MINNESOTA
PUBLIC UTILITIES COMMISSION

Docket E999/CI-16-521

This is a compilation of the two reports created for the Distributed Generation Working Group (DGWG) on the topic of Xcel's internal transmission studies. One report was from Xcel Energy and the other report was Nokomis Energy LLC, Enterprise Energy, Novel Energy Solutions LLC, and Sunrise Energy Ventures LLC.

Staff notes that both of these reports were submitted to Staff on December 13, 2024. Staff then sent the reports to the rest of the DGWG on December 17, 2024 via email listserv.

Transmission Studies for DER Project Report
December 13 2024

In response to the communication received by Commission Staff on November 18 and November 22, we provide the following answers to the questions posed by Staff regarding transmission study analysis as part of the System Impact Study (SIS) Analysis identified in the MN DIP 4.3.6, 4.3.7, 4.3.8.

Xcel Energy will review for adverse system impacts at the transmission level during the initial review stages of the SIS. If one of the review triggers are met, we will notify the developer of next steps. In the case of an internal transmission analysis (MISO triggers were not met in these cases), the study will begin as soon as the next quarterly analysis starts. For MISO analysis, we send MISO the details necessary to add the project to their list, and the project follows then the MISO timelines for their review and study.

We provide further detail regarding transmission impact review triggers, requirements, and process below.

I. Is Xcel Energy a transmission provider as provided by MN DIP?

Yes. Northern States Power Company owns the transmission facilities and therefore qualifies under the MN DIP definitions as being a Transmission Provider. MISO is also a Transmission Provider under the definition below because it controls the transmission facilities.

MN DIP provides the following pertinent definitions in its Glossary of Terms:

> ***Transmission Owner:*** *The entity that owns, leases or otherwise possesses an interest in the portion of the Transmission System relevant to the Interconnection.*
>
> ***Transmission Provider:*** *The entity (or its designated agent) that owns, leases, controls, or operates transmission facilities used for the transmission of electricity. The term Transmission Provider includes the Transmission Owner when the Transmission Owner is separate from the Transmission Provider. The Transmission Provider may include the Independent System Operator or Regional Transmission Operator.*

Northern States Power Company under these definitions qualifies as both a Transmission Owner and as a Transmission Provider. Northern States Power Company is a Transmission Owner because it owns or otherwise possesses an interest in the portion of the transmission system relevant to interconnection of DER systems that are interconnected in its service territory. Northern States Power Company is a Transmission Provider because it owns, leases, controls, or operates transmission facilities used for the transmission of electricity. Further, because it is a Transmission Owner it directly qualifies as being a Transmission Provider.

II. Potential adverse impacts that would warrant an affected transmission study.

From a safety and reliability perspective, we need transmission system impact studies when there is reverse flow onto the transmission network. Under the MISO trigger, there is a worrisome gap in performing necessary studies. MISO's System Impact Study is only triggered when DER would exceed peak loading scenarios. But there is a significant amount of time when the feeders/distribution substation are not at system peak and DER production during these times could have a material impact on the safety and reliability of the system. For example, at daytime minimum load (DML) times, solar may be at full output. Accordingly, when DER exceeds DML but is less than peak substation load, we need to assess under an Xcel Energy Transmission System Impact Study the potential impact of DER on the safety and reliability of transmission system under this scenario. The Xcel Energy Transmission System Impact Study applies to the gap between the DML and peak load scenarios, and this gap needs to be studied from a safety and reliability perspective. This explanation is consistent with how we have answered prior Staff information requests (IRs). Please see our November 14, 2023 responses.[1]

MN DIP 4.3.6 states that "*In instances where the System Impact Study shows potential for Transmission System adverse system impacts … the Area EPS Operator shall coordinate with the appropriate Transmission Provider to have the necessary studies completed to determine if the DER causes any adverse transmission impacts."* There is a potential for transmission system adverse system impacts when either the MISO trigger for further review or the Xcel Energy trigger for further review are met. The MISO trigger for further review is when the reverse flow is identified to exceed peak substation load. An Xcel Energy Transmission System Impact Study is triggered when reverse flow exceeds the substation DML. In either case, reverse flow to the substation would show potential for transmission system adverse system impacts for both safety and reliability and therefore creates a need for the studies in both scenarios. Both types of studies would determine if the DER causes any adverse transmission system impacts.

Therefore, the MISO and Xcel Energy Transmission Studies both comply with MN DIP 4.3.6. because this MN DIP provision authorizes a transmission study when the Distribution System Impact Study shows potential for transmission system adverse system impacts.

III. When is MISO's review sufficient?

The MISO trigger to review a DER application is triggered when the aggregate DER exceeds Substation Peak Load by at least 1 MW.

The MISO review is sufficient when a project has triggered the need for a MISO review, MISO conducts its review and MISO either determines that no further study is needed or performs additional studies.

