

May 7, 2026

Daniel Zuckerman, Rock Park, Forest Eidbo
Minnesota Department of Commerce
85 7th Place East
St. Paul, MN 55101

Re: *Responses to Information Requests Nos.1-6*
In the Matter of the Application for a Certificate of Need for the PowerOn Midwest
765 kV and 345 kV High Voltage Transmission Line Project
Docket No. E002, ET2, ET6675/CN-25-117

Dear Mr. Zuckerman:

Please find enclosed the responses of Great River Energy, Northern States Power Company, doing business as Xcel Energy, and ITC Midwest LLC to Minnesota Department of Commerce Information Requests Nos. 1-6.

Sincerely,

/s/ Lisa Agrimonti

Lisa Agrimonti
Fredrikson & Byron, P.A.
Attorney for Great River Energy

/s/ Valerie Herring

Valerie Herring
Taft Stettinius & Hollister LLP
Attorney for Minnesota Power



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Information Request No. 1

Docket No.: E002/CN-25-117
Response To: Minnesota Department of Commerce
Requestor: Daniel Zuckerman, Rock Park, Forest Eidbo
Date Received: April 27, 2026

Question:

Please provide the Department a copy of Great River Energy's, ITC Midwest's and Xcel Energy's (collectively, the Applicants) past, present, and future responses to other parties' information requests in this proceeding.

Response:

To date, the Applicants have not received any information requests from other parties to this proceeding. The Applicants will provide the Department with copies of its responses to other parties' information requests in this proceeding on a going forward basis.

Preparer:	Lisa Agrimonti Fredrikson & Byron	Valerie Herring Taft
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Date:	May 7, 2026	May 7, 2026



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Information Request No. 2

Docket No.: E002/CN-25-117
Response To: Minnesota Department of Commerce
Requestor: Daniel Zuckerman, Rock Park, Forest Eidbo
Date Received: April 27, 2026

Question:

- a. Did the applicants explore or consider how GETs and other upgrades such as, but not limited to, advanced reconductoring, could increase capacity, and the potential costs compared to a rebuild or new line construction, like the proposed project? If so, please detail how these were considered, if not, please explain why these upgrades were not considered as a tool to increase capacity.
- b. Have the applicants evaluated how GETs could be used to upgrade the proposed project after the in-service date? If so, please detail how GETs could be used, if not, please detail why GETs were not considered as feasible upgrades to the project after the in-service date.
- c. Did the applicants explore or consider how GETs could be used during the construction of the proposed project to mitigate congestion and curtailment caused by planned outages? If so, please detail how these were considered, and if not, please explain why these technologies were not considered as a tool to reduce congestion.
- d. Transmission owners are required to implement ambient adjusted ratings (AARs) on their transmission lines to comply with FERC Order No. 881. Have the Applicants considered a timeline for when AAR implementation on the proposed line would occur? If so, please provide details of the timeline and which mechanism would be used for rate recovery, if not, please the Applicant's plan for AAR implementation.

Response:

- a. Grid Enhancing Technologies (GETs) are defined as “hardware or software that reduces congestion or enhances the flexibility of the transmission system by increasing the capacity of a high-voltage transmission line or rerouting electricity from overloaded to uncongested lines, while maintaining industry safety standards. Grid enhancing technologies include but are not limited to dynamic line rating, advanced power flow controllers, and topology optimization.”¹ While the Minnesota statutory definition is

¹ Minn. Stat. §216B.2425, subd. 1a(e) <https://www.revisor.mn.gov/statutes/cite/216b.2425>.

broad, the general principle of GETs is to allow more power to flow across the grid if and when real-time conditions warrant, thus providing economic benefits through reduced congestion and a lower-cost generation dispatch. As addressed in the GETs Study Report filed on October 31, 2025 in MPUC Docket No. E999/M-25-99, GETs address near term, identified congestion issues and if cost-effective are being deployed by Minnesota utilities. However, for long-term transmission investments, including the Project, there are specific reliability needs that are being addressed separate from GETs. The Studied ² ~~s[OBJ]~~ are needed to address NERC reliability³. The principle of NERC reliability planning is to ensure the transmission grid is both adequate and secure (i.e.,⁴ every hour of every day.⁵ NERC reliability planning is performed using tools which model forecasted (five to twenty years into⁵ conditions during “worst case” scenarios – e.g. summer peak, winter peak, etc. Planning the grid to maintain reliability during each of these highest stressed conditions ensures the grid is reliable.⁶ The Studied Projects eliminate expected reliability overloads of 102 different facilities addressing 1,313 reliability issues expected during these modeled “worst case” scenarios. As there is no assurance that future real-time conditions will be less stressed than forecasted, which would allow more power to flow across a transmission line via Dynamic Line Ratings (DLRs) or allow power to flow across less used paths, via power flow controllers or topology optimization, GETs long-term reliability alternative to the Studied Projects. However, GETs are and will continue to be implemented in Minnesota to address economic congestion and are actively being considered by Minnesota utilities and the Commission as part of the required GETs ⁷Report in MPUC Docket No. E999.

