

## Staff Briefing Papers

Meeting Date February 27, 2020 Agenda Item 3\*\*

Companies All Electric Utilities  
Northern States Power Company, doing business as Xcel Energy

Docket Nos. **E-999/CI-19-704**

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

**E-002/M-19-809**

**In the Matter of the Petition of Northern States Power Company for Approval of a Plan to Offer Generating Resources into the MISO Market on a Seasonal Basis.**

- Issues
1. Should there be any additions or clarifications to the direction given for this investigation by the Commission in ordering paragraphs 8, 9, and 10 of the November 13, 2019 Order, in Docket No. E-999/AA-18-373?
  2. Are there any updates from Xcel Energy or potentially interested parties on the status of inquiries into Xcel Energy's plan to offer Sherco 2 and the King Plant into the MISO market on a seasonal basis?

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The attached materials are work papers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

✓ **Relevant Documents**

**Date**

**Docket No. E-999/AA-18-373**

PUC - Order

November 13, 2019

**Docket No. E-999/CI-19-704**

**PUC – Notice of Comment Period**

December 13, 2019

**Comments**

Xcel Energy

January 13, 2020

Minnesota Power

January 13, 2020

Otter Tail Power Company

January 13, 2020

Department of Commerce, Division of Energy Resources

January 13, 2020

OAG-RUD

January 13, 2020

Fresh Energy

January 13, 2020

Sierra Club

January 13, 2020

City of Minneapolis

January 13, 2020

**Reply Comments**

Xcel Energy

January 28, 2020

Minnesota Power

January 28, 2020

Otter Tail Power Company

January 28, 2020

**Docket No. E-002/M-19-809**

Xcel - Plan to Offer Generating Resources into the MISO Market

December 20, 2019

PUC - Notice of Comment Period

January 10, 2020

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## I. Statement of the Issues

Should there be any additions or clarifications to the direction given for this investigation by the Commission in ordering paragraphs 8, 9, and 10 of the November 13, 2019 Order, in Docket No. E-999/AA-18-373?

Are there any updates from Xcel Energy or potentially interested parties on the status of inquiries into Xcel Energy's plan to offer Sherco 2 and the King Plant into the MISO market on a seasonal basis?

## II. Introduction

On November 13, 2019, the Commission issued its Order opening this investigation, and on December 13, 2019, issued its notice requesting procedural comments on the process and scope of this investigation. In January 2020, parties submitted comments and replies requesting certain clarifications on process and scope. Specifically, the original order apparently did not make clear the timeframe for the first report on March 1, 2020, or for ongoing annual reporting. There also were recommendations for the amount of time that should be allowed for comments on the March 1 filings and requests for clarification about the scope of the investigation, for example, should the investigation include a review for the prudence of utility dispatch decisions, a review of the dispatch of plants other than large baseload generating facilities, and a review of planned investments and fuel contracts.

## III. Background

The Midcontinent Independent System Operator (MISO) markets identify the supply of electric generation available throughout the MISO regions, and the anticipated (and, in the real-time market, the actual) demand for electricity in each area, selecting generators for dispatch in a manner designed to minimize overall costs to the system while meeting reliability requirements.

MISO unit commitment is the process that determines which generators (and other resources) will operate to meet the upcoming need for electricity. MISO scheduling and dispatch sets the hourly output for each committed resource, using simultaneously co-optimized Security Constrained Unit Commitment and Security Constrained Economic Dispatch to clear and dispatch the energy and reserve markets.

Self-commitment and self-scheduling are “commitment” and “dispatch” statuses available to electricity generators participating in the MISO Day Ahead wholesale power market.

Self-commitment allows a market participant to request that MISO commit a particular unit to run, regardless of market price. In MISO, this is referred to as “must run” status. Unless there is a reliability issue, MISO will commit the unit, at a minimum, to that unit's specified “economic” minimum output level. The unit acts as a price taker, accepting whatever the clearing price for that period happens to be. This may be below the unit's cost to generate. Depending on reliability needs and market prices, MISO may also commit the unit to production above economic minimum.

Self-scheduling enables participants to submit hourly generation schedules to MISO. Self-scheduling does not guarantee dispatch, but does predetermine minimum output levels. Units are price takers up to the self-scheduled generation amount, but may be dispatched at higher levels up to the unit's economic maximum, depending on market pricing and reliability needs.

