

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben
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Chair
Commissioner
Commissioner
Commissioner
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In the Matter of Xcel Energy's 2021
Integrated Distribution System Plan and
Request for Certification of Distributed
Intelligence and the Resilient Minneapolis
Project

ISSUE DATE: July 26, 2022

DOCKET NO. E-002/M-21-694

ORDER ACCEPTING 2021
INTEGRATED DISTRIBUTION
SYSTEM PLAN AND CERTIFYING
THE RESILIENT MINNEAPOLIS
PROJECT

PROCEDURAL HISTORY

On November 1, 2021, Northern States Power Company d/b/a Xcel Energy (Xcel, or the Company) filed its 2021 Integrated Distribution Plan (2021 IDP or IDP Report) as required by the Commission in its July 23, 2020, order in Docket No. E-002/M-19-666.

On February 9, 2022, the Department of Commerce, Division of Energy Resources (the Department) filed comments and a report that included a grid modernization evaluation framework for the Commission to apply when examining grid modernization proposals.¹

By February 25, 2022, the following organizations filed initial comments:

- City of Minneapolis
- Community Power, Environmental Law and Policy Center, and Vote Solar (collectively, CEV)
- Fresh Energy
- Renewable Energy Partners (REP)
- Weave Grid, Inc.
- Xcel Large Industrials (XLI)
- The Department
- Tim Wulling
- Minneapolis City Council President Andrea Jenkins

¹ In response to a prior Commission request that the Department seek technical assistance in developing such guidance, a request-for-proposal process resulted in the selection of Synapse Energy Economics, Inc, which worked with the Department to develop guidance and best practices for use by the Commission.

- Elevate
- Minneapolis American Indian Center
- Sabathani Community Center
- Center for Energy and the Environment
- Minneapolis Climate Action
- Minneapolis Mayor Jacob Frey
- University of St. Thomas Center for Microgrid Research

By April 11, 2022, the following entities filed reply comments:

- Xcel
- REP
- City of Northfield
- City of Minneapolis
- CEV
- Fresh Energy
- Suburban Rate Authority (SRA)
- The Department
- The Cities of Edina, Richfield, St. Paul, St. Cloud, and St. Louis Park

On April 22, 2022, Xcel Energy withdrew its request for certification of Distributed Intelligence in the Company's 2021 IDP.

On June 1, 2022, the Commission met to consider the IDP report.

FINDINGS AND CONCLUSIONS

I. Background

Utility distribution systems have historically functioned without substantial oversight of system planning by regulators. These systems have generally been used only for one-way delivery of electricity, with the associated costs relatively straightforward to evaluate. Consequently, regulators have played very little role in scrutinizing and understanding distribution system planning and operational processes.

Over the last several years, the Commission has recognized the importance of a fuller analysis and understanding of grid modernization efforts. As part of this focus, in 2018, the Commission directed Xcel to file IDP reports.² Xcel is required to file its IDP biennially and fulfill the Commission's IDP planning objectives, as listed below:

- Maintain and enhance the safety, security, reliability, and resilience of the electricity grid, at fair and reasonable costs, consistent with the state's energy policies;
- Enable greater customer engagement, empowerment, and options for energy services;

² *In the Matter of Distribution Planning for Xcel Energy*, Docket No. E-002/CI-18-251, Order Approving Integrated Distribution Planning Filing Requirements for Xcel Energy (August 30, 2018).

- Move toward the creation of efficient, cost-effective, accessible grid platforms for new products, new services, and opportunities for adoption of new distributed technologies;
- Ensure optimized utilization of electricity grid assets and resources to minimize total system costs; and
- Provide the Commission with the information necessary to understand the utility's short-term and long-term distribution-system plans, the costs and benefits of specific investments, and a comprehensive analysis of ratepayer cost and value.

The IDP is intended to build upon Commission, stakeholder, and customer understanding of the Company's distribution system planning in two key areas: (1) development of a framework for ongoing distribution system planning and related analyses; and (2) grid modernization implementation plans and analyses.

The requirements applicable to Xcel's IDPs were initially developed in 2018 and modified in subsequent years. Xcel filed its first IDP in 2018, its second IDP in 2019, and its third IDP in this docket. Specific IDP filing requirements are contained in the Commission's 2018,³ 2019,⁴ and 2020 IDP-related orders.⁵

Xcel is required to provide information and analyses related to internal distribution system planning processes, historical actual and budgeted capital expenditures, present and forecasted levels of distributed energy resources (DER), forecasted levels of energy demand, hosting capacity data, as well as information related to its ongoing hosting capacity analysis and non-wires alternatives (NWA) analysis. Xcel is also required to discuss how its IDP fulfills the Commission's IDP Planning Objectives.

The Commission has also required that Xcel's IDP include a five-year action plan containing detailed information on scope, functionality, alternatives, timing, costs, and other key facets of distribution system investments and grid modernization projects. In short, the Commission has required that grid modernization investment proposals within the IDP be supported by benefit-cost analyses.⁶

As part of the process of analyzing grid modernization efforts consistent with the requirements and objectives stated above, the Commission requested that the Department seek technical expert services to investigate the potential costs and benefits of grid modernization investments and to

³ *Id.*

⁴ *In the Matter of Xcel Energy's 2018 Integrated Distribution Plan*, Docket No. E-002/CI-18-251, Order Accepting Report and Amending Requirements (July 16, 2019).

⁵ *In the Matter of Xcel Energy's Integrated Distribution Plan and Advanced Grid Intelligence and Security Certification Request*, Docket No. E-002/M-19-666, Order Accepting Integrated Distribution Plan, Modifying Reporting Requirements, and Certifying Certain Grid Modernization Projects (July 23, 2020).

⁶ *In the Matter of Xcel Energy's 2018 Integrated Distribution Plan*, Docket No. E-002/CI-18-251, Order Accepting Report and Amending Requirements (July 16, 2019).

assist the Department in providing recommendations to the Commission regarding any such investments.⁷ Synapse Energy Economics, Inc. (Synapse) was selected through a request-for-proposal process and worked closely with the Department to develop a document to support the analysis of grid modernization investments (the Guidance Document).

II. The 2021 IDP

In its 2021 IDP, Xcel provided an overview of its distribution system, planning and operational strategy, and how the Company plans the system to meet customers' current and future needs. The Report describes the Company's historical actual and budgeted expenditures, outlines present and forecasted levels of DER, details the Company's planning practices, discusses the planning landscape within which it is anticipating and responding, and describes the Company's advanced grid plans.

