



AN ALLETE COMPANY

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November 12, 2024

VIA E-FILING

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: In the Matter of the Investigation into Transmission-Curtailment
Matters, Drivers, and Potential Solutions to Limitations Resulting
from the Nobles County Substation
Docket No. E999/CI-24-316
REPLY COMMENTS

Dear Mr. Seuffert:

Pursuant to the Minnesota Public Utilities Commission (or the "Commission") September 23, 2024 Notice of Comment Period in Docket No. E999/CI-24-316,¹ Minnesota Power (or the "Company") hereby electronically submits its Reply Comments to the Commission's request for information regarding transmission-curtailment matters, drivers, and potential solutions for limitations resulting from the Nobles substation to facilitate a clearer understanding of possible solutions for further consideration.

Please contact me at (218) 355-3297 or jkuklenski@mnpower.com with any questions regarding this filing.

Respectfully,

A handwritten signature in black ink that reads 'Jennifer Kuklenski'.

Jennifer Kuklenski
Regulatory Strategy and Policy Manager

JK:th
Attach.

¹ *In the Matter of the Investigation into Transmission-Curtailment Matters, Drivers, and Potential Solutions to Limitations Resulting from the Nobles County Substation.* (Docket No. E999/CI-24-316).

**STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION**

In the Matter of the Investigation into
Transmission-Curtailment Matters,
Drivers, and Potential Solutions to
Limitations Resulting from the Nobles
County Substation.

Docket No. E999/CI-24-316
REPLY COMMENTS

I. INTRODUCTION

Minnesota Power (or “the Company”) hereby submits its Reply Comments Filing in Docket No. E999/CI-24-316 in response to the Notice of Comment Period (“Notice”) issued by the Minnesota Public Utilities Commission (“MPUC” or “Commission”) on September 23, 2024, and comments filed by parties on October 23, 2024. As outlined in the Notice, this docket is intended to closely examine the congestion costs impacting the Nobles County Substation and nearby wind farms, with the goal of developing clearer insights into potential solutions for alleviating congestion and mitigating negative cost impacts for Minnesota customers.

As stated in the Company’s initial comments, Minnesota Power has experienced elevated levels of congestion and curtailment costs in southwest Minnesota related to the Company’s 250 MW Power Purchase Agreement (“PPA”) for the Nobles 2 Wind Facility (“Nobles 2”), resulting in higher cost to deliver energy to customers.^{1,2} In 2023, the Company experienced 1,346 MWhs of curtailment at Nobles 2. Additionally, Minnesota Power faces challenges when evaluating new projects or PPAs in southwest Minnesota, where persistent congestion and curtailment issues create added risks for projects in this area.

Minnesota Power appreciates the initial comments submitted by other parties and submits its reply comments below, which specifically address Topic Nos. 1, 2, and 3:

¹ In the Matter of Minnesota Power’s Petition for Approval of a 250 MW Nobles 2 Wind Power Purchase Agreement, Docket No. E-015/M-18-545.

² In the Matter of Minnesota Power’s Petition for Approval of the Annual Forecasted Rates for its Rider for Fuel and Purchased Energy Charge, Docket No. E015/AA-21-312 – Annual True-up Report.

1. What are the underlying causes of the stability, thermal, and congestion issues affecting the power grid in southwestern Minnesota, and how do these issues impact existing renewable energy projects as well as potential new projects in development or permitting?
2. What regional and local transmission studies on reliability and economic market congestion have been completed?
3. What current studies are being conducted by MISO and/or the Minnesota Transmission Owners (MTO) and/or others to assess the congestion and curtailment issues affecting the grid in southwestern Minnesota, specifically in Nobles County, and what potential solutions are being proposed for these limitations?

II. REPLY COMMENTS

As stated in the Company's initial comments, congestion in southwest Minnesota is caused by an insufficient number of outlets for wind energy. Indeed, wind energy generation buildout has increased more quickly than the transmission infrastructure buildout necessary to support wind energy generation. This problem is more pronounced when wind energy generation is high or when one or more of the existing outlets is out of service either for planned or unplanned reasons. Minnesota Power appreciates the Commission's ongoing investigation to identify potential improvements regarding stability, thermal, and congestion challenges impacting the power grid in southwest Minnesota.

Due to the complexities and ongoing congestion issues in southwest Minnesota, particularly around the Nobles County Substation, both historical and recent studies have been conducted. However, previous studies have not specifically or fully addressed the persistent congestion and curtailment issues impacted by the Fenton/Nobles County/Chanarambie ("FENOCH") Interface and similar constraints. Minnesota Power and other parties have expressed the need for a more extensive study that goes beyond isolated scenarios. A more extensive approach would examine multiple scenarios and potential reconfigurations across the grid, specifically targeting stability, thermal, and voltage issues over a range of possible future conditions. A broader approach could provide clarity on the exact problem areas and create a strategic, forward-looking solution framework.

To the Company's knowledge, and as identified in the initial comments submitted by EDF Renewables, no regional or local transmission studies have been published to address the FENOCH or related constraints affecting the Nobles County area. Minnesota Power is uncertain if the Company has had access to all studies conducted, if indeed studies have been conducted internally by other Minnesota utilities. Minnesota Power agrees with EDF Renewables that internal or unpublished studies on the issues raised in this proceeding may provide valuable insight to other transmission owners in Minnesota. Greater transparency about how congestion and voltage stability in areas like Nobles County are incorporated into planning and interconnection studies would be beneficial, particularly in light of the FENOCH operating guide's implementation.