Xcel Energy may conduct internal transmission studies when MISO triggers are not met where there is the potential for adverse transmission system impact. MISO also recognizes that Transmission Owners can perform their own studies. From MISO Generation Interconnection Business Practice

[1] https://www.edockets.state.mn.us/documents/%7B5031CF8B-0000-C71E-8FAB-D81C619D4C4F%7D/download?contentSequence=0&rowIndex=105

Manual BPM-015, MISO recognizes that other Transmission Owner studies may be appropriate based on Transmission Owner Local Planning Criteria and applicable RERRA rules. The MISO BPM-015 states in section 8.3: "*MISO is aware that some RERRAs define transmission studies and affected systems studies within RERRA-jurisdictional interconnection rules. MISO considers the MISO DER AFS to be a type of affected system studies and recognizes that other TO [(Transmission Owner)] studies may be appropriate based on TO Local Planning Criteria and applicable RERRA rules."* This document includes the following definition:

> ***Relevant Electric Retail Regulatory Authority (RERRA)****: An entity that has jurisdiction over and establishes prices and/or policies for providers of retail electric service to end-customers, such as the city council for a municipal utility, the governing board of a cooperative utility, the state public utility commission or any other such entity.*

As explained above, the MN DIP authorizes the Transmission Provider and Transmission Owner to conduct a transmission study when the Distribution System Impact Study shows potential for transmission system adverse system impacts. The MISO BPM-015 does not create a conflict with this and specifically recognizes the non-exclusive approach to conducting transmission studies.

The MISO Generation Interconnection Business Practice Manual is available for download at this site: https://www.misoenergy.org/legal/rules-manuals-and-agreements/business-practice-manuals/

IV. What Xcel Energy's Transmission Studies cover that is not covered by MISO's review (e.g. Xcel Energy explain the difference between Xcel Energy's transmission and MISO transmission for this review and which potential adverse impacts in an SIS trigger each – what reliability concerns are seen in the SIS when the DER exceeds DML).

Table 1 below provides the difference between MISO analysis and Xcel Energy's analysis.

Table 1

	MISO Analysis	Xcel Energy Internal Analysis
Where	Aggregate DER > Substation Peak Load by at least 1 MW	DER exceeds DML, but MISO trigger has not been met.
When	Quarterly as scheduled by MISO[2]	Quarterly
Why	Ensure Regional Transmission reliability & deliverability	Ensure Xcel Energy Transmission System Reliability specifically for thermal or voltage issues. MISO does not concern themselves with overloading issues as long as transmission rights make sense, therefore this remains under the Company's analysis.

[2]https://www.misoenergy.org/planning/resource-utilization/distribution/#t=10&p=0&s=FileName&sd=desc

If the project is triggered to go through MISO, then it would not go through a separate transmission study performed by Northern States Power Company. If it the project goes through an internal analysis, it was not identified for a MISO analysis. As explained above, there is a potential for adverse transmission system impact when there is exporting to transmission but not large enough to trigger a MISO review. An actual transmission study in these circumstances would determine whether there is an actual adverse transmission system impact. Without a study being performed, we would not know the actual impact.

With DER production being exported to the transmission system, we need to know the impact in terms determining that the voltage and thermal limits would remain within standards. If the DER would cause a violation of our standards, we would need to identify that through a study to prevent problems with reliability and safety. The distribution SIS studies impacts on the distribution system, while the transmission SIS studies impacts on the transmission system. There is no overlap between the two studies other than the distribution SIS showing the export to the transmission system.

V. What is the concern developers have regarding the transmission studies conducted? Clarify whether the issue is: 1) the review itself; 2) costs; and/or 3) time for review (i.e. quarterly) and the trade-offs.

Developers provided feedback in a stakeholder discussion held on December 2, 2024 with 37 participants. We respond to these questions below.

A. Developers claim and ask as follows: In 2022, the PUC ordered Xcel to stay implementation of a transmission study agreement with MISO, in part because the process might require changes to MNDIP. Isn't this new process just like what the PUC directed Xcel not to do without PUC approval?

This question contains an incorrect summary of the Commission's March 31, 2022 Order in Docket 16-521. This Order, at page 10, stated as follows:

> The Commission will also stay Xcel Energy's implementation of the Affected System Study Agreement with the Midcontinent Independent System Operator (MISO) and will seek additional input. This stay only applies to implementation of this agreement itself; it does not apply to any other requirements of this Order, including deadlines for phasing out the on-hold practice. Given that these projects have already spent significant time in the interconnection queue, the Commission does not intend to further increase that time. Further, the stay does not impact the current MN DIP-approved Affected System Study process used by utilities and MISO.

This Order only stayed the Agreement with MISO as filed in that docket. The Order is clear that the stay does not impact the MN DIP-approved Affected System Study process used by utilities and MISO. The approach described above, with separate

triggers for a MISO review and Northern States Power Company transmission review, use the MN DIP-approved process.

B. Developers claim and ask as follows: In 2022, Xcel twice told the PUC that it would not use DML as the threshold trigger for transmission studies, whether in an agreement with MISO or otherwise. Why is Xcel now using DML as the threshold trigger for transmission studies? In subsequent communications as to what specific filings they are referring to, they provided the following information:

(1). Xcel Energy, *Letter Re: MISO Review of DER Applications Updating Generic Standards For Interconnection And Operation of Distributed Generation Facilities*, Docket No. 16-521 (March 4, 2022) ("we will not use as a threshold where the DER requires a new feeder, [or] in situations where a DER would exceed Daytime Minimum Load."); and
(2) Xcel Energy, *Comments*, Docket No. 16-521 at 9 (March 21, 2022) (stating that Xcel would "notify MISO of situations where a DER project may cause new or increased backflow during Daytime Minimum Load (DML)" and leave the determination of whether to conduct a transmission study to MISO").