In its February 7, 2019, ORDER ACCEPTING 2016-2017 REPORTS AND SETTING ADDITIONAL REQUIREMENTS<sup>1</sup> the Commission discussed self-commitment and self-scheduling as follows:

MISO markets identify the supply of electric generation available throughout the MISO regions, and the anticipated (and, in real time, the actual) demand for electricity in each area, selecting generators for dispatch in a manner designed to minimize overall costs to the system while meeting reliability requirements. MISO unit commitment is the process that determines which generators (and other resources) will operate to meet the upcoming need. MISO scheduling and dispatch sets the hourly output for each committed resource, using simultaneously co-optimized Security Constrained Unit Commitment and Security Constrained Economic Dispatch to clear and dispatch the energy and reserve markets. A market participant—that is, anyone registered for participation in MISO markets—can specify the production cost of its generator, and MISO will refrain from dispatching the resource until market prices meet or exceed that level, again, subject to reliability requirements. But under some circumstances a participant will prefer to commit its generator to be available for MISO dispatch (“self-commit”), and unilaterally set the generator’s output level (“self-schedule”), accepting whatever market price results rather than awaiting economic dispatch by MISO.

Renewable sources of generation have the advantage of incurring no fuel costs, which tends to reduce their operating costs and make them attractive options for MISO dispatch. However, self-committed and self-scheduled generators may displace these resources—even if, at any given moment, the renewable resource had lower operating costs.

The Commission directed Minnesota Power, Otter Tail Power, and Xcel Energy to make compliance filings containing initial analysis of the impacts of self-committing and self-scheduling their generators, including the annual difference between production costs and corresponding prevailing market prices. In response to information requests from parties, the utilities also provided hourly and monthly data.

At the Commission’s October 10, 2019, electric Annual Automatic Adjustment (AAA) agenda meeting, the parties requested, and the Commission agreed, that the issues surrounding self-commitment and self-scheduling be moved to a separate docket to provide a more focused forum for these issues. Thus, the Commission opened an investigation in this docket to require Minnesota Power, Otter Tail, and Xcel Energy to report their future self-commitment and self-scheduling analyses using a consistent methodology by including fuel cost and variable Operations and Maintenance (O&M) costs.

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<sup>1</sup> In the Matter of the Review of the 2016-2017 Annual Automatic Adjustment Reports for All Electric Utilities, Docket No. E-999/AA-17-492, and In the Matter of the Review of the 2017-2018 Annual Automatic Adjustment Reports for All Electric Utilities, Docket No. E-999/AA-18-373

In its November 13, 2019 ORDER ACCEPTING 2017-2018 ELECTRIC REPORTS AND SETTING ADDITIONAL REQUIREMENTS (November 13, 2019 Order),<sup>2</sup> the Commission:

8. Directed Minnesota Power, Otter Tail, and Xcel Energy to submit “an annual compliance filing analyzing the potential options for seasonal dispatch generally, and potential options and strategies for utilizing “economic” commitments for specific coal-fired generating plants. The utilities shall include a specific explanation of barriers or limitations to each of these potential options, including but not limited to technical limits of the units and contract requirements (shared ownership, steam offtake contracts, minimum fuel supply requirements, (shared ownership, steam offtake contracts, minimum fuel supply requirements, etc.) as relevant, on March 1, 2020, and each year thereafter.”
9. The Commission opened the investigation in this docket and required Minnesota Power, Otter Tail, and Xcel Energy to report their future self-commitment and self-scheduling analyses. The Commission ordered the utilities to use a consistent methodology by including fuel cost and variable O&M costs, matching the offer curve submitted to MISO energy markets.
10. Directed Minnesota Power, Otter Tail Power, and Xcel Energy to provide stakeholders the underlying data used to complete their analyses, in a live Excel spreadsheet, including, at a minimum, the data points listed below for each generating unit, with the understanding that this may include protected data.

Hourly data for all units:

- a) Date and hour
- b) Commit status (Null / Economic / Emergency / Must Run / Outage / Not Participating)
- c) Dispatch Status for Energy (Null / Economic / Self Schedule)
- d) Cleared MW
- e) Day ahead locational marginal price at unit node
- f) Real time MW adjustment
- g) Real time locational marginal price at unit node
- h) Day ahead dispatch minimum
- i) Real time dispatch minimum
- j) Fuel cost (\$/MWh)
- k) Variable operations and maintenance costs (\$/MWh)
- l) Day ahead locational marginal price representative of utility load zone
- m) Real time locational marginal price representative of utility load zone
- n) Whether Day Ahead Cleared = Day Ahead Dispatch Minimum (0 or 1)
- o) Actual production in MWh (for all 8,760 hours of the year)
- p) Day ahead MISO payment
- q) Real time MISO payment