Xcel requested that the Commission accept the Company's 2021 IDP. As part of its IDP filing, the Company also requested that the Commission certify the Resilient Minneapolis Project (RMP or the Project) under Minn. Stat. § 216B.2425, subd. 2(e), (the Grid Modernization Statute).

The Grid Modernization Statute requires a utility operating under a multiyear rate plan approved by the Commission to file biennial reports identifying "investments that it considers necessary to modernize the transmission and distribution system by enhancing reliability, improving security against cyber and physical threats, and by increasing energy conservation opportunities by facilitating communication between the utility and its customers through the use of two-way meters, control technologies, energy storage and microgrids, technologies to enable demand response, and other innovative technologies."⁸

A. Parties' Comments

1. Acceptance of the Report

Overall, commenters recommended that the Commission accept Xcel's 2021 IDP. Some commenters recommended adding or modifying various IDP planning objectives and filing requirements, including items related to locational reliability and equity, local energy and climate goals, DER integration, and NWA analysis.

The Department extensively analyzed Xcel's 2021 IDP and stated it sufficiently addresses applicable filing requirements and Commission orders and recommended acceptance of the Report.

⁷ *In the Matter of the Petition of Northern States Power Company for Approval of the Transmission Cost Recovery Rider Revenue Requirements for 2017 and 2018, and Revised Adjustment Factor*, Docket No. E002/M-17-797, Order Authorizing Rider Recovery, Setting Return on Equity, and Setting Filing Requirements (September 27, 2019)

⁸ Minn. Stat. § 216B.2425, subd. 2(e).

2. Recommended Modifications

CEV recommended that, in addition to accepting the Report, the Commission revise the IDP planning objectives and filing requirements to incorporate an equity analysis into the distribution planning process. The City of Minneapolis suggested that the Commission center equity in the distribution planning process by requiring community engagement and stakeholder workshops, documenting, and incorporating feedback in the Company's next IDP, and directing Xcel to include equity-focused metrics in NWA and hosting capacity analyses.

Xcel concurred on the importance of focusing on equity within the distribution planning process and supported stakeholder efforts to continue developing equity issues but asked that any Commission directive established in this docket be consistent with requirements set in other related dockets.

To better align resource planning and distribution planning, CEV recommended that the Commission modify IDP filing requirement 3.A.5 that directs Xcel to coordinate distribution system planning with the integrated resource plan (IRP) in future Xcel IDPs by including additional information (as shown in ordering paragraph 9 of Xcel's IRP docket).⁹

Xcel noted it did not find it necessary to duplicate language from the IRP order as a part of filing requirements for its IDP but also stated that it did not oppose CEV's recommendation.

Lastly, Xcel was receptive to other recommendations to modify IDP planning objections and filing requirements in future IDP proceedings but stated that it is not necessary to add additional planning objectives and filing requirements at this time; the Department concurred.

3. Weighted Average Cost of Capital (WACC)

The City of Minneapolis (the City) also recommended that the Company clarify its use of the weighted average cost of capital (WACC) in its NWA benefit-cost analysis and that Xcel instead use the societal discount rate currently approved by the Department for use in discounting the future value of Conservation Improvement Program (CIP) energy savings and other benefits.

In response, Xcel stated that the WACC, as an opportunity cost to the company in making NWA investments, is the appropriate rate to evaluate the cost-effectiveness of proposed investments against traditional distribution system expenditures.

The Department recommended that the Commission require Xcel to use both the WACC and societal discount rate in its NWA analysis and discuss the results of the two approaches in a future IDP stakeholder meeting.

⁹ *In the Matter of the 2020–2034 Upper Midwest Integrated Resource Plan of Northern States Power Company d/b/a Xcel Energy*, Docket No. E-002/RP-19-368, Order Approving Plan with Modifications and Establishing Requirements for Future Filings (April 15, 2022).

4. Institute of Electrical and Electronics Engineers (IEEE) Standard

Fresh Energy focused its analysis of the 2021 IDP on three areas: (1) improving load and DER forecasting; (2) better integrating DER forecasts into the planning process; and (3) accelerating the adoption of advanced inverter functionality. Fresh Energy recommended that Xcel accelerate its efforts to adopt the advanced inverter grid support functions required by the IEEE 1547-2018 standard and requested that the Company file its smart inverter roadmap and related reports in this docket. The Company did not oppose this recommendation and stated that it anticipates filing its roadmap for utilizing inverters that support IEEE 1547-2018 in the third quarter of 2022.

B. Commission Action

The Commission has carefully reviewed Xcel's 2021 IDP and finds that it complies with applicable reporting requirements. Therefore, the Commission will accept Xcel's 2021 IDP. However, the Commission concurs with some of the recommendations made by parties regarding modifications and additional requirements.

The Commission concurs on the reasonableness of modifying Xcel's IDP filing requirement 3.A.5 as discussed above; this will facilitate further coordination between the distribution planning process and resource plan filings. Therefore, the Commission modifies Xcel's IDP filing requirement 3.A.5 as set forth in the ordering paragraphs below and as shown in the attachment to this order.

Additionally, the Commission will direct the Company to make a compliance filing within 90 days outlining the differences between its distribution planning processes in Minnesota and Colorado to examine the level of detail most useful in future filings.

The Commission also concurs on continuing efforts to incorporate and address equity in the distribution planning process; Xcel will continue to be required to develop and address these issues in separate, ongoing dockets.¹⁰

The Commission appreciates the discussion regarding the use of the WACC approach and societal discount rates in Xcel's NWA analysis and concurs with the Department that it would be beneficial to require the Company to use both and subsequently discuss the results in a future stakeholder meeting. This will facilitate a clearer understanding of the potential ratepayer impacts of the WACC approach.

¹⁰ See *In the Matter of a Commission Investigation to Identify Performance Metrics, and Potentially, Incentives for Xcel Energy's Electric Utility Operation*, Docket No. E-002/CI-17-401; *In the Matter of Xcel Energy's Annual Report on Safety, Reliability, and Service Quality for 2019*; and *Petition for Approval of Electric Reliability Standards for 2020*, Docket No. E-002/M-20-406; and *In the Matter of Efforts to advance workforce diversity, inclusive participation, and equitable access to utility services for Xcel Energy*, Docket No. E-002/M-22-266.

