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June 14, 2013

Executive Secretary
North Dakota Public Service Commission
State Capitol Building
Bismarck, ND 58505-0480



Re: Case No. PU-13-____
Application for an Advance
Determination of Prudence for the Lewis
& Clark Station Filterable Particulate
Matter Pollution Controls Project

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc., herewith files an original and seven (7) copies of its Application for an Advance Determination of Prudence pursuant to N.D.C.C. §49-05-16 to add Filterable Particulate Matter (FPM) Pollution Control equipment at Montana-Dakota's Lewis & Clark generating station (Lewis & Clark Station) to comply with the Mercury and Air Toxics Standards (MATS) rule, collectively hereinafter referred to as the "Project". The Lewis & Clark Station is an existing single-unit, 50 MW lignite-fired generating station located near Sidney, Montana providing service to Montana-Dakota's electric customers in North Dakota, Montana and South Dakota.

As more fully described in the attached Application, the Project, necessary to continue operating the Lewis & Clark Station, is the least cost alternative available to continue providing energy and capacity to meet the requirements of Montana-Dakota's electric service customers.

Please refer all inquiries regarding this filing to:

Tamie A. Aberle
Director of Regulatory Affairs
Montana-Dakota Utilities Co.
400 North Fourth Street
Bismarck, ND 58501

Also, please send copies of all written inquiries, correspondence and pleadings to:

Daniel S. Kuntz
Associate General Counsel
MDU Resources Group, Inc.
P.O. Box 5650
Bismarck, ND 58506-5650

Also enclosed are an original and seven copies of Montana-Dakota' Application for Trade Secret Protection of portions of Exhibit 1 marked as "Trade Secret". The referenced Exhibit is provided with the trade secret information redacted.

Montana-Dakota also submits a check in the amount of \$125,000.00 in accordance with NDCC Chapter 49-05-16. Montana-Dakota respectfully requests that this filing be accepted as being in full compliance with the filing requirements of this Commission.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed, stamped envelope.

Sincerely,



Garret Senger
Vice President Regulatory Affairs and
Chief Accounting Officer

Attachments
cc: Daniel S. Kuntz

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

In the Matter of the Application of)
MONTANA-DAKOTA UTILITIES CO., a)
Division of MDU Resources Group, Inc.)
for an Advance Determination of) Case No. PU-13-____
Prudence for the Lewis & Clark Station)
Filterable Particulate Matter Pollution)
Controls Project)

I. Summary of Application

Montana-Dakota Utilities Co. (Montana-Dakota or Company) makes this application pursuant to N.D.C.C. §49-05-16 for an Advance Determination of Prudence to install and operate additional filterable particulate matter pollution control equipment at the Company's Lewis & Clark Generating Station (Lewis & Clark Station) located near Sidney, Montana (Project). As defined in Exhibit 1 to this Application, the recommended control technology includes the installation of a baghouse with modifications to the existing mist eliminator at the Lewis & Clark Station.

The Project is required to meet non-mercury metal emission limits in the U.S. Environmental Protection Agency's (EPA) final "National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units", or Mercury and Air Toxics Standard (MATS) Rule, finalized and published in the Federal Register on February 16, 2012 (77 Fed. Reg. 9304), and effective April 16, 2012. Per the MATS Rule requirements, Montana-Dakota must demonstrate compliance at the Lewis & Clark Station commencing on April 16, 2015

with the opportunity for a state approved additional year to install control technologies. The Montana Department of Environmental Quality (MDEQ) is the state permitting agency authorized to administer the MATS Rule for facilities located in Montana. Montana-Dakota will be submitting a request to the MDEQ for a one-year extension to install the required pollution controls.

Montana-Dakota will show in this Application and supporting exhibits that the Project is prudent to maintain a low cost base load resource for its North Dakota electric customers.

In support of this application, Montana-Dakota provides the following exhibits:

- Exhibit 1 – ‘Environmental Control Technology Strategy for Compliance with MATS and Regional Haze Rules’ authored by Sargent & Lundy, LLC (Sargent & Lundy).
- Exhibit 2 – Supply Resource Analysis
- Exhibit 3 – Project Timeline
- Exhibit 4 – Direct Testimony of Andrea L. Stomberg
- Exhibit 5 – Direct Testimony of Alan L. Welte
- Exhibit 6 – Direct Testimony of Brian J. Giggee

II. Description of Applicant

Montana-Dakota is a Division of MDU Resources Group, Inc., a Delaware corporation duly authorized to do business in the State of North Dakota as a foreign corporation, and doing business in the State of North Dakota as a public utility subject to the jurisdiction of and regulation by the North Dakota Public Service Commission (Commission) under Title 49, NDCC, as amended. Montana-Dakota's Certificate of Incorporation and amendments thereto have been previously filed with the Commission under Case No. PU-08-710 and such Certificate and Amendments are hereby incorporated by reference as though fully set forth herein. Montana-Dakota provides

electric service to approximately 133,000 customers with approximately 83,000 of those customers located in North Dakota.