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<sup>2</sup> In the Matter of the Review of the 2017-2018 Annual Automatic Adjustment Report for All Electric Utilities, Docket No. E-999/AA-18-373

- r) Net MISO energy payment
- s) Production costs ((J+K) \* O)
- t) Net cost or benefit (R-S)

Monthly or annual data for all units:

- u) Revenue from ancillary services (monthly)
- v) Fixed operations and maintenance costs (preferably monthly) or reasonable estimates in approximation thereof
- w) Capital revenue requirements (annual) or reasonable estimates in approximation thereof
- x) Average heat rate at economic minimum
- y) Average heat rate at economic maximum

#### **A. PUC Investigation into Self-commitment and Self-scheduling of Large Baseload Generation Facilities – Docket E-999/CI-19-704**

Docket No. E-999/CI-19-704 was opened to investigate the use of self-commitment and self-scheduling by the regulated electric utilities in Minnesota. On December 13, 2019, the Commission issued its notice requesting procedural comments. On January 10, 2020, the parties filed initial comments on the scope of this investigation, with reply comments filed on January 28, 2020. In these comments the parties raised the question of the period covered by the reporting required in the November 13, 2019 Order, with various parties suggesting different time periods for the first set of comments, due March 1, 2020.

#### **B. Xcel Seasonal Dispatch Plan - Docket No. E-002/M-19-809**

On December 20, 2019, Xcel Energy filed its Plan to Offer Generating Resources into the MISO Market on a Seasonal Basis, in Docket No. E-002/M-19-809. In this filing, Xcel laid out its plan to offer the Allen S King Generating Station (King) and Unit 2 of the Sherburne County Generating Station (Sherco 2) into the MISO market on a seasonal basis. This plan calls for Xcel to suspend normal operations during non-peak seasons at King as soon as March 2020, and at Sherco 2 as soon as September 2020. During these periods, Xcel would operate only if required for reliability.

Xcel also requested permission to true-up fuel costs in 2020, which may differ from Xcel's initial 2020 Fuel forecast as approved in Docket No. E-002/AA-19-293 due to the change in plant usage. According to Xcel, switching from year-round economic dispatch to seasonal economic dispatch should result in significant savings to ratepayers from lower operating and maintenance (O&M) and capital costs, but may increase fuel costs slightly. Xcel is requesting permission to true up any increased fuel costs that may arise through the fuel clause and is silent with respect to the estimated cost savings.

On January 10, 2020 Commission issued its Notice of Comment Period in this docket establishing April 1, 2020 as the deadline for initial comments, April 16, 2020 as the deadline for reply comments.

This docket is noticed for this Commission meeting so that Xcel and potentially interested parties have an opportunity to provide an update on the status of Xcel's plan and the inquiries into Xcel's proposal, and for Commissioners to ask any questions they may have at this time about Xcel's plan.

#### **IV. Parties' Comments**

##### **A. Reporting Period**

Several parties requested clarification of the time period covered by the March 1 reporting. Minnesota Power and Otter Tail Power both noted that the information requested in Docket 18-373 covered the time period July 1, 2017 to June 30, 2018, and so suggested that providing data for July 1, 2018 to December 31, 2019 would be appropriate for the first filing in 2020. Xcel suggested filing for a calendar year, though they acknowledged the July to June planning period also made sense. Fresh Energy and the Sierra Club both requested that the initial data filing go back 5 years, to cover January 1, 2015 to December 31, 2019. Both environmental groups cited a need for a longer time series of data than the data already available.

In reply the Utilities each noted that the period July 2016 to June 2018 was already analyzed in the earlier dockets, so adding July 2018 to December 2019 would give parties 3 ½ years of data to analyze. Xcel noted that "the requirement as written to provide data for the electric AAA reporting period appropriately informs this record." Xcel also noted that market conditions in 2015 were different from today, so an analysis reaching so far back may not be valid for development of forward-looking policies. Minnesota Power notes that its generation mix has changed significantly since 2015, with the retirement of Taconite Harbor Energy Center and the Boswell Units 1 and 2, and conversion of Laskin Energy Center from a baseload coal plant to a gas plant both occurring from mid-2015 until now.

##### **B. Comment Timeline**

The Department requests a one month timeline on comments after the March 1 filings, due to the needs for other projects. The other parties which made recommendations requested anywhere from two to four months after the initial March 1 filings are submitted by Xcel, MP, and OTP, with another two weeks to two months for reply comments. Fresh Energy recommend an additional two weeks after reply comments for responses to reply comments.

