



**MONTANA-DAKOTA UTILITIES CO.**

**CASE NO. PU-14-\_\_\_**

**CASE NO. PU-14-\_\_\_**

Application for an Advance Determination of  
Prudence for the Thunder Spirit Wind Project

Application for a Certificate of Public Convenience  
& Necessity for the Thunder Spirit Wind Project

Filed December 22, 2014

**1**    **PU-14-844**    Filed: 12/22/2014    Pages: 32  
**Application for Certificate of Public Convenience  
and Necessity**

Montana-Dakota Utilities Co., a Division of MDU Resources  
Group, Inc.  
Garret Senger

**1**    **PU-14-843**    Filed: 12/22/2014    Pages: 32  
**Application for Advance Determination of Prudence**

Montana-Dakota Utilities Co., a Division of MDU Resources  
Group, Inc.  
Garret Senger



**MONTANA-DAKOTA**

**UTILITIES CO.**

*A Division of MDU Resources Group, Inc.*

400 North Fourth Street

Bismarck, ND 58501

(701) 222-7900

December 22, 2014

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

Re: Case No. PU-14-\_\_\_\_  
Application for an Advance Determination of Prudence for the Thunder Spirit  
Wind Project

Case No. PU-14-\_\_\_\_  
Application for a Certificate of Public Convenience & Necessity for the Thunder  
Spirit Wind Project

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc., herewith files an original and seven (7) copies of this Application for approval of an Advance Determination of Prudence (ADP) and a Certificate of Public Convenience and Necessity (CPCN) for the 107.5 MW Thunder Spirit Wind Project (Thunder Spirit or Project) located in Adams County, North Dakota. This Project will provide energy, capacity and renewable energy credits to Montana-Dakota's electric customers in North Dakota, Montana and South Dakota.

As more fully described in the attached Application, Thunder Spirit is a cost effective generation alternative that will help meet the needs of Montana-Dakota's electric service customers. The possibility to own this resource comes at a most opportune time. With the favorable pricing of this resource and the Company's need for energy and capacity to serve its customers, the Company believes it is prudent to make this resource acquisition.

Accordingly, Montana-Dakota respectfully requests that the Commission grant an ADP and CPCN and determine that this proposal to own Thunder Spirit is cost-effective. Once the Commission grants the ADP and CPCN, the Company will file for a transfer of the Site Certificate with the transfer to be effective upon the closing date of the transaction which is anticipated to be the in-service or commercial operation date.

Please refer all inquiries regarding this filing to:

Ms. 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's Application for Trade Secret Protection of portions of the Application and the Direct Testimony of Darcy J. Neigum and Exhibit No. \_\_\_ (DJN-2) that have been marked as "Trade Secret". The referenced materials are provided herein with the trade secret information redacted. The Trade Secret versions have been provided on yellow paper, marked confidential and placed in a sealed envelope.

Montana-Dakota also submits a check in the amount of \$175,000.00 in accordance with N.D.C.C. §49-05-16. N.D.C.C. § 49-03-02(3) provides the Commission with authority to impose a fee in an amount not to exceed \$175,000 for the processing of an application for a Certificate of Public Convenience and Necessity. If the Commission requires additional fees, the Company will provide any additional fees requested. Montana-Dakota respectfully requests that this filing be accepted as being in full compliance with the filing requirements of this Commission for an ADP and CPCN.

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-14-\_\_\_\_  
Prudence for the Thunder Spirit Wind )  
Project )

In the Matter of the Application of )  
MONTANA-DAKOTA UTILITIES CO., a )  
Division of MDU Resources Group, Inc. )  
for a Certificate of Public Convenience ) Case No. PU-14-\_\_\_\_  
and Necessity for the Thunder Spirit )  
Wind Project )  
)

**I. Summary of Application**

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc., (Montana-Dakota or Company) makes this Application pursuant to N.D.C.C. §49-05-16 for an Advance Determination of Prudence to own and operate the Thunder Spirit Wind Project (Thunder Spirit or Project), a 107.5 megawatt (MW) wind facility to be located in Adams County, North Dakota.

The Company also requests through this Application that the Commission grant a Certificate of Public Convenience and Necessity (CPCN) for the Project pursuant to N.D.C.C. Chapter 49-03.

This Application and the supporting exhibits demonstrate that the ownership of this Project is prudent to provide a cost effective generation resource for Montana-Dakota's North Dakota electric customers and that the Project meets the requirements for a CPCN. Under N.D.C.C. 49-05-16(7), a rebuttable presumption exists that the Project, which is located in North Dakota, is prudent.

In support of this application, Montana-Dakota provides the Direct Testimony and Exhibits of Darcy J. Neigum.

## **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, N.D.C.C., as amended. Montana-Dakota's Certificate of Incorporation and amendments thereto have been previously filed with the Commission under Case No. PU-08-710. Such Certificate and Amendments are hereby incorporated by reference as though fully set forth herein and Montana-Dakota requests the Commission to take official notice of them. Montana-Dakota provides electric service to approximately 138,000 customers with approximately 89,000 of those customers located in North Dakota.

## **III. Description of the Project**

Thunder Spirit is a 107.5 MW wind project currently under construction in Adams County, North Dakota northeast of the city of Hettinger. The Project will be comprised of 43 Nordex N100/2500 (2.5 MW) wind turbines erected on 80 meter towers and is expected to have a net capacity factor of 45.2 percent and be online by the end of 2015. At a capacity factor of 45.2 percent, the projected average annual output is estimated at approximately 426,000 megawatt-hours per year. A detailed description of the Project is provided in the testimony of Mr. Neigum.

