



414 Nicollet Mall  
Minneapolis, MN 55401

June 30, 2023

—Via Electronic Filing—

Will Seuffert  
Executive Secretary  
Minnesota Public Utilities Commission  
121 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101

RE: REPLY COMMENTS  
COMMISSION INVESTIGATION INTO SELF-COMMITMENT AND SELF-  
SCHEDULING OF LARGE BASELOAD GENERATION FACILITIES  
DOCKET NO. E999/CI-19-704

Dear Mr. Seuffert:

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission the enclosed Reply to the May 31, 2023 Comments of the Department of Commerce in the above-referenced docket related to the Company's 2022 Annual Report of Self-Commitment and Self-Scheduling of Large Baseload Generation Facilities. We also respond to questions posed in the Commission's June 20, 2023 Notice of Extended Comment Period and Additional Reporting.

We have electronically filed this document with the Commission, and copies have been served on the parties on the attached service list. Please contact Becky Billings at 612-702-1730 or [Becky.J.Billings@xcelenergy.com](mailto:Becky.J.Billings@xcelenergy.com) or contact me at 612-330-7974 or [Christopher.J.Shaw@xcelenergy.com](mailto:Christopher.J.Shaw@xcelenergy.com) if you have any questions regarding this filing.

Sincerely,

/s/

CHRISTOPHER SHAW  
MANAGER, REGULATORY POLICY

Enclosure  
cc: Service List

STATE OF MINNESOTA  
BEFORE THE  
MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
Joseph K. Sullivan	Commissioner
John A. Tuma	Commissioner

IN THE MATTER OF AN INVESTIGATION  
INTO SELF-COMMITMENT AND SELF-  
SCHEDULING OF LARGE BASELOAD  
GENERATION FACILITIES

DOCKET NO. E999/CI-19-704

**REPLY COMMENTS**

**INTRODUCTION**

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission's this Reply to the May 31, 2023 Comments of the Department of Commerce – Division of Energy Resources in the above-noted docket.

The Company appreciates the Department's thorough review of our annual report on the self-commitment and self-scheduling of large baseload generation facilities for the calendar year 2022 reporting period. We respond to several requests and recommendations made by the Department below, in addition to responding to questions posed in the June 20, 2023 Notice of Extended Comment Period and Additional Reporting in regard to statute changes passed in the 2023 Legislative session.

**REPLY COMMENTS**

**A. Equivalent Forced Outage Rate Trend Analysis**

The Department recommended the Company explain in Reply Comments why its units have relatively high equivalent forced outage rates (EFOR) and if these numbers have increased in the recent years. In accordance with Order Point 7.a of the November 2022 Order, utilities provided their EFOR for each unit. The Department had proposed this requirement to track the operating conditions of the units and identify impacts of additional wear and tear. Table 1 below provides a six-year comparison of EFOR for the Company's four coal units.

**Table 1: EFOR Trend Analysis**

Unit	2017	2018	2019	2020	2021	2022	6 Year Avg.
King	2.4	13.9	26.8	9.6	9.9	30.7	15.6
Sherco 1	10.5	14.4	7.3	13.9	8.2	16.6	11.8
Sherco 2	10.0	7.7	3.4	9.8	13.7	28.4	12.2
Sherco 3	4.8	8.7	5.8	9.2	7.3	22.3	9.7

The plants are not operating at a high capacity factor due to lower gas and market prices, so we do not see a need for immediate action, but we will consider actions again for next year. Sherco Unit 2 is retiring at the end of 2023. As it nears retirement, capital and O&M spending is reduced. Several factors forced Sherco Unit 3 offline in 2022. The unit has just completed an extensive overhaul and is expected to return to previous year EFOR numbers. In 2022, King Plant was removed from Seasonal Idle due to the 2022/2023 MISO Planning Resource Auction (PRA). That Unit experienced more startups and shutdowns than expected.

## **B. Best Case/Worst Case Scenario Modeling**

The Department recommends the Company explain reasons behind dispatch differences between the PLEXOS model and actual MISO day ahead awards and ways to generate more realistic comparison benchmarks from its modeling for the best and worst case analysis.

As stated in the self-commit report, the comparison of Must-Commit, Economic Commit and Seasonal Commit Scenarios was performed using a PLEXOS run in which operational parameters are utilized and actual resource constraints are included. The model optimizes against historical day ahead LMPs at the commercial pricing node of each seasonally operated resource and assumes that the LMP is unaffected by unit commit.

As with any modeling, it is inevitable that there will be differences between study results and actual operations. Much of the differences between the PLEXOS model and day ahead awards were in the dispatch levels. The model tended to dispatch or “award” the units more than their actual MISO awards. Differences such as this are expected as the PLEXOS model lacks comprehensive knowledge of the entire MISO system and in this case only considers one product, energy. MISO’s actual clearing engine considers the bids and offers for all market products (Energy, Regulation, Spinning Reserve, Supplemental Reserve, Short Term Reserve & Ramp Capability) from all market participants and simultaneously co-optimizes them such that total

system production cost is minimized, resource revenue is maximized, and all reliability and transmission constraints are met.

The PLEXOS model also does not distinguish well between Emergency and Economic maxes and would dispatch units to the Emergency max and keep them there for some time. In addition, generating units may sometimes be available but not for their full capacity, and capturing these events in the model proved difficult. Without these derates in the model, PLEXOS would dispatch units to full capability, in contrast to the day ahead market, where that availability was factored into market offers. Lastly, PLEXOS does not incorporate cost adders at different break points, so it did not solve for the dispatch with these costs factored in. We had to interpolate these dispatches outside of the model.

