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March 1, 2021

—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: ANNUAL REPORT  
COMMISSION INVESTIGATION INTO SELF-COMMITMENT AND SELF-  
SCHEDULING OF LARGE BASELOAD GENERATION FACILITIES  
DOCKET NO. E999/CI-19-704

PLAN TO OFFER GENERATING RESOURCES INTO THE MISO MARKET ON A  
SEASONAL BASIS  
DOCKET NO. E002/M-19-809

Dear Mr. Seuffert:

Northern States Power Company, doing business as Xcel Energy, submit this annual report analyzing the Company's 2020 results of and future options for seasonal dispatch, self-commitment and self-scheduling in compliance with the Minnesota Public Utilities Commission's February 7, 2019 Order in Docket Nos. E999/AA-17-492 and E999/AA-18-373, November 13, 2019 Order in Docket No. E999/AA-18-373, July 15, 2020 Order in Docket No. E002/M-19-908, and January 11, 2021 Order in Docket Nos. E999/CI-19-704 and E002/M-19-809.

Please note that portions of Attachment A, B and C are marked as "Not Public." Certain data is considered to be "not public data" pursuant to Minn. Stat. §13.02, Subd.9, and is "Trade Secret" information pursuant to Minn. Stat. §13.37, subd. 1(b) as this data derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by other persons who can obtain economic value from its disclosure or use.

Pursuant to Minn. Stat. § 216.17, subd. 3, we have electronically filed this document, and served copies of the summary on the parties on the attached service list.

Please contact Rebecca Eilers at [rebecca.d.eilers@xcelenergy.com](mailto:rebecca.d.eilers@xcelenergy.com) / 612-330-5570 or me at [christopher.j.shaw@xcelenergy.com](mailto:christopher.j.shaw@xcelenergy.com) / 612- 330-7974 if you have any questions regarding this filing.

SINCERELY,

/s/

CHRISTOPHER SHAW  
MANAGER, REGULATORY POLICY

Enclosures  
c: 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

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

DOCKET No. E002/M-19-809

**ANNUAL REPORT**

### **OVERVIEW**

Northern States Power Company, doing business as Xcel Energy, submits this annual report analyzing the Company's options for seasonal dispatch, self-commitment and self-scheduling in compliance with several Orders issued by the Minnesota Public Utilities Commission:

- Docket Nos. E999/AA-17-492 and E999/AA-18-373, ORDER ACCEPTING 2016-2017 REPORTS AND SETTING ADDITIONAL REQUIREMENTS, February 7, 2019 (February 7 Order);
- Docket No. E999/AA-18-373, ORDER ACCEPTING 2017-2018 ELECTRIC REPORTS AND SETTING ADDITIONAL REQUIREMENTS, November 13, 2019 (November 13 Order); and
- Docket Nos. E999/CI-19-704 and E002/M-19-809, ORDER EVALUATING SELF-COMMITMENT AND SELF-SCHEDULING REPORTS AND ESTABLISHING ADDITIONAL FILING REQUIREMENTS, January 11, 2021 (January 11 Order).

We include additional reporting related to the Company's plan to offer generating resources into the MISO market on a seasonal basis as required by the Commission's

July 15, 2020 ORDER APPROVING PLAN AND REQUIRING FILING in Docket No. E002/M-19-809 (July 15 Order).

We provide the requested analysis for calendar year 2020.

## ANNUAL REPORT

### **A. Analysis of Self-Commitment and Self-Scheduling Decisions for Calendar Year 2020**

In compliance the February 7, 2019 Order, the November 13, 2019 Order, and the January 11 Order, we provide an analysis of self-commitment and self-scheduling decisions made during the calendar year 2020 reporting period.

The Company analyzed the economic impact of its self-commit actions for the period January – December 2020 by comparing the MISO day-ahead and real-time (DART) revenues and charges that Xcel Energy received from its self-commit approach for certain resources to the production costs of those resources to determine margin. While we cannot perform a what-if margin analysis of allowing MISO to commit and dispatch the Xcel Energy units, the Company did analyze the total DART margins of the actions it did take to self-commit these resources.