- b. The Applicants have not yet determined if GETs would directly connect to the Project, e.g., DLR sensors, could be included in the final engineering design. Other GETs outside the scope of the Project (e.g., powerflow controllers and topology optimization) would be addressed through separate processes (e.g., the MISO Transmission Expansion Plan (MTEP) or Minnesota Biennial Transmission Projects Report⁸). The Studied Projects, as designed, have adequate capacity to optimally meet the identified reliability need, but also has capacity to accommodate future potential increase in demand.⁹ Based on current modeling, the Studied Projects are not expected to cause congestion and thus further increasing capacity when real-time conditions warrant, via GETs, would not result in an increase in Studied Projects performance. It should be noted that GETs, such as DLR sensors, can be added at any time, including after the Project is energized in 2034. Going forward, the Applicants will continue to evaluate the need and benefit of adding GETs to the Project as forecasts are updated.
- c. The Applicants will coordinate with MISO and other Transmission Owners to help lessen the impacts of congestion when constructing the Project and other projects that are part of the MISO Long-Range Transmission Plan (LRTP) Tranche 2.1 portfolio. GETs are one

² As described in Section 6.1 of the Certificate of Need Application, for the purposes of the need analysis in this Application, the Applicants studied the entirety of LRTP numbers 22 through 26 (including the portions of those lines outside of Minnesota). This group of projects is referred to as the “Studied Projects.”

³ Certificate of Need Application - Section 6.3.1

⁴ Id. – Section 3.4.1.

⁵ Id. Section 6.2.2 – specifically “Steady State Reliability” and “System Stability”.

⁶ Id. Section 6.3.1.

⁷ [2025 Biennial Transmission Projects Report](#).

⁸ Minn. Stat. §216B.2425.

⁹ Certificate of Need Application – Figure 6.3-3 and Section 6.6.1.

of the multiple options that the Applicants will explore. The Project and the rest of the MISO LRTP Tranche 2.1 portfolio are still in the early stages of development and the routes, which would identify the grid outages necessary to construct the Tranche 2.1 projects, have not yet been identified. As a result, it is too early to know if and what options are prudent to address construction-related congestion.

- d. To comply with FERC Order 881, the Project, which has a 2034 estimated in-service date, is expected to utilize AARs upon energization. For public utilities, rate recovery for AARs would be included with other Project costs and recovered through a rate case or transmission cost recovery (TCR) rider.

Preparer: Matt Ellis, Great River Energy
Title: Director, Transmission Planning and Compliance
Email Address: mellis@grenergy.com
Phone Number: 612-590-1136
Department: Transmission
Date: May 7, 2026



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Information Request No. 3

Docket No.: E002/CN-25-117
Response To: Minnesota Department of Commerce
Requestor: Daniel Zuckerman, Rock Park, Forest Eidbo
Date Received: April 27, 2026

Question:

The Applicants state the project will use ACSR Bunting conductor, or a similar performing conductor.

- a. Did the Applicants consider alternatives to the ACSR Bunting conductor? If so, please explain the Applicant's plan if the ACSR Bunting conductor is unavailable, and explain any factors impacting the availability of supply for the ACSR Bunting conductor.
- b. Can the Applicants also provide examples of similar conductors and the cost differences between them? If alternatives have not been considered, explain why.
- c. Have the Applicants performed value engineering (VE), or similar analysis, on conductor types? If so, please provide this analysis. If VE was not considered not, detail why VE was not used to evaluate conductor type.

Response:

- a. The Applicants analyzed more than a dozen different conductor types to determine the most suitable conductor for the Project. The analysis not only considered MISO's capacity requirements of 4,000 amps and 2,400 megawatt (MW) surge impedance loading (SIL), but also considered such things as structure geometry, conductor bundle geometry, conductor performance, and cost. Based on this analysis, the Applicants determined 1192.5 45/7 ACSR Bunting conductor met or exceeded the necessary requirements for the Project. The Applicants will continue to "fine tune" conductor selection based on detailed engineering analysis to ensure the conductor selection is economically optimal to meet the required performance specifications.