The Company is already making changes to PLEXOS and our processes to handle some of these differences. To account for derates and dispatches to economic max, we are importing the hourly day ahead offered economic max into the PLEXOS model to cap the model's maximum dispatch limit to resemble day ahead award limits. To address cost adders at different break points, Xcel Energy has also found a way to adjust unit variable O&M in the model so that the model can solve with these costs.

### **C. Wind Curtailment**

The Department recommended all three utilities explain in Reply the reasons behind the large amounts of curtailment both for Company owned and contracted wind facilities, and the contribution of must run units towards that curtailment.

The increased curtailment was the result of a number of different aspects of system operations, but a common factor is that the transmission system in the Upper Midwest has become oversubscribed and cannot support all the wind generation that has recently gone into service. Factors impacting 2022 curtailment were wind generation going into service prior to the completion of transmission upgrades required for the generation to interconnect, along with a number of transmission outages. In other words, there was more wind generation installed in the western subregion of MISO than could be delivered to meet customer demand throughout the MISO footprint.

Evidence suggests that curtailment experienced in 2022 is primarily due to a lack of deliverability of wind, not due to the dispatch offer of our coal or nuclear units. Must run status of the coal and nuclear units has little to no impact on the current levels or causes of wind curtailment the Company is experiencing. In other words, wind generation and transmission limitations are causing the curtailment of other wind

resources. We further note that our plants are economically dispatched by MISO to minimize production and operating reserve costs while enforcing multiple security constraints.

As part of moving towards a carbon-free generation fleet by 2040, we are working on increasing our operational flexibility so that we can ramp down our plants during periods of high transmission congestion and low prices, such as times when abundant renewable resources are available on our system. We have demonstrated our nuclear units' ability to participate in the MISO Day Ahead market by flexing a number of times in 2020 through the present. This helps with the Company's efforts to integrate its continuing renewable additions.

#### **D. Response to the Changes to Minnesota Statute § 216B.2422**

Minnesota Statute 216B.2422 was amended during the 2023 legislative session. Subdivision 8 was added to the statute:

##### **Carbon dioxide emissions reduction.**

(a) The commission may issue an order to reduce carbon dioxide emissions from coal-fired electric generating units located in Minnesota that do not have applicable capacity obligations with a regional transmission organization and are wholly owned by a public utility required to file a resource plan under this section. The order may:

(1) require the public utility to develop and implement a plan to operate coal-fired electric generating units only during the months of June, July, August, December, January, and February, other than for emergency or reliability purposes; or

(2) establish an annual limit on the carbon dioxide emissions from coal-fired electric generating units.

(b) Nothing in this subdivision affects a public utility's obligation to comply with the provisions of section 216B.1691.

This addition allows the Commission to require seasonal dispatch of coal-fired generators or establish an annual limit on carbon dioxide emissions.

As discussed in our April 29, 2022 update letter in this docket, we ceased seasonal operations at King and Sherco 2 in the Spring of 2022 and began offering the units on an economic basis. The change was the result of two developments. First, the Independent Market Monitor (IMM) raised new concerns surrounding our plans to idle the units in March 2022. Second, all of our offered units, including Sherco 2 and King, cleared in the 2022/2023 MISO Planning Resource Auction (PRA). Therefore,

we were obligated to offer all cleared resources, including Sherco 2 and King, into the market for the 2022/2023 planning year.

The results of the 2023/2024 MISO PRA were released in May 2023. Sherco 2 and King did not clear the PRA auction for the summer, fall or spring seasons,<sup>1</sup> which may provide some additional ability to idle the units. Currently, our coal units are being committed on a limited basis due to the low gas commodity and market energy prices.<sup>2</sup> Therefore, we do not expect a change to seasonal operation at either Sherco 2 or King would have a significant impact on operations in the near-term. Moreover, Sherco 2 is scheduled to retire at the end of this year.

However, were we ordered to dispatch King seasonally, consistent with the statute, we would comply, provided we were able to do so in a way that maintained reliability and safety. We note that we initially proposed to operate King and Sherco 2 on a seasonal basis in Docket No. E002/M-19-809. The Commission approved our plan and required reporting on the impact of seasonal operations in its Order.<sup>3</sup> If ordered to dispatch King on a seasonal basis, the Company would commit to providing similar reporting in future annual reports. We do not believe any further reporting requirements are necessary to comply with the new statute.

### CONCLUSION

Xcel Energy appreciates the opportunity to provide this Reply to the Department's Comments in this docket. We respectfully request that the Commission accept this filing in compliance with the Commission's Orders in Docket Nos. E999/AA-18-373 and E999/CI-19-704.

Dated: June 30, 2023

Northern States Power Company

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<sup>1</sup> Sherco 2 was not offered for winter or spring due to its scheduled retirement at the end of 2023.

<sup>2</sup> Sherco 3 has been offered as must run at the request of SMMPA.

<sup>3</sup> *Order Approving Plan and Requiring Filing*, Docket No. E002/M-19-809 (July 15, 2020).

## CERTIFICATE OF SERVICE

I, Christine Schwartz, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota

xx electronic filing

**Docket No.        E999/CI-19-704**

Dated this 30th day of June 2023

/s/

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Christine Schwartz  
Regulatory Administrator

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400  St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_19-704_Official
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Leann	Oehlerking Boes	lboes@mnpower.com	Minnesota Power	30 W Superior St  Duluth, MN 55802	Electronic Service	No	OFF_SL_19-704_Official
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 551012131	Electronic Service	Yes	OFF_SL_19-704_Official
Isabel	Ricker	ricker@fresh-energy.org	Fresh Energy	408 Saint Peter Street Suite 220 Saint Paul, MN 55102	Electronic Service	Yes	OFF_SL_19-704_Official
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