BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
600 North Robert Street
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FOR THE PUBLIC UTILITIES COMMISSION OF THE STATE OF MINNESOTA
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In the Matter of Xcel Energy's Petition for Approval of its 2023 Annual Fuel Forecast and Monthly Fuel Cost Charges	CAH No. 21-2500-40336 MPUC No. E-002/AA-22-179

POST-HEARING BRIEF OF THE XCEL LARGE INDUSTRIALS

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The Xcel Large Industrials ("XLI")[1] submit the following brief regarding Northern States Power Company d/b/a Xcel Energy's ("Xcel Energy" or "Company") negligent operation of Prairie Island Nuclear Generating Plant ("PINGP") that led to an extended outage and caused the Company to purchase replacement power for 103 days, from October 19, 2023, to March 1, 2024.[2] XLI respectfully requests the Administrative Law Judge ("ALJ"):

1. find that the Company has used a flawed methodology (i.e., PLEXOS) to calculate replacement power costs, resulting in the material understatement of the refund it owes customers,
2. apply the methodology offered by XLI's witness Brian Andrews to calculate the replacement power costs, and
3. reject Xcel's proposed offsets to its refund on the basis that they are speculative and defy Commission precedent.

XLI requests the ALJ make appropriate recommendations to the Minnesota Public Utilities Commission ("Commission") on the basis of the arguments below.

I. INTRODUCTION

The Commission ordered this proceeding to "determine the appropriate refund amount due to customers due to Xcel's lack of prudence regarding the October 2023 outage at Prairie Island."[3] The Commission referred the matter to the Court of Administrative Hearings ("CAH") for a contested-case proceeding in which Xcel bears the burden to establish that any or all of the energy replacement costs were reasonably and prudently incurred, applying good utility practices.[4] Through the contested case process, the Commission intended to address "contested material facts and significant unresolved issues" related to the determination of "the appropriate amount for Xcel to refund ratepayers due to the lack of prudence regarding the October 2023 outage at PINGP."[5]

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[1] XLI is an *ad hoc* consortium of C&I Demand class customers served by Xcel Energy, consisting here of Flint Hills Resources Pine Bend, LLC; Marathon Petroleum Corporation; and USG Interiors, Inc.

[2] *In the Matter of Xcel Energy's Petition for Approval of its 2023 Annual Fuel Forecast and Monthly Fuel Cost Charges*, Docket No. E-002/AA-22-179, Order Approving 2023 Fuel Clause True-Up Report, Requiring Additional Filings, Finding Imprudence, And Notice Of And Order For Hearing at 3 (Nov. 15, 2024) (eDocket No. 202411-211999-01) ("PINGP Order").

[3] PINGP Order at 11.

[4] *See In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in the State of Minnesota,* Docket No. E-002/GR-12-961, et al, Notice and Order for Hearing at 11 (Jul. 13, 2022) (eDocket No. 20227-187362-07).

[5] PINGP Order at 8.

The Commission stated it expected "the parties will thoroughly develop a full record, addressing, at a minimum, the appropriate refund amount due to ratepayers stemming from the lack of prudence regarding the October 2023 outage at PINGP."[6]

The method Xcel Energy used to calculate replacement power costs in this proceeding, which was based on its use of PLEXOS modeling, is flawed and produced irrational outputs. As explained in this brief, the Locational Marginal Pricing ("LMP") method more appropriately calculates replacement power costs and should be applied in this proceeding to determine those costs and subsequent customer refunds. Additionally, XLI opposes Xcel's attempt to offset its refund to customers through three offsets, which are speculative and unsupported by Commission precedent. The ALJ and the Commission should determine Xcel has failed to properly calculate its replacement power costs, which it estimates as $34.3 million, and require the Company to refund $40.6 million, plus interest, to its customers.[7]

II. ANALYSIS

A. The PINGP Outage and Xcel's Purchase of Replacement Power

Xcel's PINGP is a two-unit, nuclear-powered, electric generating station located in Red Wing, Minnesota, with a combined capacity of 1,100 megawatts, which began operating in 1973 and 1974.[8] When functional, the plant provides baseload service and operates 24 hours a day, seven days a week to provide electric power to Xcel customers.[9]

In October 2023, Xcel Energy struck an underground cable bundle during work to replace certain power cables at PINGP.[10] As a result, PINGP's Unit 1 shut down and endured an outage lasting 103 days. In its report on the outage to the Nuclear Regulatory Commission, Xcel cited weaknesses in its process for approving the excavation permit and inadequate oversight of the excavation work as direct causes of the outage.[11] Further, the report stated "due to inadequate

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6 PINGP Order at 9.