The Commission also concurs with Fresh Energy that it is reasonable to require the Company to file its smart inverter roadmap and related reports in this docket.

The Commission is persuaded that these actions will further the development and goals of distribution system planning for Xcel and in Minnesota generally and better align the resource and distribution planning processes.

III. Certification of Resilient Minneapolis Project (RMP)

Minn. Stat. § 216B.2425, subd. 3, requires that the Commission decide whether to certify, certify as modified, or deny certification to any of the utilities' proposed transmission and distribution projects—including grid modernization projects. The Commission evaluates proposed certification requests on a case-by-case basis and in accordance with the Grid Modernization Statute. Only projects that have been certified are eligible for recovery through the Transmission Cost Recovery Rider (TCR Rider) under Minn. Stat. § 216B.16, subd. 7b(b). Certification of grid modernization plans does not imply any judgment on the merits of a subsequent cost recovery request.

A. Xcel's Proposal

The Resilient Minneapolis Project (RMP or the Project) is a proposed initiative, implemented at three Minneapolis locations in partnership with Black, Indigenous, and People of Color (BIPOC)-led organizations that seeks to improve communities' resilience to crises by protecting against physical threats, such as severe weather events, while providing ancillary benefits to the distribution grid and advancing the Commission's objectives for IDPs. Xcel proposes to invest in Company-owned and -operated battery energy storage systems (BESS) and islanding switch, microgrid controller, and interconnection hardware.

The Project will be implemented at three locations: The North Minneapolis Community Resiliency Hub;¹¹ Sabathani Community Center; and the Minneapolis American Indian Center. At each site, the Company will work with partners to install rooftop solar, BESS, microgrid controls, and necessary distribution system modifications to integrate these technologies.¹²

The Company estimates that the total cost for the capital expenditures of the Project as proposed are approximately \$8.9 million, as shown in the table below.

¹¹ The North Minneapolis Community Resiliency Hub will be implemented on three Minneapolis Public School (MPS) buildings: Hall Elementary School at 1601 N. Aldrich Avenue, Franklin Middle School at 1501 N. Aldrich Avenue, and the MPS Nutrition Center at 812 Plymouth Avenue N.

¹² The costs for the North Minneapolis Community Resiliency Hub solar arrays were not included in Xcel's request for certification.

	North Minneapolis Community Resiliency Hub	Minneapolis American Indian Center	Sabathani Community Center	Total
A. Capital Costs				
Battery Energy Storage System	\$ 2,123,123	\$ 940,163	\$ 940,163	\$ 4,003,449
Islanding Switch (ATO)	\$ 241,800	\$ 241,800	\$ 241,800	\$ 725,400
Medium Voltage Work	\$ 128,464	\$ 56,668	\$ 112,964	\$ 298,096
Site Evaluation/Surveying/Prep/Etc.	\$ 211,420	\$ 211,420	\$ 211,420	\$ 634,260
Business Systems Integration	\$ 330,274	\$ 330,274	\$ 330,274	\$ 990,822
Project Management and Labor	\$ 236,890	\$ 220,075	\$ 282,075	\$ 739,040
Miscellaneous	\$ 639,396	\$ 382,835	\$ 525,579	\$ 1,547,811
Total Capital Costs	\$ 3,911,367	\$ 2,383,235	\$ 2,644,276	\$ 8,938,878
B. Annual Operations and Maintenance (O&M) Costs				
Annual O&M	\$ 23,861	\$ 19,091	\$ 19,091	\$ 62,043

The Company explained that the Project is an opportunity for community-responsive investments through focused stakeholder engagement, which include equity considerations as a part of the criteria/selection process, and that consider a wide range of DERs. According to the Company, the Project would provide an opportunity for Xcel to gain experience with batteries, microgrid controls, and the integration of these technologies within Xcel's distribution systems while increasing energy equity in traditionally underserved communities. Lessons learned from the pilots would also be useful to regulators, local governments, and others invested in resilience and grid modernization.

The Company further asserted that the project would improve communities' resilience to crises while advancing the Commission's objectives for IDPs and serve as a model for community-based climate action grounded in racial equity. The Company also stated that the Project would increase energy conservation opportunities by facilitating communication between the utility and its customers through the use of control technologies, energy storage and microgrids, and other innovative technologies.

B. Parties' Comments

The Commission received comments in support of the Project from the following organizations:

- Minneapolis City Council President Andrea Jenkins
- Elevate
- Minneapolis American Indian Center
- Sabathani Community Center
- Center for Energy and the Environment
- Minneapolis Climate Action

- Minneapolis Mayor Jacob Frey
- University of St. Thomas Center for Microgrid Research
- Suburban Rate Authority

Although there was broad support for the Project, the Department recommended that the Commission deny Xcel's request for certification of the Project.

Most supporters of the Project urged the Commission to find that it meets the statutory requirements for certification of investments that modernize the distribution system. They contended that it would enhance resilience at specific sites on Xcel's system while providing Xcel and customers an opportunity to gain experience with energy storage and microgrid systems for both resiliency and system efficiency applications. They also stated that in extreme weather events, for example, the Project would improve security against physical threats.

Supporters also contended that the Commission should consider the broader community benefits, such as benefits to the natural environment from rooftop solar and battery backup, which in turn makes the American Indian Center, for example, an increasingly vital community resource for meeting the needs of those it serves, particularly during crises.

The SRA supported the proposal but emphasized the need to obtain additional data, including outage data, from Xcel that will facilitate evaluation of the Project's benefits and lead to an assessment of, for example, the Project's effect on customers' energy education and usage. Fresh Energy, REP, and CEV echoed the importance of developing robust evaluation metrics.

The Department analyzed the Project using the Guidance Document developed by Synapse and recommended that the Commission further standardize the grid modernization review process by expanding its certification standards to include an evidentiary requirement. Specifically, the Department recommended that in addition to the Commission's existing requirements for certification, the Commission should grant certification for a grid modernization investment only when the proposal and benefit-cost analysis shows that, by a preponderance of the evidence on the record, the proposed investment will be in the public interest and there is no more reasonable and prudent alternative to the proposed grid modernization investment. The Department stated that the proposed Project did not align with long-term planning as Xcel did not define specific goals or problems solved by implementing the Project's initiatives, nor did Xcel explain how the Project fits within the context of the Commission's IDP planning objectives.