Traditional grid upgrades and Non-Wires Alternatives ("NWA") may help alleviate some of the congestion and curtailment issues experienced in Southwest Minnesota, as noted in the initial comments submitted by the Minnesota Department of Commerce ("Department") in reference to potential solutions for transmission inadequacies identified in the 2023 Biennial Transmission Projects report.³ As pointed out by a number of parties, the Midcontinent Independent System Operator ("MISO") Long Range Transmission Plan ("LRTP") will help address constraints on the system in Minnesota. However, LRTP projects will not address immediate congestion and curtailment concerns, and stability-limited interfaces may not be addressed by such upgrades, as highlighted in the Department's initial comments.⁴

Furthermore, construction of MISO LRTP projects will require outages of existing transmission facilities which will impact congestion. The LRTP Tranche 1 project located closest to the Nobles area – the Mankato-Mississippi River Transmission Project – while expected to be in service in 2028, will utilize existing transmission corridor right of ways, convert existing lines to higher voltages, and add new circuits to existing transmission structures. These activities, while meant to optimize from a project perspective, will require outages of existing facilities and therefore not improve congestion near term locally or across MISO. Minnesota Power appreciates the recommendation from the Department to explore Grid Enhancing Technologies ("GETs") as a near term solution to address congestion and

³ Reference the 2023 Biennial Transmission Projects Report in Docket No. E999/M-23-91 and Initial Comments Submitted by the Department in Docket No. E999/CI-24-316.

⁴ Reference page 9 of the Department's Initial Comments in Docket No. E999/CI-24-316.

curtailment issues in southwest Minnesota, such as dynamic line ratings, advanced power flow control, and topology optimization; however, the Company's ability to assess the potential benefits associated with GETs in southwest Minnesota is hindered by a lack of transparency on current grid issues and limitations.

As discussed by Minnesota Transmission Owners ("MTO") in their initial comments, Grid North Partners will conduct a biennial congestion study in 2025 in compliance with recently passed Minnesota legislation modifying Minnesota Statutes 2022, section 216B.2425, subdivision 2.⁵ The new legislation requires consideration of solutions GETs may provide to reduce congestion or enhance flexibility of the transmission system.⁶ Based on the intent of this upcoming study, it is expected that the specific congestion impacting Nobles County and the FENOCH area will be identified. This study may therefore provide essential transparency to help develop more targeted solutions that align with state and regional needs.

More clarity is also needed to better understand why recommended reconfiguration proposals are being rejected and to determine the specific drivers of congestion and stability constraints. It has been Minnesota Power's experience that reconfigurations requests are immediately rejected on initial screening based on potential for stability impacts. Without understanding certain reconfiguration rejections, Minnesota Power finds it challenging to contribute or suggest improvements effectively.

Greater clarity and enhanced transparency would facilitate collaboration on solutions that align with grid stability requirements and operational constraints, allowing transmission owners to more effectively advocate for practical and targeted solutions. Through a transparent, collaborative approach to understanding and addressing these issues, the region can better alleviate grid constraints, reduce renewable energy curtailment, and enable efficient integration of wind projects contributing to Minnesota's broader renewable energy objectives.

⁵ Reference the initial comments filed by Fredrikson & Byron, P.A., on behalf of MTO in Docket No. E999/CI-24-316.

⁶ The 2024 bill, HF 5247, added GETs to Minnesota's transmission planning process (Article 42 Sec. 21) and established a requirement for utilities that own more than 750 miles of transmission lines to evaluate GETs on highly congestion lines (Article 42 Sec. 52).

III. CONCLUSION

Minnesota Power appreciates the opportunity to provide input and engage with other interested parties through this proceeding. Minnesota Power's customers have faced rate impacts due to congestion in the southwest Minnesota region, which is a growing area of concern. Congestion is a complex issue under investigation throughout the region, and Minnesota Power is encouraged by the advanced transmission planning efforts currently underway. The Company is committed to active participation in future discussions and looks forward to collaborating with stakeholders to develop transparent, efficient, and effective solutions that can relieve congestion and improve grid stability for the benefit of all customers.

Dated: November 12, 2024

Respectfully submitted,

A handwritten signature in black ink, reading "Jennifer Kuklenski". The signature is written in a cursive, flowing style.

Jennifer Kuklenski
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STATE OF MINNESOTA)
)ss
COUNTY OF ST. LOUIS)

AFFIDAVIT OF SERVICE VIA
ELECTRONIC FILING

Tiana Heger of the City of Duluth, County of St. Louis, State of Minnesota, says that on the 12th day of November, 2024, she served Minnesota Power's Reply Comments in **Docket No. E999/CI-24-316** on the Minnesota Public Utilities Commission and the Energy Resources Division of the Minnesota Department of Commerce via electronic filing. The persons on E-Docket's Official Service List for this Docket were served as requested.



Tiana Heger

[illegible]

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Carol A.	Overland	overland@legalelectric.org	Legalelectric - Overland Law Office	1110 West Avenue Red Wing, MN 55066	Electronic Service	No	OFF_SL_24-316_Official 24-316
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 55101-2131	Electronic Service	Yes	OFF_SL_24-316_Official 24-316
Christine	Schwartz	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 55401-1993	Electronic Service	No	OFF_SL_24-316_Official 24-316
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th PI E Ste 350 Saint Paul, MN 55101	Electronic Service	Yes	OFF_SL_24-316_Official 24-316
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