III. Description of the Project

Montana-Dakota seeks authorization to install equipment necessary to reduce filterable particulate matter at the Lewis & Clark Station through the installation and operation of a fabric filter baghouse system and modifications to existing mist eliminators. The baghouse installation will also require the demolition of an abandoned chimney. A detailed description of the Project is provided as Exhibit 1 entitled '*Environmental Control Technology Strategy for Compliance with MATS and Regional Haze Rules*' authored by Sargent & Lundy, LLC (Sargent & Lundy). Sargent & Lundy is a consulting engineering, design, and analysis company retained by Montana-Dakota to evaluate emission control technology strategies that would provide a cost effective means to address the controls necessary for Montana-Dakota to meet the requirements of the MATS Rule. The modifications identified will enable the Lewis & Clark Station to comply with emissions standards set forth by the MATS Rule. Montana-Dakota plans to issue a Request for Proposal (RFP) later this year for a baghouse system or similar technologies that will meet the environmental requirements.

The Lewis & Clark Station is an existing single-unit, 50-MW lignite-fired facility located near Sidney, Montana that has been in operation since October 1, 1958. The Lewis & Clark Station is an integrated system resource supplying approximately twelve percent of the integrated system energy requirements in 2012 and representing nine percent of the required capacity credits for the integrated system. The Lewis & Clark

Station is currently equipped with multiple-cyclone mechanical particulate collectors, as well as a flooded wet disk particulate scrubber. The flooded wet disk scrubber is primarily designed for particulate matter pollution control but also removes sulfur dioxide from the flue gas. For mercury control, the unit currently uses fuel additives as well as activated carbon injection

The MATS Rule, published as a final rule on February 16, 2012 (77 Fed. Reg. 9304), regulates hazardous air pollutant (HAP) emissions from coal- and oil-fired electric generating units. As stated above, the MATS Rule became effective on April 16, 2012, and compliance with the MATS emission limits is required by April 16, 2015, with the opportunity for a one-year extension, if required, for the installation of the selected air pollution control systems.

The MATS Rule includes emissions standards for mercury, non-mercury trace metals, and acid gas emissions from existing coal-fired boilers. Work practice standards were included for control of organic hazardous air pollutant emissions. For the non-mercury metals, the MATS Rule includes alternative emission limits for filterable particulate matter, total non-mercury, and individual hazardous air pollutant metals. For the acid gases, the MATS Rule includes alternative emission standards for either hydrochloric acid (HCl) or sulfur dioxide as a surrogate to demonstrate compliance for all acid gas emissions. MATS emission limits that apply to the Lewis & Clark Station are summarized in Table 3-1 found on page 3-1 in Exhibit 1.

IV. Environmental Control Technology Evaluation

Diagnostic testing was performed in 2011 and 2012 to measure filterable particulate matter, total non-mercury hazardous air pollutant metals, individual non-

mercury hazardous air pollutant metals, and hydrogen chloride emissions from the Lewis & Clark Station. Stack tests were conducted using approved U.S. EPA stack test methods, and the test results were compared with the respective MATS emissions limits. In addition, mercury and sulfur dioxide baseline emissions data obtained from the facility's existing continuous emissions monitoring systems were compared with the MATS standards for mercury and sulfur dioxide. Lewis & Clark's baseline emissions are compared to the MATS emission limits in Table 3-2 on page 3-2 of Exhibit 1.

The 2011 diagnostic test results for total non-mercury hazardous air pollutant metals indicated that Lewis & Clark could meet the MATS limit with the current suite of pollution controls equipment, but the testing was determined to be questionable. The subsequent measured emissions for filterable particulate matter, total non-mercury and individual non-mercury hazardous air pollutant metals from the 2012 diagnostic testing all exceeded the respective MATS limits. Sargent & Lundy reviewed the 2011 and 2012 stack test reports and test methods, as well as the Lewis & Clark Station fuel characteristics, and concluded that the 2012 test results are more representative of actual non-Hg HAP metal emissions. In addition, further stack testing was completed in late 2012 for non-mercury metals and the preliminary review of those results appears to further support the June and September 2012 stack testing results. Therefore, manganese is expected to consistently prevent the unit from being compliant with either the individual or total non-Hg HAP metals emission limits with the existing suite of air pollution control technologies. Additional information on emissions testing performed at Lewis & Clark can be found in Exhibit 1, pages 3-1 through 3-6.