7 Ex. Xcel-1 at 15:13-20 (Krug Direct); Ex. XLI-2 at 3:12 (Andrews TS Direct) (Xcel has waived the need for trade secret designation of XLI's estimate of replacement power costs, which was redacted in XLI Witness Andrews' Direct Testimony because it relies on underlying workpapers Xcel deemed trade secret).

8 Ex. Xcel-1 at 3:1-3 (Krug Direct).

9 Ex. Xcel-1 at 3:4-6 (Krug Direct).

10 PINGP Order at 3.

11 PINGP Order at 3.

oversight, work proceeded without all controls in place that would be expected for work at a nuclear plant. Specifically, approved work plans were not always available at the work site and approved construction drawings for the boring work were not updated when changes were made ….”[12] In its report, Xcel also admitted that it “inadvertently provided maps that did not fully depict all the other underground cables near the excavation path.”[13] The Commission has affirmatively determined Xcel Energy’s imprudence caused the extended outage at issue.[14]

During the outage, Xcel was forced to purchase replacement power to cover for lost generation from PINGP.[15] Upon finding Xcel acted imprudently to cause the 103-day outage at PINGP, the Commission concluded it could not determine the appropriate ratepayer refund amount resulting from Xcel’s imprudence, and thus referred the issue to the CAH for the issue of refund calculation to proceed as a contested case and allow for additional record development.[16] Additionally, the Commission directed Xcel to “include interest … in any outage-related refund,” stating such inclusion appropriate because ratepayers impacted by Xcel’s imprudence and the ensuing outage should not pay for “costs incurred due to the Company’s imprudence.”[17] As such, any outage-related refund should include interest using the U.S. Federal Reserve’s Prime Rate.[18]

B. The Methodology Xcel Energy Used to Calculate Its Replacement Power Costs Is Flawed.

Xcel Energy produced an understated estimate of replacement power costs related to the outage. Xcel’s use of PLEXOS modeling, a production cost modeling software, fails to capture the replacement power costs associated with the PINGP outage, and the outputs of that model are irrational. Xcel’s model was incorrectly calibrated and did not match actual conditions, and Xcel has not provided evidence or analysis comparing its costs, which are produced by the base case in PLEXOS, to actual costs incurred during the outage. Instead, Xcel’s calibration effectively forced

12 PINGP Order at 3.
13 PINGP Order at 3.
14 PINGP Order at 4-5.
15 PINGP Order at 3.
16 PINGP Order at 11.
17 PINGP Order at 5.
18 PINGP Order at 5.

the model to run the generating units to align with actual output, a method that minimizes the refund due, but not one insufficient to objectively calculate the significant costs incurred.

1. The PLEXOS Base Case Is Not Reasonable.

Xcel's base case is unreasonable because Xcel cannot demonstrate the base case run accurately represents its actual power costs during the outage. Xcel explains in its testimony that to assess replacement power costs, it used PLEXOS to determine a base case reflective of actual operations without PINGP, "incorporating real data on unit availability, fuel costs, wind generation, customer loads and MISO's market prices."[19] Upon calibrating the base case to actual operations, Xcel extracted its total system costs from the model, then compared it to the "change" case created, which modeled PINGP as available for generation during the study period. Xcel claims $34.4 million (Minnesota jurisdictional) represents the difference between the base case and change case, and thus constitutes its estimate of replacement power costs. Xcel Energy, however, provides no demonstration or analysis comparing costs produced by the base case to actual costs incurred during the study period.[20] In contrast, XLI Witness Andrews found that Xcel's calibration "essentially forced the base case run to make no dispatch decisions in the base case, but instead forced the model to run the generating units to align with their actual output," meaning there is no analysis to provide that the base case accurately represents Xcel's power costs during the extended outage.[21]

