April 30, 2021

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

VIA E-FILING

Re: In the Matter of an Investigation into Self-Commitment and Self-Scheduling of Large Baseload Generation Facilities, Docket No. E-999/CI-19-704

Sierra Club PUBLIC Version of Initial Comments: Otter Tail Power 2021 Annual Compliance Filing

Dear Mr. Seuffert:

Sierra Club respectfully submits its Initial Comments on Otter Tail Power's 2021 Annual Compliance Filing in Docket No. E999/CI-19-704.

These comments and attachments contain information Otter Tail Power considers to be Trade Secret. Sierra Club believes this filing comports with the Minnesota Public Utilities Commission's Notice relating to Revised Procedures for Handling Trade Secret and Privileged Data, pursuant to Minn. Rule 7829.0500.

Please contact me at (303) 454-3358 or laurie.williams@sierraclub.org if you have any questions regarding this filing.

Sincerely,

/s/Laurie Williams
Senior Attorney
Sierra Club
1536 Wynkoop St. Suite #200
Denver, CO 80202

Enclosures

STATE OF MINNESOTA

BEFORE THE 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. E-999/CI-19-704

SIERRA CLUB INITIAL COMMENTS
IN RESPONSE TO OTTER TAIL POWER'S 2021 COMPLIANCE FILING

Developed with the Assistance of Synapse Energy Economics, Inc.
485 Massachusetts Ave., Suite 3
Cambridge, Massachusetts, 02139

PUBLIC DOCUMENT –TRADE SECRET DATA EXCISED

April 30, 2021

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I. INTRODUCTION AND PURPOSE OF COMMENTS

Sierra Club, with the assistance of Synapse Energy Economics, Inc. (Synapse), submits these comments in response to Otter Tail Power's (OTP's) March 1, 2021 Annual Compliance Filing in *In the Matter of an Investigation into Self-Commitment and Self-Scheduling of Large Baseload Generation Facilities,* Docket No. E999/CI-19-704. Synapse, a research and consulting firm specializing in energy, economic, and environmental topics, has been retained by Sierra Club to provide expert services and analysis in this docket.

Sierra Club engaged Synapse in this docket to evaluate OTP's commitment and dispatch decision-making practices for its Big Stone Plant (Big Stone) and Coyote Station (Coyote) units and to evaluate the effects of those practices on the units' economic performance. The purpose of our comments submitted last year was to provide recommendations to the Minnesota Public Utilities Commission ("the Commission") on actions the Commission should take to address uneconomic commitment and dispatch practices and related activities, and to encourage OTP to operate Big Stone and Coyote in a manner that maximizes value to ratepayers. In this set of comments, Sierra Club summarizes changes and improvements in OTP's unit commitment practices in 2020, updates our unit commitment analysis with data from 2020, and provides updated recommendations to the Commission.

Recent public analyses have highlighted that utilities' heavy reliance on the practice of self-commitment and self-scheduling coal plants is harming customers.[1] When a utility fails to conduct forward-looking analyses to inform unit commitment and dispatch decisions, resulting in periods of avoidable uneconomic operation, the Commission must address the question of the prudence of the variable costs, including fuel costs, incurred during those times. Under Minnesota law, the utility bears the burden of proving these costs are reasonable and in the public interest. Minn. Stat. § 216B.16, Subd. 4.

As discussed in detail below, during the filing period, OTP's practice of self-committing Big Stone and Coyote led to periods of avoidable, sustained losses to customers. OTP has taken steps to improve its commitment and scheduling practices at Big Stone by working with the co-owners of the plan to implement a "coordinated offer process that allowed for joint economic offer capability."[2] But the unit is still operating uneconomically a significant portion of the year based

[1] *See, e.g.,* Sierra Club's 2019 report *Playing With Other People's Money: How Non-Economic Coal Operations Distort Energy Markets*, available at: https://www.sierraclub.org/sites/www.sierraclub.org/files/Other%20Peoples%20Money%20Non-Economic%20Dispatch%20Paper%20Oct%202019.pdf.

[2] Annual Compliance Filing of Otter Tail Power, March 1, 2021. Docket No. E999/CI-19-704, page 3. *[The current filing will be hereafter be referred to as Annual Compliance Filing of OTP (2021). The annual filing from March 2, 2020 will be referred to as Annual Compliance Filing of OTP (2020)].*

in large part on OTP's obligation to self-commit its share of the plant whenever any co-owners want to commit the unit. This pattern was driven by a significant market price differential between the Midcontinent Independent System Operator (MISO) and Southwest Power Pool (SPP) over the past year.[3] At Coyote, OTP has advocated for "immediate implementation of strategic applications of economic dispatch."[4] But, based on the dispatch requests of current plant owners, implementation of economic commitment is not expected to begin until the second quarter of 2022.[5] Until then, the utility continues to both self-commit and self-schedule Coyote, resulting in excess costs to customers. Given the inherent barriers to economic operation of Coyote and Big Stone resulting from co-ownership and dual market operation, the Commission should require that OTP evaluate, as part of its 2021 Integrated Resource Plan (IRP), whether it is in the best interest of customers for the Company to continue operating the jointly owned units.

There is also the question as how the Commission should address Otter Tail's 25-year fuel supply contract for the Coyote plant. As discussed further below, Otter Tail entered that contract without first analyzing whether it was in the interest of customers to do so, and the Commission has never reviewed or approved the contract's prudence. The contract designates [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]**[6] of Coyote's fuel costs as fixed. Our analysis shows that, if one instead designates those costs as almost entirely variable, as they are at Big Stone, Coyote operated uneconomically [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] of the time it was available in 2020.[7] The contract is thus a significant driver of the unit's uneconomic operation. We also reviewed the Company's fuel contract at Coyote and found that the Company locked itself into a portion of, but not the entire, contract cost at Coyote. The costs of exiting the fuel contract early, while significant, are very likely less than the net losses that the Company will incur by continuing to operate the unit over the next two decades. Moreover, the Commission would need to evaluate which portion of early termination costs should be borne by the Company's shareholders, not customers.

[3] Annual Compliance Filing of OTP (2021), page 12.

[4] Otter Tail Power Response to Sierra Club's Information Request 51(d) (public).

[5] *Id*.

[6] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 3.

[7] *See* attached Sierra Club Big Stone Workpaper NOTPUBLIC, and Sierra Club Coyote Workpaper NOTPUBLIC (trade secret in their entirety), using data from Attachments 2&3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

II. DEFINITIONS

The concepts of self-commitment and self-scheduling are central to this docket. For consistency, we will rely on definitions from OTP's Annual Compliance Filing.

- **Self-commitment.** Self-commitment is a practice in which the utility requests MISO to "commit" a generating unit, ensuring the unit is operating. When a unit is committed, it runs at least at the unit's "economic minimum" output regardless of market pricing.[8] When a utility elects to self-commit a unit, the unit is not ensured sufficient revenues from the market to make whole its costs. This is in contrast to economic commitment, which is when MISO commits the unit when it is economical to do so. MISO only provides a day-ahead price signal, which for some generators is insufficient, or may lead to excessive starts during the year. For this reason, self-commitment is common in MISO for units with long or costly start-up and shut-down parameters.[9] In absence of a formal multi-day MISO process, some utilities have established mechanisms for approximating economic commitment determinations to avoid excessive operations during extended periods of low market prices.

- **Self-scheduled dispatch.** Self-scheduled dispatch is a practice in which the utility submits self-schedules of "fixed quantities of energy, per hour, that may be dispatched from an online unit."[10] The quantities of energy may be between the unit's economic minimum and economic maximum. If the self-schedule is less than the unit's economic maximum, then MISO may dispatch the unit above the self-schedule on an economic basis. When a unit is both self-committed and self-scheduled, the unit is guaranteed dispatch regardless of market pricing. This is in contrast to economic dispatch, which is when MISO dispatches the unit when it is economical to do so. Self-scheduling is the exception within MISO, comprising only 12 percent of megawatt hours (MWh) in March 2020, for example. [11] The vast majority of dispatchable generation in MISO does not elect to self-schedule.[12]

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[8] Annual Compliance Filing of OTP (2021), page 2.