The analysis evaluates actions taken for Xcel Energy's baseload units, exclusive of its Refuse Derived Fuel units. Additionally, the combined cycle and simple cycle combustion turbines are not included in the analysis because these generating resources are offered to MISO as economic units unless testing or operating directives (*i.e.* MISO or transmission operations directives) require otherwise. The baseload units included in the analysis comprise a large part of the Company's MISO settlement and are the bulk of our strategic self-commit decisions. Since 2019, the Company's practice is to offer our coal facilities with an economic commit status – as opposed to self-commit – as much as possible. The Company began in fall 2020 to suspend normal operations at King Plant and Sherco 2 during non-peak seasons, as discussed in Docket No. E002/M-19-809.

In evaluating instances of self-commit of these units, we also excluded hours when Xcel Energy's self-commit action in the MISO market was unavoidable (*e.g.*, mandatory generating resource testing, fuel and steam offtake contract requirements, and generating resource maintenance outages). These instances are noted in Attachments A and B in compliance with the January 11 Order.

The resulting DART margin by resource is shown in Figure 1. The DART margin during the strategic self-commit for the period was \$211,285,884 which means that market revenues during these self-commitment periods exceeded the production costs of the units as offered to MISO. We also conducted a further DART margin analysis with production costs including sunk contractual coal costs. Under this analysis, the DART margin during the strategic self-commit for the period was \$140,806,767. We performed this further analysis because we do not typically exclude sunk contractual costs from unit offers, as we did during 2020 because our contracting for coal in 2020 was complete before plans for seasonal operations were developed and approved. This transitional issue occurred as we moved toward more aggressive cycling and economic operation of our coal fleet. We returned to our standard practice of including the total cost of coal in our offers as of January 1, 2021.

The Company recently began exploring economic dispatch of nuclear units, in an effort to provide additional flexibility to the MISO market. During conversations about fuel procurement for nuclear plants, we determined that the timing and amount of fuel procured during refueling could not be altered by the economic dispatch efforts that the Company had undertaken. Rather, the fuel costs for nuclear were treated as a fixed cost in this analysis, and these fuel costs were removed from the incremental offer prices for nuclear effective June 27, 2020. For purposes of this report, the estimated nuclear fuel costs are treated as fixed costs, and are included as “Remaining Fuel Costs” in the reporting as of June 27, 2020.

**Figure 1: 2020 DART Margin for Non-Discretionary Self-Commit of Baseload Units**

2020 Non-Discretionary Day Ahead and Real Time Margins for NSP Base Load Resources							
Net MISO Pmt less Production Costs (cost)/benefit							
NSP.KING1	NSP.SHERCO1	NSP.SHERCO2	NSP.SHERC3	NSP.PRISL1	NSP.PRISL2	NSP.MNTCEL1	Total
0	1,770,847	702,463	14,423,760	54,257,302	61,558,229	78,573,283	211,285,884
Net MISO Pmt less Total Production Costs including Remaining Unit Fuel Costs (cost)/benefit							
NSP.KING1	NSP.SHERCO1	NSP.SHERCO2	NSP.SHERC3	NSP.PRISL1	NSP.PRISL2	NSP.MNTCEL1	Total
0	(1,762,510)	(1,712,238)	12,042,173	36,123,363	40,235,029	55,880,950	140,806,767

We believe this DART margin data represents an appropriate metric for determining whether the Company’s self-commitment decisions were beneficial, and the data provided in Figure 1 demonstrates that the Company’s customers received value as a result of its decision to self-commit the baseload resources.

The Company has provided detailed analysis of the consequences of self-commitment of its generators in Attachments A, B and C, which include the required hourly, monthly or annual data items a through z, by unit, as detailed in Attachment A of the January 12 Order.<sup>1</sup> We note that, when the Company submits a commit status of “Must-Run” for a unit (self-commits), it designates a resource as committed to MISO per Xcel Energy’s request and makes the resource available for dispatch by MISO. To self-schedule for energy, Xcel Energy would have to submit a resource to operate at a specific MW value or operating level for energy and set the energy dispatch status to “Self-Schedule.” For January – December 2020, Xcel Energy did not find any instances of self-scheduling of resources for energy; therefore, Attachments A-C do not capture the consequences of self-scheduling. The attachments do, however, present the impact of self-commitment.