The fundamental problem with the base case is that it is not calibrated to use or provide the actual MISO purchase costs and sales revenues for the outage period. In its base case, while Xcel demonstrated it used actual generator output and fuel and operating costs for its estimate, its calculation captured only a portion of its actual power costs.[22] Xcel did not provide evidence showing net costs associated with MISO purchases and sales represented actual costs—a crucial element to establish the reasonableness of the base case.[23] In the base case, while the volumes of

19 Ex. XLI-1 at 3:21-4:1 (Andrews Direct).
20 Ex. XLI-1 at 4:15-17 (Andrews Direct).
21 Ex. XLI-1 at 4:17-5:2 (Andrews Direct).
22 Ex. XLI-3 at 3:9-15 (Andrews Surrebuttal).
23 Ex. XLI-3 at 4:2-5 (Andrews Surrebuttal).

the MISO sales and purchases may be reflective of actual operations, there is no indication or proof that the purchase cost and the sales revenues reflect Xcel's actual costs.[24]

2. Xcel's Change Case Is Also Unreasonable.

Not only is Xcel's base case unreasonable, but Xcel's change case is also flawed. In the PLEXOS change case, Xcel failed to allow for "any reduction of the MISO purchases and only a minimal amount of additional sales," a fatal flaw that precludes Xcel's PLEXOS modeling from isolating the PINGP outage and producing realistic replacement power cost estimates.[25] As explained by XLI Witness Andrews, "MISO market interaction is also a significant component of Xcel's overall power costs."[26] Witness Andrews observes that PINGP's loss would cause only small changes in the energy output of Xcel's units in MISO's actual dispatch because most of the change in output to account for the PINGP outage would be spread broadly across MISO, and not isolated only to Xcel's generation units.[27] As a result, Witness Andrews and the Department Witness Rakow do not agree with Xcel's assumption that the loss of PINGP's energy would be replaced by Xcel's own generation, as opposed to the MISO market.[28] "Xcel's PLEXOS analysis should not be relied upon in this case."[29]

3. XLI's LMP Methodology Should Be Used to Calculate the Replacement Power Cost.

Because Xcel's PLEXOS modeling is flawed and materially understates the replacement power costs, these costs should instead be calculated based on the locational marginal pricing ("LMP") method as described in XLI Witness Andrews Direct and Surrebuttal Testimony.

The LMP Calculation Methodology is "a reasonable proxy for replacement power costs."[30] As an example, the calculation of replacement power costs in Xcel's Sherco 3 proceeding involved calculating a new set of LMPs, applying two distinct production costs models to identify replacement power costs.[31] The analysis of that method produced three categories of costs: (1)

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24 Ex. DOC-3 at 13-14 (Rakow Surrebuttal).

25 Evidentiary Hearing Transcript Volume (Tr. Vol.) 1 at 107:14-20 (Andrews).
26 Ex. XLI-3 at 3:14-15 (Andrews Surrebuttal).
27 Ex. XLI-1 at 2-3 (Andrews Direct).
28 Ex. DOC-3 at 6 (Rakow Surrebuttal).
29 Ex. DOC-3 at 14 :14 (Rakow Surrebuttal).
30 Ex. XLI-1 at 14:11-12 (Andrews Direct).
31 Ex. XLI-1 at 13:11-16 (Andrews Direct).

lost net revenue from the unit, (2) increased expense of making more market purchases, and (3) additional net revenues from other generating resources, where the "increased expense from purchases, and the offset for increased net revenue from the other generators" almost entirely nullify each other, leaving the lost net revenue from Sherco 3 as the majority of the replacement power costs.[32] XLI witness Andrews interprets the lost net revenue portion as "essentially an LMP calculation," thus demonstrating the LMP calculation method as a "reasonable proxy for replacement power costs."[33]