C. Commission Action

The Commission concurs that the Project satisfies the applicable criteria for certification and will certify it under Minn. Stat. § 216B.2425. The Commission appreciates the robust record development on this issue. And although the Department has raised important factors for consideration, the Commission is persuaded that the Project's investments would modernize the distribution system by improving security against physical threats, as well as increase opportunities for energy conservation by facilitating communication between Xcel and its customers through the use of control technologies, energy storage and microgrids, and other innovative technologies.

The Department's primary point of contention with the proposed Project is the lack of detail substantiating its purported benefits, as well as the potentially limited scale of the anticipated benefits in comparison to estimated costs. But as Xcel asserted, the Project is designed to increase energy conservation opportunities, including through rooftop solar, which could further expand the reach of energy conservation. Adding energy storage and microgrids paired with solar generation at Hall Elementary, Franklin Middle School, and the Nutrition Center in the North Minneapolis Community Resiliency Hub has the potential to be transformative within the community. Direct experience with energy conservation technologies can generate significant support for their use and strengthen efforts to increase access to resources that support such technologies, which would benefit not only the community but also the distribution system. Such opportunities for increased energy conservation align well with stated statutory objectives.

The Commission also recognizes, however, the importance of scrutinizing the Project's investments and implementation. The Commission will therefore limit potential cost recovery to \$9 million unless Xcel can show by clear and convincing evidence that additional costs were reasonable, prudent, and beyond the Company's control. Xcel stated that if the estimated costs of the Project increased due to inflationary pressures the Company would not discontinue Project implementation before seeking additional input on costs from the Commission.

This certification does not imply any finding of prudence with respect to the recovery of costs in a petition for TCR Rider recovery, or certification of any investments beyond those specifically associated with the Project.

To facilitate evaluation of the Project, the Commission will also require the Company to file annual and quarterly reports on the Project, as set forth in the ordering paragraphs below. The information filed by Xcel will aid parties in assessing outcomes and facilitate further record development on the issues raised in comments. Similarly, the Commission will require the Company to develop evaluation metrics that reflect the input of commenters in this proceeding, including Xcel, for comparing the Project to other resilience proposals.

IV. Stakeholder Engagement

Fresh Energy and the City of Minneapolis emphasized the importance of stakeholder engagement and inclusion in distribution system planning and recommended that the Commission require Xcel to hold a series of stakeholder meetings to collaborate with interested parties, obtain input, and generate new ideas around a shared vision of the distribution grid of the future. The Department stated that it generally supports initiatives to encourage community participation and Company transparency in distribution system planning efforts and supported holding additional stakeholder workshops. Xcel agreed to hold a series of stakeholder meetings and file a report summarizing its stakeholder processes and how the Company considered and incorporated stakeholder input.

The Commission concurs that further stakeholder input will improve the distribution planning process and supports Xcel's commitments in this area. The Commission will direct Xcel to hold a series of stakeholder meetings to collaborate with interested parties, obtain input, and generate new ideas around a shared vision of the distribution grid of the future, as set forth in the ordering paragraphs below.

ORDER

1. The Commission accepts Xcel Energy's 2021 IDP Report as in compliance with IDP reporting requirements.
2. Xcel shall file its smart inverter roadmap and related consultant reports in this docket by November 1, 2022.
3. Xcel shall use both the WACC and societal discount rate in its NWA analysis and discuss the results of the two approaches in a future IDP stakeholder meeting.
4. The Commission modifies filing requirement 3.A.5 for future Xcel IDPs as shown in italics below:

3.A.5. Discussion of how the distribution system planning is coordinated with the integrated resource plan (including how it informs and is informed by the IRP), and planned modifications or planned changes to the existing process to improve coordination and integration between the two plans, *including:*

 - a. *Setting the forecasts for distributed energy resources consistently in its resource plan and its Integrated Distribution Plan.*
 - b. *Conducting advanced forecasting to better project the levels of distributed energy resource deployment at a feeder level, using Xcel's advanced planning tool.*
 - c. *Proactively planning investments in hosting capacity and other necessary system capacity to allow distributed generation and electric vehicle additions consistent with the forecast for distributed energy resources.*
 - d. *Improving non-wires alternatives analysis, including market solicitations for deferral opportunities to make sure Xcel can take advantage of distributed energy resources to address discrete distribution system costs.*
 - e. *Planning for aggregated distributed energy resources to provide system value including energy/capacity during peak hours.*
5. Within 90 days, Xcel shall make a compliance filing that outlines key difference between its Colorado and Minnesota distribution system planning processes, including but not limited to a discussion of the following:
 - a. Orders, rules, and statutes pertaining to distribution system planning
 - b. How Xcel Energy conducts DER and load forecasting, including the Company's implementation of LoadSEER
 - c. How Xcel Energy conducts its NWA analysis
 - d. How Xcel Energy conducts its Hosting Capacity Analysis
6. Xcel shall hold a series of stakeholder meetings to collaborate with interested parties,

obtain input, and generate new ideas around a shared vision of the distribution grid of the future. This stakeholder series is intended to provide transparency into the Company's distribution planning process and explore how Minnesota's public policy goals will be realized on the distribution system and impact the Company's future plans.

This stakeholder series should be timed such that stakeholder input can be incorporated into the Company's next IDP filing and next IRP filing and include at least four meetings. The topics will include, but not be limited to, the following:

- a. Integrated Distribution Planning 101
- b. Identify the public policy goals that are changing the expectations of the distribution grid and how each public policy is expected to be realized on the grid in the near- and long-term. [For example, examine transportation, building and industrial electrification forecasts and the effects on load profiles in the near-term and long-term.]
- c. How energy efficiency, demand response, and other DER might impact Xcel's planning processes.
- d. How Xcel should consider and incorporate local clean energy goals in its planning processes.
- e. What investments are necessary to achieve the distribution grid of the future, and the criteria Xcel should use to plan and prioritize those investments.
- f. Prioritizing the use of "net load" in its load forecasts and system planning, including developing a methodology for incorporating the load reducing impact of distributed generation into its load forecasts and system planning processes.
- g. Develop a methodology for valuing the load-modifying impacts of demand response in load forecasts and present a load forecast that includes demand response contributions.
- h. Identify appropriate transportation, building, and industrial end use electrification scenarios for inclusion in the 2023 IDP load forecasts.
- i. How Xcel anticipates proactively planning for grid investments to allow distributed generation and EV additions consistent with the DER forecast.
- j. Estimate the potential synergies between interconnection upgrades and planned distribution capital investments, and discuss the anticipated overlap between planned investments and capacity constrained locations on Xcel's distribution system.