[9] MISO, April 2020, *MISO 'self-commitment' trends: Most coal generation is dispatched economically.* Available at: https://cdn.misoenergy.org/202005%20Self%20Commitment%20MISO%20Trends461129.pdf.

[10] Annual Compliance Filing of OTP (2020), page 2.

[11] *Supra* note 9.

[12] *Id.*

III. SUMMARY OF FINDINGS AND RECOMMENDATIONS

In this section, we will summarize our findings and present our recommendations.

A. Key Findings

- In 2020, OTP uneconomically self-committed Big Stone and Coyote the majority of the time each unit was not in outage ([**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of the time for Big Stone and **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of the time for Coyote).[13]

- OTP's incurred significant net-revenue losses at Big Stone and Coyote in 2020 as a result of its unit commitment and dispatch decision-making processes and arrangements. Specifically, the Company incurred over **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]**[14] in net-revenue losses at Big Stone and **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** in net-revenue losses at Coyote.[15]

- While OTP implemented economic commitment procedures at Big Stone in 2020, OTP was still obligated to uneconomically commit Big Stone the majority of the time the unit was not in outage between May and December 2020 due to the plants' joint ownership structure and operation in both the SPP and MISO markets. Between the months of May and December, OTP's analysis shows that **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]**[16] of the Company's losses were incurred during hours where the Company did not endorse self-committing the unit but other owners elected to do so. There is no transparency into the unit commitment decision and processes used by the co-owners committing into SPP, and therefore we cannot verify whether co-owners were in fact economically committing into the SPP market.

[13] Sierra Club Big Stone Workpaper NOTPUBLIC, and Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing) and Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[14] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 11.

[15] *Id.*, page 13.

[16] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Annual Compliance Filing of OTP (2021) NOTPUBLIC Table 4, page 12.

  - OTP's use of an economic commitment status at Big Stone did reduce losses to ratepayers in 2020 by reducing operations (specifically 1,500 hours of economic decommitment)[17] in hours when market prices were low.

- The joint ownership structure and dual market operation of the Coyote plant will present OTP with the same challenges that it currently faces at Big Stone in constraining its ability to operate the unit economically, even after it implements economic commitment procedures in 2022.

- OTP's decision to enter into a fuel contract for Coyote that designates **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]**[18] of its fuel costs as fixed costs is driving the uneconomic operation of the plant. Our analysis found that, if the entire fixed portion of Coyote's fuel costs were instead considered to be a variable cost (as they are for Big Stone), Coyote's operation would have been uneconomic on an energy cost basis alone for [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] of its operational hours in 2020.[19]

- The Commission has never reviewed or approved the prudence of OTP's fuel supply contract for Coyote. The contract locks OTP in to purchasing certain assets and taking on certain liabilities at the mine upon contract termination.[20] The costs of exiting the fuel contract early, while significant, are very likely less than the net losses that the Company will incur by continuing to operate the unit over the next two decades.

- OTP has not provided robust technical analysis to sufficiently supported its claim that Big Stone and Coyote are needed or are the least cost method for meeting the Company's resource adequacy requirements.

- OTP has still not incorporated planned preventative operations and maintenance costs into its unit commitment decision-making process.

[17] Otter Tail Power's response to Sierra Club Information Request 55 (public).

[18] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 3.

[19] Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[20] Otter Tail Power's response to Sierra Club Information Request 62 (public).

B. Recommendations

- The Commission should find that the record shows that the Big Stone and Coyote units' co-ownership and operation in both the MISO and SPP markets has resulted in losses to customers, and require, as part of its 2021 Integrated Resource Plan (IRP), that OTP evaluate whether it is in the best interest of customers for the Company to continue its ownership interest in the units.
- With respect to the Coyote fuel supply contract, the Commission should:
    - Require Otter Tail to evaluate in its upcoming IRP whether continued participation in that contract is in its customers' interest, or whether customers would instead be better served by early termination of the contract.
    - Identify a docket (whether 19-704, the 2021 IRP, or a fuel clause adjustment docket) in which it will evaluate the reasonableness and prudence of the contract and determine what portion of any early termination costs should be borne by customers versus ratepayers.
    - Indicate that it will disallow from inclusion in fuel costs all forward-going expenditures on new assets or mine expansion activities at Coyote mine pending demonstration by the Company in the IRP that continued ownership of its share of the Coyote plant is in its customers' interests. This is important to prevent additional costs from accumulating that could increase exit costs associated with the contract.
- In the absence of a multi-day commitment market at MISO, the Commission should require OTP to maintain, as part of the record in fuel clause adjustment proceedings, standardized records sufficient to demonstrate that it has used forward-looking analyses to inform commitment decisions at the Big Stone and Coyote units**.**
    - OTP should be required to utilize LMP forecasts, unit operational costs, and unit start-up and shut-down costs to determine daily whether to self-commit a unit or to take it offline during periods of low market prices. OTP should be required to retain this analysis to allow the Commission to evaluate in fuel clause adjustment true-up proceedings whether a unit's commitment decision maximized its economic value to OTP's customers.
    - In addition, OTP should be required to produce data that allows the Commission to verify that the co-owners of Big Stone and Coyote are also using forward looking analyses to inform commitment decisions into the SPP market.

- The Commission should signal that it may, in the next fuel cost true-up proceeding, disallow recovery of fuel costs for times when the unit was operated uneconomically in a manner that is not justified by such forward-looking analyses (or for which no analysis or documentation was produced to demonstrate that the co-owners were committing economically into the SPP market). The reasonableness of unit dispatch practices should be evaluated based on analysis that incorporates predictive maintenance costs—and any other excluded costs that scale with and are impacted by plant operations—as well as all fuel costs, into the variable costs that OTP uses to make its unit commitment and dispatch decisions.

- The Commission should require OTP to evaluate alternative ways of meeting its resource adequacy requirements in its 2021 IRP.

- The Commission should require utilities to identify any proposed new coal contracts in Fuel Clause Adjustment proceedings, and to submit them for prudence review those proceedings, before signing any such contracts.

IV. LEGAL STANDARD OF REVIEW

The Commission has the authority and the duty to ensure fuel costs are reasonable. Minn. Stat. § 216B.16, Subd. 6, provides the Commission with the authority to determine "just and reasonable rates" for public utilities. Proposed energy cost adjustments are considered to be a change in rates and so are subject to the same standard of review. Minn. R. 7825.2390 ("When a utility proposes new or revised electric energy...adjustment provisions, the proposal is considered a change in rates and must be reviewed according to commission rules and practices relating to utility rate changes."). To meet this standard, a utility must demonstrate that it has taken actions to minimize its fuel costs. Minn. R. 7825.2800.

Strong Commission oversight of utilities' decisions is the regulatory substitute for the consequences of free and open competition. "If a competitive enterprise tried to impose on its customers costs from imprudent actions, the customers could take their business to a more efficient provider. A utility's ratepayers have no such choice."[21] Within its assigned territory, each utility has a legal monopoly over retail electric service. Absent regulatory oversight, a utility protected from competition lacks incentive to perform as if subject to competition: "Management of unregulated business subject to the free interplay of competitive forces have no alternative to efficiency. If they are to remain competitive, they must constantly be on the lookout for cost economies and cost savings. Public utility management, on the other hand, does

[21] *Long Island Lighting Co*., Case No. 27563, 71 PUR 4th 262 (N.Y. Pub. Serv. Comm'n, Nov 16, 1985).

not have quite the same incentive."[22] A utility's motivation to act prudently arises instead from the prospect that the Commission will disallow imprudent costs.[23] The core of prudence analysis is whether captive customers can reasonably be asked to pay for a utility's choices.