As stated above, the analysis only includes instances when Xcel Energy strategically self-commits select baseload units. There are circumstances when self-commit is unavoidable, such as testing, operating directives from MISO or Transmission Operations, or third-party contractual requirements. Strategic decisions to self-commit units are based on a number of considerations, including MISO model limitations, contractual obligations, and system reliability.

In addition to the economic value received from these self-commitment actions, there are other reasons why the Company self-commits certain generation resources, including specific contractual relationships with other parties. We discuss such reasons below.

Xcel Energy also strongly considers reliability when making decisions about self-committing units. Extreme weather conditions, elevated MISO conditions, high load days, tight capacity conditions, and transmission requirements increase reliability risks and are factored into our decisions to self-commit units.

Xcel Energy constantly monitors system conditions, looking for opportunities to lower customer costs. At times when we believe system reliability risks are low, as when renewable generation is forecasted to be high, loads are forecasted to be low, and plant availability is high, we have offered baseload units into MISO as economic, making them available to be de-committed. In several instances coal units offered with an “Economic” status have been de-committed by MISO.

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<sup>1</sup> Attachment A provides items a-t for coal units; Attachment B provides items a-t for nuclear units; Attachment C provides items u-z. We note that due to file size, only the first lines of each hourly tab include live formulas.

In addition, Xcel Energy continually evaluates opportunities to provide resource flexibility to MISO, which may lessen the need to self-commit and self-schedule units. Widening unit dispatch ranges, improving unit start capabilities, reducing cycling times, and exploring nuclear flexible operations gives MISO more opportunities to commit and dispatch our units economically.

Xcel Energy also seeks market changes that will accommodate better economic commit and dispatch opportunities. The development of a multi-day financial commitment market design in MISO will optimize these long lead resources, such as coal units, across multiple days while still honoring their operating parameters. A multi-day commitment process is able to evaluate reliability risks and minimize total production costs over a longer time horizon, making it a superior process and better suited to also optimize baseload resources with slower start-up times and longer minimum down times. Without a multi-day commitment there is less assurance that the market will commit and de-commit these units in an optimal manner on behalf of customers. Xcel Energy has been and remains an advocate for a multi-day commitment process for multiple years. At this time, MISO has postponed work on a multi-day commitment process.

#### *1. Minimum Operating Levels*

NSP continuously seeks to improve operational flexibility for its generating units and as part of this effort, NSP has worked to reduce the minimum required loading at Sherco 1 and Sherco 2 from 260 MW to 215 MW. This increased “turndown capability” produced an estimated \$460,000 in customer benefits in 2020. These benefits are calculated by comparing MISO Day Ahead/Real Time energy margins when the unit was in turndown to the estimated margins had the unit only dispatched to its previous economic minimum. Margins are based on MISO estimated energy settlement less unit production costs. Lower operational minimums accommodate additional renewables generation, decreases carbon emissions, and reduces production costs.

### **B. Analysis of Economic and Seasonal Dispatch Options**

#### *1. Background*

In compliance with the November 13 Order and the January 11 Order, we provide an analysis of the costs and benefits of unit dispatch relative to self-scheduling at the Sherburne County Generating Station Units 1 and 3 (Sherco 1 and Sherco 3). We note that, in the fall of 2020, the Company implemented a seasonal dispatch plan for the Allen S. King Plant (King Plant) and Sherco 2, as approved by the Commission in

the July 15 Order. We provide an analysis of the results of seasonal dispatch for these units later in this report.

The Sherco 1 and 3 units are coal-fired generators with a capacity of approximately 680 MW and 860 MW, respectively, located in Sherburne County, MN. As noted above, Sherco 3 is subject to a joint operating agreement with the Southern Minnesota Municipal Power Agency (SMMPA) that divides the unit output between the two parties; Xcel Energy owns 59 percent of the unit output. In our last Integrated Resource Plan (IRP), the Commission approved our proposal to retire Sherco 1 in 2026 and Sherco 3 in 2040.<sup>2</sup> In our IRP filed on July 1, 2019, we proposed to accelerate the retirement of Sherco 3 to 2030.<sup>3</sup>

For this report, we have conducted economic modeling to analyze the cost impacts of an alternate unit dispatch plan using the PLEXOS model.<sup>4</sup> The dollar savings shown are relative to the fuel clause and do not include any O&M savings (variable or fixed).