##### **C. Filing Scope**

Xcel Energy requested clarification of three points. In addition to the comment period issue noted above, Xcel requests to file in response to ordering paragraph 9 in the investigation docket, rather than both the investigation docket and the AAA report, with a reference in the AAA report to the investigation docket, this year. In future years, they would file in the AAA report.

Also, Xcel would like the Commission to clarify that only coal and nuclear baseload facilities are to be included in the report. Their May 9, 2019 compliance report included only those facilities, since they account for the bulk of strategic self-commitment.

Otter Tail requested that its Hoot Lake facility (units 1 and 2), which it expects to retire in 2021, be excluded from these reporting requirements.

#### **D. Planned Investments & Operating and Maintenance (O&M) Expenses**

Fresh Energy and the City of Minneapolis requests that each utility include an itemized list of planned and expected investments in each plant. Fresh Energy provides an amendment to Item 8 of the November 13, 2019 Order to implement this change (changes italicized).

8. Minnesota Power, Otter Tail, and Xcel shall submit an annual compliance filing analyzing the potential options for seasonal dispatch generally, and potential options and strategies for utilizing “economic” commitments for specific coal-fired generation plants. The utilities shall include a specific explanation of barriers or limitations to each of these potential options, including but not limited to technical limits of the units and contract requirements (shared ownership, steam offtake contracts, minimum fuel supply requirements, etc.) as relevant, *and shall describe potential solutions to each barrier or limitation. The utilities shall provide an itemized list of planned or expected capital investments over the lifetime of each unit, and discuss whether there is an opportunity to defer or avoid the expense with modified operations. The utilities will submit this compliance filing on March 1, 2020, and each year thereafter.*

The Sierra Club recommended “the Commission require the utilities to provide an annual breakdown of operation and maintenance costs allocated to variable O&M and fixed O&M – i.e. categorize the costs associated with each.”

Xcel, Minnesota Power and OTP suggest that extensive evaluation of planned and expected investments over the plant’s lifetime is better and more appropriately addressed in a utility’s Integrated Resource Plan.

#### **E. Fuel Contracts Review**

Sierra Club requests that the Commission require all utilities provide long-term fuel contracts which are identified as a cause for non-economic self-scheduling, as well as any steam delivery contracts which lead to or justify self-scheduling.<sup>3</sup> Minnesota Power believes fuel costs are more appropriately handled in AAA and FCA Forecast filings. OTP is not opposed to providing this information but recommended that if the scope is expanded, the March 1 initial filing date for the utilities should be extended.

#### **F. Imprudence and Rebates**

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<sup>3</sup> “For example, if a utility were to identify that long-term fuel contracts are a barrier to economic dispatch, they should be required to identify possible solutions to that issue, such as assessment of long-term contracts before the Commission, assessing the fixed component of fuel cost as liquidated damages only, or ensuring that new minimum-take contracts do not require the Companies to burn coal in excess of economic conditions.” Sierra Club, comments , p. 1

The OAG suggests that the Commission should explore the circumstances under which uneconomic dispatch-related costs should be refunded to taxpayers. Specifically, the OAG suggests defining the circumstances under which uneconomic dispatch is prudent or imprudent, the methodology of computing refunds of imprudent uneconomic dispatch, and the mechanism of making refunds.

Xcel objected to the OAG's request and argued that this investigation was not intended to be "a prudency review of past decisions, but instead ... a discussion centered [on] future dispatch choices that have the potential to reduce costs and environmental impacts."

OTP also objects to the OAG's recommendation arguing that there are many factors unique to each facility in addition to its economic dispatch price that contribute to how the plant is optimally operated by the company.

## **V. Staff Analysis**

The primary decision that needs to be made now by the Commission is about the scope of the reporting – should the first report cover 18 months, 12 months, or 5 years? 18 months for the March 1, 2020 compliance filing would coincide with current (but anomalous) AAA reporting period and gives approximately 3½ years of continuous data, between this year's report and the data requests from last year's AAA reports. For 2020, the electric AAA reporting period will revert to the normal 12 month time period, and the March 1, 2021 filings will be for calendar year 2020. In staff's opinion, this should be adequate for all parties to review the use of self-scheduling and self-commitment by the three utilities. Staff believes Xcel's recommendation to shift this annual reporting requirement to the investigation docket also makes sense for the March 1, 2020 filings and for the filings required in future years.