This question contains an incorrect summary of the Company's referenced filings.

The referenced March 4, 2022 filing stated in pertinent part on page 2:

> "Given this guidance, the Company will begin to implement the MISO ad hoc process as discussed at the February 25, 2022 DGWG meeting. For determining the potential of adverse transmission system impacts, under the MISO ad hoc process we intend to use two thresholds for initiating the study: (1) the threshold that MISO discussed at the DGWG meeting – namely, where the proposed DER may provide new or increased backflow onto the transmission system during peak load at a particular substation, and (2) where we may otherwise determine that the DER shows potential for adverse transmission system impacts. We clarify that under the ad hoc process, we will not use as a threshold where the DER requires a new feeder, unless one of the above thresholds was also met. And, we will not send a Notice to MISO under its ad hoc process in situations where a DER would exceed Daytime Minimum Load unless one of the above thresholds was also met."

Contrary to the representations of the developers, this letter was specifically written for ***MISO ad hoc study analysis (which is no longer used by MISO)***, and also specifically noted that the Company may otherwise determine that a transmission study is needed even when the MISO trigger has not been met. The filing does not state that no transmission study will be performed based on the DER exceeding DML. The MISO trigger is not based on DER exceeding DML.

The referenced March 21, 2022 filing at page 9 stated in pertinent part:

> "Further, the MISO ASIS Agreement (par. 2.2.1) provides an opportunity for the Company to notify MISO of situations where a DER project may cause new or increased backflow during Daytime Minimum Load (DML). MISO would then

need to determine within 20 Business Days whether to conduct a study for the project. If MISO decides not to study the project, then there is no expected delay to the DER interconnection process because of the 35 Business Day timeline to provide DER System Impact Study results (under MN DIP 4.3.5) compared to the 20 Business Days for MISO to determine whether to proceed with a study. This assumes that the Company would provide notice to MISO soon after the DER System Impact Study is signed and funded."

Contrary to the representations of the developers, this was in the context of the MISO ASIS Agreement, which is not being used. Under the current MISO process, the MISO trigger for when projects should be sent to MISO is as discussed above. Under this MISO process, the Transmission Owner can still follow the MN DIP process to conduct its own transmission study where the MISO trigger has not been met. This filing does not state that the Company would not use DML as a trigger for its own transmission studies.

For internal analysis, DML is one trigger for which we would conduct a transmission affected study. These triggers were explained in our August 9, 2023 training that can be found on our Xcel Energy website.[3]

During the June 6, 2022 Interconnection Process Working Group (IPWG) meeting[4] there was a discussion regarding peak load usage as part of item 5. In the presentation, on slide 5 provided below, it is noted that MISO will use peak load to align with other Affected Facilities Study processes, this is in row one. However, on the fourth row MISO also notes that the study is focused on impacts to the MISO system under MISO functional control and that Transmission Operators (including Xcel Energy) may perform our own studies to analyze these factors.[5] We have determined that this is necessary in these cases as described above regarding reliability and safety of our system.

[3] https://www.xcelenergy.com/staticfiles/xe-responsive/Working%20With%20Us/Renewable%20Developers/2023%20Q3%20Transmission%20Study%20Discussion.pdf

[4] https://www.misoenergy.org/past-events/2022/interconnection-process-working-group-ipwg---june-6-2022/

[5] https://cdn.misoenergy.org/20220606%20IPWG%20Item%2005%20DER%20Interconnection624982.pdf

Summarized stakeholder feedback from April 11 IPWG request	MISO response
Use off-peak loading in addition to peak loading when applying the 5 MW injection screen.	MISO proposes to use peak conditions for screening, consistent with other Affected Systems screening practices. However, MISO intends to propose using peak and shoulder peak models for the detailed Affected Systems studies.
Apply "OR" logic rather than "AND" for the two proposed screens to determine outcome (e.g., "OR" means failure of either screen triggers a study).	MISO will incorporate this proposed change and apply "OR" logic.
Lower the 5 MW injection threshold.	MISO proposes to retain the 5 MW injection screen, consistent with other Affected Systems practices. However, with the change to "OR" logic, DER injecting 0 MW to 5 MW could be subject to further analysis should it trigger the one percent line load change screen.
Transmission owners (TO) should be able to preform impact studies in lieu of MISO's proposed standardized screening.	MISO proposes to use standardized screening for simplicity and transparency, consistent with other Affected Systems practices, when considering DER impacts on the MISO functional control transmission system. TOs would retain the right to perform state-jurisdictional transmission studies, per the applicable Relavent Electric Retail Regulatory Authority (RERRA) rules.
Clarify how DER screening affects the generator interconnection Fast Track process.	MISO's proposed DER screening practices do not affect the Fast Track process. These topics are unrelated.
Clarify how upgrades would be handled for under 5 MW of injection.	System upgrades are a topic for the October 10th IPWG.

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MISO

C. Developers claim and ask as follows: Xcel's process is to run a transmission study on one project per quarter. What is the technical basis for this methodology, which will likely prevent Xcel from completing more than four interconnection studies, per substation, per year?