The Applicants have engaged numerous conductor vendors, both domestically and internationally, as part of the Applicants' vendor engagement process. Based on these initial discussions, the Applicants does not currently foresee any factors that may impact the availability of Bunting conductor for the Project. Should any such availability concerns arise, the Applicants would consider mitigation options, including, but not limited to,

utilizing multiple conductor suppliers to meet the Project's needs or considering alternate, but similar performing conductor for the Project.

- b. The chart below provides the cost information for 17 conductor types that the Applicants evaluated.

Conductor	Price in \$/ft.
Redwing 715.5kcmil	2.17
Kettle ACSR/TW 957.2kcmil	2.60
Tern 795kcmil	2.15
Drake 795kcmil	2.76
ACCC Drake	7.95
Ruddy 900kcmil	2.35
Canary 900kcmil	2.95
Rail 954kcmil	2.50
Cardinal 954kcmil	2.90
Ortolan 1033.5kcmil	2.70
Curlew 1033.5kcmil	3.20
Bluejay 1113kcmil	3.00
Finch 1113kcmil	3.50
Bunting 1192.5kcmil	3.15
Grackle 1192.5kcmil	4.15
Bittern 1272kcmil	3.10
Pheasant 1272kcmil	4.40

Note: Pricing based on Q3 2024 estimates.

- c. The Applicants conducted a detailed analysis of conductor performance and cost in support of the Application. The Applicants will supplement this response with that analysis.

Preparer: Kyle Oraskovich, Great River Energy
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Department: Transmission Line Engineering and
Date: May 7, 2026



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Information Request No. 4

Docket No.: E002/CN-25-117
Response To: Minnesota Department of Commerce
Requestor: Daniel Zuckerman, Rock Park, Forest Eidbo
Date Received: April 27, 2026

Question:

- a. Did the Applicants explore or consider how storage as a transmission-only asset (SATO) (not as generation) combined with GETs could serve as a reasonable alternative to the proposed project? If so, please explain how this alternative analysis was performed, if not, please explain why GETs plus SATO would not be a feasible alternative to the proposed project.
- b. The application states that the project is both not inducing additional demand but also is using modeling factors that assume the maximum impact from projected large load additions. Were alternative forecasts created showing less than 100 percent load factor for large loads, as seen in recent data center project proposals? If so, please detail these alternative forecasts or detail why less than 100% load factor forecasts would not match realistic industry trends of load factors.

Response:

- a. The evaluation of energy storage as an alternative to the Studied Projects is detailed in Section 7.3.3 of the Certificate of Need Application. The Applicants' evaluation was not limited nor specific to MISO market registration type. The Applicants' analysis sought to find the "optimal" (i.e., least amount) of energy storage to replace the need for the Studied Projects.¹⁰ Limiting the energy storage alternative to a single function (e.g., storage as transmission-only asset or SATO) would likely result in less economic dispatch¹¹ and could result in the need for more storage and/or transmission upgrades to meet the reliability need. As the total cost of the "optimal" energy storage alternative was multiple times that of the Studied Projects, additional analysis limiting to a single registration type was not performed. The inclusion of GETs is addressed in the Applicants' response to Information Request 2 and would not be a reasonable alternative to the Studied Projects.
- b. The Applicants assume that "large load" in this question refers to a new single-customer electrical demand at a single point of interconnection, e.g., a data center or industrial

¹⁰ Certificate of Need – Section 7.3.3.

¹¹ A less economic dispatch would degrade the congestion and fuel savings provided by the energy storage alternative(s) in Table 7.3-4 of the Certificate of Need.

addition. As an initial matter, the Studied Projects are needed regardless of whether data centers or other large loads come to fruition. As stated in Section 5.3.1 of the Certificate of Need Application, the demand forecast used to justify the need for the Studied Projects (i.e., the “base” forecast) does “not include the potential for growth attributed to data centers and other industrial demands beyond what was firmly committed in 2023” – meaning the need for the Studied Projects is justified independent of serving a potential data center’s electrical needs. Should data centers or other large loads choose to interconnect to the grid, a separate study would be performed to determine if there is adequate transmission system capacity to facilitate their reliable interconnection.

As detailed in Section 6.6.1 “Enabled Demand Growth Beyond the Base Load Forecast,” the Studied Project is needed and designed to optimally enable the demand in the “base” MISO forecast but also has capacity to accommodate potential additional demand. The base demand forecast is modeled using area specific load factors. Section 6.6.1 quantifies the incremental demand beyond the base forecast enabled by the Studied Projects. As stated in Section 6.6.1, the new potential load is agnostic to type (i.e., could be residential, commercial, industrial, etc.). As a conservative measure, the Applicants assumed that new load has a 100 percent load factor (i.e., it is “always on”). The Studied Projects will enable 3,140 MW of new demand beyond the base forecast.¹² Should the actual load factor of the incremental load be lower than 100%, there is potential the Studied Projects could enable additional demand in excess of 3,140 MW stated in Section 6.6.1.