The Project will interconnect with Montana-Dakota's Hettinger 230 kV Junction Substation. The network upgrades are expected to be less than \$1.5 million and include the addition of a 230 kV breaker bay, isolation switches, and necessary protective relaying. As part of a MISO transmission service request for firm point-to-point transmission service under the PPA, Montana-Dakota also needs to reconductor five miles of Montana-Dakota's 115kV line between the Coyote and Beulah Junction Substations to increase its facility rating to accommodate the transmission service request. No other wind projects are currently located in the Hettinger area and the likelihood for project curtailments is small compared to other project opportunities that Montana-Dakota reviewed in other parts of the state which have potential significant curtailment impacts.

The Company originally entered into a Power Purchase Agreement (PPA) to buy the output from the Project in October 2013 following a review of responses to a request for proposal (RFP) process utilized by Montana-Dakota to solicit offers for additional generation in accordance with its 2013 Integrated Resource Plan (IRP). The Project was to be completed by December 31, 2015 in order to qualify for Federal Production Tax Credits (PTCs) and Montana-Dakota's obligations under the PPA were conditioned on Thunder Spirit Wind, LLC (TSW) obtaining financing by February 28, 2014. Despite extensions to the financing deadline granted by Montana-Dakota and interest in the Project shown by several investors, it became apparent TSW could not obtain Project financing without price increases and other significant amendments to the PPA. With the uncertainty of TSW's ability to timely obtain financing even with increased PPA prices and other concessions requested by TWS, Montana-Dakota determined it was

advantageous and in the best interest of its customers to consider ownership of the Project as an alternative to the PPA arrangement.

In September 2014, Montana-Dakota contacted Allete Clean Energy (ACE), a subsidiary of Allete, Inc., which has developed other wind projects in North Dakota, to determine if ACE would consider acquiring the TSW Project, completing its development, and selling the completed Project to Montana-Dakota. ACE reviewed the Project and determined that it was willing to develop the Project and either sell the output or the completed Project to Montana-Dakota. ACE acquired TSW from the developers and contemporaneously TSW and Montana-Dakota entered into both an amended PPA and a conditional-asset purchase agreement for the Project. Pursuant to the agreements, Montana-Dakota agreed to purchase the completed Project conditioned upon approval by the Commission of a Certificate of Public Convenience and Necessity and an Advance Determination of Prudence for the purchase. Alternatively, Montana-Dakota will purchase the Project output under the amended PPA.

#### **IV. Need and Justification for the Project**

The need for additional energy was identified in the Company's five year plan provided in the 2013 IRP (Case No. PU-13-510) and included the recommendation to purchase 50 to 100 MW of wind energy by 2015. The IRP forecasts an increase in total net energy requirements of nearly 1 million MWh between 2012 and 2020 and more than 100 MW in peak demand over the same period. This Project will be used to meet a portion of the energy need identified in the IRP. The Project is scheduled to be completed by the end of 2015 and will provide a low cost energy resource that will serve

to offset purchases from the Midcontinent Independent System Operator energy market that currently represent approximately 20 percent of the energy supplied by Montana-Dakota with projections for the purchases to increase absent the addition of incremental energy on the system.

The levelized cost of Montana-Dakota's ownership of the Project over a 20-year period is \$31.96 per MWh as compared to a cost of **[TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS]** per MWh under the terms of the amended PPA. As described in the testimony of Mr. Neigum, Montana-Dakota updated the IRP modeling utilizing the modeling assumptions underlying the 2013 IRP along with the prices under the amended PPA. The updated modeling selected the full 107.5 MW Project as a cost effective resource and the addition of the Project does not affect the remainder of the Future Resource Plan. Ownership of the Project makes it an even more cost effective resource as Project ownership is projected to save customers nearly \$30 million on a net present value basis over 20 years.

### V. Cost Estimates

The purchase price of the Project from ACE is **[TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS]** million. In addition, Montana-Dakota will incur financing and owner's costs to result in a total estimated project cost of between **[TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS]** million (2014 dollars). North Dakota's share of the costs are approximately 71 percent or approximately **[TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS]** million.

## VI. Project Timeline

The Project will be comprised of 43 Nordex N100/2500 (2.5 MW) wind turbines erected on 80 meter towers. Nordex is scheduled to begin delivery of Project equipment to the site with padmount transformers and foundation inserts in June of 2015. Turbine equipment is scheduled to begin arriving on-site in July of 2015 and be completed in October. The electrical interconnection is scheduled to be complete by the end of September with turbine commissioning beginning in early October and continuing through the end of November assuming no delays or issues with the construction schedule or equipment deliveries occur. The Project is anticipated to be in-service by the end of 2015.

## VII. Standard for Advance Determination of Prudence

Montana-Dakota requests an Advance Determination of Prudence for its acquisition of the Project. A determination that the Project acquisition and associate investment is prudent and recoverable through future rates is necessary to facilitate the estimated **[TRADE SECRET DATA BEGINS                      TRADE SECRET DATA ENDS]** 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 seventy-five thousand dollars with provision for an increase or waiver of the fee
- 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.