Xcel shall make a compliance filing with a summary of the stakeholder process and a list of next steps by August 1, 2023. Xcel shall include a summary of the stakeholder series in its next IDP and relevant summary in its next IRP, including how it considered and incorporated stakeholder input.

7. The Commission certifies the Resilient Minneapolis Project and limits cost recovery to a cost cap of \$9 million unless Xcel can show by clear and convincing evidence that the

costs were reasonable, prudent, and beyond the Company's control. Xcel shall file reports annually on December 1 through 2026. The first report is due on December 1, 2022, and must contain the following information:

- a. Define and quantify the emergency service capabilities and capacity in more detail and in more concrete terms than Xcel has hitherto provided in its proposal and via discovery responses.
 - b. Report on the status of the emergency service capacity to ensure that the benefits are or can be realized, and to develop a process and a plan for demonstrating that the benefits can be realized.
 - c. Define a process for identifying and addressing the potential situation in which either or both of the following conditions arise: the project fails to deliver all, or a large portion of Xcel's claimed quantified benefits and / or the claimed unquantified benefits cannot or are unlikely to materialize.
8. Xcel shall consult with stakeholders, including RMP site partners, on the development of a set of evaluation metrics that allow comparison to other resilience offerings. This set of evaluation metrics shall be included in Xcel's December 1 annual reports. Xcel shall provide the following information and data to the greatest extent practicable. Where the Company is not able to do so, it shall explain why. Where applicable, Xcel must include data in spreadsheet (.xlsx) format. In consultation with stakeholders Xcel shall consider the following reporting elements when developing evaluation metrics:
 - a. Xcel shall include optional feedback from site hosts and community partners, using a form Xcel distributes on an annual (or more frequent) basis, which invites partners to discuss their experience participating in the project, its impact on the organization or community, or other information partners wish to share with the Commission.
 - b. Xcel shall file a spreadsheet reporting, for each RMP site, the number of union labor jobs or contracts and the number of contracts awarded to women- and minority-owned businesses.
 - c. Xcel shall file a spreadsheet reporting, for each RMP site, the number of workers trained in the operation of energy systems and the number of energy-related jobs created.
 - d. Xcel shall record in a spreadsheet any instances of natural events or Company-orchestrated simulations in which RMP systems switch to "islanded mode" and how the system performs.
 - e. Xcel shall track in a spreadsheet or in narrative form how RMP sites' rooftop solar, BESS, and microgrid are dispatched and optimized daily to mitigate system peaks, manage and shape demand, and integrate more solar generation.
 - f. Xcel shall report in a spreadsheet, for any of the RMP site, when a generator is used, for how long, and the generator power capacity and fuel source.

- g. Xcel shall quantify in a spreadsheet the number and type of HVAC upgrades, building envelope upgrades, energy efficiency measures, and/or demand response programs undertaken at any of the RMP sites, shared at the discretion of RMP site hosts and partners.
 - h. Xcel shall develop metrics related to resiliency benefits and energy equity and data collection on those topics.
- 9. Xcel shall file a letter in this docket to notify the Commission and stakeholders if the Company encounters any significant procurement challenges related to RMP, including delays, low bid numbers, or unexpected costs.
- 10. Xcel shall include a discussion of the RMP program in comparison to battery and microgrid programs/projects in Xcel's service territories in other states, lessons learned from these programs as they move through construction and into operation, and specific details how these lessons are informing RMP project decisions, reducing costs, and/or improving efficacy.
 - a. Xcel shall include this information in Xcel's 2023 IDP filing.
 - b. Xcel shall include this information in each of Xcel's annual reports filed in Docket No. E-002/M-21-694.
- 11. Xcel shall report on the Resilient Minneapolis Project in its quarterly reports in Docket No. E, G-999/M-20-492.
- 12. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Will Seuffert
Executive Secretary



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MINNESOTA INTEGRATED DISTRIBUTION PLANNING REQUIREMENTS

For Xcel Energy
Docket E002/CI-18-251

Red-lines indicate modifications adopted in the July 26, 2022 Order in Docket 21-694
Blue underlines incorporate previous, ongoing order points into the IDP, including citations to the order point where they were added.

Planning Objectives

The Commission is facilitating comprehensive, coordinated, transparent, integrated distribution plans to:

1. Maintain and enhance the safety, security, reliability, and resilience of the electricity grid, at fair and reasonable costs, consistent with the state's energy policies;
2. Enable greater customer engagement, empowerment, and options for energy services;
3. Move toward the creation of efficient, cost-effective, accessible grid platforms for new products, new services, and opportunities for adoption of new distributed technologies;
4. Ensure optimized utilization of electricity grid assets and resources to minimize total system costs, and,
5. Provide the Commission with the information necessary to understand Xcel Energy's short-term and long-term distribution system plans, the costs and benefits of specific investments, and a comprehensive analysis of ratepayer cost and value.

Commission review of annual distribution system plans are is¹ not meant to preclude flexibility for Xcel to respond to dynamic changes and on-going necessary system improvements to the distribution system; nor is it a prudence determination of any proposed system modifications or investments.

For filing requirements which Xcel claims is not yet practicable or is currently cost-prohibitive to provide, Xcel shall indicate for each requirement:

1. Why the Company has claimed the information is not yet practicable or is currently cost-prohibitive;
2. How the information could be obtained, at what estimated cost, and timeframe;
3. What the benefits or limitations of filing the data in future reports as related to achieving the planning objectives;
4. If the information cannot be provided in future reports, what information in the alternative could be provided and how it would achieve the planning objectives.