As discussed above, additional emissions controls will be required for the Lewis & Clark Station to meet the MATS emissions limits for filterable particulate matter and for non-mercury hazardous air pollutant metals. Montana-Dakota evaluated several strategies to reduce these emissions. Based on the compliance strategy evaluation, provided in Section 5 of Exhibit 1, Montana-Dakota identified the optimal MATS compliance option to be the installation of a fabric filter baghouse system and modification of the existing flooded wet disk scrubber's mist eliminators at an estimated cost of \$26.142 million. This technology was determined to be the most cost effective means of meeting the MATS rule requirements. A baghouse collects particulate matter by passing ash-containing flue gas through filter bags. Mist eliminator modifications are required to minimize particulate carryover from the wet scrubber that will remain in use for sulfur dioxide emissions control, and ensure filterable particulate matter emissions remain below the MATS standard. The demolition of an abandoned chimney is required to provide an optimal tie-in location for the baghouse. Detailed descriptions of the Project emissions control technologies are provided in Exhibit 1, pages 4-20 through 4-23.

Alternative compliance strategies considered include: (1) fuel switching, (2) flooded wet disk scrubber modifications, (3) installation of a dry electrostatic precipitator, (4) installation of a wet electrostatic precipitator, (5) installation of a baghouse and dry sorbent injection system to replace the existing wet disk scrubber, and (6) installation of a baghouse and a dry flue gas desulfurization system to replace the existing wet disk scrubber. A detailed description of each alternative is provided is provided in Exhibit 1, Sections 4 and 5.

Montana-Dakota also conducted an additional internal review of a potential fuel switch to natural gas in 2012 and 2013. The conversion to natural gas and the optimal MATS compliance option were included with other supply side alternatives in the Company's Supply Resource Analysis and are discussed in Section V below.

V. Need and Justification for the Project

The Lewis & Clark Station has been an important part of Montana-Dakota's generation portfolio and it continues to provide reliable, low cost energy to our customers. Additionally, it is located within the Bakken Oil Field development area and is an important generation resource that serves load and provides voltage support to the region in addition to its contribution to meeting the energy and capacity requirements of the integrated system. With the rapid growth of activity in the Bakken area, the Lewis & Clark Station is needed to maintain reliability in the area under both peak system conditions and various transmission outage conditions.

The Electric Generation Expansion Analysis System (EGEAS), a computer software model developed by the Electric Power Research Institute, was used to perform a resource expansion analysis and develop a least-cost resource expansion plan for the retirement of the Lewis & Clark Station in 2015, as it is currently configured and operated, to comply with the MATS rule. Results of the analysis are contained in Exhibit 2.

To perform the EGEAS analysis, the existing Lewis & Clark Station was assumed to be retired as a supply resource in 2015. Alternative configurations for the Lewis & Clark Station were included in the analysis as potential replacement facilities including (1) the addition of a baghouse and modifications to the wet scrubber mist eliminator to the existing plant for MATS compliance, (2) conversion of the Lewis & Clark Station to a natural gas-fired combustion facility along with the construction of a pipeline to the

nearby ONEOK gas processing plant, (3) conversion of the Lewis & Clark Station to a natural gas-fired combustion facility along with modification of the WBI Energy Charbonneau compressor station to supply sufficient natural gas requirements to the facility, and (4) conversion of the Lewis & Clark Station to a natural gas-fired combustion facility along with the construction of a pipeline to connect to the Northern Border Pipeline. For reliability purposes, the Lewis & Clark Station under the natural gas-fired options in the EGEAS model was required to operate at the minimum generation level for four months every year through 2019 to support the Bakken area load. For modeling purposes, the Lewis & Clark Station baghouse option was assumed to have a five year depreciation life as a conservative modeling approach to determine the value of continuing to run the Lewis & Clark Station on coal even under a limited remaining life scenario. The natural gas-fired options for the Lewis & Clark Station were considered to have a twenty year life.

Resource alternatives considered in the EGEAS analysis included simple cycle combustion turbines, reciprocating engines, combined cycle combustion turbines, coal-fired generation (with and without carbon capture), self-built wind generation, solar generation, biomass fueled generation, solid waste fueled generation, purchased capacity, purchased MISO energy, and purchased wind energy. Sensitivity scenarios in the analysis consisted of various assumptions regarding the following (1) low natural gas prices, (2) high natural gas prices, (3) low customer growth, (4) high customer growth, (5) \$30 carbon tax on all fossil fuel combustion resources, (6) \$50 carbon tax on all fossil fuel combustion resources, (7) high combustion turbine costs, and (8) MISO planning reserve requirements similar to the current 2013-2014 planning year.