Consistent with our seasonal operations analysis for King and Sherco 2, we have defined seasonality using a traditional definition of shoulder months and summer and winter months. Specifically, we defined winter and summer operation as the period from December through February and June through August, respectively. These months generally align with higher market prices and higher load levels. We defined shoulder months as March through May and September through November.

## *2. Impacts of SMMPA Partnership on Dispatch of Sherco 3*

The original joint operating agreement between Xcel Energy and SMMPA provided little opportunity to economically commit Sherco 3 to the MISO market. Under the agreement, each partner was its own Market Participant managing their pro-rata offer of the plant to MISO. With this arrangement, if the partners offer their respective share of the unit economically to MISO, MISO may commit one share of the facility, but not the other. However, the commitment of one share of Sherco 3 necessitates the operation of the other partner's share, regardless of economic opportunities to decommit the other portion, as the operating minimum of the total facility requires both shares.

Both Xcel Energy and SMMPA recognize that there are opportunities to offering Sherco 3 economically to MISO; therefore, both parties have come to an agreement

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<sup>2</sup> Docket No. E002/RP-15-21, ORDER APPROVING PLAN WITH MODIFICATIONS AND ESTABLISHING REQUIREMENTS FOR FUTURE RESOURCE PLAN FILINGS (January 11, 2017).

<sup>3</sup> Docket No. E002/RP-19-368

<sup>4</sup> Approved by the Commission's December 22, 2020 Order in Docket No. E002/AA-20-417.



on how to offer economically to the market. Xcel Energy and SMMPA signed a Sherco 3 MISO Coordination Agreement, effective March 1, 2021, to combine each company’s share of the plant into a single asset to be offered to MISO. Xcel Energy will be the Market Participant for the total Sherco 3 unit in the MISO market, managing its registration, offer, metering, and settlements. The agreement coordinates the exchange of participants’ costs and fuel requirements in order to effectively manage unit parameters into a single offer package. As with our other coal units, there will be instances where Sherco 3 will have to be self-committed, such as for testing, fuel contract mandates and reliability, but this new arrangement does offer much more opportunity for economic cycling as MISO will be committing the total unit, as opposed to each individual partner’s share.

As a result of this agreement, the analysis we performed assumed economic commitment could begin March 1, 2021. However, the date at which economic offers can begin for Sherco 3 is subject to coal inventory at the plant, fuel contract commitments, system conditions, and coordination with SMMPA such that economic offers may begin later than March 1.

*3. Fuel Cost Impacts of Sherco 3 Dispatch*

The Company analyzed economic commitment of Sherco 3 in the context of NSP’s fuel clause. The Company used PLEXOS to model the NSP power supply system and forecast costs for fuel and purchased energy.

The Company modeled the impacts of transitioning from a must-commit status on Sherco 3 to a fully economic commitment strategy. The fuel clause impact of that change in commitment status is shown below in Table 1.

**Table 1: Potential NSPM Fuel Clause Impacts of Year-Round Economic Commit Versus Must Commit for Sherco 3 (\$000)**

<b>Base LMP</b>			
<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
(\$1,333)	(\$4,456)	(\$3,591)	(\$379)
<b>High LMP</b>			
<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
\$388	(\$548)	\$195	\$889

As shown above, the change from must-commit to year-round economic commitment results in an expected reduction in fuel costs using the base LMP scenario. Under a high LMP scenario, lower cost savings would be expected. Since

the PLEXOS model takes into account assumed market conditions, the projected fuel cost impacts shown above could differ depending on actual market conditions.

#### 4. *Carbon Impacts of Sherco 3 Dispatch*

In addition, economic commitment at Sherco 3 will impact the carbon emissions on our system. Table 2 below provides the net change in CO<sub>2</sub> emissions on our system based on the PLEXOS analysis described above.

**Table 2: Change in CO<sub>2</sub> Emissions of Year-Round Economic Commit Versus Must Commit for Sherco 3 (Millions of tons)**

Base LMP			
2021	2022	2023	2024
(1.8)	(1.9)	(1.8)	(1.9)
High LMP			
2021	2022	2023	2024
(0.4)	(1.2)	(1.2)	(0.7)

CO<sub>2</sub> emissions would be reduced by offering Sherco 3 on an economic basis under the base LMP scenario and, to a lesser extent, under the high LMP scenario. As generation from our coal units is reduced, emissions of criteria pollutants are also reduced.