The Commission has moved all fuel costs out of rate cases and into fuel clause adjustment dockets.[24] The Commission also recently reformed the fuel clause adjustment process. Under the new process:

> each utility will forecast its monthly fuel costs for the upcoming year in an annual filing, and will charge those forecasted rates unless the utility can show a significant unforeseen impact on those rates during the forecasted year. At the end of the forecasted year, each utility will compare its forecasted rates with its actual fuel costs incurred throughout the year, and will refund any overcollections or show prudence of costs before recovering under-collections.[25]

It would therefore be appropriate for the Commission to address issues with utilities' self-commitment and self-scheduling practices in annual Fuel Clause Adjustment forecast filings and annual true-up filings.

V. OTP'S OWN ANALYSIS SHOWS ITS PRACTICE OF SELF-COMMITTING BIG STONE AND COYOTE HARMED CUSTOMERS DURING THE REPORTING PERIOD.

A. During the filing period, OTP frequently self-committed the Big Stone and Coyote coal plants into MISO.

OTP operates the Big Stone Power Plant and Coyote Station, two of its three baseload coal units, in the MISO markets.[26] Big Stone is a 474 MW coal-fired steam plant built in 1975. Coyote is a

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[22] *Midwestern Gas Transmission Co. v. E. Tenn. Nat. Gas Co*., 36 FPC 61, 70, 64 P.U.R.3d 433 (1966), *aff'd sub nom. Midwestern Gas Transmission Co. v. FPC*, 388 F.2d 444 (7th Cir. 1968).

[23] *See, e.g., U.S. Gypsum, Inc*., 735 N.E.2d at 797 ("As a quid pro quo for being granted a monopoly … the utility is subject to regulation by the state to ensure that it is prudently investing its revenues in order to provide the best and most efficient service possible to the consumer.").

[24] Order Approving Compliance Filings, In the Matter of an Investigation into the Appropriateness of Continuing to Permit Electric Energy Cost Adjustments, Docket No. E-999/CI-03-802, Nov 5, 2019, at 4.

[25] Order Approving Additional Details of New Fuel Clause Adjustment Process, In the Matter of an Investigation into the Appropriateness of Continuing to Permit Electric Energy Cost Adjustments, Docket No. E-999/CI-03-802, June 12, 2019, at 1.

[26] OTP has a third baseload coal unit: Hoot Lake Plant. Hoot Lake Plant is retiring in the spring of 2021, and as such OTP excluded it from the analysis in its Annual Compliance Filing.

427 MW single-unit coal-fired steam plant built in 1981.[27] Throughout 2020, OTP self-committed the units at their minimum operating level (and MISO could dispatch the unit at higher levels if market conditions were such that it was economic to do so or if there was a reliability need that required additional output from the unit) the majority of the time.[28] OTP and its co-owners enabled Big Stone to switch to economic commitment in 2020.[29] But based on the plant's joint ownership structure, OTP still ended up self-committing Big Stone into MISO **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of the time.[30] This was partially driven by higher market prices in SPP, where one of the co-owners commits its share of the unit.[31] Coyote was self-committed **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of the time that the unit was available.[32] The Company is working with Coyote's co-owners to transition the unit to economic commitment as well, but does not expect that transition to occur until 2022.[33]

Big Stone is co-owned by OTP (53.9 percent), Montana Dakota Utilities (22.7 percent), and Northwestern Energy (23.4). Coyote is co-owned by OTP (35 percent), Minnkota Power Cooperative (30 percent), Montana Dakota Utilities (23 percent), and Northwestern Energy (10 percent). OTP, Montana Dakota Utilities, and Minnkota Power Cooperative operate their shares of Big Stone and Coyote within the MISO markets, while Northwestern Energy operates its shares of Big Stone and Coyote within the Southwest Power Pool (SPP) market.[34]

B. OTP incurred millions in net revenue losses at Coyote and Big Stone in 2020.

When the fixed portion of the Coyote fuel costs are excluded from the analysis, OTP's share of Big Stone and Coyote incurred [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] in net revenues losses and [**TRADE SECRET DATA BEGINS…**

[27] Annual Compliance Filing of OTP (2020), page 1.

[28] Annual Compliance Filing of OTP (2021), page 3.

[29] *Id.*

[30] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[31] Annual Compliance Filing of OTP (2021), page 12.

[32] Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[33] Annual Compliance Filing of OTP (2021), page 14; Otter Tail Power Response to Sierra Club's Information Request 51(d) (public).

[34] Annual Compliance Filing of OTP (2020), page 3.

…TRADE SECRET DATA ENDS] in positive net revenues, respectively, in 2020 (see CONFIDENTIAL Table 1).[35]

CONFIDENTIAL Table 1. Net Operational Revenues of Big Stone and Coyote ($ Millions)

Year	Big Stone	Coyote	Coyote (including full fuel cost)
	[TRADE SECRET DATA BEGINS…		
2017			
2018			
2019			
2020			
…TRADE SECRET DATA ENDS]			

Sources: Sierra Club Big Stone Workpaper NOTPUBLIC, and Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 2&3 to Annual Compliance Filing of Otter Tail Power (2020) NOTPUBLIC and Attachment 2&3 to Annual Compliance Filing of Otter Tail Power (2021) NOTPUBLIC.

Big Stone earned [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] net revenues in two of the past 4 years, while Coyote appears to have earned [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] in all of the past 4 years. But, as we will discuss below, these results at Coyote include only [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] percent of the unit's fuel costs.[36]

In 2020, amidst a backdrop of low LMPs driven by low demand and low gas prices (partly as a result of the COVID 19 pandemic), Big Stone and Coyote's economic performance was worse than in any of the prior three years, with Big Stone incurring [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] in net revenue losses and Coyote incurring [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] in net revenue losses (when accounting for the unit's full fuel cost). While it is reasonable that net revenues would be lower in a year with low market prices, it is not reasonable to incur significant negative net revenues when market energy can be procured for a lower cost.

If the units had been turned off, they would have incurred $0 in net revenue, but also $0 in losses.

[35] Annual Compliance Filing of OTP (2021) NOTPUBLIC, pages 11 and 13.

[36] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 3.

As a specific example, before the Big Stone was switched to economic commitment, from [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**], OTP self-committed and self-scheduled the dispatch of Big Stone for [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] consecutive hours of net losses. In every hour during this time period, unit costs exceed day-ahead LMPs. Over this seventeen-day period, the plant incurred [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] in net operational losses.[37] These losses were avoidable if the unit had been committed economically, and therefore not operated during this period.

C. A review of OTP's own analysis shows that Company's use of a self-commitment status at Coyote resulted in many instances of avoidable, sustained losses.

In its Annual Compliance Filing, OTP shows that Coyote earned [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] during 2020 based on an accounting of only the fuel costs that Otter Tail designates as variable, but when all of the unit's fuel costs are treated as variable, instead we find that the unit incurred [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**].[38] The fact that the unit earned positive net revenue on a variable cost basis (based on consideration of only a portion of fuel costs) does not mean that the unit always operated prudently, or that the net operational revenues would not have been greater had OTP committed and dispatched the unit differently—for example, by utilizing economic commitment and dispatch. While there are factors at Coyote that make regular economic commitment a challenge (such as joint ownership, commitment and dispatch across two markets, long-term coal contract with fixed costs, all of which we will cover in subsequent sections), the fact remains that the unit is not being operated in a manner that delivers maximum value to OTP ratepayers.

When unit commitment decisions are made outside of the market, it is prudent for the utility to weigh the projected costs and benefits of committing the unit versus keeping it offline. The evaluation should incorporate factors such as LMP forecasts, unit operational costs, and unit start-up and shut-down times and costs. But at Coyote, the Company was clear that no such analysis is conducted, and instead the unit is *always* offered into the wholesale energy market as self-committed at its minimum output, except when in forced or planned outage.[39] OTP's (and the other unit co-owners') decision to regularly self-commit Coyote at its minimum operating

[37] Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[38] Annual Compliance Filing of OTP (2021) NOTPUBLIC, Table 5, page 13.