Conveniently, Xcel has already conducted an analysis of replacement power costs based on LMPs.[34] Witness Andrews verified the accuracy of Xcel's analysis based on LMPs through use of a simple analysis to determine the net revenue lost due to the PINGP outage using the "hourly output for both PINGP Units 1 and 2," "the actual MISO Day-Ahead LMPs for the PINGP node, and the variable fuel and operating costs that were contained in Xcel's PLEXOS input files."[35] Mr. Andrews explains that this analysis produced a replacement power cost of [**TRADE SECRET DATA BEGINS** . . . [redacted], . . . **TRADE SECRET DATA ENDS**], a difference of less than 1% of what Xcel's own LMP calculation produced.[36] Thus, XLI witness Andrews concludes the LMP Calculation conducted by Xcel, which shows the 2023 replacement power costs to be [**TRADE SECRET DATA BEGINS** . . . [redacted] . . . . **TRADE SECRET DATA ENDS**], and the 2024 replacement power costs to be [**TRADE SECRET DATA BEGINS** . . . [redacted] . . . . **TRADE SECRET DATA ENDS**], for a total replacement power cost for the PINGP outage of **[TRADE SECRET DATA BEGINS** . . . [redacted] . . . **TRADE SECRET DATA ENDS]** is an accurate calculation of replacement power costs. When allocated to Minnesota, this replacement cost would be [**TRADE SECRET DATA BEGINS** . . . [redacted] . . . **TRADE SECRET DATA ENDS**].[37]

Based on Xcel's own LMP analysis, the replacement power costs Xcel produced using PLEXOS, which are significantly lower than the replacement power costs estimated using the LMP calculation method, cannot be reasonable.[38] As Department Witness Rakow states:

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32 Ex. XLI-1 at 14:1-8 (Andrews Direct).
33 Ex. XLI-1 at 14:10-12 (Andrews Direct).
34 *See* Ex. Xcel-1 at Schedule 2 (Krug Direct).
35 Ex. XLI-1 at 12:19-13:2 (Andrews Direct).
36 Ex. XLI-1 at 13:2-4 (Andrews Direct).
37 Ex. XLI-1 at 12:5-15 (Andrews Direct).
38 Ex. XLI-1 at 14:11-15:3 (Andrews Direct).

"[A]lthough PLEXOS production modeling would customarily be appropriate for modeling incremental power costs, Xcel's modeling here is too unreliable to use," and "in the absence of reliable PLEXOS modeling," Witness Rakow concludes the "LMP calculation method recommended by Mr. Andrews provides a sufficiently reasonable result for purposes of calculating a replacement power cost refund."[39] In sum, Xcel's PLEXOS modeling inaccurately represents replacement power costs associated with the PINGP outage and any estimated power costs derived through the methodology should be rejected in lieu of the $40.6 million estimate derived from the LMP methodology.

4. Capacity Revenues

In its analysis of replacement power costs, XLI calculated a future impact to ratepayers due to lost Accredited Capacity revenues, meaning revenues that would have been generated in the MISO planning process and credited back to ratepayers but for the outage. Generally speaking, XLI believes this component of lost capacity revenues should be an element of the cost of the extended outage refunded to ratepayers, because customers would have received the benefit of those revenues but for Xcel's imprudence. The Commission has determined, however, that the issue of capacity revenues should be addressed as part of Xcel's general rate case, and not as part of this proceeding.[40]

C. The Offset Xcel Requests Are Improper and Should Not Be Granted.

Xcel proposes three offsets to the refund due to customers: (1) "pull-forward" or "supplemental" work,[41] (2) "avoided 2029 costs,"[42] and (3) a historical performance adjustment.[43] These proposed offsets are speculative and directly contradict Commission precedent. As the Commission explained just recently regarding Xcel's extended outage at its Sherco 3 plant, Xcel may not offset a customer refund based on other benefits that may have accrued from resolving

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39 Ex. DOC-3 at 19 (Rakow Surrebuttal).