Table XX, below, applies the high and low environmental cost values as established by the Commission to the reduction in CO<sub>2</sub> emissions due to seasonal commitment relative to Year-Round Economic Commitment for the Base LMP scenario in Table 3.

**Table 3: Environmental Cost Impacts of Year-Round Economic Commit Versus Must Commit for Sherco 3**

	2021	2022	2023	2024
Low Environmental Cost (\$/ton)	\$10.32	\$10.77	\$11.22	\$11.69
High Environmental Cost (\$/ton)	\$48.39	\$50.38	\$52.43	\$54.55
Reduction in CO <sub>2</sub> × Low Env. Cost (\$000)	\$18,580	\$20,459	\$20,188	\$22,208
Reduction in CO <sub>2</sub> × High Env. Cost (\$000)	\$87,097	\$95,721	\$94,378	\$103,638

#### 5. *Analysis of Sherco 1 Dispatch Options*

We are currently in the process of replacing two Auxiliary Boilers (ABs) at the Sherco plant. The new ABs are needed to provide a reliable source of steam supply for unit cold startup for the existing power plant and building heating. The existing ABs are

in poor condition. One unit has been removed from service and the second has been unreliable and is undersized. The ABs will be replaced with larger capacity boilers to ensure reliable operation of the Sherco Units through the end of their useful lives. We anticipate completing the replacement of the ABs by the end of this year.

A reliable source of steam for startup and building heating becomes increasingly important in the future, since there will be times where no coal unit will be operating to supply heat or startup steam to any other unit. Steam supply from the new ABs will decrease our dependence on Unit 1 for cold start requirements in preparation for the retirement of these units. This provides more flexibility related to any economic or seasonal operation in the future.

In addition to providing steam for startup and heat for the building, the new ABs could be used to provide steam to Liberty Paper, Inc. (LPI), although doing so on an extended basis likely will require updated air permitting. LPI is one of the largest recyclers of paper in the Midwest, and a large employer of more than 160 people in Becker, Minnesota. LPI purchases steam from the Sherco facility and has done so since 1993. With the planned retirement of all the units at Sherco and need to operate the Sherco Units more flexibly, we are in the process of creating alternatives that ensure a continued reliable source of steam for LPI.

In the interim, since Sherco 2 is already being offered into the market on a seasonal basis, and we plan to offer Sherco 3 on an economic commitment basis beginning in 2021, Sherco 1 must remain available to provide auxiliary steam, at least until the new ABs are placed into service. Since operation at Sherco 1 is currently limited by these factors, we do not believe further quantitative analysis of alternate dispatch options for Sherco 1 is appropriate at this time.

## 6. *Conclusion*

Our analysis supports potential cost savings and emissions reductions related to offering Sherco 3 into the market as an economic committed resource. Cost savings and emissions reductions are possible if the unit were to be offered on a seasonal basis have not been studied because, given current capacity needs, we are not able to offer Sherco 3 on a seasonal basis at this time. However, we will begin to offer it on an economic basis as soon as is feasible after March 1, 2021. In addition, our current contractual obligations, infrastructure, and permitting prevent us from offering Sherco 1 on an economic or seasonal basis. We will continue to assess the status of these units and our capacity needs with a goal of being able to offer these resources into the market differently in the future.

## C. Analysis of Seasonal Dispatch Plan Implementation at King and Sherco 2

### 1. *Comparison of Must-Commit, Economic Commit and Seasonal Commit Scenarios and Emissions*

In compliance with the July 15 Order, we provide the following analysis of our Unit Commitment Plan for King and Sherco 2, under which we seasonally dispatched those units beginning in fall 2020.

This analysis was performed using a PLEXOS run in which operational parameters are utilized and actual outages are included. The production costs in the model include sunk fuel costs, including contractual coal costs. The model optimizes against the historical DA LMPs at the commercial pricing node of each seasonally operated unit, and assumes that LMP is unaffected by unit commit.

Figure 2 compares the modeled production costs during seasonal operations compared to modeled production costs from must commit and economic commitment. This figure also shows the modeled CO2 emissions savings due to the seasonal operations plan relative to must run and economic commitment for King and Sherco 2.