[39] Otter Tail Power's response to Sierra Club Information Request 48 (public).

levels without the use of forward-looking analysis resulted in instances of avoidable, sustained losses for OTP ratepayers.

In general, it is more economical for OTP to decommit its units during periods in which (a) the units will likely incur losses for more hours than it takes to first cool-down to "warm" status and then start back up from warm status; and (b) the expected losses exceed the warm startup costs. Coyote has a cool-down time to warm of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, a warm startup time of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, and warm startup costs of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**], (reflecting OTP's share of the costs).[40] We find that in 2020, OTP self-committed Coyote during [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] periods[41] in which the plants incurred (a) consecutive losses for more hours than the units' cool-down time to warm plus warm startup time (a total of [**TRADE SECRET DATA BEGINS… … TRADE SECRET DATA ENDS**] hours), [42] and (b) incurred losses that exceeded the warm startup costs.

In some instances, the units may need to decommit to cold. Coyote has a cool-down time to cold of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, a cold startup time of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, and cold startup costs of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**], reflecting OTP's share of the costs.[43] Again, we find that OTP self-committed and self-scheduled the dispatch of Coyote during [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] periods[44] during 2020 in which the unit incurred (a) consecutive losses for more hours than the units' cool-down time to cold plus cold startup time (a total of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours),[45] and (b) incurred losses that exceeded the cold startup costs.[46]

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[40] Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC.

[41] Sierra Club Coyote Workpaper NOTPUBLIC, using data from Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC, and Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[42] Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC.

[43] *Id.*

[44] Sierra Club Coyote Workpaper NOTPUBLIC, using data from Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC, and Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[45] Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC, and Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[46] As a general matter, generating units that have slow shutdown and startup times and high startup costs should elect to commit from "cold" when expected market revenues over a reasonable forward period

As a specific example, from [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**], OTP self-committed and self-scheduled the dispatch of Coyote for [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] consecutive hours of net losses. In every hour during this time period, unit costs exceed day-ahead LMPs. Over this fourteen-day period, the plant incurred [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] in net operational losses.[47]

These findings point to the benefit that economic commitment and dispatch would provide to OTP's customers. Therefore, we recommend that OTP accelerate its efforts to move the commitment status of the Coyote unit to economic.

Further, as discussed above, an additional challenge is posed by the unit's long term coal contract, which classifies [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] of the unit's fuel costs as fixed.[48] As shown in CONFIDENTIAL Table 2 below, we found that OTP operated Coyote uneconomically for **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of all operational hours in 2020 based on just the variable fuel costs, but when we re-evaluated unit costs assuming all coal contract costs for Coyote are variable, we found that the unit was actually uneconomic for **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of all operational hours in 2020.[49]

are expected to exceed startup costs. Similarly, an operating unit should elect to decommit when the absolute value of losses exceeds the startup costs. When a unit is already operating, the startup cost becomes an avoidable cost—i.e., it can be avoided by not shutting down. But if the costs of operating (that is, the losses) exceed that avoidable cost, then the unit should decommit. In OTP's case, this calculation is omitted altogether.

[47] Sierra Club Coyote Workpaper NOTPUBLIC, using data from Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC, and Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing)

[48] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 3.

[49] Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

CONFIDENTIAL Table 2. Operational Hours in which Coyote Generated Uneconomically (%)

Year	Coyote (only "variable" fuel costs)	Coyote (all fuel costs considered variable)
	[TRADE SECRET DATA BEGINS…	
2017		
2018		
2019		
2020		
	…TRADE SECRET DATA ENDS]	

Sources: Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 3 to Annual Compliance Filing of Otter Tail Power-NOTPUBLIC (2020), Attachment 3 to Annual Compliance Filing of Otter Tail Power-NOTPUBLIC (2021), Otter Tail Power's response to Sierra Club Information Request 19-NOTPUBLIC and Fresh Energy Information Request 2-NOTPUBLIC.

During the reporting period, OTP self-committed the Coyote unit at its minimum operating levels, and in doing so it often committed its units at times in which unit costs were greater than day-ahead LMPs. While Coyote does not include the fixed component of its coal expenses in the unit costs that it submits to the MISO offer curve, it nonetheless incurs those costs and passes them on to its ratepayers.

D. Even after OTP and its co-owners agreed to switch Big Stone to economic commitment, OTP still incurred significant unnecessary losses at Big Stone as a result of its requirement to commit the unit whenever a co-owner wanted the unit committed.

As discussed above, in its current Annual Compliance Filing, OTP showed that Big Stone incurred **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** during 2020.[50] As shown in CONFIDENTIAL Table 3, Big Stone operated uneconomically around **[TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of the year in 2020.[51] In the first four months of the year (January through April 2020), the unit operated uneconomically and incurred net revenue losses of **[TRADE SECRET DATA BEGINS … …TRADE SECRET DATA ENDS]** during the hours in which the unit was committed with a must run status.[52] At the end of April 2020, the co-owners "implemented a

[50] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 12.

[51] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[52] Id.

coordinated offer process that allowed for joint economic offer capability"[53] and the co-owners began to commit the unit with an economic status at times.

CONFIDENTIAL Table 3. Operational Hours in which Big Stone Generated Uneconomically (%)

Year	Big Stone
	[TRADE SECRET DATA BEGINS…
2017	
2018	
2019	
2020	
	…TRADE SECRET DATA ENDS]

Sources: Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 2 to Annual Compliance Filing of Otter Tail Power-NOTPUBLIC (2020), Attachment 2 to Annual Compliance Filing of Otter Tail Power-NOTPUBLIC (2021), Otter Tail Power's response to Sierra Club Information Request 19-NOTPUBLIC and Fresh Energy Information Request 2-NOTPUBLIC.

Joint ownership and operation of the unit across two market poses a challenge to OTP economically committing the Big Stone unit into MISO, specifically because if any co-owner requests self-commitment, all other co-owners are required to self-commit their shares of the plant. Similarly, if MISO or SPP calls for a co-owner's portion of the plant, all other co-owners are obligated to self-commit their share, at least to minimum output. Co-ownership and operation in two markets is thus preventing Big Stone from being operated in a manner that delivers maximum value to OTP ratepayers.

OTP indicated that although the Company committed the unit economically into MISO starting in April of 2020:

> ...for significant period of 2020, Otter Tail was obligated to self-commit its share of the plant. The largest driver in forced self-commitment was higher LMP pricing in the SPP market. At the Big Stone node, SPP market price was nearly 22% higher than MISO pricing. The 2020 Big Stone pricing in SPP averaged $16.74 per MWh versus $13.74 in MISO. A $3 average price difference can result in significantly increased commitment and dispatch patterns.[54]

[53] Annual Compliance Filing of OTP (2021), page 12.
[54] *Id*.

Specifically, between the months of May and December in 2020 (the months after implementation of economic offer capability), OTP's filing states that it incurred net revenue losses of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS],** but only [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] of those losses were incurred during the hours that the Company "endorsed hours of self-commitment."[55] This means that over [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of the losses at Big Stone between May and December 2020 were incurred during hours when the Company did not "endorse" self-commitment.[56] Revenues are not shared across owners and markets. If the unit is committed based on favorable market prices in SPP, but incurs net negative margins in MISO, the owners in MISO pass the costs onto their ratepayers, and the owners in SPP pass the revenues onto their ratepayers.[57] According to OTP's filing data, the unit was "unavoidably self-committed" into MISO [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of the hours in 2020 based on "SPP market conditions;" the unit incurred net losses during [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** of these hours.[58] In short, OTP's customers subsidized co-owners by nearly [**TRADE SECRET DATA BEGINS … …TRADE SECRET DATA ENDS]**.

Breaking down the 2020 losses incurred at Big Stone, the unit has a cool-down time to warm of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, a warm startup time of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, and warm startup costs of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**], (reflecting OTP's share of the costs).[59] We find that in 2020, OTP self-committed Big Stone during [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] periods[60] in which the plants incurred (a) consecutive losses for more hours than the units' cool-down time to warm plus warm startup

[55] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 12

[56] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[57] Otter Tail Power's response to Sierra Club Information Request 25 (public).