40 *In the Matter of the Application of Northern States Power Company, d/b/a Xcel Energy, for Authority to Increase Rates for Electric Service in the State of Minnesota*, Docket No. E002/GR-24-320; *In the Matter of Xcel Energy's Petition for Approval of its 2023 Annual Fuel Forecast and Monthly Fuel Cost Charges*, Docket No. E-002/AA-22-179, Order Denying Petition for Reconsideration and Granting Request for Clarification at 4 (Jan. 31, 2025) (eDocket No. 20251-214793-01).

41 *See* Ex. Xcel-4 at 20:6-19 (Detmer Direct).

42 *See* Ex. Xcel-4 at 17:6-20:2 (Detmer Direct).

43 *See* Ex. Xcel-4 at 20:25-22:4 (Detmer Direct).

the consequences of imprudent behavior.[44] Prudence in one regard cannot offset lack of prudence by the Company elsewhere.

1. Supplemental Work Offset

Xcel's supplemental work offset seeks to reduce the refund owed to customers on the basis that the Company "proactively completed various additional projects during the outage that were scheduled to be completed during future planned outages."[45] XLI opposes these offsets because the Commission has found Xcel's imprudent actions directly caused the PINGP outage and thus all replacement power costs should be refunded to customers. Not only is Xcel's proposed offset categorically disallowed under Commission precedent, but the benefits Xcel claims are speculative and not supported by reasonable evidence.[46] The ALJ and Commission should reject Xcel's proposed supplemental work offset.

2. Avoided 2029 Cost Offset

Xcel's avoided cost offset seeks to reduce its refund to customers based on cable replacement work the Company performed during the outage, which it claims "enabled the Company to avoid or shorten total outage days" and avoid future replacement power costs.[47] Fundamentally impacting the integrity of the avoided cost offset, to determine the 2029 avoided cost offset, Xcel used the PLEXOS model, which XLI would not expect to be accurate for the reasons described above. As explained in Witness Andrews' surrebuttal testimony, Xcel made significant assumptions to forecast costs out to 2029, including about hourly LMPs, hourly loads, monthly fuel prices, monthly Operations and Maintenance ("O&M") of each generator, unit heat rates, outage rates, start-up costs and fuel transportation costs.[48] For example, Xcel witness Krug explains the 2029 jurisdictional allocator, which increases the offset, assumes Xcel's system will add over 2,000 MW of data center load by 2029. [49] The assumptions Xcel used to determine the 2029 avoided costs are speculative at best and should not be relied upon.

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44 *In re Appl. of N. States Power Co. for Auth. to Increase Rates for Elec. Serv. in the State of Minn.*, Docket No. E-002/GR-12-961, Order Adopting Administrative Law Judge Report As Modified at 36 (Dec. 24, 2024) (eDocket No. 202412- 213317-01) ("Sherco 3 Forced Outage Order").

45 Ex. Xcel-4 at 20:6-11 (Detmer Direct).

46 Sherco 3 Forced Outage Order at 36.

47 Ex. Xcel-4 at 17:6-10 (Detmer Direct).

48 Ex. XLI-3 at 9:6-10 (Andrews Surrebuttal).

49 Ex. XLI-3 at 9:12-16 (Andrews Surrebuttal).

Second, regulatory precedent does not support offsets of this nature. To the contrary, the Commission explicitly rejected this type of offset in Xcel's Sherco 3 outage proceeding, wherein the Commission disallowed Xcel from offsetting customer refunds based on other benefits that may have accrued as a result of resolving consequences stemming from Xcel's imprudent behavior.[50] In its order, the Commission stated "Xcel's prudent management of the restoration process—including efforts to mitigate costs—[is] the expectation and does not offset or mitigate Xcel's prior imprudence."[51] The Commission has categorically denied this type of proposed offset and the Administrative Law Judge and the Commission should similarly do so here.