Xcel Energy performed what-if scenario modeling of production costs compared to historic DA LMP using the PLEXOS model. This analysis includes three scenarios: base, must run and economic. The base case models the actual commitment of the King and Sherco 2 units during seasonal dispatch. During seasonal operations, MISO is allowed to access the seasonal operation units if MISO declares an emergency. No emergencies occurred during the seasonal operations timeframe, therefore King and Sherco 2 are modeled as being in outage during the timeframe in which they were seasonally operated.

The must run and economic cases enforce the operating parameters used during the base case, but alter the commit status to create a what-if scenario. For the must run case, the seasonal dispatch units are forced online in the model during the seasonal operations timeframe. For the economic case, the model is free to commit and decommit the seasonal operations units, respecting the unit parameters included in the model. Finally the must run and economic cases are compared to the base case, as shown in Figure 2. The model results indicate that seasonal operations was successful from both an economic and environmental point of view for both King and Sherco 2.

King’s base case (representing seasonal operations) compared favorably to the must run scenario, with \$1.27 million higher DART margin resulting from seasonal operations. The model also showed seasonal operations saved 1.9 billion pounds of carbon dioxide (CO2) emissions. The economic case for King resulted in a slightly more optimal DART margin compared to seasonal operations, with the model committing King during October 2020 for a total of 213 hours. The increased profit for economic operations compared to seasonal operations at King was \$580,816. However, this is offset by the O&M savings of \$1.21 million associated with O&M savings resulting from seasonal operations, reported below in the *Capital and O&M Costs* section. In addition, seasonal operations at King saved 229 million pounds CO2 emissions compared to economic operations.

Sherco 2 seasonal dispatch also showed economic and environmental benefits compared to must run of the unit. Sherco 2 base case resulted in \$1.5 million additional DART margin, and savings of 1 billion pounds of CO2 emissions. The economic case resulted in Sherco 2 receiving a slightly higher DART margin compared to seasonal operations, with the model committing Sherco 2 briefly during November 2020 for a total of 35 hours. The increased profit for economic operations compared to seasonal operations at Sherco 2 was just \$55,370. This is offset by the O&M savings of \$835,000 associated with seasonal operations. In addition, seasonal operations at Sherco 2 saved 49 million pounds of CO2 emissions compared to economic operations.

**Figure 2: Comparison of Econ and Must Run to Seasonal Operations**

		MR less BASE				ECON less BASE			
		MWh	Profit (+) / Loss (-)	CO2 (000 lb)	run hours	MWh	Profit (+) / Loss (-)	CO2 (000 lb)	run hours
KING	9/4/20 - 9/30/20	258,647	(1,049,650)	567,989	288	-	-	-	-
	Oct-20	320,869	294,169	704,629	744	104,350	580,816	229,153	213
	Nov-20	301,555	(515,327)	662,215	720	-	-	-	-
	<b>Total</b>	<b>881,072</b>	<b>(1,270,808)</b>	<b>1,934,834</b>	<b>1,752</b>	<b>104,350</b>	<b>580,816</b>	<b>229,153</b>	<b>213</b>
SHC2	9/20/20 - 9/30/20	68,056	(760,142)	158,707	205	-	-	-	-
	Oct-20	151,977	(668,035)	354,409	408	-	-	-	-
	Nov-20	215,913	(82,162)	503,509	456	20,996	55,370	48,963	35
	<b>Total</b>	<b>435,946</b>	<b>(1,510,339)</b>	<b>1,016,625</b>	<b>1,069</b>	<b>20,996</b>	<b>55,370</b>	<b>48,963</b>	<b>35</b>

Figure 3 shows the actual operations of the coal units by quarter for 2020, including offline hours (outage or reserve shutdown), starts by type (MISO economic, MISO reliability, Company must run) and duration of each start by type.

Due to economic decommit or idling for seasonal operation, King was offline in reserve shutdown (RS) for 6,081 hours out of the 8,784 hours during 2020, or 69.2% of hours during 2020. King was only self-committed by company on one occasion

during 2020. MISO economically committed King three times for economics, and once for reliability.