The Company noted our quarterly study process as part of the August 9, 2023 stakeholder discussion. This is not based on one project per quarter. Instead, once each quarter to have a transmission study conducted for all DER projects meeting our trigger at the same time to determine the cumulative impact to the Xcel Energy transmission system in Minnesota. The quarterly cadence is required to allow the prior transmission study to be completed before starting the next one. This approach also reduces the number of studies that would be required. This also lowers the study cost per project because the study cost is the same regardless of the number of projects being studied and the per project cost is reduced by putting several DER projects in the same study. By pulling study analysis together, we limit the cost to approximately $33,000 shared across the group being studied.

Internal transmission analysis is limited to substations with more than 750kw of aggregate DER which impacts approximately 42 substations with DER exceeding DML.

D. Developers claim and ask as follows: In 2022, Xcel proposed amendments to MNDIP to implement the transmission study process. Does Xcel no longer believe amendments to MNDIP are necessary?

This question contains an incorrect summary of the Company's March 21, 2022 comments in Docket 16-521. These comments were pursuant to the Commission's February 17, 2022 Notice of Comment Period which raised the issue of whether the Commission should take any further action related to the Affected System Impact Study (ASIS) Agreement between Xcel Energy and the Midcontinent Independent Service Operator (MISO). The March 21,

2022 comments of the Company noted that this ASIS Agreement is generally consistent with MN DIP, but that MN DIP is internally inconsistent within itself. The proposed redline changes at pages 6-7 of that filing contain suggestions to resolve internal MN DIP inconsistency. The absence of making these changes does not preclude having transmission studies. The Company still supports these changes to resolve the internal MN DIP inconsistency, but these changes are not required to conduct transmission studies.

E. Developers ask as follows: What industry standards is being used for Xcel Energy's transmission studies.

Under NERC Standard FAC-002-4 Xcel Energy is required to study the reliability impact of any interconnecting new generation, transmission, or electricity end-user Facilities to ensure adherence to applicable NERC Reliability Standards as well as regional and Transmission Owner planning criteria.

Also, FAC-011-4 requires that the transmission system remain between all thermal and voltage facility ratings. We ensure our operators can maintain all thermal and voltage facility ratings by performing studies to confirm this.

We need to perform these studies to be compliant, and to show compliance, with these NERC standards.

F. Developers ask as follows: What has led to the current fees established for internal study analysis.

We had requested bids from qualified contractors, and the current fees reflect the bid that was accepted. The transmission fees that the Company assesses for the transmission studies contain no mark-up to the accepted bid.

Joint Xcel Transmission Studies Report to DGWG

On November 18, 2024, staff of the Minnesota Public Utilities Commission (the "Commission"), asked parties to the Distributed Generation Workgroup ("DGWG") to submit a report to the DGWG on the issue of Xcel's new transmission study process.

Below are comments submitted on behalf of Nokomis Energy LLC, Enterprise Energy, Novel Energy Solutions LLC and Sunrise Energy Ventures, LLC.

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In 2021, Northern States Power Company, d/b/a Xcel Energy ("Xcel") proposed a new transmission study process for interconnection applications on Xcel's distribution grid. Pursuant to an agreement with the Midwest Independent System Operator ("MISO"), Xcel would refer interconnection applications to MISO under certain conditions, to evaluate impacts to the transmission system. When Xcel presented the agreement to the Minnesota Public Utilities Commission (the "Commission"), the Commission expressed concern that Xcel had not sought input on the agreement, nor explained how it was consistent with the Minnesota Distributed Energy Resources Interconnection Process ("MNDIP"). The Commission ordered the agreement stayed pending a full comment period.

Seemingly chastened, Xcel proposed potential changes to MNDIP and abandoned the most burdensome trigger for a transmission study, exceedance of daytime minimum load. Instead, Xcel explained to the Commission that it would rely solely on MISO's screening criteria and study processes, as contemplated in MNDIP. This would ensure that only projects with the potential to impact the transmission system would be subjected to an expensive and time-consuming transmission study.

A little over a year later, however, Xcel came up with a new transmission study process, again outside of the timelines, costs and negotiated steps of MNDIP. In this version, MISO would continue to rely on its screening criteria and study processes, as contemplated in MNDIP. Xcel, however, would run a parallel transmission study on projects that MISO does not believe are likely to impact the transmission system: projects that merely exceed daytime minimum load.

This is essentially the same process that the Commission already directed Xcel not to undertake without a full comment period. Only this time, Xcel has declared *itself* the transmission provider, and as "*Xcel, Transmission Provider*," instead of "*Xcel, Area EPS Operator,"* Xcel claims it can do the very same things that the Commission directed it not to without a comment period. In fact, this process is more problematic. Unlike the agreement with MISO, Xcel's transmission study process is not even written down, or seemingly enforceable in any way. MNDIP stakeholders are subject entirely to Xcel's discretion.

The consequences of Xcel's self-declared transmission study policy are extraordinary. Nearly every distributed interconnection application in Xcel's service territory will now be subjected to a $33,000 transmission study, none of which concern MISO enough to study. And according to Xcel, each transmission study will be performed on only one project per substation at a time, conducted only once per quarter, and take up to 90 days each. This inability to complete more than four (4) interconnection agreements per substation, per year, will lead to cascading delays throughout Xcel territory, adding *years* to the MNDIP study timelines.