N.D.C.C. §49-05-16(7) further provides: “There is a rebuttable presumption that a resource addition located in the state is prudent.” A prudence review considers whether a company’s investment, based upon what was known or should have been known at the time of the investment, is reasonable and prudent in light of the circumstances existing at the time.<sup>1</sup> Montana-Dakota has a demonstrated need for additional generation resources and a wind resource at the size of the Project was identified as a part of a cost effective generation portfolio to meet that need. Project ownership provides the opportunity for lower costs in comparison to PPA prices over the term of the PPA with the further opportunity for realization of additional generation beyond the term of the PPA. In general, Company owned resources can continue to provide low cost energy to customers over a longer period than a PPA. Through ownership of the Project, Montana-Dakota is able to manage the uncertainty of inflation and future maintenance costs. The Company can only recover actual maintenance costs from customers. With a PPA, the maintenance costs will be conservatively estimated and will increase the PPA prices in later years. While maintenance costs may increase as the Project ages, the Project will become more fully depreciated and more than offset any increases to maintenance costs.

Ownership of the Project also provides Montana-Dakota with the ability to expand the site in the future, if needed, to meet its customers’ energy requirements while capturing the economies of scale offered by a larger project site.

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<sup>1</sup> Re Western Massachusetts Electric Co., 80 PUR 4th 479, 520 (Massachusetts 1986).

Montana-Dakota has met the conditions required for an Advance Determination of Prudence and requests that the Project be deemed a prudent investment for Montana-Dakota's North Dakota electric customers.

### **VIII. Standard for Certificate of Public Convenience and Necessity**

N.D.C.C. § 49-03-01 provides that:

An electric public utility may not begin construction or operation of a public utility plant or system, or of an extension of a plant or system without first obtaining from the commission a certificate that public convenience and necessity require or will require such construction and operation.

Before the Commission may issue a CPCN, the electric public utility must file a certified copy of its articles of incorporation, and submit evidence that it has obtained, or will make application to obtain, the consent of any other public authority whose consent is required (N.D.C.C. § 49-03-02). After notice and hearing, the Commission may: (i) issue the certificate; (ii) refuse to issue the certificate; (iii) issue the certificate for only portions of the proposed facilities; or (iv) issue the certificate subject to such terms and conditions the Commission determines the public convenience and necessity requires. The Company believes this filing meets the required standards.

### **IX. Conclusion**

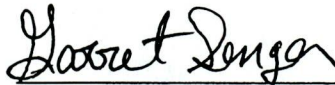
Applicant respectfully requests that the Commission:

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 §49-02-02, N.D.C.C.;
2. Enter an Order making a determination that the Project is prudent pursuant to the provisions of N.D.C.C. §49-05-16;

3. Enter an Order and issue a Certificate of Public Convenience and Necessity authorizing the Applicant to own and operate Thunder Spirit in Adams County, North Dakota; and

4. Grant such other relief as the Commission shall deem appropriate.

Dated this 22<sup>nd</sup> day of December, 2014.

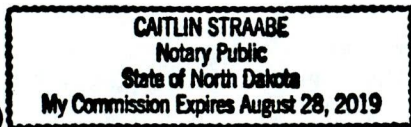


Garret Senger  
Vice President Regulatory Affairs &  
Chief Accounting Officer

Subscribed and sworn to before me this 22<sup>nd</sup> day of December, 2014.



Caitlin Straabe, Notary Public  
Burleigh County, North Dakota  
My Commission Expires: 08/28/2019



(S E A L)

Of Counsel:

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

MONTANA-DAKOTA UTILITIES CO.  
A Division of MDU Resources Group, Inc.

Before the Public Service Commission of North Dakota

Case No. PU-14-\_\_\_\_  
Case No. PU-14-\_\_\_\_

Direct Testimony  
of  
Darcy J. Neigum

1 **Q. Please state your name and business address.**

2 A. My name is Darcy J. Neigum and my business address is 400  
3 North Fourth Street, Bismarck, North Dakota 58501.

4 **Q. By whom are you employed and in what capacity?**

5 A. I am the Director of System Operations and Planning for Montana-  
6 Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources  
7 Group, Inc.

8 **Q. Please describe your duties and responsibilities with Montana-  
9 Dakota.**

10 A. I have managerial responsibility for the evaluation and  
11 development of new generation resources as well as overseeing the day-  
12 to-day operations of the electric control center and system operations  
13 planning department. The System Operations Planning Department is  
14 responsible for electric resource planning and expansion studies for the  
15 Company.

16 **Q. Please outline your educational and professional background.**

1 A. I hold a Bachelor's Degree in Electrical and Electronics  
2 Engineering from North Dakota State University as well as a Masters of  
3 Business Administration from the University of Mary. My work experience  
4 includes four years as a nuclear plant operator, three years of experience  
5 as a plant engineer for a coal-fired plant in North Dakota, and eleven  
6 years of generation development and operational responsibilities for coal-  
7 fired, gas-fired, and renewable generation sources. Over the last twelve  
8 years, I have been responsible for project management and construction  
9 of a 220 MW gas-fired generator in Brazil, a 43 MW gas-fired generator in  
10 Montana, a 120 MW coal-fired generator in Montana, 30 MW of wind  
11 generation in Montana, 20 MW of wind generation in North Dakota, and a  
12 5 MW heat-recovery generation project in North Dakota. I was also  
13 responsible for executive oversight of the operation and technical support  
14 for MDU Resources Group's independent power generation business unit  
15 prior to its sale in 2007 and I have been responsible for the development  
16 of the Company's integrated resource planning activities since 2008.

