Department granted an extension with terms, and such terms are identified in the permit.

B. Risk Management Plans

A Risk Management Plan as defined in 40 CFR Part 68 is not required for the Montana-Dakota Lewis and Clark Station based on information provided by Montana-Dakota on April 11, 1997, and June 26, 2002, and in the renewal application received February 20, 2014. Montana-Dakota does not currently store any regulated substances which exceed the threshold quantities.

C. NESHAPS Standards

As of the issuance date of this permit, the Department is not aware of future 40 CFR Part 61 requirements that may be promulgated that will affect this facility.

NESHAP Standard 40 CFR 61, Subpart M does apply to the facility at this time.

D. NSPS Standards

As of the issuance date of this permit, the Department is unaware of any future NSPS Standards that may be promulgated that will affect this facility.

E. CAM Applicability

An emitting unit located at a Title V facility that meets the following criteria listed in ARM 17.8.1503 is subject to Subchapter 15 and must develop a CAM Plan for that unit:

- The emitting unit is subject to an emission limitation or standard for the applicable regulated air pollutant (other than emission limits or standards proposed after November 15, 1990, since these regulations contain specific monitoring requirements);
- The emitting unit uses a control device to achieve compliance with such limit; and
- The emitting unit has potential pre-control device emissions of the applicable regulated air pollutant that are greater than major source thresholds.

Montana-Dakota has two emitting units which meet the above criteria, EU01 (Tangential Coal-Fired Boiler) and EU10 (Wärtsilä Natural Gas RICE Generator Sets). An overview of the CAM plan is provided in Appendix I and Appendix L of the Operating Permit.

F. Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule

On May 7, 2010, EPA published the “light duty vehicle rule” (Docket # EPA-HQ-OAR-2009-0472, 75 FR 25324) controlling greenhouse gas (GHG) emissions from mobile sources, whereby GHG became a pollutant subject to regulation under the Federal and Montana Clean Air Act(s). On June 3, 2010, EPA promulgated the GHG “Tailoring Rule” (Docket # EPA-HQ-OAR-2009-0517, 75 FR 31514) which modified 40 CFR Parts 51, 52, 70, and 71 to specify which facilities are subject to GHG permitting requirements and when such facilities become subject to regulation for GHG under the PSD and Title V programs.

Under the Tailoring Rule, any PSD action (either a new major stationary source or a major modification at a major stationary source) taken for a pollutant or pollutants other than GHG that was not final prior to January 2, 2011, would be subject to PSD permitting requirements for GHG if the GHG increases associated with that action were at or above 75,000 tons per year (tpy) of carbon dioxide equivalent (CO_{2e}). Similarly, if such action were taken, any resulting requirements would be subject to inclusion in the Title V Operating Permit. Starting on July 1, 2011, PSD permitting requirements would be triggered for modifications that were determined to be major under PSD based on GHG emissions alone, even if no other pollutant triggered a major modification. In addition, sources that exceed the 100,000 tpy CO_{2e} threshold under Title V would be required to obtain a Title V Operating Permit if they were not already subject.

The Supreme Court of the United States (SCOTUS), in its *Utility Air Regulatory Group v. EPA* decision on June 23, 2014, ruled that the Clean Air Act neither compels nor permits EPA to require a source to obtain a PSD or Title V permit on the sole basis of its potential emissions of GHG. SCOTUS also ruled that EPA lacked the authority to tailor the Clean Air Act’s unambiguous numerical thresholds of 100 or 250 TPY to accommodate a CO_{2e} threshold of 100,000 TPY. SCOTUS upheld that EPA reasonably interpreted the Clean Air Act to require sources that would need PSD permits based on their emission of conventional pollutants to comply with BACT for GHG. As such, the Tailoring Rule has been rendered invalid and sources cannot become subject to PSD or Title V regulations based on GHG emissions alone. Sources that must undergo PSD permitting due to pollutant emissions other than GHG may still be required to comply with BACT for GHG emissions.