This situation is untenable. Xcel is effectively modifying MNDIP unilaterally, recreating a process that the Commission already stayed, with the effect of creating a brand new "on hold" process that will bring the interconnection process to a crawl.

Xcel must stay implementation of its transmission study process. If Xcel wishes to add a transmission study process on top of MISO's process, Xcel needs to seek Commission approval to modify MNDIP.

I. BACKGROUND

Over the course of 2021, Xcel worked with MISO to develop a written process to study DER interconnection applications that may impact the transmission network.[1] Xcel presented the signed version of the MISO Affected System Impact Study Agreement (the "ASIS Agreement") to the Commission for the first time via letter of December 17, 2021.[2]

At a hearing on January 20, 2022, the Commission ordered Xcel to stay implementation of the ASIS Agreement until a comment period could be conducted to determine whether the ASIS Agreement required changes to MNDIP. The Commission explicitly stated that this would not require Xcel to put projects in an "on hold" process, but rather that Xcel should use the long-standing ad-hoc process for MISO transmission studies.[3] A few days later, however, Xcel filed a letter with the Commission, erroneously contending that the Commission had directed Xcel to stay the ad-hoc process as well, placing all applicable interconnection applications on hold.[4]

On February 17, 2022, the Commission filed a notice seeking comments on the ASIS Agreement.[5] Prior to its formal comments, Xcel submitted yet another letter to the Commission.[6] In that letter, Xcel announced that it would follow the long-standing ad-hoc process after all.[7] Xcel also explained that it would no longer use daytime minimum load as a threshold for triggering a transmission study:

> For determining the potential of adverse transmission system impacts, under the MISO ad hoc process . . . **we will not use as a threshold** . . . **situations where a**

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[1] Xcel, *Letter*, Doc. No. 16-521 at 1 (Dec. 17, 2021).
[2] *Id.*
[3] Commission, *Hearing*, Doc. No. 16-521 at 2:44:30 (Jan. 20, 2022) (stating that the stay should not require an "on hold" process); *see also* Xcel, *Reply Comments*, Docket No. 16-521 at 8 (March 31, 2022) ("Commissioner Schuerger (Beginning at about 3:53:10): As I noted in my discussion with the Company, I do not believe that this requires an interruption, or any placement on-hold of projects."); Xcel, *Information Request No. 3*, Doc. No. 16-521 (Oct. 27, 2023) ("[t]he Commissioner discussion at the January 20, 2022 Agenda Hearing on this issue clearly indicated that the MISO transmission studies would still be needed, and that the action of the Commission would not require placing projects on hold").
[4] Xcel, *Letter*, Doc. No. 16-521 at 2 (Jan. 31, 2022). Xcel filed another letter on February 10, 2022, reiterating its misrepresentation of the Commission's direction. Even after MISO told Xcel that MISO would conduct studies under the ad-hoc process in the absence of the ASIS Agreement, Xcel concluded that "the Commission's decision to stay our implementation of the MISO ASIS Agreement also stays our ability to implement any substantially similar study process." Xcel, *Letter*, Doc. No. 16-521 (Feb. 10, 2022).
[5] Commission, *Notice of Comment Period and DGWG Meeting*, Doc. No. 16-521 (Feb. 17, 2022).
[6] Xcel, *Letter Re: MISO Review of DER Applications Updating Generic Standards For Interconnection And Operation of Distributed Generation Facilities*, Docket No. 16-521 (March 4, 2022).
[7] *Id.* at 2.

> **DER would exceed Daytime Minimum Load** unless one of the above thresholds was also met.[8]

Xcel submitted comments on March 21, 2022, proposing changes to MNDIP to harmonize it with the ASIS Agreement. First, Xcel proposed an amendment to Attachment 6, System Impact Study Agreement, to reflect the timing of the deposit due to the Transmission Provider, and to reflect that Xcel would be billing the interconnection customer based on the costs of the transmission study provided by the Interconnection Provider (*i.e.*, MISO).[9] Xcel also proposed to amend MNDIP section 4.3.6 to reflect that the need for a transmission study may arise outside of the System Impact Study.[10]

Finally, Xcel proposed a series of amendments to MNDIP and the Facilities Study Agreement to account for any "transmission provider facilities costs."[11] Xcel further explained the transmission study process: "[u]nder MN DIP 4.3.6, the affected system impact study will be completed by MISO when Xcel Energy identifies the potential for adverse transmission system impacts from the proposed DER interconnection."[12] Regarding daytime minimum load in the proposed ASIS Agreement, Xcel planned to leave it to MISO discretion:

> the MISO ASIS Agreement (par. 2.2.1) provides an opportunity for the Company to notify MISO of situations where a DER project may cause new or increased backflow during Daytime Minimum Load (DML). MISO would then need to determine within 20 Business Days whether to conduct a study for the project.[13]

Xcel also explained that a MISO transmission study may include two or more projects at a time.[14] On March 31, 2022, Xcel submitted reply comments reiterating its support for the changes to MNDIP to better align with the transmission study process.[15]