17 **Q. What is the purpose of your testimony in this proceeding?**

18 A. I provide support for the Company's request for an Advance  
19 Determination of Prudence and Certificate of Public Convenience and  
20 Necessity for the proposed addition of the Thunder Spirit Wind Project  
21 (Thunder Spirit or Project) as a generation resource for the Company's  
22 integrated electric system.

23 **Q. Please describe Thunder Spirit.**

1 A. Thunder Spirit is a 107.5 megawatt (MW) wind project under  
2 construction in Adams County, North Dakota northeast of the City of  
3 Hettinger. The Project is being constructed under a Certificate of Site  
4 Compatibility issued by this Commission in Case No. PU-11-601. Thunder  
5 Spirit will be comprised of 43 Nordex N100/2500 (2.5 MW) wind turbines  
6 erected on 80 meter towers with a net capacity factor of 45.2 percent.  
7 The Project is expected to be online by the end of 2015. At a capacity  
8 factor of 45.2 percent, the average annual output is projected at 426,000  
9 megawatt-hours per year.

10 Adams County is in southwestern North Dakota in one of the best  
11 wind areas of the state based upon actual site wind data and wind  
12 assessment studies conducted for the Project. The Project has received  
13 all of its major permits and agreements including a generation  
14 interconnection agreement with the Midcontinent Independent System  
15 Operator (MISO) and a turbine supply agreement with Nordex USA, Inc.

16 The Project will interconnect at the adjacent Hettinger 230 kilovolt  
17 (kV) Junction Substation owned by Montana-Dakota. The Project has all  
18 of the necessary land agreements and interconnection rights to expand  
19 the site to accommodate a project with a total size of 150 MW.

20 **Q. How did Montana-Dakota originally select and contract for Thunder**  
21 **Spirit?**

22 A. A comparable sized wind project was selected as a least cost  
23 resource in the Company's 2013 Integrated Resources Plan filed with the  
24 North Dakota Public Service Commission (Case No. PU-13-510).

1 Following a review of responses to a request for proposal (RFP) issued on  
2 March 25, 2013, Montana-Dakota selected Thunder Spirit over several  
3 other potential wind projects offered to the Company. Thunder Spirit was  
4 selected as the best opportunity for an energy resource based upon its  
5 price, contract terms, and location.

6 In October 2013, Montana-Dakota entered into a 25 year PPA with  
7 TSW to purchase the output of the Project at an attractive price. In  
8 addition to the attractive price, Montana-Dakota liked the Project site as it  
9 could easily be interconnected to the Company's Hettinger 230 kV  
10 Junction Substation with a minimum of new transmission or transmission  
11 upgrades. On-site measured data and long-term wind assessment  
12 studies demonstrated the area has an excellent wind regime. No other  
13 wind projects are currently located in the Hettinger area making the  
14 likelihood for project curtailments small compared to other project  
15 opportunities that Montana-Dakota reviewed in other parts of the state  
16 which have potentially significant curtailment impacts. Most Power  
17 Purchase Agreements (PPAs) require the buyer to take on outage  
18 curtailment risks including make whole payments to the seller. Because of  
19 the minimal likelihood of outage curtailments, Thunder Spirit Wind, LLC  
20 (TSW) was willing to take on all curtailment risks for the Project except for  
21 economic and buyer requested curtailments.

22 **Q. Why is the Company proposing now to own this Project as opposed**  
23 **to buying the output through a PPA?**

1 A. The Project was to be completed by December 31, 2015 in order to  
2 qualify for Federal Production Tax Credits (PTCs). Montana-Dakota's  
3 obligations under the PPA were conditioned on TSW obtaining project  
4 financing by February 28, 2014. Despite extensions to the financing  
5 deadline granted by Montana-Dakota and interest in the Project shown by  
6 several investors, it became apparent TSW could not obtain Project  
7 financing without price increases and other significant amendments to the  
8 PPA. With the uncertainty of TSW's ability to timely obtain financing, even  
9 with increased PPA prices and other concessions requested by TSW,  
10 Montana-Dakota determined it was advantageous and in the best interest  
11 of its customers to consider owning and operating the Project as an  
12 alternative to the PPA arrangement.

13 **Q. Would you please describe the current Project development**  
14 **arrangement?**

15 A. In September 2014, Montana-Dakota contacted Allete Clean  
16 Energy (ACE), a subsidiary of Allete, Inc., which has developed other wind  
17 projects in North Dakota, to determine if ACE would consider acquiring the  
18 TSW Project, completing its development, and selling the completed  
19 Project to Montana-Dakota. ACE reviewed the Project and determined  
20 that it was willing to develop the Project and either sell the output or the  
21 completed project to Montana-Dakota. ACE acquired TSW from the  
22 developers and contemporaneously TSW and Montana-Dakota entered  
23 into both an amended PPA and a conditional asset purchase agreement  
24 for the Project. Pursuant to the agreements, Montana-Dakota agreed to

1 purchase the completed Project prior to its commercial operations date  
2 conditioned upon approval by the Commission of a Certificate of Public  
3 Convenience and Necessity and an Advance Determination of Prudence  
4 for the purchase. Alternatively, Montana-Dakota agreed to purchase the  
5 Project output under the terms of the amended PPA if Montana-Dakota's  
6 applications for a Certificate of Public Convenience and Necessity and  
7 Advance Determination of Prudence were not approved. Both the asset  
8 purchase agreement and the amended and PPA were signed on  
9 November 20, 2014.