[58] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[59] Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC.

[60] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

time (a total of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours), and (b) incurred losses that exceeded the warm startup costs.[61]

Big Stone has a cool-down time to cold of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, a cold startup time of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours, and cold startup costs of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**], reflecting OTP's share of the costs.[62] Again, we find that OTP self-committed and self-scheduled the dispatch of Big Stone during [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] periods[63] during 2020 in which the unit incurred (a) consecutive losses for more hours than the units' cool-down time to cold plus cold startup time (a total of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] hours),[64] and (b) incurred losses that exceeded the cold startup costs.

These findings point to the challenges posed by the co-ownership arrangement. This arrangement might have made sense when coal units functioned economically as baseload units that were rarely turned on and off, but with renewables and gas driving down market prices, it is critical for OTP to evaluate whether this co-ownership arrangement is in the best interest of its ratepayers. This requires evaluating projected market performance in not just MISO but also SPP for fuel cost planning dockets and evaluating the forward-going economics of the plant, based on operating in both markets, as part of the next IRP.

E. Despite the challenges posed by joint ownership, OTP did reduce its losses in 2020 at Big Stone by utilizing economic commitment in some hours, and now should make every effort to move Coyote to year-round economic commitment.

As discussed above, at the end of April 2020, OTP and its Big Stone co-owners "implemented coordinated offer processes that allowed for joint economic offer capability."[65] With this switch, the unit should more frequently (notwithstanding the MISO/SPP problem) be committed into the market and operated when energy price are above the marginal operating cost, and de-committed and not operated when energy prices are below the units marginal operating cost. The co-owners meet regularly to discuss and coordinate the unit's offer status.[66] As shown in CONFIDENTIAL

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[61] Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC.

[62] *Id.*

[63] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[64] Otter Tail Power's response to Sierra Club Information Request 53 NOTPUBLIC.

[65] Annual Compliance Filing of OTP (2021), page 3.

[66] Otter Tail Power's response to Sierra Club Information Request 46 (public).

Table 4, Big Stone was committed uneconomically [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] after it was switched to economic offer (in May through December) than in the months before the switch was made (January through April).[67]

CONFIDENTIAL **Table 4. Operation of Big Stone before and after economic offer capability was enabled.**

	Total	Percent	Jan-April	May-Dec
	[TRADE SECRET DATA BEGINS…			
Hours with net losses				
Hours committed with a must-run status				
Hours committed with an uneconomic must-run status				
	…TRADE SECRET DATA ENDS]			

Sources: Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

We commend OTP on taking this step to overcome barriers to operating Big Stone more economically. But even after the switch was made, the Company still incurred significant net revenue losses, as shown in CONFIDENTIAL Table 5 below. Further, there are still critical questions that need to be explored, specifically around oversight of the co-owners' commitment choices, which has a significant impact on the costs incurred by OTPs ratepayers.

[67] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

CONFIDENTIAL Table 5. Net Revenues/losses of Big Stone before and after economic offer capability was enabled.

	Total	Jan-April	May-Dec
	[TRADE SECRET DATA BEGINS…		
Total Net Revenues (losses)			
Revenues/ losses from hours with must run			
Losses from hours with Uneconomic must run (DA)			
	…TRADE SECRET DATA ENDS]		

Sources: Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing)

At Coyote Station, the unit is still being committed with a must run status [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] of the time the unit is available.[68] The co-owners have "developed the technical systems necessary to allow for economic offer capability and is now awaiting unanimous co-owner agreement for full implementation," and Otter Tail stated that it is "currently advocating for immediate implementation of strategic applications of economic dispatch at Coyote Station.[69] However, OTP has said that this is not likely to happen until the second quarter of 2022,[70] and when it does happen, OTP has also acknowledged that "the protocols and limitation for Coyote economic offer capability are expected to be nearly identical to the protocols and limitations, as described above, for Big Stone economic offer capability."[71] Specifically, the unit still has to be dispatched by several owners into two different markets.

It is therefore clear that the co-ownership arrangement is a significant impediment to economically commit the unit. If the co-ownership of Coyote makes it such that OTP must offer its share of this unit as must-run and, in doing so, frequently incurs sustained periods of net operational losses, joint ownership of Coyote may no longer be serving the best interests of ratepayers. We therefore recommend that the Commission require OTP in its upcoming IRP to justify why continued joint ownership of Coyote is prudent and in the best interest of OTP's

[68] Sierra Club Big Stone Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).
[69] Otter Tail Power's response to Sierra Club Information Request 46 (public).
[70] Otter Trail Power Response to Sierra Club's Information Request 51(d) (public).
[71] Otter Tail Power's response to Sierra Club Information Request 46 (public).

ratepayers (relative to alternatives), given that it results in OTP operating the unit uneconomically for a significant portion of the time and passing on those losses to customers.

F. The Commission Should Require OTP to Conduct Regular Forward-Looking Evaluations of Self-Commitment Decisions as Part of the Fuel Clause Adjustment Proceedings to Ensure it is Maximizing Big Stone and Coyote's Economic Value to Customers.

In last year's filing, when asked about its unit commitment decision-making process, OTP stated that it did not perform "economic analysis to inform day to day unit commitment decisions for Big Stone Plant and Coyote."[72] At that time, both plants were self-committed at minimum operating levels whenever they were available. Because the units were always online, the Company did not incorporate consideration of factors such as startup times and costs into its operational practices.[73] Big Stone has now switched to economic commitment (or more specifically, has had economic offer capability implemented by OTP and its co-owners), while Coyote is still being self-committed whenever it is available.

While it is reasonable for a utility to sometimes be wrong in its forecasts and decisions, it is unreasonable for a utility to: 1) have the tools to inform its decisions (namely, forward-looking analyses), 2) nevertheless make uninformed decisions that lead to losses that may have been avoidable had it used those tools, and 3) make ratepayers pay for those losses. Many of the losses discussed in the section above likely could have been mitigated at Coyote if the Company had used economic commitment and dispatch, rather than regular self-committing and self-scheduling.

At Big Stone, OTP has not presented data that allows the Commission to verify that the co-owners, especially those committing into SPP, are committing the unit in an economic manner. In fact, OTP does not state that the owners have committed to always economically operate the unit. Rather OTP states that the co-owners have implemented economic offer capability.[74] This raises serious questions as to whether co-ownership is in OTP customers' interest. As with Coyote**, we recommend that the Commission require OTP to justify in its upcoming IRP why continued joint ownership of Big Stone is prudent and in the best interest of OTP's ratepayers** (relative to alternatives) if it results in OTP operating the unit uneconomically for a significant portion of the time and passing on those losses to customers. At the same time, the Commission should also require OTP to develop a system that allows for tracking and verification that each unit commitment decision is economic. Without this type of tracking

[72] Otter Tail Power's response to Sierra Club Information Request 14 (public).
[73] Otter Tail Power's response to Sierra Club Information Request 13 (public).
[74] Annual Compliance Filing of OTP (2021), page 12.

requirement, most of the marginal costs being passed on to OTP ratepayers at Big Stone will be incurred outside of OTP's control and outside of the Commission's review.

Therefore, we also recommend the following:

- In the absence of a multi-day commitment market at MISO, the Commission should require OTP to maintain, as part of the record in fuel clause adjustment proceedings, standardized records sufficient to demonstrate that it has used forward-looking analyses to inform commitment and dispatch decisions at the Big Stone and Coyote units**.**
    - OTP should be required to utilize LMP forecasts, unit operational costs, and unit start-up and shut-down costs to determine daily whether to self-commit a unit or to take it offline during periods of low market prices. OTP should be required to retain this analysis to allow the Commission to evaluate in fuel clause adjustment true-up proceedings whether a unit's commitment decision maximized its economic value to OTP's customers.
    - In addition, OTP should be required to produce data that allows the Commission to verify that the co-owners of Big Stone and Coyote are also economically committing the unit into the SPP market.
- The Commission should signal that it will, in the next fuel cost true-up proceeding, disallow recovery of fuel costs for times when the unit was operated uneconomically in a manner that is not justified by such forward-looking analyses or for which no analysis or documentation was produced to demonstrate that the co-owners were committing economically into the SPP market. The reasonableness of unit dispatch practices should be evaluated based on analysis that incorporates predictive maintenance costs—and any other excluded costs that scale with and are impacted by plant operations—as well as all fuel costs, into the variable costs that OTP uses to make its unit commitment and dispatch decisions.