On the same day reply comments were due, the Commission issued an order formally staying implementation of the ASIS Agreement:

> Xcel Energy must stay implementation of the Affected System Study Agreement until a comment period regarding the following issues has concluded:
>
> 1. Whether the Agreement between Xcel Energy and the Midcontinent Independent System Operator requires changes to MN DIP or to a tariff;

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[8] *Id.* (emphasis added).
[9] Xcel, *Comments*, Doc. No. 16-521 at 6-7 (March 21, 2022) (emphasis added).
[10] *Id.*
[11] *Id.* at 9-14.
[12] *Id.* at 3.
[13] *Id.* 9.
[14] *Id.* at 5 ("for purposes of MISO review, if a given substation has two or more feeders, then due to the cadence of MISO review it could be the case for example that two projects each in MN DIP serial review will be part of the same MISO transmission study")
[15] Xcel, *Reply Comments*, Doc. No. 16-521 at 8 (March 31, 2022).

2. What those changes might be;
3. Whether any changes to the Agreement should be requested;
4. Whether any jurisdictional issues exist; and
5. Any other related issues.[16]

The commission added that "the stay does not impact the current MN DIP-approved Affected System Study process used by utilities and MISO."[17]

Since then, MISO has updated its DER affected system study process, by formally adopting a Business Practice Manual after soliciting feedback.[18] MISO conducts its studies on a substation basis and does not require utilities like Xcel to submit projects for transmission study simply because they exceed daytime minimum load.[19]

On August 9, 2023, Xcel presented a PowerPoint in the 2023 Q3 MN DER stakeholder workgroup, announcing a new "Transmission Studies Process."[20] Under the new process, Xcel will run a transmission study when aggregate DER is less than substation peak load, but exceeds the substation daytime minimum load.[21]

Nokomis Energy submitted a letter to the Commission on October 4, 2023, raising concerns about the authority for, and application of, Xcel's new transmission study process.[22] Neither the Commission nor Xcel responded. On October 27, 2023, Xcel responded to a series of information requests from the Commission. Among them, Xcel confirmed that it has not used the ASIS Agreement, and has instead used the ad-hoc process because "[t]he Commissioner discussion at the January 20, 2022 Agenda Hearing on this issue clearly indicated that the MISO transmission studies would still be needed, and that the action of the Commission would not require placing projects on hold."[23] Xcel also explained that it now considers itself a Transmission Provider under MNDIP.[24]

Xcel has not presented its new transmission study process to the Commission, solicited input on its transmission study process, presented any documentation of the new transmission study process rules, recommended updates to MNDIP, or asked the Commission for a comment period.

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[16] Commission, *Order Modifying Practices And Setting Reporting Requirements*, Doc. No. 16-521 at 12 (March 31, 2022).
[17] *Id.* at 10.
[18] MISO, *Generation Interconnection Business Practices Manual*, BPM-015-r26 (March 1, 2023).
[19] *E.g. id.,* at 123, 129.
[20] *See* Xcel, *2023 Q3 MN DER Stakeholder Workgroup Presentation* at 34-37 (Aug. 9, 2023).
[21] *Id.*
[22] Nokomis Energy, *Letter RE: Transmission Studies*, Doc. No. 16-521 (Oct. 4, 2023).
[23] *See* Xcel, *Information Request No. 3*, Doc. No. 16-521 (Oct. 27, 2023).
[24] Xcel, *Information Request No. 1*, Doc. No. 16-521 (Oct. 27, 2023) ("Northern States Power Company owns the transmission facilities and therefore qualifies under the above definition as being a Transmission Provider.").

II. XCEL IS EFFECTIVELY MODIFYING MNDIP UNILATERALLY

Numerous stakeholders over the course of numerous meetings and workgroups, developed MNDIP to implement MINN. STAT. § 216B.1611, which requires the Commission to create a generic distributed energy interconnection process. Among other things, it was intended to establish a "a practical, efficient interconnection process that is easily understandable for everyone involved" and would give "maximum possible encouragement of distributed energy resources."[25] MNDIP governs the interconnection of distributed resources in the state of Minnesota, including all investor-owned utilities, generating asset owners, and other stakeholders within the jurisdiction.[26] Xcel is subject to MNDIP, and all of its actions and timelines in processing interconnection applications are provided in, and governed by, MNDIP.

Until Xcel declared that it was conducting a new transmission study process, Nokomis is not aware of any suggestion that MNDIP authorized Xcel to perform transmission studies. Xcel made no reference to this in its December 17, 2021 letter, not in the January 31, 2022 letter, not in the February 10, 2022 letter, not in the March 4, 2022 letter, not in the March 21, 2022 comments, not in the March 31, 2022 reply comments, not in any relevant Commission hearings, and not in the discussion of MISO's new Business Practice Manual. The expectations of all stakeholders under MNDIP was that the relevant provisions of MNDIP direct the Area EPS Operator (Xcel) to coordinate with the Transmission Provider (MISO), who performs the transmission studies. This was the clear understanding of how transmission studies would work since the adoption of MNDIP until Xcel announced its new transmission study process.