10 **Q. How will Montana-Dakota utilize Thunder Spirit to meet customer**  
11 **needs?**

12 A. Thunder Spirit will help keep energy prices to Montana-Dakota's  
13 customers as low as possible. Since the expiration of the 66 MW  
14 Antelope Valley Station Unit II PPA with Basin Electric in 2006, Montana-  
15 Dakota has been a net purchaser of energy from others to meet its  
16 customers' energy requirements. The Company's most recent long term  
17 forecast indicates customer energy requirements will be increasing by five  
18 percent per year for the next five years. The amount of energy that  
19 Montana-Dakota purchases from the MISO energy market has grown from  
20 10 percent, or 308,000 MWhs, in 2007 to over 20 percent, or 884,000  
21 MWhs, in 2013 despite the addition of generation resources during the  
22 time period. Without the addition of a new energy supply resource like  
23 Thunder Spirit, this number is forecasted to increase to almost 40 percent  
24 by 2016 based upon Plexos generation and market dispatch simulation

1 runs. Even with Thunder Spirit, Montana-Dakota's energy purchases from  
2 MISO are still expected to be almost 20 percent of its customers' annual  
3 energy requirements in 2016.

4 Ownership provides Montana-Dakota with control of the Project site  
5 and equipment along with the ability to capture additional value from the  
6 Project after the expiration of a PPA. All of the wind energy purchased  
7 under the PPA is at the contract price and if the Project generates more  
8 energy than the P50 wind forecast (50/50 historic wind potential) the  
9 Company still pays the contract price for all of the energy above the P50  
10 output level. Under an ownership scenario, customers receive the benefits  
11 of this additional generation at no additional cost. Ownership also provides  
12 Montana-Dakota with the ability to expand the site in the future, if needed,  
13 to meet its customers' energy requirements while capturing the economies  
14 of scale offered by a larger project site.

15 Thunder Spirit is a cost effective generation resource opportunity  
16 for Montana-Dakota that provides numerous benefits including price  
17 protection against future MISO energy prices, price protection against  
18 increases in future natural gas prices, greater fuel source diversity in the  
19 Company's generation mix, and the ability to capture significant value from  
20 federal and state tax incentives.

21 **Q. How will Thunder Spirit qualify for the Federal PTC that was to expire**  
22 **at the end of 2013?**

23 A. PTC's will reduce the Project's total cost by approximately 40  
24 percent over its life. Projects could qualify for the PTCs that were

1 scheduled to expire after 2013 if construction commenced prior to  
2 December 31, 2013 and "continuous efforts" are being made toward  
3 project completion. Under IRS guidelines, the first part of this test can be  
4 met if the project incurred five percent of the Project's costs prior to  
5 December 31, 2013. TSW met the first part of the test by acquiring certain  
6 turbine parts and completing other preliminary Project work during 2013.  
7 According to IRS guidelines, the second part of the test is met if the  
8 Project is completed by a safe harbor date of December 31, 2015. If the  
9 project is completed after December 31, 2015, the taxpayer must be  
10 prepared to show by "facts and circumstances" that continuous efforts  
11 were made in 2014 and 2015 to complete the project.

12 To provide for delivery of the wind turbine equipment in the summer  
13 of 2015 to meet a December 31, 2015 completion date, ACE issued a  
14 notice to proceed to Nordex on November 20, 2014 and provided the next  
15 milestone payment along with posting credit for the remaining payments  
16 under a previously executed turbine supply agreement between TSW and  
17 Nordex. The current delivery schedule for the turbine equipment will allow  
18 for erection and commissioning of the turbines to meet the December 31,  
19 2015 safe harbor completion date; however, the schedule is tight and  
20 subject to possible delays considering that many of the turbine  
21 components will be manufactured and shipped from Europe and Asia.

22 Delivery delays could cause the completion of some of the turbines  
23 to slip past December 31, 2015 resulting in the need for the Project to  
24 rely on satisfaction of the continuous efforts test to qualify for the PTCs.

1           Although the IRS has provided some limited guidelines on what facts and  
2           circumstances constitute continuous efforts toward completion, there are  
3           no hard and fast rules and no established precedent of whether a  
4           particular set of facts will satisfy the continuous efforts test. Nonetheless,  
5           ACE and Montana-Dakota concluded that the activities conducted by  
6           TSW during 2014 would likely satisfy the continuous efforts test.

7           The recently adjourned Congress also extended a number of tax  
8           benefits which we understand will extend PTC eligibility for projects by one  
9           year. This should ensure the applicability of Federal PTCs for the Project  
10          by extending both the start and completion of construction deadlines.

11   **Q. Does Montana-Dakota see any risks with Thunder Spirit not**  
12   **qualifying for the Federal PTCs if construction of the Project is not**  
13   **completed by the end of 2015?**

14   A.           Although there was some risk that any portion of the Project that  
15           was not completed by December 31, 2015 would not qualify for PTCs,  
16           Montana-Dakota believes there is a strong likelihood both that the Project  
17           will be completed by December 31, 2015, and to the extent not completed,  
18           any delayed turbines would qualify for PTCs under the continuous efforts  
19           test.