Similarly, Sherco 1 and Sherco 2 also experienced increased reserve shutdown hours and several MISO economic starts. Sherco 1 and Sherco 2 did not experience any reliability starts by MISO. Due to system conditions and contractual requirements, unique to Sherco plant, Sherco 1 and Sherco 2 were started for company needs 7 and 4 times, respectively, during 2020.

**Figure 3: Operating Statistics by Quarter**

Unit	Date	Run Hours			Offline Hours		Starts by Type			
		MISO ECON	MISO REL	COMP MR	RS	OUT	MISO ECON	MISO REL	COMP MR	TOTAL
SHC1	Q1	2	0	2,031	151	0	0	0	1	1
	Q2	34	0	1,185	825	140	1	0	1	2
	Q3	481	0	1,447	32	248	0	0	2	2
	Q4	30	0	1,692	1	485	1	0	3	4
	<b>Total</b>	<b>547</b>	<b>0</b>	<b>6,355</b>	<b>1,009</b>	<b>873</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>9</b>
SHC2	Q1	36	0	1,289	859	0	1	0	1	2
	Q2	35	0	1,310	839	0	1	0	1	2
	Q3	701	0	1,224	154	129	0	0	0	0
	Q4	255	0	862	950	141	0	0	2	2
	<b>Total</b>	<b>1,027</b>	<b>0</b>	<b>4,685</b>	<b>2,802</b>	<b>270</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>6</b>
KING	Q1	220	0	57	1,907	0	1	0	0	1
	Q2	14	128	0	2,042	0	1	1	0	2
	Q3	910	0	495	668	135	1	0	1	2
	Q4	744	0	0	1,464	0	0	0	0	0
	<b>Total</b>	<b>1,888</b>	<b>128</b>	<b>552</b>	<b>6,081</b>	<b>135</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>5</b>

## 2. Capital and O&M Costs

As discussed in the Unit Commitment Plan Petition, we did not expect to see any capital savings at Sherco 2 in 2020. Given its retirement date of 2023, minimal investments are planned for the unit. In addition, while we expect to see some capital savings at King in future years of seasonal operations, we did not expect to see any in 2020.<sup>5</sup>

As a result of seasonal dispatch, King achieved O&M savings of \$1.21 million in 2020 and Sherco 2 achieved O&M savings of approximately \$835,000.

<sup>5</sup> See Table 6 of the December 20, 2019 Petition in Docket No. E002/M-19-809.

### 3. *Workforce Impacts*

No employees were negatively impacted due to seasonal operations at King and Sherco 2. When possible, and in compliance applicable with union rules, employees were given the opportunity to travel to other power plant sites to help support daily and overhaul activities.

As we discussed in our April 1, 2020 supplement in Docket No. E002/M-19-809, plant managers have been engaging with employees regarding the future of our coal generators for several years. Management communicated to employees that the generation business is changing due to the significant additions of renewable energy on the system, low natural gas prices, and goals to reduce carbon emissions. As part of those communications, we discussed the likelihood that coal plants would shut down before their expected retirement date. We conducted this communication through plant meetings, small group meetings, individual discussions, and emails. We continue to communicate with employees in this manner to keep them informed.

### **CONCLUSION**

We respectfully request that the Commission accept this filing in compliance with the November 13, 2019 ORDER ACCEPTING 2017-2018 ELECTRIC REPORTS AND SETTING ADDITIONAL REQUIREMENTS in Docket No. E999/AA-18-373, the February 7, 2019 ORDER ACCEPTING 2016-2017 REPORTS AND SETTING ADDITIONAL REQUIREMENTS in Docket Nos. E999/AA-17-492 and E999/AA-18-373, the January 11, 2021 ORDER EVALUATING SELF-COMMITMENT AND SELF-SCHEDULING REPORTS AND ESTABLISHING ADDITIONAL FILING REQUIREMENTS in Docket Nos. E999/CI-19-704 and E002/M-19-809, and the July 15, 2019 ORDER APPROVING PLAN AND REQUIRING FILING in Docket No. E002/M-19-809.

Dated: March 1, 2021

Northern States Power Company

## CERTIFICATE OF SERVICE

I, Mustafa Adam, 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 Nos. E999/CI-19-704  
E002/M-19-809**

Dated this 1<sup>st</sup> day of March 2021

/s/

---

Mustafa Adam  
Regulatory Administrator



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