VI. OTP'S COST ACCOUNTING AND PLANNING DECISIONS CONTINUE TO HARM OTP RATEPAYERS

A. OTP's decision to enter into a long-term coal contract at Coyote with fixed terms has resulted in its exclusion of about [TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS] the unit's fuel costs from its submission in the MISO offer curve.

In October 2012, OTP entered into a fuel contract (the Lignite Sales Agreement or LSA) for Coyote (a mine mouth plant) with the Coyote Creek Mining Company (CCMC) with a

"Production Period" commencing on May 5, 2016.[75] OTP's contract between Coyote and CCMC extends through 2040 and includes a term requiring that it pays "[**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**]."[76] Per its contract terms, the fuel cost of Coyote in 2020 was [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] between fixed and variable costs.[77] As such, OTP excludes about [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] of the units' fuel costs from its submissions in the MISO offer curve, and therefore from its unit commitment and dispatch analysis. As OTP states in the public version of its filing, "much of the fuel costs for Coyote Station are fixed. This means Otter Tail is obligated to pay for these costs whether or not the fuel is consumed to generate electricity."[78] In Otter Tail's view, "These fixed costs equate to sunk costs and do not play a role in appropriately developing market offers on a day-to-day basis."[79]

In comparison, OTP's coal contracts for Big Stone [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**].[80] This makes Coyote appear more economic to operate when looking at just variable costs. Looking at just variable costs that OTP uses for unit commitment purposes, Big Stone's average unit cost in 2020 was [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**, while Coyote's average unit cost during the same period was only [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]**. If Coyote's fuel contract were structured like Big Stone's, Coyote's full fuel costs would be [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]**.[81]

This over-allocation of fuel costs to fixed costs results in MISO dispatching Coyote more than it would if the full variable costs were included in the offer curve. OTP confirms this, stating: "Historically, as a result of the fixed costs, there have been relatively few hours throughout a typical year where it did not make economic sense to operate the plant."[82]

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[75] Otter Tail Power's response to Sierra Club Information Request 62 (public). The Lignite Sales Agreement was provided in Otter Tail Power's Response to Sierra Club Information Request 5, Attachment 3.

[76] Otter Tail Power's response to Fresh Energy Information Request 2(a) NOTPUBLIC.

[77] Annual Compliance Filing of OTP (2021) NOTPUBLIC, page 3.

[78] Annual Compliance Filing of OTP (2021), page 14.

[79] *Id.*

[80] Otter Tail Power's Response to Sierra Club Information Request 41, Attachment 1 NOTPUBLIC.

[81] Sierra Club Big Stone Workpaper NOTPUBLIC and Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing); Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[82] Annual Compliance Filing of OTP (2021), page 3.

In its filing, Otter Tail "maintains it is appropriate to judge Coyote Station's commitment and dispatch decisions based on variable costs, not variable costs plus fixed fuel costs."[83] However, the Company entered into its 25-year fuel supply contract at the Coyote plant without Commission pre-approval or prudence review. In response to an information request regarding whether the Commission had, in the Company's view, reviewed the contract's prudence, the Company responded in the 2020 docket: "Otter Tail is not aware of any regulatory standard whereby the MPUC 'approves' specific fuel supply agreements in dockets established for that specific purpose. Fuel costs for Coyote Station and Big Stone Plant (which are derived from coal supply agreements) are ultimately approved by the Commission in the Company's FCA filings."[84] In the current docket, the Company provided a different response to this same question:

> Fuel costs for Coyote Station and Big Stone Plant (which are derived from coal supply agreements) are ultimately approved by the Commission in the Company's FCA filings. Also, with respect to Coyote Station, the Commission approved extending the remaining life of Coyote Station by 8.4 years from 19 years to 27.4 years, with an AYFR of 2041 in Docket No. E017/D13-795. This extension was prompted by entry into the 25-year coal contract, a term in line with the characteristics of mine-mouth facilities. Filings in that docket reference the agreement. The Commission approved adjusting Coyote Station's remaining life to correspond with the coal supply agreement. The Commission reviews AYFR and other depreciation parameters for all of Otter Tail's generation facilities on an annual basis. The Commission also periodically reviews Otter Tail's resource portfolio in Integrated Resource Planning dockets.[85]

However, approval of a change in depreciation schedule does not mean the Commission reviewed and approved the terms of the contract. In our view, given that the Commission has never reviewed or approved the prudence of the Coyote coal contract, it has not yet issued a decision as to whether it is appropriate for Otter Tail to exclude the fixed portion of its fuel contract from is commitment decisions.

The Company did not undertake any analysis to determine whether it was in customers' interest to enter into a contract of that duration or with [**TRADE SECRET DATA BEGINS … …TRADE SECRET DATA ENDS**] fixed costs.[86] In response to an information request asking whether the Company had assessed the net present value of the 25-year contract before entering

[83] *Id.* at 14.
[84] Otter Tail Response to Sierra Club Information Request 5.
[85] Otter Tail Response to Sierra Club Information Request 41 (public).
[86] Otter Tail Response to Sierra Club Information Request 62(c) (public) ("Otter Tail has not calculated the net present value of the fuel portion of the LSA for the full 25-year period").

it in 2012, the Company responded, "no such assessment was made because the contract was being evaluated only against an alternative long-term lignite supply agreement with another lignite supplier."[87] This does not explain why the Company did not explore entering a contract of far shorter duration, or why it did not examine alternatives that included lower fixed fuel costs.

Assuming nearly [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] of the costs of its fuel supply contract are fixed through 2040, then, in 2012, OTP entered into a long-term coal contract, beginning 2016, that commits ratepayers to nearly [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] in fixed costs, rivaling the costs of new generation.[88] Before entering a contract of this magnitude, the utility should have 1) conducted a cost-benefit analysis of alternatives, including alternatives to coal-fired generation, as well as a contract of far shorter duration, and 2) submitted the contract to the Commission for prudence review.

In considering whether it was prudent for OTP to sign a 25-year coal supply contract in 2012, it is also relevant to consider that OTP's Coyote generating station is among a small subset of coal plants nation-wide with multi-decades-long coal contracts. In fact, over the last decade, the majority of coal plants have ceased holding long-term coal contracts, shifting to one- to three-year contracts or spot purchases.[89] OTP contemplated and then signed this contract in 2012, during an era when many other utilities and coal generators were concerned about the forward-looking viability of the coal fleet in general.[90] In mid-2012, the Energy Information Administration projected that 49 gigawatts, or 1/6th of US coal generation, could retire by 2020

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[87] Otter Tail Response to Sierra Club Request 34; see also Otter Tail Response to Sierra Club Request 5.

[88] In 2017, 2018, and 2019, Coyote received deliveries of coal from Coal Creek mine costing $48, $63, and $43 million, respectively. Data from EIA Form 923, Fuel Receipts. If we assess that [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**] the cost of this coal was fixed by terms of the contract, then we arrive at annual fixed costs of about [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**]. Inflated at 2 percent through 2040 and discounted back to 2016 (at an assumed 7 percent discount rate), we arrive at a present value cost of [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS**].

