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July 31, 2023

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 an Investigation into Self-Commitment and Self-Scheduling of
Large Baseload Generation Facilities
Docket No. E999/CI-19-704
Minnesota Power's Reply Comments

Dear Mr. Seuffert:

Minnesota Power respectfully submits its Reply Comments in the above referenced docket.

The Reply Comments contain information Minnesota Power considers Trade Secret. A statement providing the justification for excising the Trade Secret data was provided with Minnesota Power's March 1, 2023, annual compliance filing in this docket.

Please contact me at (218) 355-3570 or mpodratz@mnpower.com if you have any questions regarding this matter.

Sincerely,

Marcia A. Podratz
Regulatory Compliance Principal

MAP:th
Attach.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of an Investigation into
Self-Commitment and Self-Scheduling of
Large Baseload Generation Facilities

Docket No. E999/CI-19-704
**MINNESOTA POWER'S
REPLY COMMENTS**

I. INTRODUCTION

Minnesota Power (or the “Company”) submits these Reply Comments in response to the Minnesota Department of Commerce – Division of Energy Resources (“Department”) who filed Comments on May 31, 2023, in the above-referenced Docket. In addition, the Minnesota Public Utilities Commission (“Commission”), in its June 20, 2023, Notice of Extended Comment Period and Additional Reporting (“Notice”), requested parties to comment on whether any modifications to reporting requirements should be made due to the changes to Minnesota Statute Section 216B.2422 or other statutes in the 2023 Legislative session. Minnesota Power also addresses that topic below.

II. RESPONSE TO COMMENTS

A. *Best- and Worst-Case Scenario Analysis*

The Department requested Minnesota Power in its reply comments to provide net benefits for the best- and worst-case scenarios for 2022 along with actual net benefits for Boswell Units 3 and 4 (“BEC3” and “BEC4”).¹ Minnesota Power’s initial filing did not include this analysis in the format desired by the Department, and there were also some internal modeling inconsistencies that took time for the Company to resolve prior to providing the requested data. Therefore, Minnesota Power appreciates the Department’s patience and request that we provide the analysis in reply comments.

Minnesota Power evaluated a must run dispatch status compared to an economic dispatch operation for 2022. The first scenario analyzed a “best case” scenario where BEC3 and BEC4 operated in economic dispatch all year. The second scenario analyzed

¹ Department’s May 31, 2023, Comments at pages 40, 42, and 46.

a “worst case” scenario where BEC3 and BEC4 would have been set to must run all year. For actual operations during 2022, BEC4 was in must run status and BEC3 was in economic dispatch status. For this analysis, a production cost model with actual 2022 market prices, fuel costs, outages and derates was used in predicting how the units would dispatch under each of the best- and worst-case operating scenarios. Please note that this is a hypothetical analysis because BEC4 cannot operationally dispatch under an economic status year-round, as there is currently the need for supplemental heating that is provided by BEC4 for the facility during winter months.

For the year 2022, Minnesota Power would have expected to see similar benefits to customers under either economic dispatch (i.e., “best case”) or must run dispatch (i.e., “worst case”) for both BEC3 and BEC4. This is because due to market pricing in 2022, there was a high demand for both units; therefore, even though Boswell Unit 3 operated under economic dispatch, there wasn’t a significant difference from a must run operation. As shown Table 1 below, a comparison of the “best case” scenario to the “worst case” scenario provided a small additional power supply benefit of approximately [TRADE SECRET DATA BEGINS [REDACTED] TRADE SECRET DATA ENDS] over the course of year for BEC3 and BEC4, respectively.

Table 1: Best/Worst Case Scenario Analysis*

	(Cost)/Benefit
	[TRADE SECRET DATA BEGINS]
Boswell 3 Best Case /1	[REDACTED]
Boswell 3 Worst Case /2	
Boswell 3 Best Case Additional (Cost)/Benefit	
Boswell 4 Best Case /3	
Boswell 4 Worst Case /4	
Boswell 4 Best Case Additional (Cost)/Benefit	
	[TRADE SECRET DATA ENDS]

/1 Boswell 3 Best Case is utilizing the RTSim model with the unit being dispatched in economic operations all year

/2 Boswell 3 Worst Case is utilizing the RTSim model with the unit being dispatched in must-run operations all year

/3 Boswell 4 Best Case is utilizing the RTSim model with the unit being dispatched in economic operations all year

/4 Boswell 4 Worst Case is utilizing the RTSim model with the unit being dispatched in must-run operations all year

*Please also note that the model accounts only for day ahead market operations and will slightly differ from actual market operations due to the exclusion of any real time market benefits or costs.

B. Renewable Impact

The Department also noted that the largest increase in curtailment of renewable resources was seen by Minnesota Power in 2022 compared to 2021. The Department recommended all three utilities explain in reply comments 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.²

Minnesota Power's generation is registered with the Midcontinent Independent System Operator ("MISO") and receives price signals at the various generator Commercial Pricing Node ("CPNode") level. The wind generation, which includes a combination of MP owned generation and power purchase agreements ("PPA"), is located in North Dakota (~600 MW), Southern Minnesota (250 MW), and Northern Minnesota (25 MW). The thermal generation is located in Northern Minnesota (~975 MW).

MISO dispatches generation at least cost based on the system configuration abilities, customer demand, and generation offer prices. Generation is traditionally offered into MISO at a variable rate. However, wind assets may be offered at different rates such as \$0 fuel, production tax credit ("PTC"), or PPA rate. MISO uses the information provided by market participants and dispatches the generation based on least cost supply.