¹ Nov. 2, 2020 Order (19-666), Order Point 4

Xcel shall discuss in future filings how the IDP meets the Commission's Planning Objectives, including:

1. An analysis of how the information presented in the IDP related to each Planning Objective,
2. The location in the IDP,
3. Analysis of efforts taken by the Company to improve upon the fulfillment of the Planning Objectives, and
4. Suggestions as to any refinements to the IDP filing requirements that would enhance Xcel's ability to meet the Planning Objectives²

Distribution System Plan Process

1. **Filing Date:** Require Xcel to file annually with the Commission beginning on November 1, 2018, and biennially starting Nov 1, 2021³ an Integrated Distribution Plan (MN-IDP or IDP) for the 10-year period following the submittal. Xcel must continue to file an annual update of baseline financial data and non-wires alternatives analysis.⁴ The Commission will either accept or reject a distribution system plan by June 1 (to the extent practicable) of the following year based upon the plan content and conformance with the filing requirements and Planning Objectives listed above. The plan will be reviewed and may be combined with the Biennial Distribution System Plan required by Minn. Stat. 216B.2425 and associated certification requests, as authorized in that docket (E002/M-17-776).
2. **Stakeholder Meeting(s):** Xcel should hold at least one stakeholder meeting prior to the November 1 filing of the Company's MN-IDP to obtain input from the public. The stakeholder meeting should occur in a manner timely enough to ensure input can be incorporated into the November 1 MN-IDP filing as deemed appropriate by the utility.

At a minimum, Xcel should seek to solicit input from stakeholders on the following MN-IDP topics: (1) the load and distributed energy resources (DER) forecasts; (2) proposed 5-year distribution system investments, (3) anticipated capabilities of system investments and customer benefits derived from proposed actions in the next 5-years; including, consistency with the Commission's Planning Objectives (see above), and (4) any other relevant areas proposed in the MN-IDP.

Following the November 1 filing, the Commission will issue a notice of comment period. If deemed appropriate by staff, an additional stakeholder meeting may be held in combination with the comment period to solicit input.

3. **Filing Requirements:** For purposes of these requirements, DER is defined as "supply and demand side resources that can be used throughout an electric distribution system to

² July 16, 2019 Order (18-251), Order Point 5

³ July 23, 2020, Order (19-666) Order Point 2

⁴ July 23, 2020, Order (19-666) Order Point 3

meet energy and reliability needs of customers; can be installed on either the customer or utility side of the electric meter.”⁵ This definition for this filing may include, but is not limited to: distributed generation, energy storage, electric vehicles, demand side management, and energy efficiency.⁶

A. Baseline Distribution System and Financial Data

System Data

1. Modeling software currently used and planned software deployments
2. Percentage of substations and feeders with monitoring and control capabilities, planned additions
3. A summary of existing system visibility and measurement (feeder-level and time interval) and planned visibility improvements; include information on percentage of system with each level of visibility (ex. max/min, daytime/nighttime, monthly/daily reads, automated/manual)
4. Number of customer meters with AMI/smart meters and those without, planned AMI investments, and overview of functionality available
5. Discussion of how the distribution system planning is coordinated with the integrated resource plan (including how it informs and is informed by the IRP), and planned modifications or planned changes to the existing process to improve coordination and integration between the two plans, including:
 - a. Setting the forecasts for distributed energy resources consistently in its resource plan and its Integrated Distribution Plan.
 - b. Conduct advanced forecasting to better project the levels of distributed energy resource deployment at a feeder level, using Xcel’s advanced planning tool.
 - c. Proactively planning investments in hosting capacity and other necessary system capacity to allow distributed generation and electric vehicle additions consistent with the forecast for distributed energy resources.
 - d. Improving non-wires alternatives analysis, including market solicitations for deferral opportunities to make sure Xcel can take advantage of distributed energy resources to address discrete distribution system costs.
 - e. Planning for aggregated distributed energy resources to provide system value including energy/capacity during peak hours.⁷
6. Discussion of how DER is considered in load forecasting and any expected changes in load forecasting methodology
7. Discussion if and how IEEE Std. 1547-2018⁸ impacts distribution system planning considerations (e.g. opportunities and constraints related to interoperability and advanced inverter functionality)
8. Estimated distribution system annual loss percentage for the prior year

⁵ See *Minnesota Staff Grid Modernization Report*, March 2016.

⁶ ICF Report, Integrated Distribution Planning, August 2016, prepared for Minnesota Public Utilities Commission, Docket No. E999/CI15-556, available online: See [eDockets ID: 20169-124836-01](#).

⁷ July 26, 2022, Order (21-694) Order Point 4

⁸ IEEE Standard 1547-2018 published April 6, 2018.

9. For the portions of the system with SCADA capabilities, the maximum hourly coincident load (kW) for the distribution system as measured at the interface between the transmission and distribution system
10. Total distribution substation capacity in kVA
11. Total distribution transformer capacity in kVA
12. Total miles of overhead distribution wire
13. Total miles of underground distribution wire
14. Total number of distribution premises
15. Total costs spent on DER generation installation in the prior year. These costs should be broken down by category in which they were incurred (including application review, responding to inquiries, metering, testing, make ready, etc).
16. Total charges to customers/member installers for DER generation installations, in the prior year. These charges should be broken down by category in which they were incurred (including application, fees, metering, make ready, etc.)
17. Total nameplate kW of DER generation system which completed interconnection to the system in the prior year, broken down by DER technology type (e.g. solar, combined solar/storage, storage, etc.)
18. Total number of DER generation systems which completed interconnection to the system in the prior year, broken down by DER technology type (e.g. solar, combined solar/storage, storage, etc.)
19. Total number and nameplate kW of existing DER systems interconnected to the distribution grid as of time of filing, broken down by DER technology type (e.g. solar, combined solar/storage, storage, etc.)
20. Total number and nameplate kW of queued DER systems as of time of filing, broken down by DER technology type (e.g. solar, combined solar/storage, storage, etc.)
21. Total number of electric vehicles in service territory.
22. Total number and capacity of public electric vehicle charging stations.
23. Number of units and MW/MWh ratings of battery storage
24. MWh saving and peak demand reductions from EE program spending in previous year
25. Amount of controllable demand (in both MW and as a percentage of system peak)

Financial Data

26. Historical distribution system spending for the past 5-years, in each category:
 - a. Age-Related Replacements and Asset Renewal
 - b. System Expansion or Upgrades for Capacity
 - c. System Expansion or Upgrades for Reliability and Power Quality
 - d. New Customer Projects and New Revenue
 - e. Grid Modernization and Pilot Projects
 - f. Projects related to local (or other) government-requirements
 - g. Metering
 - h. Other

The Company may provide in the IDP any 2018 or earlier data in the following rate case categories:

- a. Asset Health

- b. New Business
- c. Capacity
- d. Fleet, Tools, and Equipment
- e. Grid Modernization

For each category, provide a description of what items and investments are included.

