MONTANA-DAKOTA UTILITIES CO.

Before the Public Service Commission of North Dakota

Case No. PU-22-371

Direct Testimony

Of

Darcy J. Neigum

Q. Please state your name and business address.

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

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

A. I am the Director of System Operations and Planning for Montana-Dakota Utilities Co. (Montana-Dakota).

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

A. I have managerial responsibility for overseeing the day-to-day operations of the Company's electric control center and system operations and planning department.

Q. Please outline your educational and professional background.

A. I hold a bachelor's degree in Electrical and Electronics Engineering from North Dakota State University as well as a master's degree in Business Administration from the University of Mary. I have worked for Montana-Dakota and MDU Resource Group, Inc. for twenty-seven years

EXHIBIT
MDU-4

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MDU Exhibit 4 - Darcy Neigum pre-filed testimony - redacted
Montana-Dakota Utilities Co.

with the last fourteen years managing the system operations & planning department for Montana-Dakota.

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

A. I will provide support for the Company's application for approval of the Electric Service Agreement (ESA) for the Applied Digital Ellendale Data Center (Ellendale Data Center) under the Company's approved Rate 45 Tariff for High Density Contracted Demand Response service.

Q. Can you describe the rate the Ellendale Data Center will pay under the ESA and Montana-Dakota Rate 45?

A. The rate for the Ellendale Data Center is set based upon Montana-Dakota's Rate 45 Tariff. This approach provides a more competitive rate, than the Company's Tariff Rate 30 and Rate 38 for interruptible high density data center loads which minimizes risk and provides significant value to Montana-Dakota's other customers.

[redacted]

[redacted]

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[redacted]

Q. Why didn't Montana-Dakota create separate settlement nodes for its other customers loads?

A. When Montana-Dakota joined the MISO market in 2005, a single settlement node, MDU.MDU, was setup to represent all of its customer load at the time. This settlement node is a blended combination of all Montana-Dakota customer load on the MISO transmission system and represents the weighted average price that Montana-Dakota would

receive if it separately registered all of its customer loads on the MISO transmission system.

[redacted]

Q. Is Montana-Dakota planning to build any generation to service the Ellendale data center?

A. No.

Q. Does the Ellendale Data Center utilize any of Montana-Dakota's distribution assets?

A. No, the Ellendale Data Center does not use any distribution assets.

Q. How does the Ellendale Data Center connect to the Montana-Dakota system?

A. The Ellendale Data Center load is connected to the tertiary winding on the Ellendale 345/230 kV transformer. Applied Digital was responsible for paying all the costs through a contribution in aid to construct (CAIC) to connect the data center load to the Montana-Dakota system. No additional contribution was requested for the removal of the facilities as they are small in size, and the salvage cost of these facilities would likely cover the cost of removal.

Q. What was the reason for installing the 345/230 kV Ellendale transformer?

A. The Ellendale 345/230 kV transfer was installed as part of the Ellendale to Big Stone MISO Multi-Value Project.

Q. How is the Ellendale 345 kV substation recovered in customer rates?

A. The Ellendale 345 kV substation is a MISO MVP project and recovered through MISO Schedule 26A.

[redacted]

Q. When do Montana-Dakota's other customers pay the MDU.MDU MISO price?

A. Montana-Dakota's other customers pay the MDU.MDU MISO price for their energy requirement above what is provided by Montana-Dakota's

generation fleet and any power purchase agreement that the Company has.

[redacted]

Q. Can you describe the MISO transmission system in the Ellendale area?

A. The MISO transmission system in the Ellendale area consists of a 230kV line that Montana-Dakota owns which runs from the Mandan Substation to Ellendale, a 230 kV line that Otter Tail Power Company (Otter Tail) owns that runs from Ellendale to Hankinson, and a 345 kV line that Montana-Dakota and Otter Tail jointly own which runs from Ellendale to Big Stone, SD. See Figure 1 – Ellendale Transmission Map.