20           Language recently passed by the Congress that extends the PTC  
21           eligibility for projects by one year after the previously expiration date of  
22           December 31, 2013 would seemingly remove any remaining risk if the  
23           Project is not entirely complete by December 31, 2015.

24   **Q. What is the status of the Project's major contracts and agreements?**

1 A. TSW, in its efforts as Project developer, completed the necessary  
2 project studies and agreements to develop a wind project capable of  
3 achieving commercial operation by December 31, 2015. The turbine  
4 supply agreement with Nordex includes a five year turbine operation and  
5 maintenance agreement with a five year extension option available at the  
6 buyer's request.

7 TSW signed a large generator interconnection agreement with  
8 MISO and Montana-Dakota for a 150 MW interconnection into Montana-  
9 Dakota's Hettinger 230 kV Junction Substation located near Hettinger,  
10 North Dakota. The network upgrades under this interconnection  
11 agreement are expected to be less than \$1.5 million and include the  
12 addition of a 230 kV breaker bay, isolation switches, and necessary  
13 protective relaying, will be paid by TSW and are included in the asset  
14 purchase price to Montana-Dakota. As part of a MISO transmission  
15 service request for firm point-to-point transmission service under the PPA,  
16 Montana-Dakota also needs to reductor the five miles of Montana-  
17 Dakota's 115kV line between the Coyote and Beulah Junction Substations  
18 to increase its facility rating to accommodate the transmission service  
19 request. The cost of this reductoring as well as the cost of some other  
20 minor transmission upgrades that Montana-Dakota will incur are estimated  
21 to be less than \$1 million.

22 TSW has obtained all of the necessary local and state siting  
23 permits for the 150 MW project site. It has the necessary FAA  
24 determinations along with the necessary fish and wildlife and cultural

1 resource study results. TSW has secured wind energy leases and  
2 easements to support a 150 MW project through lease and easement  
3 agreements with over 40 landowners.

4 TSW contracted with Wanzek Construction (Wanzek) to perform  
5 the Project engineering, procurement, and construction activities. Wanzek  
6 will complete the necessary Project engineering in the winter of 2014-2015  
7 along with procurement of long lead-time equipment for timely delivery in  
8 the summer of 2015. Wanzek will also be responsible for the construction  
9 of the Project substation and 230kV interconnection line, less than one  
10 mile in length, between the Project substation and Montana-Dakota's  
11 Hettinger 230kV Junction Substation and will mobilize its construction  
12 crews to the Project site in June of 2015 with the start of Project roads and  
13 civil construction. Finally, Wanzek will be responsible for the turbine  
14 erection and Nordex will provide for the turbine commissioning.

15 **Q. What is the construction schedule for 2015?**

16 A. Nordex is scheduled to begin delivery of Project equipment to the  
17 site with padmount transformers and foundation inserts in June of 2015.  
18 Turbine equipment is scheduled to begin arriving on-site in July of 2015  
19 and be completed in October. The electrical interconnection is scheduled  
20 to be complete by the end of September with turbine commissioning  
21 beginning in early October and continuing through the end of November  
22 assuming no delays or issues with the construction schedule or equipment  
23 deliveries occur.

1 Q. Who has ownership of the renewable energy and capacity credits  
2 generated by Thunder Spirit?

3 A. Montana-Dakota will have ownership of the Project's renewable  
4 energy credits (RECs) and Project capacity credits whether it owns  
5 Thunder Spirit or purchases the output under a PPA arrangement.  
6 Currently seven percent of Montana-Dakota's customer energy  
7 requirements come from renewable generation including Diamond Willow I  
8 and II, Cedar Hills, and the Glen Ullin heat recovery generator. With the  
9 addition of Thunder Spirit, twenty percent of Montana-Dakota's 2016  
10 customer energy requirements will come from cost effective renewable  
11 generation.

12 Q. Please describe the asset purchase arrangement Montana-Dakota  
13 has with ACE Wind LLC.

14 A. Under the Asset Purchase Agreement with ACE Wind LLC, Allete  
15 will construct Thunder Spirit and deliver to Montana-Dakota prior to  
16 commercial operation of the Project a complete wind Project capable of  
17 fulfilling the requirements of the Amended and Restated Power Purchase  
18 Agreement between the Parties.

19 The sales price under the Asset Purchase Agreement to Montana-  
20 Dakota for Thunder Spirit is [TRADE SECRET DATA BEGINS  
21 TRADE SECRET DATA ENDS] million. Montana-Dakota will make  
22 milestone payments to Allete throughout the construction of the Project  
23 which will total the asset purchase price of [TRADE SECRET DATA  
24 BEGINS TRADE SECRET DATA ENDS] million. Montana-Dakota's

1 financing costs associated with the milestone payments are expected to  
2 add \$10 million to \$12 million to the cost of Project ownership. In addition,  
3 Montana-Dakota expects to incur costs of up to \$5 million to \$8 million for  
4 Project management and acquisition costs and transmission upgrades  
5 which will bring the total Project ownership costs to [TRADE SECRET  
6 DATA BEGINS TRADE SECRET DATA ENDS] million.