- 27. All non-Xcel investments in distribution system upgrades (e.g. those required as a condition of interconnection) by subset (e.g. CSG, customer-sited, PPA and other) and location (i.e. feeder or substation).
- 28. Projected distribution system spending for 5-years into the future for the categories listed above, itemizing any non-traditional distribution projects
- 29. Planned distribution capital projects, including drivers for the project, timeline for improvement, summary of anticipated changes in historic spending. Driver categories should include:
 - a. Age-Related Replacements and Asset Renewal
 - b. System Expansion or Upgrades for Capacity
 - c. System Expansion or Upgrades for Reliability and Power Quality
 - d. New Customer Projects and New Revenue
 - e. Grid Modernization and Pilot Projects
 - f. Projects related to local (or other) government-requirements
 - g. Metering
 - h. Other
- 30. Provide any available cost benefit analysis in which the company evaluated a non-traditional distribution system solution to either a capital or operating upgrade or replacement

DER Deployment

- 31. Current DER deployment by type, size, and geographic dispersion (as useful for planning purposes; such as, by planning areas, service/work center areas, cities, etc.)
- 32. Information on areas of existing or forecasted high DER penetration. Include definition and rationale for what the Company considers “high” DER penetration.
- 33. Information on areas with existing or forecasted abnormal voltage or frequency issues that may benefit from the utilization of advanced inverter technology.

B. Hosting Capacity and Interconnection Requirements

- 1. Provide a narrative discussion on how the hosting capacity analysis filed annually on November 1 currently advances customer-sited DER (in particular PV and electric storage systems), how the Company anticipates the hosting capacity analysis (HCA) identifying interconnection points on the distribution system and necessary distribution upgrades to support the continued development of distributed generation resources⁹, and any other method in which Xcel anticipates customer benefit stemming from the annual HCA.

⁹ Minn. Stat. 216B.2425, Subd. 8

2. Describe the data sources and methodology used to complete the initial review screens outlined in the Minnesota DER Interconnection Process.¹⁰

C. Distributed Energy Resource Scenario Analysis

1. In order to understand the potential impacts of faster-than-anticipated DER adoption, define and develop conceptual base-case, medium, and high scenarios regarding increased DER deployment on Xcel's system. Scenarios should reflect a reasonable mix of individual DER adoption and aggregated or bundled DER service types, dispersed geographically across the Xcel distribution system in the locations Xcel would reasonably anticipate seeing DER growth take place first.

[Xcel must provide detail on how, in aggregate, the energy and climate goals of the Minnesota communities it serves, along with customer preference trends, are reflected. In particular, distribution generation planning should include consideration of local community generation goals and beneficial electrification.](#)¹¹

2. Include information on methodologies used to develop the low, medium, and high scenarios, including the DER adoption rates (if different from the minimum 10% and 25% levels), geographic deployment assumptions, expected DER load profiles (for both individual and bundled installations), and any other relevant assumptions factored into the scenario discussion. Indicate whether or not these methodologies and inputs are consistent with Integrated Resource Plan inputs.
3. Provide a discussion of the processes and tools that would be necessary to accommodate the specified levels of DER integration, including whether existing processes and tools would be sufficient. Provide a discussion of the system impacts and benefits that may arise from increased DER adoption, potential barriers to DER integration, and the types of system upgrades that may be necessary to accommodate the DER at the listed penetration levels.
4. Include information on anticipated impacts from FERC Order 841¹² (Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators) and a discussion of potential impacts from the related FERC Docket RM18-9-000 (Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators)

D. Long-Term Distribution System Modernization and Infrastructure Investment Plan

¹⁰ August 13, 2018 Order, Docket E999/CI-16-521, See MN DIP 3.2 Initial Review

¹¹ July 23, 2020 Order (19-666), Order Point 4

¹² Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, 162 FERC ¶61,127 (February 28, 2018)

1. [\[Merged into 3.D.2 per July 16, 2019 Order, Order Point 4\]](#)
2. Xcel shall provide a 5-year Action Plan [as part of a 10-year long term plan](#)¹³ for distribution system developments and investments in grid modernization [based on internal business plans and considering the insights gained from the DER future analysis, hosting capacity analysis](#)¹⁴, and non-wires alternatives analysis. The 5-year Action Plan should include a detailed discussion of the underlying assumptions (including load growth assumptions) and the costs of distribution system investments planned for the next 5-years (expanding on topics and categories listed above). Xcel should include specifics of the 5-year Action Plan investments. Topics that should be discussed, as appropriate, include at a minimum:
 - a. Overview of investment plan: scope, timing, and cost recovery mechanism
 - b. Grid Architecture: Description of steps planned to modernize the utility's grid and tools to help understand the complex interactions that exist in the present and possible future grid scenarios and what utility and customer benefits that could or will arise.¹⁵
 - c. Alternatives analysis of investment proposal: objectives intended with a project, general grid modernization investments considered, alternative cost and functionality analysis (both for the utility and the customer), implementation order options, and considerations made in pursuit of short-term investments. The analysis should be sufficient enough to justify and explain the investment.
 - d. System interoperability and communications strategy
 - e. Costs and plans associated with obtaining system data (EE load shapes, PV output profiles with and without battery storage, capacity impacts of DR combined with EE, EV charging profiles, etc.)
 - f. Interplay of investment with other utility programs (effects on existing utility programs such as demand response, efficiency projects, etc.)
 - g. Customer anticipated benefit and cost
 - h. Customer data and grid data management plan (how it is planned to be used and/or shared with customers and/or third parties)
 - i. Plans to manage rate or bill impacts, if any
 - j. Impacts to net present value of system costs (in NPV \$/MWh or \$/MW)
 - k. For each grid modernization project in its 5-year Action Plan, Xcel should provide a cost-benefit analysis [based on the best information it has at the time and include a discussion of non-quantifiable benefits. Xcel shall provide all information used to support its analysis.](#)¹⁶
 - l. Status of any existing pilots or potential for new opportunities for grid modernization pilots

¹³ Modified by July 16, 2019, Order (18-251), Order Point 4

¹⁴ Modified by July 16, 2019, Order (18-251), Order Point 4

¹⁵ <https://gridarchitecture.pnnl.gov/>

¹⁶ July 16, 2019, Order (18-251), Order Point 3

- m. [The results of its annual distribution investment risk-ranking and a description of the risk-ranking methodology.](#)¹⁷
 - n. [Information on forecasted net demand, capacity, forecasted percent load, risk score, planned investment spending, and investment summary information for feeders and substation transformers that have a risk score or planned investment in the budget cycle in future IDPs](#)¹⁸
 - o. [Long-range distribution studies conducted since the last IDP](#)¹⁹
3. In addition to the 5-year Action Plan, Xcel shall provide a discussion of its vision for the planning, development, and use of the distribution system over the next 10 years. The 10-year Long-Term Plan discussion should address long-term assumptions (including load growth assumptions), the long-term impact of the 5-year Action Plan investments, what changes are necessary to incorporate DER into future planning processes based on the DER futures analysis, and any other types of changes that may need to take place in the tools and processes Xcel is currently using.