Minnesota Power follows the MISO tariff and offers thermal generation and wind generation at its CPNode with a price curve. Wind is offered at a forecasted level, and thermal generation is offered either as Self-Commit (must run) or Economic, with MISO dispatching the generation based on the system need.

Minnesota Power reports on curtailments differently in its annual fuel adjustment clause true-up filings ("FAC True-up Filings") and the filings in this docket ("Self-Commitment Filings"). Reporting in the FAC True-up Filings includes only curtailments related to the alternating current ("AC") transmission system, while the Self-Commitment Filings include all curtailments (AC, Locational Marginal Price ("LMP"), Environmental, etc.). The Commission's Orders in Minnesota Power's Bison 2 Wind Project (Docket No. E-015/M-

² Department's May 31, 2023, Comments at page 38.

11-234 dated September 8, 2011) and Bison 3 Wind Project (Docket No. E-015/M-11-626 dated November 2, 2011), “Required Minnesota Power to file with the Commission and the Department The dates and amount of any curtailment due to the use of the AC transmission system.” Minnesota Power includes this information on wind curtailments in its annual FAC True-up Filings. In contrast, the Commission’s November 17, 2022, Order in this proceeding (Docket E-999/CI-19-704), Order Point 7.c) required that utilities provide: “Energy (MWh) produced and curtailed from utility owned and contracted wind facilities monthly for each facility in subsequent filings in this docket.” Since these different types of filings require reporting of curtailments with different definitions, the 2021 curtailments in the FAC True-up Filing are not directly comparable to the 2022 curtailments now reported in the Self-Commitment filing. The more expansive definition of curtailments included in the Self-Commitment Filings is the reason for the increase in curtailments from 2021 to 2022 as noted by the Department.

The Company reviewed the two filings the Department used to determine that Minnesota Power saw the largest increase in curtailment. In our review, we noted as described above that the 2021 FAC True-Up filing³ was reporting only curtailments due to constraints on the AC system, whereas the 2022 Self-Commitment filing in this docket was showing curtailments for constraints on the AC system plus curtailments for economic, DC outages/derates, and environmental. For example, if the other curtailment types at Bison in 2021 are included, instead of **[TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]** MWh⁴ of curtailed energy as reported in the 2021 FAC True-up Filing, the total curtailed energy is **[TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]** MWh. This is greater than the **[TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]** MWh⁵ reported for 2022 in the Self-Commitment Filing. For clarity, Minnesota Power saw a decrease in wind curtailments from 2021 to 2022.

³ Minnesota Power’s March 1, 2022, Annual True-Up Report for 2021 in Docket E-015/M-20-463, Attachment No. 8, Wind Curtailment Reporting.

⁴ Ibid.

⁵ Minnesota Power’s March 1, 2023, Self-Commitment Annual Compliance Filing for 2022 in Docket E-999/CI-19-704, Attachment 3, Page 1 of 1, Bison Wind Energy Total Lost MWh.

There were several reasons for changes in wind curtailments in 2022 compared to 2021. Minnesota Power's North Dakota wind experienced lower curtailment hours in 2022 vs. 2021 due to low LMPs but did see higher curtailment hours in 2022 due to environmental reasons (e.g., icing of turbine blades in November and December of 2022). The Nobles 2 wind facility in Southern Minnesota, which is a PPA, experienced lower curtailment hours due to LMPs in 2022 vs. 2021. Overall, Minnesota Power saw less curtailments at Bison and Nobles 2 in 2022 when compared to 2021.

Minnesota Power has economically offered BEC3 since July 20, 2021, and continues to self-commit BEC4 into the MISO market, as described in the Company's March 1, 2023, annual compliance filing in this docket. Due to the geographical locations of Minnesota Power's wind generation as compared to its thermal generation, it is difficult to state whether the LMP curtailment of the wind generation was due to the self-commit (must run) of the thermal generation. Minnesota Power anticipates the expiration of PTC, which increases the offer price for wind after expiration, will have a greater impact on economic curtailments of Minnesota Power's wind generation than does operations at Boswell.

Minnesota Power continues to monitor how its generation is dispatched into the MISO market to ensure least cost power supply for its customers.

III. ADDITIONAL ANNUAL REPORTING RECOMMENDATIONS

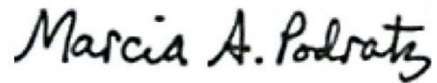
The Commission's Notice requested comments from parties on whether the filing requirements in this docket should be amended in response to the changes to Minnesota Statute Section 216B.2422 in the 2023 Legislative Session that addressed carbon dioxide ("CO₂") emissions reduction and monthly/annual limits on operation of coal-fired generating units. Minnesota Power does not currently incorporate seasonal or monthly shutdowns in the operation of its coal-fired units. Therefore, the Company sees no need to amend Minnesota Power's filing requirements in this docket to reflect seasonal shutdowns of coal-fired units. Consideration of whether or how the Commission should implement this new statutory authority with respect to Minnesota Power is more appropriately addressed in a future resource plan.

IV. CONCLUSION

Minnesota Power appreciates the opportunity to provide these Reply Comments and looks forward to the Commission's consideration of this matter.

Dated: July 31, 2023

Sincerely,

A handwritten signature in black ink that reads "Marcia A. Podratz". The signature is written in a cursive, flowing style.

Marcia A. Podratz
Regulatory Compliance Principal

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 31st day of July, 2023, she served Minnesota Power's Reply Comments in **Docket No. E999/CI-19-704** 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