In Xcel's new interpretation of MNDIP, Xcel is both Area EPS Operator and Transmission Provider. As *Area EPS Operator*, Xcel's obligations, study process, and timelines are all governed by MNDIP. As *Transmission Provider*, however, Xcel has discovered it is no longer bound by MNDIP. MNDIP was written this way, in part, because the Area EPS Operator is an entity subject to Commission jurisdiction, and the Transmission Provider, expected to be MISO, is not. As a result, MNDIP simply defers to Transmission Providers like MISO to conduct the transmission studies that MISO deems necessary.

Importantly, Xcel *is* subject to the Commission's jurisdiction, regardless what it calls itself, and therefore should at all times be subject to the processes required by MINN. STAT. § 216B.1611. Xcel claiming to be a Transmission Provider, and claiming its transmission study process is therefore exempt from MNDIP, is effectively modifying MNDIP. Xcel's study processes are expected to be transparent and within the timelines and scope of MNDIP. By declaring itself a Transmission Provider, Xcel has figured out how to evade the spirit and purpose of MNDIP.

a. XCEL Previously Proposed Amendments to MNDIP

Xcel's view that its new transmission study process is exempt from MNDIP is incompatible with its prior proposed amendments to MNDIP. On March 21, 2022, Xcel submitted comments to the

[25] MNDIP at 1.
[26] *Id.* § 1.1.

Commission, proposing changes to MNDIP to harmonize it with the ASIS Agreement.[27] Each of these proposed amendments seems equally applicable to Xcel's new transmission study process. Whether the transmission study is being conducted by Xcel or MISO, the timing of the deposit is not strictly connected to the execution of the system impact study agreement, as it suggests in the SIS Agreement.[28] Moreover, Xcel has asserted that it may determine that a project is subject to Xcel's new transmission study process at any time, not just after the system impact study. Despite these inconsistencies with MNDIP, *which Xcel already identified*, Xcel has still not proposed any process to integrate its new transmission studies process into MNDIP.

Furthermore, Xcel's proposal to be both the Area EPS Operator and the Transmission Provider makes some provisions of MNDIP nonsensical. For example, Section 4.3.6 directs the Area EPS Operator to coordinate with the Transmission Provider within five (5) business days. How is this interpreted if Xcel is both parties and is coordinating with itself? Does Xcel still get 5 business days? We can't answer this question because Xcel has not proposed amendments to MNDIP or even provided a written description of its new transmission study process.

Xcel's new transmission process is also in conflict with the timelines and queue process in MNDIP. A new 90 day study that is only conducted once per quarter adds months or years to the timeline of most projects. It may add only 90 days to the first project, but that number compounds for every project waiting to interconnect on the same substation.

The MNDIP queue is managed by feeder, and requires Xcel to study projects on each feeder, in the order they are deemed complete. Xcel's new transmission process studies projects by substation, however, requiring Xcel to merge the queues of multiple feeders. This is done completely opaquely, and fundamentally changes the order in which projects are studied, in conflict with MNDIP.

b. Xcel's New Transmission Process Is Inconsistent With The Intent of The Commission Order

The last action taken by the Commission on this topic was an order to stay the ASIS Agreement pending a full comment period.[29] Read broadly, the Commission directed Xcel to withhold changes to the transmission study process until a full record could be compiled and evaluated.

Instead of continuing with the comment period to seek approval of the ASIS agreement (and the associated MNDIP Amendments Xcel had proposed), Xcel seems to have abandoned this particular agreement with MISO.[30] In its place, Xcel has resurrected the portion of the ASIS agreement that MISO does not believe pose any risk to the transmission system, projects that merely exceed daytime minimum load, and is undertaking the transmission study process itself. Xcel seems to believe that although the Commission stayed an agreement between Xcel and

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[27] Xcel, *Comments*, Doc. No. 16-521 at 6-7 (March 21, 2022) (emphasis added).
[28] *See id.* at 6-7.
[29] Commission, *Order Modifying Practices And Setting Reporting Requirements*, Doc. No. 16-521 at 12 (March 31, 2023).
[30] *See* Xcel, *Information Request No. 3*, Doc. No. 16-521 (Oct. 27, 2023).

MISO to study projects exceeding daytime minimum load, Xcel performing those very same transmission studies without the ASIS agreement, raises no similar concerns.

III. XCEL HAS INSERTED ANOTHER UNWRITTEN "ON HOLD" PROCESS INTO MNDIP

When the Commission was evaluating the ASIS Agreement in 2022, the Commission was also evaluating another "on hold" process that Xcel had unilaterally added to MNDIP.[31] In that "on hold" process, Xcel would remove an interconnection application from the MNDIP timeline if there were any projects ahead in the administrative queue. The applicant was then forced to wait "on-hold" until each project ahead in the administrative queue had completed all engineering studies, executed a MNDIA, and placed an interconnection deposit. As a result, DER projects on unconstrained feeders had to wait months or even years for Xcel to process their interconnection applications. In its March 31, 2022 Order, the Commission directed Xcel to end the "on hold" process because it was inconsistent with MNDIP and led to extensive delays.[32]