Results of the EGEAS modeling support the installation of the baghouse at the Lewis & Clark Station in all scenarios except for the low growth scenario which is unlikely based on the forecasted growth in the Bakken area. The net present value of the revenue requirement for the scenario with the installation of the Lewis & Clark

Station baghouse is approximately \$115 million less than the Base Case where the Lewis & Clark Station is retired in 2015, and at least \$118 million less than any of the natural gas-fired conversion options for the Lewis & Clark Station over the 50 year study period as shown on page 14 of Exhibit 2.

The Lewis & Clark Station baghouse project provides a vital resource in Montana-Dakota's least cost resource plan and in meeting the load serving needs of the Bakken area. Through a robust modeling analysis, Montana-Dakota has determined that the addition of the required equipment in order to continue to operate the Lewis & Clark Station is the least cost alternative for Montana-Dakota and its customers.

VI. Cost Estimates

The capital outlay for the Project is estimated to be \$26.142 million (2013 dollars). This cost estimate is considered to be a conceptual cost estimate with an accuracy of ± 20 percent. The total cost of the project, including applicable loadings and Allowance for Funds Used During Construction equates to approximately \$27.7 million based on the most recent project estimate and timeline for construction. North Dakota's share of the addition required for the Lewis & Clark Station is approximately 71 percent or approximately \$19.7 million. North Dakota's residential customers will see an estimated increase of \$1.40 per month in their electric service bill assuming the use of 750 Kwh per month.

VII. Compliance Timeline Including Extension

Compliance with the MATS emission standards is required within three years of publication of the rule in the *Federal Register* (i.e., April 16, 2015). However, if an existing source is unable to comply within three years, the permitting authority (in this

case, the State of Montana's Department of Environmental Quality) has the ability to grant up to a one-year extension if additional time is necessary for the installation of controls. Permitting authorities have the discretion to issue an extension to address a range of situations in which installation schedule may take more than three years, including staggering installations for reliability reasons or other site-specific challenges that might arise related to source-specific construction, permitting, labor, procurement, or resource challenges. In the preamble to the final rule, the EPA stated that the "fourth year should be broadly available to enable a facility owner to install controls within four years if the three-year time frame is inadequate for completing installation." (See, 77 Fed. Reg. 9410). Montana-Dakota is in discussions with the Montana Department of Environmental Quality and plans to seek and obtain timely approval from the Montana Department of Environmental Quality for a one-year extension due to the Project complexity and length of time required to implement the filterable particulate matter pollution control project.

Montana-Dakota anticipates the Project to be completed within 23 months from time the project is approved. Exhibit 3 provides a timeline and milestones for the Project.

VIII. Reasonableness and Prudence of the Project

Montana-Dakota requests an advance determination of prudence for the Project. A finding that this investment will be deemed reasonable and prudent and recoverable through rates at a point in the future is necessary in order to facilitate the approximate \$27.7 million investment associated with this resource addition. As provided in N.D.C.C. §49-05-16 the Commission may issue an order approving the prudence of an electric resource addition if the following conditions are met:

- a. The public utility files with its application a projection of costs to the date of the anticipated commercial operation of the resource addition;
- b. The public utility files with its application a fee in the amount of one hundred twenty-five thousand dollars.
- c. The commission provides notice and holds a hearing, if appropriate, in accordance with section 49-02-02; and
- d. The commission determines that the resource addition is prudent. For facilities located or to be located in this state the commission, in determining whether the resource addition is prudent, shall consider the benefits of having the resource addition located in this state.

Montana-Dakota has met the above conditions and requests that the Project be deemed a prudent investment for Montana-Dakota's North Dakota electric customers.

IX. Conclusion

Applicant respectfully requests that the Commission:


1. Give Notice of Opportunity to request a hearing to interested parties and, if no hearing is requested within twenty days, to waive the hearing in accordance with §49-03.1-05, NDCC;
2. Enter an Order making a determination that the Project is prudent pursuant to the requirements of to N.D.C.C. §49-05-16e.
3. Grant such other relief as the Commission shall deem appropriate.

Dated this 14th day of June, 2013.



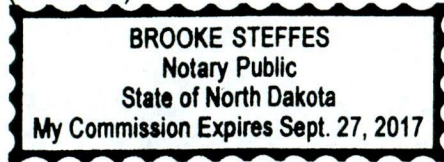
Garret Senger
Vice President Regulatory Affairs &
Chief Accounting Officer

Subscribed and sworn to before me this 14th day of June, 2013.



Brooke Steffes, Notary Public
Burleigh County, North Dakota
My Commission Expires: 9/27/2017

(S E A L)



Of Counsel:

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