[89] According to EIA Form 923, in 2019 79 percent of delivered coal was served by the spot market, or contracts of three years or shorter (i.e. terminating in 2021), while in 2009 75 percent of coal delivered to those plants still operating in 2019 was served by short contracts or spot sales. Adjusting to review only plants still in existence in 2019 normalizes for retirements. The data is somewhat convoluted because plants with coal contracts that extend beyond 2019 tend to still be operational, often in part due to the restrictive nature of the coal contract.

[90] *See,* for example, NERC 2010 Special Reliability Scenario Assessment: Resource Adequacy Impacts of Potential US Environmental Regulations. Available online at https://www.nerc.com/files/EPA_Scenario_Final_v2.pdf

under reference case assumptions,[91] and analysts were regularly highlighting the risk of currently operating coal.[92] Between 2012 and 2016, about 42 gigawatts of coal had elected to retire due not only to environmental regulations but steadily declining market prices, brought about by rapidly expanding renewable energy and the shale fracking boom.[93] This broadly realized concern, followed by a steady decline in the projected price of gas and energy, caused many utilities to re-assess the viability of long-term investments at coal plants, as well as long-term coal contracts. Many utilities appear to have reached the conclusion – even in 2012 – that long-term contracts reduced operational flexibility and were not in their customers' interests.

Based on Sierra Club's review of mine-mouth coal contracts nation-wide, the Coyote coal contract appears to be the most restrictive third-party coal mining agreement signed in 2012 or thereafter. According to our review of EIA 923 data, there are only three coal contracts in the country with start dates of 2016 or after that extend to 2040. (The others are a waste coal facility in Pennsylvania and the Oxbow Lignite mine serving the Dolet Hills Plant in Louisiana).

The contract also has a concerning provision that appears to require Otter Tail to buy certain assets at the mine itself upon contract termination.[94] This type of provision – obligating a utility to purchase assets at a mine or take on liabilities associated with a mine (such as mine reclamation) upon contract termination – is rare and places significant risk on ratepayers. This risk is highlighted at the Dolet Hills and Pirkey Power Stations, two lignite coal plants owned by the Southwest Electric Power Company (SWEPCO) that have similarly restrictive contracts.

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[91] Energy Information Administration. July 31, 2012. Today in Energy: Projected retirements of coal-fired power plants. Available online at https://www.eia.gov/todayinenergy/detail.php?id=7330

[92] *See*, for example, Tierney, Susan. February 16, 2012. Why Coal Plants Retire: Power Market Fundamentals as of 2012. Available online at https://www.analysisgroup.com/globalassets/content/news_and_events/news/2012_tierney_whycoalplantsretire.pdf

[93] Energy Information Administration. July 16, 2019. Today in Energy: More U.S. coal-fired power plants are decommissioning as retirements continue. Available online at https://www.eia.gov/todayinenergy/detail.php?id=40212

[94] Otter Tail Response to Sierra Club Request 62(d) (public) ("…the agreement is structured so that the price of the coal would cover all costs of operations as well as future reclamation costs. The Coyote Station owners are required to buy certain assets of CCMC at book value should they terminate the contract prior to the end of the contract term and are providing a guarantee of the value of the equity of the CCMC because the Coyote Station owners are required to buy the membership interests of CCMC at the end of the contact term at equity value.")

SWEPCO recently decided to retire the plants in 2021[95] and 2023[96] respectively, leaving ratepayers with the bill for significant outstanding mine costs and liabilities (some of which were only recently incurred to expand the mines).

Despite the imprudence of the original decision to enter such a restrictive contract, and the significant costs associated with it, the contract does contain a provision that contemplates early exit from the contract. Through discovery, Sierra Club asked Otter Tail to provide the total cost that the company would incur if it were to terminate the contract early under the early termination provisions. OTP responded that "In the event the contract is terminated prior to the end of the term due to certain events, OTP's maximum exposure to additional costs, as a result of its involvement with CCMC, and potential impairment loss if recovery of those costs is denied by regulatory authorities, could be as high as $50.0 million, OTP's 35% share of CCMC's unrecovered costs as of December 31, 2020."[97]

At Sierra Club's request, OTP also provided an estimated contract buy-out cost by year between now and 2040. In 2024, for example, OTP estimates that its share of the contract buy-out cost ranges between [**TRADE SECRET DATA BEGINS …**

…TRADE SECRET DATA ENDS] and in 2028 the buy-out cost ranges between [**TRADE SECRET DATA BEGINS …** **…TRADE SECRET DATA ENDS**].[98] As OTP explains, "In simple terms, if the LSA is terminated, the Coyote Station co-owners will need to pay back the loans and leases for the mine construction cost, sell the assets for salvage, purchase the membership interests of the mine and reclaim the mine area. NACC may be required to repurchase the dragline and rolling stock at a to-be-determined net book value. While the costs of the loans and leases are a known quantity, the other factors are estimates."[99] From our review of Otter Tail's response to Sierra Club Request 67 NOT PUBLIC and the attached estimated contract buy-out analysis, it appears that [**TRADE SECRET DATA BEGINS …**

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[95] S&P Global, SWEPCO, Cleco eye 2021 retirement of Dole Hills coal plant in Louisiana. May 13, 2020. Accessible at https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/swepco-cleco-eye-2021-retirement-of-dolet-hills-coal-plant-in-louisiana-58612640

[96] Longview News-Journal. SWEPCO to retire Pirkey Power Plant in Hallsville in 2023. November 5, 2020. Accesible at https://www.news-journal.com/news/business/local/swepco-to-retire-pirkey-power-plant-in-hallsville-in-2023/article_eaeeeac6-1fa4-11eb-9fea-4f0416deafed.html.

[97] Otter Tail Response to Sierra Club Request 62(d) Public.

[98] Sierra Club Big Stone Workpaper NOTPUBLIC and Sierra Club Coyote Workpaper NOTPUBLIC, using data from Otter Tail Response to Sierra Club Request 67 NOT PUBLIC and Attachment 1 NOT PUBLIC.

[99] Otter Tail Response to Sierra Club Request 67 Public.

…TRADE SECRET DATA ENDS]. It is therefore important to note that [**TRADE SECRET DATA BEGINS …**

…TRADE SECRET DATA ENDS].[100] It is therefore in customers' best interest for the Commission to require OTP to evaluate the cost of paying out the contract and selling or retiring its share of the plant, relative to the cost of continuing to operate the plant through 2040. Moreover, because the Commission has never made a prudency determination regarding the contract, the Commission may find that some or all of the contractual obligations should be borne by Otter Tail shareholders rather than its customers.

Based on the analysis above, we therefore recommend that the Commission:

- Require Otter Tail to evaluate in its upcoming IRP whether continued participation in that contract is in its customers' interest, or whether customers would instead be better served by early termination of the contract.
- Identify a docket (whether 19-704, the 2021 IRP, or a fuel clause adjustment docket) in which it will evaluate the reasonableness and prudence of the contract, and determine what portion of any early termination costs should be borne by customers versus ratepayers.
- Indicate that it will disallow from inclusion in fuel costs all forward-going expenditures on new assets or mine expansion activities at Coyote mine pending demonstration by the Company in the IRP that continued ownership of its share of the Coyote plant is in its customers' interests. This is important to prevent additional costs from accumulating that could increase exit costs associated with the contract.

B. OTP has not adequately analyzed whether continuing to operate Big Stone and Coyote is the lowest cost way to fulfill its resource adequacy requirements.

OTP claims that Big Stone and Coyote are needed to meet its market resource adequacy requirements. However, OTP has not adequately established a capacity need in MISO in the absence of one or both of its Big Stone and Coyote plants, on either a seasonal basis or with a full unit retirement.

[100] Otter Tail Response to Sierra Club Request 67 NOT PUBLIC

According to the 2019/2020 Planning Resource Auction (PRA), MISO Zone 1 has surplus capacity and is an exporting zone.[101] Thus, OTP operates within a MISO zone with low capacity prices. While the onus is always on the utility to quantitatively justify the ways in which it meets its resource adequacy requirements, operating within an exporting zone with a capacity surplus makes the need for a quantitative justification even more necessary.