In its new transmission study process, Xcel has found a way to create a new "on hold" process in MNDIP. Under Xcel's new transmission study process, Xcel studies one project at a time, per substation, per quarter.[33] All other projects on all other feeders connected to the substation are placed on hold. This is even more egregious than the last on-hold process, because in that case, only the subsequent projects on the same feeder were placed on hold. Under Xcel's new transmission study process, every project at the substation, regardless which feeder it is on, even those first in line on a feeder, even those in active study on a feeder, will be put on hold each time Xcel studies a single project from any feeder on the substation.

a. Xcel's New Transmission Study Process Will Dramatically Slow The Interconnection Process

The process announced by Xcel is an unnecessary hurdle impeding the interconnection process. In evaluating impacts to projects that have already been submitted to Xcel for interconnection, Xcel's new transmission studies process will delay these projects at least 5 months, and up to 5 *years*. The manner in which Xcel manages its transmission study process – which is not written down, let alone in MNDIP, and thus seemingly changeable at will – is as problematic as the Xcel transmission study process itself.

Xcel's decision to set aside 90 days for each study, to only study one project at a time, to study projects in a queue at the substation that Xcel secretly manages apart from the feeder-based queue, and to only perform one study per quarter, each independently add delay and uncertainty to the interconnection process.

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[31] Commission, *Staff Briefing Papers*, Doc. No. 16-521 at 5 (Jan. 17, 2022).
[32] Commission, *Order Modifying Practices And Setting Reporting Requirements*, Doc. No. 16-521 (March 31, 2022) ("the Commission will require Xcel Energy to phase out the practice of placing project on hold and instead adopt practices to expedite the review process").
[33] *See, e.g.*, Xcel, *Information Request No. 2*, Doc. No. 16-521 at 3 (Oct. 27, 2023); Xcel, 2023 Q3 MN DER Stakeholder Workgroup presentation, at 34-36 (Aug. 9, 2023).

b. Xcel Has Not Provided Any Technical Basis For Using Daytime Minimum Load

Xcel's transmission study process has already started to create extraordinary delays to the interconnection process under MNDIP, and yet Xcel has still not provided any technical basis for them.

MISO has proposed transmission studies under the ASIS Agreement, the ad-hoc process, and the new Business Practice Manual. At no point has MISO ever suggested that projects that exceed daytime minimum load pose any risk to the transmission system. Indeed, the only reference to daytime minimum load in either process was added as a courtesy to Xcel in the ASIS agreement. Despite repeated requests since 2021, Xcel has never offered any explanation for why, if MISO finds mere exceedance of daytime minimum load insignificant, Xcel believes it poses a concern to the very same transmission system.

The trigger in Xcel's newly proposed transmission studies process – where DER exceeds daytime minimum load – is something that Xcel specifically stated it would not apply in the "ad-hoc" process, and that it would defer to MISO in the proposed TASIS Agreement.[34] Xcel seems to have completely reversed course from what it last told the Commission and other stakeholders. Xcel has provided no justification for this reversal, or any reason to think an exceedance of daytime minimum load somehow went from not concerning in 2022, to concerning in 2023.

c. Xcel Has Not Provided Any Technical Basis For Studying One DER Per Quarter

As Xcel has noted, and as is made clear in MISO's Business Practices Manual, MISO conducts transmission studies at the substation level, i.e. 2 or more projects at a time.[35] That raises a few questions: why is Xcel only studying one project per substation? Is Xcel referring only one project at a time to MISO, notwithstanding MISO's ability to study more than one project? Why has Xcel not proposed revisions to MNDIP to clarify this process?

Xcel has not provided any justification for conducting only one study per quarter, other than MISO does it this way.[36] Yet, Xcel has itself explained that MISO does not believe projects that merely exceed daytime minimum load are likely to impact the transmission system. In other words, if MISO does not care about these projects, there is no need to duplicate MISO's quarterly study process. Why is Xcel not conducting its own transmission studies on an as-needed basis? Daytime minimum load can be determined without a system impact study, so the transmission study could be performed at almost any stage in MNDIP. These questions and more

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[34] *See* Xcel, *Letter Re: MISO Review of DER Applications Updating Generic Standards For Interconnection And Operation of Distributed Generation Facilities*, Doc. No. 16-521 at 2 (March 4, 2022); Xcel Energy, *Comments*, Docket No. 16-521 at 9 (March 21, 2022).
[35] *See* Xcel, *Comments*, Doc. No. 16-521 at 5; Midwest Independent System Operator, *Generation Interconnection Business Practices Manual*, at 129.
[36] Xcel, *Information Request No. 2*, Doc. No. 16-521 at 3 (Oct. 27, 2023).

could be addressed if Xcel had appropriately undertaken a process to add its transmission study process to MNDIP.

IV. CONCLUSION

All stakeholders would benefit from clarity around the applicable guidelines and authority for the newly proposed Transmission Studies Process. MNDIP exists to provide certainty around the DER interconnection application process, and unilateral changes to this process inevitably hinder all parties' efforts to meet the state's renewable energy goals. If Xcel undertook a process of modifying MNDIP to add a transmission study process, many of the problems identified herein would be reduced, and all stakeholders could resume fulfilling the legislature's intent to interconnect distributed generation in a transparent and efficient process to give maximum possible encouragement of distributed energy resources. In the meantime, Xcel must stay implementation of its transmission study process and return to following MNDIP as intended.