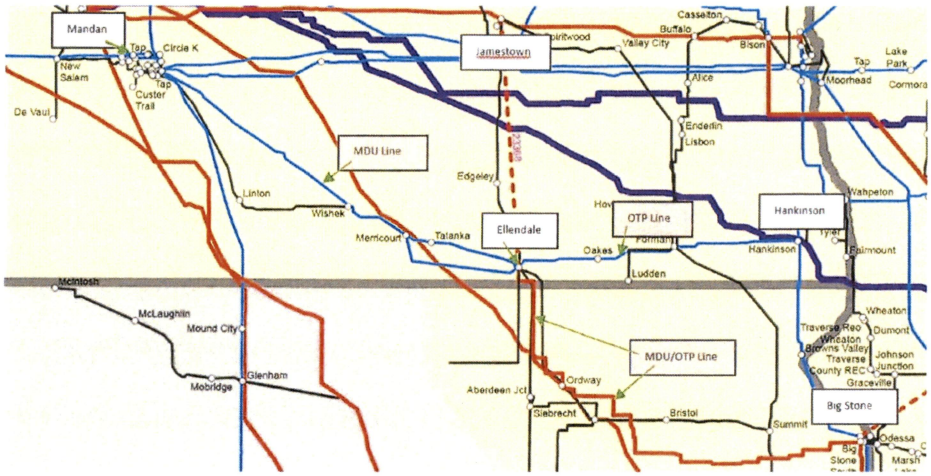

Figure 1 – Ellendale Transmission Map

Q. How much wind generation is currently installed between Mandan, ND and Big Stone, SD?

A. There is currently 1,100 MWs of wind generation on-line between Mandan and Big Stone. Another 250 MWs of additional wind generation has received a MISO interconnection agreement and a North Dakota Public Service Commission siting certificate in this area.

Montana-Dakota is also a joint owner of the 475 MW coal-fired power plant located at Big Stone.

Q. Does Montana-Dakota own any of this wind generation in the Ellendale area?

A. No.

Q. Does Montana-Dakota have any load located in the Ellendale area?

A. Montana-Dakota has a peak winter load in the Wishek and Ellendale area of 20 MWs and a peak summer load of 10 MWs.

Q. Does the Ellendale area experience negative MISO market pricing?

A. Yes, with the excess wind generation and transmission outages in the area, MISO uses an energy market pricing signal to curtail wind generation to maintain system reliability in the area which creates a negative pricing situation.

[redacted]

Q. Does Montana-Dakota's other customers see negative pricing associated with their load?

A. Yes.

Q. Do Montana-Dakota's other customers receive the benefits of MISO negative pricing in their area?

A. Yes, Montana-Dakota passes along the benefits for the MISO MDU.MDU market prices, even negative pricing, to its other customers through the Fuel & Purchase Power Adjustment Rate 58.

Q. Do Montana-Dakota's other customers have to share the negative pricing with anyone else or denied this benefit?

A. No, Montana-Dakota's customers receive the full benefit of any negative pricing that MISO assigns to its load.

Q. What impact will the Ellendale area see with 180 MWs of load addition for the Ellendale Data Center?

A. Montana-Dakota conducted and submitted a load study to MISO for the Ellendale Data Center which showed no upgrades needed to service the load and an improvement in overall system reliability in the area.

Q. How does the Ellendale Data Center load improve reliability in the area?

A. The addition of data center load reduces the amount of modeled overvoltage cases the transmission sees in the Ellendale area caused by the interconnected wind generation equipment and supporting transmission facilities.

[redacted]

[redacted]

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Q. Does MISO have any plans to reduce congestion in the area?

A. MISO studied and approved a Long Range Transmission Plan for a new 345kV line between Ellendale and Jamestown, ND. This project will come online at the end of 2028 at the earliest.

Q. Is more generation looking to interconnect into this area?

A. Yes. The current MISO Interconnection queue has an additional 1,400 MWs of wind generation seeking interconnection service in the Ellendale Area[1].

[redacted]

Q. Do Montana-Dakota's other customers have future exposure associated with this new data center load?

A. No.

Q. Is Montana-Dakota adding any addition staffing to support the data center?

A. No.

[1] MISO Interconnection Queue – Active Projects Map. https://giqueue.misoenergy.org/PublicGiQueueMap/index.html

[redacted]

Q. Does Montana-Dakota's other customer load receive any reliability benefits for the Ellendale Data Center?

A. In the case of reliability benefits that the data center provides to the Ellendale Area, this has the potential to avoid a future reliability project associated with modeled cases of high system voltage levels in the area without the data center load.

Q. Who would be responsible to pay for these future reliability projects if one was needed in the future?

A. These costs would either be paid for by Montana-Dakota's customers as a MISO baseline reliability project, as part of a generator interconnection network upgrade project, or allocated to the broader MISO system load if identified for mitigation as part of a Long Range Transmission Project.

Any system reliability issues mitigated by a MISO Long Range Transmission Project would be paid for by all qualifying MISO load under a MISO Schedule 26A charge, which would include the Ellendale Data Center load.

[redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

Q. Does this conclude your direct testimony?

A. Yes, it does.