Instead, OTP has failed to conduct robust technical and economic analyses exploring the costs and benefits of meeting its resource adequacy requirement through other means. In its Annual Compliance Filing, OTP repeated its claims from last year that seasonal dispatch is not viable for its generating units because it must meet MISO Module E capacity accreditation requirements that require the units to maintain a daily must offer requirement to remain accredited. It further states that if it were "to forego capacity accreditation of the Big Stone or Coyote generators, Otter Tail would need to procure additional capacity resources to meet the MISO Module E Capacity requirements."[102] While this may be true, OTP provides no economic analysis comparing the benefits of meeting any of its MISO capacity requirements with Big Stone and Coyote relative to alternative compliance. It may very well be that meeting the requirements through alternatives such as the construction of new generation facilities, bi-lateral capacity purchases, or the purchase of capacity through the MISO capacity auction, would be more cost-effective than meeting the requirements with Big Stone and Coyote.

As such, we recommend the Commission require OTP in its upcoming IRP to conduct an analysis that compares the costs and benefits of meeting its MISO Module E Capacity requirements with Big Stone and Coyote against meeting those same requirements through alternative methods, including—but not limited to—the construction of new generation facilities, bi-lateral capacity purchases, and the purchase of capacity through the MISO capacity auction.

C. OTP's variable cost accounting continues to be incomplete and omit variable predictive maintenance costs and other non-fuel costs that scale with operation into this analysis and into its MISO offer curves.

OTP has once again not included predictive maintenance costs in its analysis, stating that "Variable preventative maintenance is not a term that Otter Tail is familiar with in tracking costs associated with operation of maintenance of a power plant."[103] We reiterate our findings from last year that, by excluding these costs, OTP's results are predicated on OTP's incomplete

[101] MISO 2019 / 2020 PRA Results. April 12, 2019. Available at: https://cdn.misoenergy.org/20190412_PRA_Results_Posting336165.pdf.

[102] Annual Compliance Filing of OTP (2021), page 2.

[103] Annual Compliance Filing of OTP (2021), page 7.

accounting of short-run marginal costs that omits variable predictive maintenance costs and for Coyote.

Predictive maintenance costs are operational costs that are scalable with operation, yet OTP imprudently classifies them as fixed.[104] By failing to include an appropriate level of variable O&M costs in its pricing curve, OTP has allocated variable costs to fixed categories, and omitted them from unit dispatch costs (see our comments from last year for a full description of the category of costs omitted).

Capital and some O&M costs, such as labor, are generally fixed (i.e., they do not vary as a function of unit output) and are therefore reasonable to exclude from an offer curve. However, a wide range of other O&M costs scale with unit operations in a predictable and known manner—either as a function of runtime or output. These variable costs are avoidable and deferable if units are idled or dispatched at lower levels, and they therefore should be incorporated into unit commitment and dispatch decision-making.

OTP's treatment of predictive maintenance costs as fixed costs results in OTP submitting into MISO an offer that is lower than the actual variable cost to operate the unit. In 2020, Big Stone's average non-fuel variable O&M costs were approximately [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** and Coyote's average non-fuel variable O&M costs were approximately [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]**.[105] This is [**TRADE SECRET DATA BEGINS… TRADE SECRET DATA ENDS]** than the [**TRADE SECRET DATA BEGINS… …TRADE SECRET DATA ENDS]** non-fuel variable O&M costs in 2020 dollars that Horizons Energy assigns to 400-599 MW coal plants in its Fall 2019 North American Market Database, based primarily on historical O&M data from FERC Form 1.[106] By submitting artificially low variable costs to the MISO offer curve, OTP biases the market in favor of committing and dispatching OTP's units (in this case, dispatching above the minimum operating level) over other units that may actually be lower cost to operate. This also allows OTP to make

[104] In its response to Sierra Club Information Request 8a, OTP lists the short-term variable costs used for the purposes of dispatch at Big Stone as: coal, fuel oil, lime, activated carbon, ammonia, coal freight tariff, SO_2 allowances, miscellaneous variable costs, and train-related costs. OTP lists the short-term variable costs used for purposes of dispatch at Coyote as: coal, fuel oil, lime, activated carbon, coal conversion tax, SO_2 allowances, and miscellaneous variable costs.

[105] Sierra Club Big Stone Workpaper NOTPUBLIC and Sierra Club Coyote Workpaper NOTPUBLIC, using data from Attachment 2 to IR MN-Sierra-001_NOTPUBLIC (2021 filing); Attachment 3 to IR MN-Sierra-001_NOTPUBLIC (2021 filing).

[106] Horizons Energy is known for its industry expertise on issues such as integrated resource planning, power market analytics, and economic consulting. See: https://www.horizons-energy.com/about/.

the units look more economic than they are when comparing costs to the LMP revenues earned. But these costs do not disappear just because they are not included in the MISO offer curve; they are passed onto customers through rates as fixed costs in a less transparent manner.

We repeat our recommendation from last year and recommend that the Commission require OTP to evaluate its unit commitment practices using an analysis that incorporates predictive maintenance costs—and any other excluded costs that scale with and are impacted by the frequency and duration of plant operations—into the variable costs that OTP uses to make its unit commitment and dispatch.

VII. RESTATEMENT OF RECOMMENDATIONS

- The Commission should find that the record shows that the Big Stone and Coyote units' co-ownership and operation in both the MISO and SPP markets has resulted in losses to customers, and require, as part of its 2021 IRP, that OTP evaluate whether it is in the best interest of customers for the Company to continue its ownership interest in the units.
- With respect to the Coyote fuel supply contract, the Commission should:
    - Require Otter Tail to evaluate in its upcoming IRP whether continued participation in that contract is in its customers' interest, or whether customers would instead be better served by early termination of the contract.
    - Identify a docket (whether 19-704, the 2021 IRP, or a fuel clause adjustment docket) in which it will evaluate the reasonableness and prudence of the contract, and determine what portion of any early termination costs should be borne by customers versus ratepayers.
    - Indicate that it will disallow from inclusion in fuel costs all forward-going expenditures on new assets or mine expansion activities at Coyote mine pending demonstration by the Company in the IRP that continued ownership of its share of the Coyote plant is in its customers' interests. This is important to prevent additional costs from accumulating that could increase exit costs associated with the contract.
- In the absence of a multi-day commitment market at MISO, the Commission should require OTP to maintain, as part of the record in fuel clause adjustment proceedings, standardized records sufficient to demonstrate that it has used forward-looking analyses to inform commitment decisions at the Big Stone and Coyote units**.**
    - OTP should be required to utilize LMP forecasts, unit operational costs, and unit start-up and shut-down costs to determine daily whether to self-commit a unit or to take it offline during periods of low market prices. OTP should be required to

retain this analysis to allow the Commission to evaluate in fuel clause adjustment true-up proceedings whether a unit's commitment decision maximized its economic value to OTP's customers.

  - In addition, OTP should be required to produce data that allows the Commission to verify that the co-owners of Big Stone and Coyote are also using forward looking analyses to inform commitment decisions into the SPP market.

- The Commission should signal that it may, in the next fuel cost true-up proceeding, disallow recovery of fuel costs for times when the unit was operated uneconomically in a manner that is not justified by such forward-looking analyses (or for which no analysis or documentation was produced to demonstrate that the co-owners were committing economically into the SPP market). The reasonableness of unit dispatch practices should be evaluated based on analysis that incorporates predictive maintenance costs—and any other excluded costs that scale with and are impacted by plant operations—as well as all fuel costs, into the variable costs that OTP uses to make its unit commitment and dispatch decisions.

- The Commission should require OTP to evaluate alternative ways of meeting its resource adequacy requirements in its 2021 IRP.

- The Commission should require utilities to identify any proposed new coal contracts in Fuel Clause Adjustment proceedings, and to submit them for prudence review those proceedings, before signing any such contracts.

Sierra Club respectfully requests the Commission adopt the recommendations above.

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Respectfully submitted,

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