With respect to the comment period for the March 1, 2020 filings, staff believes three months would be a reasonable amount of time for initial comments and one month for replies. If the scope of this investigation is expanded at this meeting, the Commission may want to extend the March 1 filing or allow parties to supplement their March 1 filings with additional information. The decision alternatives include a range of alternatives, however, staff does not believe it is absolutely necessary for the Commission to set comment these periods in its order. Guidance on timelines can be provided and authority to establish procedures for an investigation, vary deadlines in orders and to set comment periods can be, and usually is, delegated to the Commission's Executive Secretary.

Staff does not believe it is necessary to explicitly expand or limit the scope of this investigation at this time. Staff agrees with Xcel generally that the intent of this inquiry was to take a forward looking approach to self-commitment and self-scheduling issues for the largest baseload facilities. Staff also agree with OTP that there may not be a lot value in looking at OTP's operation of its Hoot Lake plant because the plant is scheduled to be taken out of service in 2021. Regardless, the Commission's decisions about filing periods and comment deadlines do not preclude a party from issuing discovery requests, gathering facts, and using those facts as a basis for bringing issues forward in comments.

## VI. Decision Alternatives

### Reporting Period

1. Clarify that the 1<sup>st</sup> annual filing required in the November 13, 2019 order in Docket AA-18-373 should cover the period from July 2018 to December 2019, and that filings in later years should cover January to December of the prior calendar year. (MP, Otter Tail)
2. Clarify that the annual filing required in the November 13, 2019 order in Docket AA-18-373 should cover the prior calendar year. (Xcel)
3. Clarify that the annual filing required in the November 13, 2019 order in Docket AA-18-373 should include 5 years of data through December of the year prior to the filing during the first filing year, and that filings in later years should cover January to December of the prior calendar year. (Sierra Club, Fresh Energy)

### Docket in which the March 1, 2020 and future reports should be filed

4. The investigation docket, i.e. Docket No. E-999/CI-19-704. (Xcel)
5. The relevant electric AAA reporting docket for the corresponding self-scheduling and self-commitment reporting time period.

### Comment Timeline

6. Deadline for Initial Comments
  - a. April 1, 2020 (1 month) (DOC)
  - b. May 1, 2020 (2 months) (OTP)
  - c. June 1, 2020 (3 months) (MP, FE, Sierra Club, MP)
  - d. July 1, 2020 (4 months) (City of Minneapolis)
7. Deadline for Reply Comments
  - a. 30 days from the deadline for initial comments (OTP, MP)
  - b. 15 days from the deadline for initial comments (FE)
8. Deadline for Responses to Reply Comments
  - a. 30 days from the deadline for reply comments
  - b. 15 days from the deadline for reply comments (FE)

### Delegation of Authority to the Commission's Executive Secretary

9. Delegate authority to the Commission's Executive Secretary to establish additional procedures for this investigation, vary deadlines in orders and set comment periods for the duration of this investigation.

## Miscellaneous

10. Specify that the March 1 report should be limited to baseload facilities. (Xcel)
11. Authorize OTP to exclude information about Hoot Lake from these reports. (OTP)
12. Modify ordering paragraph 8 of the Commission's November 13, 2019 Order to include the underlined language in the following paragraph:
  8. Minnesota Power, Otter Tail, and Xcel shall submit an annual compliance filing analyzing the potential options for seasonal dispatch generally, and potential options and strategies for utilizing "economic" commitments for specific coal-fired generation plants. The utilities shall include a specific explanation of barriers or limitations to each of these potential options, including but not limited to technical limits of the units and contract requirements (shared ownership, steam offtake contracts, minimum fuel supply requirements, etc.) as relevant, and shall describe potential solutions to each barrier or limitation. The utilities shall provide an itemized list of planned or expected capital investments over the lifetime of each unit, and discuss whether there is an opportunity to defer or avoid the expense with modified operations. The utilities will submit this compliance filing on March 1, 2020, and each year thereafter. (Fresh Energy, City of Minneapolis)
13. Require the utilities to provide an annual breakdown of operation and maintenance costs allocated to variable O&M and fixed O&M – i.e. categorize the costs associated with each. (Sierra Club)
14. Require all utilities provide long-term fuel contracts which are identified as a cause for non-economic self-scheduling, as well as any steam delivery contracts which lead to or justify self-scheduling. (Sierra Club)
15. Require the require the utilities to address, and request stakeholder input on: (1) the circumstances under which uneconomic dispatch is prudent or imprudent, (2) the methodology for computing ratepayer refunds for imprudent uneconomic dispatch, and (3) the appropriate mechanism(s) for making the refunds. (OAG)