Preparer: Matt Ellis, Great River Energy
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Phone Number: 612-590-1136
Department: Transmission
Date: May 7, 2026

¹² Certificate of Need – Section 6.6.1.



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Information Request No. 5

Docket No.: E002/CN-25-117
Response To: Minnesota Department of Commerce
Requestor: Daniel Zuckerman, Rock Park, Forest Eidbo
Date Received: April 27, 2026

Question:

Xcel Energy provides an annual revenue requirement as alternative data to rate impacts and notes that the revenue requirement calculations do not account for future operations and maintenance costs.

- a. Did the Applicants consider how they plan on accounting for operations and maintenance costs? If so, please explain how these costs have been considered, including the impact of these costs on the total project cost. If not, please explain why these costs have not been considered.
- b. Has Xcel Energy used projected life-cycle operations and maintenance costs in value engineering (VE), or similar cost evaluation methodology, for this project? If so, please share the detailed VE calculations (or similar methodology), for the project including life-cycle operations and maintenance costs. If not, please explain why cost evaluation methodology was not considered.

Response:

- a. Xcel Energy provided estimated annual O&M costs in the Certificate of Need Application in section 2.4.2. We determined these estimates based on historical records or industry standard costs for lifecycle operations and maintenance of these facilities.
- b. No. Xcel Energy did not employ VE because it is not a requirement of the Certificate of Need Application and it was not otherwise needed for the project at this time.

Preparer: Tony Wendland, Xcel Energy
Title: Project Director, Capital Project Development (T&D)
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Phone Number: 612-330-5531
Department: Integrated System Planning
Date: May 7, 2026



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Information Request No. 6

Docket No.: E002/CN-25-117
Response To: Minnesota Department of Commerce
Requestor: Daniel Zuckerman, Rock Park, Forest Eidbo
Date Received: April 27, 2026

Question:

- a. Have the Applicants explored or considered contingency plans if the South Dakota or Iowa sections of the project are completed before or after the Minnesota segments? If yes, please share these plans or analysis, if not, please explain why it is unnecessary to consider this contingency.
- b. Have the Applicants explored or considered what would happen if the Minnesota segment of the proposed project is completed first? If yes, would the Minnesota segment be energized, or will all segments have to be built for the project to be energized? If not, please explain why this has not been considered.
- c. Have the Applicants explored or considered the impacts if any of the other LRTP tranche 2.1 portfolio projects in Minnesota were not completed? If yes, detail the impacts, if not, please explain why this has not been considered.

Response:

- a. The 765 kV lines in Minnesota, South Dakota, and Iowa each have the same MISO 2034 need by date. The Applicants are coordinating construction for the segments under our control to ensure this date is met. Energization sequencing is a topic that the Applicants are actively discussing and will be coordinating with MISO. Energization sequencing will depend not only on the Project but other MISO Tranche 2.1 projects, some of which MISO has not yet selected a developer. Given the early stage in development, energization contingency plans have not yet been developed.
- b. See response in part a above.
- c. The MISO LRTP Tranche 2.1 projects were designed and optimized to work together to address reliability needs and therefore if a Tranche 2.1 project were to not move forward it would be a major change. As each Tranche 2.1 project addresses different NERC reliability needs, MISO would need to identify an alternative solution for that project which addresses the reliability needs and works best with the other MISO-approved Tranche 2.1 projects. As MISO would need to identify an alternative to the non-

constructed project, which is currently not identified, the Applicants have not evaluated the impacts to the Project under this scenario.

Preparer: Matt Ellis, Great River Energy
Title: Director Transmission Planning and Compliance
Email Address: mellis@grenergy.com
Phone Number: 612-590-1136
Department: Transmission
Date: May 7, 2026

**In the Matter of the Application for a Certificate
of Need for the PowerOn Midwest 765 kV and
345 kV High Voltage Transmission Line Project**

DOCKET NO. E002, ET2, ET6675/CN-25-117

CERTIFICATE OF SERVICE

Nicci Ledbetter certifies that on the 7th of May, 2026, she e-mailed a true and correct copy of the **Response to Department of Commerce Information Requests Nos. 1-6**, on behalf of Great River Energy, Northern States Power Company, doing business as Xcel Energy, and ITC Midwest LLC to the following parties:

Utility.Discovery@state.mn.us

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Daniel Zuckerman
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Executed on May 7, 2026

Signed: /s/ Nicci Ledbetter

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