E. Non-Wires (Non-Traditional) Alternatives Analysis

1. Xcel shall provide a detailed discussion of all distribution system projects in the filing year and the subsequent 5 years that are anticipated to have a total cost of greater than two million dollars. For any forthcoming project or project in the filing year, which cost two million dollars or more, provide an analysis on how non-wires alternatives compare in terms of viability, price, and long-term value.
2. Xcel shall provide information on the following:
 - a. Project types that would lend themselves to non-traditional solutions (i.e. load relief or reliability)
 - b. A timeline that is needed to consider alternatives to any project types that would lend themselves to non-traditional solutions (allowing time for potential request for proposal, response, review, contracting and implementation)
 - c. Cost threshold of any project type that would need to be met to have a non-traditional solution reviewed
 - d. A discussion of a proposed screening process to be used internally to determine that non-traditional alternatives are considered prior to distribution system investments are made.

Order Points

Order points that are not amendments to the filing requirements.

July 16, 2019, Order (18-251)

¹⁷ July 16, 2019, Order (18-251), Order Point 9

¹⁸ July 16, 2019, Order (18-251), Order Point 10

¹⁹ July 16, 2019, Order (18-251) Order Point 11

6. Xcel shall provide additional information on the Incremental Customer Investment Initiative and the System Expansion or Upgrade for Reliability and Power Quality increases beginning in 2021.
7. Xcel shall make the development of enhanced load and DER forecasting capabilities, as well as, tracking and updating of actual feeder daytime minimum loads, a priority in 2019 and include a detailed description of its progress in the Company's 2019 IDP.
8. Xcel shall provide all information, analysis, and assumptions used to support the cost/benefit ratio for AMI, FAN and FLISR; and IVVO and CVR cost-benefit analysis as part of its 2019 IDP filing or other future filings.

July 23, 2020, Order (19-666)

5. Xcel must allow any interested person to participate in stakeholder engagement meetings regarding its IDP and HCA.
6. Xcel must engage stakeholders in further advancing the Company's NWA Analysis, including, but not limited to, screening criteria, analysis methodology and assumptions, and NWA evaluation parameters.

July 26, 2022, Order (21-694)

2. Xcel shall file its smart inverter roadmap and related consultant reports in this docket by November 1, 2022.
3. Xcel shall use both the WACC and societal discount rate in its NWA analysis and discuss the results of the two approaches in a future IDP stakeholder meeting.
5. Within 90 days, Xcel shall make a compliance filing that outlines key difference between its Colorado and Minnesota distribution system planning processes, including but not limited to a discussion of the following:
 - a. Orders, rules, and statutes pertaining to distribution system planning
 - b. How Xcel Energy conducts DER and load forecasting, including the Company's implementation of LoadSEER
 - c. How Xcel Energy conducts its NWA analysis
 - d. How Xcel Energy conducts its Hosting Capacity Analysis
6. Xcel shall hold a series of stakeholder meetings to collaborate with interested parties, obtain input, and generate new ideas around a shared vision of the distribution grid of the future. This stakeholder series is intended to provide transparency into the Company's distribution planning process and explore how Minnesota's public policy goals will be realized on the distribution system and impact the Company's future plans.

This stakeholder series should be timed such that stakeholder input can be incorporated into the Company's next IDP filing and next IRP filing and include at least four meetings. The topics will include, but not be limited to, the following:

- a. Integrated Distribution Planning 101
- b. Identify the public policy goals that are changing the expectations of the

distribution grid and how each public policy is expected to be realized on the grid in the near- and long-term. [For example, examine transportation, building and industrial electrification forecasts and the effects on load profiles in the near-term and long-term.]

- c. How energy efficiency, demand response, and other DER might impact Xcel's planning processes.
- d. How Xcel should consider and incorporate local clean energy goals in its planning processes.
- e. What investments are necessary to achieve the distribution grid of the future, and the criteria Xcel should use to plan and prioritize those investments.
- f. Prioritizing the use of "net load" in its load forecasts and system planning, including developing a methodology for incorporating the load reducing impact of distributed generation into its load forecasts and system planning processes.
- g. Develop a methodology for valuing the load-modifying impacts of demand response in load forecasts and present a load forecast that includes demand response contributions.
- h. Identify appropriate transportation, building, and industrial end use electrification scenarios for inclusion in the 2023 IDP load forecasts.
- i. How Xcel anticipates proactively planning for grid investments to allow distributed generation and EV additions consistent with the DER forecast.
- j. Estimate the potential synergies between interconnection upgrades and planned distribution capital investments, and discuss the anticipated overlap between planned investments and capacity constrained locations on Xcel's distribution system.

Xcel shall make a compliance filing with a summary of the stakeholder process and a list of next steps by August 1, 2023. Xcel shall include a summary of the stakeholder series in its next IDP and relevant summary in its next IRP, including how it considered and incorporated stakeholder input.

CERTIFICATE OF SERVICE

I, Chrishna Beard, hereby certify that I have this day, served a true and correct copy of the following document to all persons at the addresses indicated below or on the attached list by electronic filing, electronic mail, courier, interoffice mail or by depositing the same enveloped with postage paid in the United States mail at St. Paul, Minnesota.

Minnesota Public Utilities Commission

**ORDER ACCEPTING 2021 INTEGRATED DISTRIBUTION SYSTEM PLAN
AND CERTIFYING THE RESILIENT MINNEAPOLIS PROJECT**

Docket Number **E-002/M-21-694**

Dated this 26th day of July, 2022

/s/ Chrishna Beard

[illegible]

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