7 In the event an Advance Determination of Prudence and Certificate  
8 of Public Convenience and Necessity are not approved for the purchase of  
9 the Project, Allele will remain the owner of the Project and sell the output  
10 to Montana-Dakota under a 20 or 25 year PPA. [TRADE SECRET DATA  
11 BEGINS

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18 TRADE SECRET DATA ENDS].

19 **Q. Who will provide the turbine and balance of plant operations and**  
20 **maintenance for Thunder Spirit?**

21 A. As previously stated, Nordex will provide, under a maintenance  
22 service arrangement (MSA), for the initial operation and maintenance  
23 (O&M) of the project wind turbines excluding major complements like  
24 turbine blades, generators, gearboxes, bedplates, and tower sections. The

1 turbine supply agreement provides for two years of equipment warranty  
2 coverage after which Montana-Dakota will need to supply spare parts for  
3 the Project. Nordex will continue to supply Project consumables excluding  
4 gearbox oil changes under the MSA. Following the initial five years of the  
5 MSA, Montana-Dakota has the option to contract with Nordex for an  
6 additional five years of O&M under similar terms and conditions as the  
7 initial five year term including to be negotiated price adjustments.

8 Montana-Dakota will be responsible for the O&M of the Project's  
9 balance of plant equipment which includes all Project equipment from the  
10 turbine padmount transformers through the collector system and back to  
11 the point of interconnection at Montana-Dakota's Hettinger 230kV Junction  
12 Substation. Montana-Dakota will be responsible for all requirements under  
13 the wind lease and easement agreements with local landowners.

14 Montana-Dakota will be responsible for all project agreements and permits  
15 including the interconnection agreement with MISO. Montana-Dakota  
16 anticipates hiring two new employees for these balance of plant O&M  
17 activities.

18 **Q. Can you describe the economic modeling that went into the decision**  
19 **to purchase Thunder Spirit?**

20 Montana-Dakota conducted additional modeling runs using the  
21 2013 IRP EGEAS model as part of its evaluation process. The additional  
22 model runs included a 107.5 MW PPA at the purchase price contained in  
23 the amended and restated power purchase agreement with ACE along  
24 with a twenty percent capacity credit that could be used to meet Montana-

1 Dakota's MISO resource adequacy requirements. The purchase option  
2 used a financial model to develop the revenue requirement cost to  
3 Montana-Dakota's based upon (a) the terms of the asset purchase  
4 agreement, (b) the Nordex maintenance supply agreement, (c) the  
5 applicability of the current Federal PTC for new wind generation, and (d)  
6 the applicability for incentive property tax and earned income tax credits  
7 for wind generation under current North Dakota tax laws and as proposed  
8 by the North Dakota Empower Commission for the next legislative session  
9 under Senate Bill 2037. The revenue requirement for the purchase option  
10 was then entered into the 2013 IRP EGEAS model as a future resource  
11 alternative.

12 Both the amended and restated PPA and the purchase option were  
13 selected as least cost alternatives for Montana-Dakota's customers with  
14 the purchase option resulting in a lower net present value revenue  
15 requirement of approximately \$30 million over the PPA option. Exhibit  
16 No. \_\_\_(DJN-1), provides a summary of the Net Present Value of the  
17 revenue requirement for all resources under the Optimal Resource Case  
18 originally submitted in the 2013 IRP and the Net Present Value of the  
19 Revenue Requirement under 1) Optimal Resource Plans assuming the  
20 energy produced by the Project is purchased under a PPA and 2)  
21 Montana-Dakota owns and operates Thunder Spirit. As shown, the  
22 ownership option provides the least cost plan and does not affect the other  
23 future resources identified in the 2013 IRP. An additional scenario 3) is  
24 also included whereby the wind PPA and purchase option were removed

1 from the 2013 IRP Optimal Resource Case which resulted in an increase  
2 in the NPV revenue requirement of over \$100 million as compared to the  
3 purchase option.

4 The levelized cost of the Project over a twenty year period is  
5 \$31.96 per MWh under the purchase arrangement and [TRADE SECRET  
6 DATA BEGINS TRADE SECRET DATA ENDS] per MWh under a  
7 PPA with Allele as shown on Exhibit No.\_\_\_\_(DJN-2).

8 **Q. How does the addition of 107.5 MW of wind into Montana-Dakota's**  
9 **resource portfolio affect its future resource plan?**

10 A. In addition to adding 50 to 100 MW of wind in 2015, Montana-  
11 Dakota's 2013 IRP plan filed with the North Dakota Public Service  
12 Commission selected a 200 MW combined cycle resource to be added to  
13 the Company's generation portfolio in 2020. Thunder Spirit does not  
14 change Montana-Dakota's future generation resource needs as identified  
15 in the 2013 IRP. In addition to Thunder Spirit, Montana-Dakota is in need  
16 of both future capacity and energy from the combined cycle resource to  
17 meet its customers growing energy requirements.

18 **Q. Why doesn't Montana-Dakota just build the 200 MW combined cycle**  
19 **resource now and forgo the 107.5 MW of wind?**

20 A. The Company's resource expansion model selects both the 107.5  
21 MW wind project and a 200 MW combined cycle resource to meet its  
22 customers growing energy requirements. The pricing for the 200 MW  
23 combined cycle resource in the IRP model is a part of a larger cost  
24 effective 600 MW plus sized plant. Montana-Dakota is in conversation with

1 neighboring utilities to find interest in constructing such a larger combined  
 2 cycle resource. These conversations show that the earliest in-service date  
 3 for a likely partner is 2020 which is also the earliest date that the Company  
 4 would be able to plan and construct a large combined cycle resource.