3. Historical Performance Offset

Additionally, there is no precedent to support, and Xcel should not be granted, a speculative historical performance adjustment for Xcel operating its nuclear generating plant properly. Xcel contends that because PINGP operated so well during the 2018-2022 timeframe, it should be rewarded by only refunding customers 51% of the net replacement power cost. Multiple parties oppose this offset, including the Office of the Attorney General – Residential Utilities Division ("OAG") and the Department.[52] XLI similarly opposes the offset for several reasons. First, Xcel is a monopoly with captive customers who pay for electric utility service at regulated rates. Xcel's base rates are reflective of the costs to operate and maintain its generating units, including PINGP, meaning customers have already paid (and continue to pay) for the operation and maintenance of the plant, which is expected to operate continuously as a baseload facility. Xcel should not be allowed to double-recover the costs to simply operate one of its plants through a reduced refund to customers. Any past performance does not offset the increased costs that were paid by ratepayers as a result of the PINGP outage—rather, customers expect Xcel will operate all of its assets prudently and well. The irony in Xcel's seeking an offset for historical good performance for a plant that experienced a forced outage caused by Xcel's admitted imprudence cannot be ignored. Historical performance cannot be banked to excuse imprudence, and Xcel's proposed historical performance adjustment should be rejected.

Further, the Commission already rejected Xcel's historical performance argument in this very docket. In its Petition for Reconsideration of the Commission's PINGP Order, Xcel requested

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50 Sherco 3 Forced Outage Order at 36.
51 Sherco 3 Forced Outage Order at 36.
52 Ex. OAG-1 at 18 (Lee Direct); Ex. DOC-1 at 18:5-7 (Golden Direct).

the Commission reconsider its PINGP Order on the basis that the Commission failed to consider the past "exemplary performance" of PINGP that it characterizes "consistently exceeded that of other utilities and nuclear operators, demonstrating overall operations and management of PINGP that align with and even exceed good utility practice."[53] In its Petition, the Company claimed that "rather than referring the contested issue of prudence to the Office of Administrative Hearings (OAH) for an evidentiary hearing, as required by its rules, the Commission simply determined that Xcel Energy's actions surrounding the Outage were imprudent and denied the Company's request for replacement power costs through the FCA."[54] The Company fails to acknowledge the Commission's finding that Xcel's actions were so *egregiously* imprudent, the Commission found itself "unpersuaded that a contested case is required to resolve any disputed material facts necessary to inform a prudence determination," relying on the fact that Xcel did not dispute its own imprudence "enabled workers at PINGP to unintentionally strike the buried cables and cause the outage at PINGP."[55] Its findings demonstrate the Commission's position that the proper operation and maintenance of a utility's generation assets cannot excuse or mitigate imprudence that results in direct costs to customers.[56] The Commission has already rejected this historical performance argument with regard to prudency and the ALJ should do the same with regard to offsets.

The PINGP outage resulted in real, measurable harm suffered by ratepayers and the refund should not be reduced by speculative offsets.

III. CONCLUSION

Xcel's PLEXOS modeling fails to adequately capture the replacement power costs associated with the PINGP outage, and therefore its estimated refund to customers is irrational. Through application of a simpler approach, the LMP Method, XLI produced a more accurate calculation of replacement power costs during the outage. The ALJ should determine the LMP methodology is superior to Xcel's PLEXOS modeling and recommend the Commission order Xcel to refund $40.6 million to customers, plus interest.

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53 Xcel Petition for Reconsideration at 2 (eDocket No. 202412-212755-01) ("Xcel Petition for Reconsideration of PINGP Order").

54 Xcel Petition for Reconsideration of PINGP Order at 5

55 PINGP Order at 5.

56 Sherco 3 Forced Outage Order at 5, 16-17.

Further, the offsets proposed by Xcel should be rejected, given they are speculative and have been explicitly rejected by the Commission. The adequate operation of one of Xcel's plants does not negate the significant imprudence the Company displayed in causing a plant outage spanning months. Xcel customers have already paid for PINGP's operation and maintenance and continue to do so in their base rates. Xcel's imprudence should not be rewarded through an offset to an outage caused entirely by its negligence.

Because Xcel failed to prudently operate and maintain PINGP, energy replacement costs associated with the PINGP outage should be refunded to customers with interest.

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