5 Scenarios 2) and 3) shown on Exhibit No. \_\_\_(DJN-1) compare the  
 6 total revenue requirement of the Optimal Resource Case with 107.5 MW  
 7 of wind added in 2016 and the Optimal Resource Case without 107.5 MW  
 8 of wind added in 2016. Both scenarios include the addition of 200 MW of  
 9 combined cycle generation in 2020 along with 36 MW of reciprocating  
 10 generation in either 2017 or 2019. Scenario 2 (reflecting the ownership  
 11 addition of 107.5 MW of wind generation in 2016) provides over \$100  
 12 million in net present value benefits over the scenario without 107.5 MW of  
 13 wind generation (Scenario 3).

14 The following table outlines the difference in the annual revenue  
 15 requirements for the first ten years between Scenario 2) and 3).

Annual Revenue Requirement (In Millions of Dollars)			
	2) Own TSW	3) No-wind	Scenario 2) less 3)
2016	\$165.34	\$159.46	\$5.88
2017	164.49	167.38	(2.89)
2018	167.36	174.53	(7.17)
2019	176.80	182.69	(5.90)
2020	201.84	210.15	(8.32)
2021	205.37	215.70	(10.33)
2022	211.63	223.54	(11.91)
2023	218.38	231.81	(13.43)
2024	225.32	240.04	(14.72)
2025	234.72	251.46	(16.74)

1 **Q. What are the benefits of Project ownership for Montana-Dakota and**  
2 **its customers?**

3 A. Ownership of the Project provides many benefits to Montana-  
4 Dakota and its customers including continued value in the ownership of  
5 the asset at the end of the PPA, and better ability to manage the  
6 uncertainty of inflation and future maintenance costs in the later years of  
7 the Project. The uncertainty of maintenance and inflation costs in the later  
8 years of a wind PPA tends to increase its contracted price to ensure the  
9 asset owner will recover sufficient revenue at the end of the contract to  
10 cover its costs plus a profit. Ownership allows recovery of actual costs  
11 from customers and eliminates the need for uncertainty adders.

12 **Q. Are there benefits in having the Project located in North Dakota?**

13 A. Yes. The annual wind lease payments are approximately  
14 \$500,000 for local landowners and property taxes for the Project are  
15 expected to be approximately \$500,000. There will also be local  
16 economic benefits to the area as a result of the construction and  
17 employment activity during 2015. Finally, as previously noted, Montana-  
18 Dakota expects to have two full time employees stationed at the Project  
19 for maintenance and operation after its acquisition. Nordex is also  
20 expected to have at least five full time employees assigned to the Project  
21 to perform turbine operation and maintenance services.

22 **Q. What approvals and conditions are required under the Asset**  
23 **Purchase Agreement with ACE Wind LLC?**

1 A. The only approvals needed by Montana-Dakota under the Asset  
2 Purchase Agreement with ACE Wind LLC are the North Dakota Public  
3 Service Commission Advance Determination of Prudence, Certificate of  
4 Public Convenience and Necessity and FERC approval of the ownership  
5 transfer under Section 203 of the Federal Power Act.

6 **Q. Does this conclude your direct testimony?**

7 A. Yes, it does.

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC UTILITY - NORTH DAKOTA  
NET PRESENT VALUE COMPARISONS OF THE REVENUE REQUIREMENTS OF MODEL RUNS**

**Original 2013 Optimal Resource Case (ORC)**

2015	L&C MATS Project 50 MW of Wind PPA (maximum available to EGEAS model) 73 MW of Recipricating Engines
2016	
2017	36 MW of Recipricating Engines
2018	
2019	
2020	200 MW of Combined Cycle
	NPV      \$3,525 million

**2) 2013 ORC with 107.5 MW of Owned Wind**

2015	L&C MATS Project 73 MW of Recipricating Engines
2016	107.5 MW of Owned Wind
2017	
2018	
2019	36 MW of Recipricating Engines
2020	200 MW of Combined Cycle
	NPV      \$3,445 million

**1) 2013 ORC with 107.5 MW Amended and Restated PPA Pricing**

2015	L&C MATS Project 73 MW of Recipricating Engines
2016	107.5 MW of Wind PPA
2017	
2018	
2019	36 MW of Recipricating Engines
2020	200 MW of Combined Cycle
	NPV      \$3,475 million

**3) 2013 ORC with no new wind**

2015	L&C MATS Project 73 MW of Recipricating Engines
2016	
2017	36 MW of Recipricating Engines
2018	
2019	
2020	200 MW of Combined Cycle
	NPV      \$3,574 million

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC UTILITY - NORTH DAKOTA  
Thunder Spirit Wind  
PPA vs. Ownership Pricing**

PPA - ACE (1)  
20 Years

[TRADE SECRET DATA  
BEGINS

Ownership - MDU (2)  
20 Years

Year			<b>\$31.96</b>	20 Year Levelized cost at 7% discount rate
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[TRADE SECRET DATA  
BEGINS

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TRADE SECRET DATA  
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TRADE SECRET DATA  
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Notes (1) Based upon Amended and Restated PPA pricing with ACE dated 11/20/14  
(2) Based upon Montana-Dakota Financial Model for Thunder Spirit Wind Project