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September 21, 2017

—Via Electronic Filing—

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: QUESTIONNAIRE-SECTION C – REPLY COMMENTS
GRID MODERNIZATION
DOCKET NO. E999/CI-15-556

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed Reply Comments in response to initial comments received on Section C of the Commission's April 26, 2017 Corrected Notice of Comment Period on Distribution System Planning Efforts and Considerations in the above-referenced Docket.

Pursuant to Minn. Stat. §216.17, subd. 3, we have electronically filed this document with the Minnesota Public Utilities Commission, and copies have been served on all parties on the attached service list. Please contact me at bria.e.shea@xcelenergy.com or (612) 330-6064 if you have any questions regarding this filing.

Sincerely,

/s/

BRIA E. SHEA
DIRECTOR, REGULATORY AND STRATEGIC ANALYSIS

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IN THE MATTER OF THE COMMISSION
INVESTIGATION INTO GRID
MODERNIZATION: FOCUS ON
DISTRIBUTION SYSTEM PLANNING

DOCKET NO. E999/CI-15-556

REPLY COMMENTS

OVERVIEW

Northern States Power Company, doing business as Xcel Energy, submits these Reply Comments in response to the July 21, 2017 and August 21, 2017 Comments submitted in response to the Commission’s April 26, 2017 Corrected Notice of Comment Period on Distribution System Planning Efforts and Considerations in the above-referenced Docket.

The Comments were in response to utility descriptions of their current planning processes, practices, and the status of their current plans – as well as Section C of the Notice. Section C requested utilities and other stakeholders to discuss ways to improve or augment utility planning processes – and to discuss the identified subjects or any others that relate to the efficient and economic investment in technological advancements, infrastructure and integration of Distributed Energy Resources (DER) into distribution system planning and operations.

In our view, the Comments largely recommend procedural steps for the Commission to take toward enhanced distribution planning – and suggest planning approaches, planning requirements, and ways for the Commission to oversee an enhanced planning process.

Several commenters pointed to enhanced distribution planning proceedings and requirements occurring in other states as a point of reference – with some caveating that Minnesota is in a different place and thus will need to put actions and outcomes occurring in those proceedings in Minnesota context. We similarly noted in our Comments that each state’s efforts are driven by differing policies and considerations,

is taking a different approach, and may result in its own solution that may not fit the circumstances elsewhere. As did we, some commenters also reference leading expert guidance to take a walk, jog, run approach to evolving to an enhanced and integrated system planning process.

We believe evolving distribution planning to be more like integrated resource planning (IRP) and its broad stakeholder engagement that commenters in this proceeding seek at the distribution system level, will need to be thoughtful and planful. As we discussed in our July 21, 2017 Comments, IRPs chart a long-term direction of how load can be served in a broad service area. They are grounded in Minnesota statutes and rules that prescribe the purpose, scope, content, filing requirements, procedures – and the Commission’s standard of review, and the plans’ relationship to other Commission processes. These processes contemplate broad stakeholder engagement and work for IRPs due to the long-term nature of macro resource additions and changes.

As discussed in the utility filings, distribution planning is much more immediate than the full planning horizon period of an IRP. We generally agree with stakeholders that cost recovery should remain separate from the planning process. We believe evolving distribution planning practices will need to consider the realities of the distribution system and its direct connection and immediacy of customer reliability. We also continue to believe the focus of any changes to the distribution planning process should be in terms of process, data sharing, and advancing state policy objectives as opposed to challenging the state’s current regulatory model or discussing opportunities for third party ownership of various distribution components.

We agree with the Minnesota Department of Commerce that the Commission should not take action to approve distribution plans at this time. We also agree with the Department that the Commission not adopt uniform planning processes at this time. While we believe that while the Commission may ultimately want to establish a uniform planning framework for utilities like exists today for IRPs, in the near-term the focus needs to be on building foundational tools and developing and aligning processes and stakeholders around the objectives of an enhanced planning process. We continue to believe that there are no definitive answers at this point – and that the Commission should continue to take a deliberate, staged approach to grid modernization and enhanced planning practices that allows utilities to focus on implementing the necessary foundational tools and technologies to achieve ultimate state policy goals.

We continue to support the evolution of the grid, and are taking actions to evolve our planning tools and improve our foundational capabilities to support our customers’ expanding energy needs and expectations. We support a shift toward more integrated

system planning, where utilities assess opportunities to reduce peak demand using DER and to supply customers' energy needs from a mix of centralized and distributed generation resources; however, at a measured pace that correlates to Minnesota policy objectives and customer value.

REPLY COMMENTS

A. Planning Framework and Approval

Much of the stakeholder comments focused on the planning framework. As we noted in our comments, we believe shaping the planning framework is the area where stakeholders can provide the greatest value at this time, rather than direct involvement in the annual planning process.

Several parties suggested objectives for an enhanced planning process, commented on ways to measure or assess utility distribution plans – and discussed elements of cost-benefit analyses (CBA) for non-wire alternatives (NWAs). We agree with stakeholders that it will be important to define the objective(s) of enhanced utility planning processes, establish plan requirements, determine linkages to other Commission processes (such as cost recovery), and identify standards of review or metrics for the Commission to evaluate or measure plan effectiveness. We believe the initial focus of these efforts should be on the planning framework that provides a road map for utilities and stakeholders.¹ We also believe that any standards to measure distribution plans should focus on public interest benefits, such as cost-effectiveness and meeting public policy goals established by the Legislature – similar to the standards that exist today for IRPs.²

In terms of plan approval, we agree with the Department that the Commission not approve distribution plans at this time. As we have discussed, the overall planning process for system capacity does not lend itself to broad stakeholder involvement and a formal approval process at this time.

B. Data Access

A number of stakeholders commented on the issue of data sharing, access, and protections. We agree with the Interstate Renewable Energy Council, Inc. (IREC) that existing laws and regulations are important considerations with respect to grid security

¹ See for reference Minn. R. 7843, which prescribes the utility integrated resource planning process, including plan content and relationship to other Commission process.

² See Minn. R. 7843.0500, subp. 3.

and customer confidentiality and privacy. However, the issue of access and protection of distribution grid information is largely uncharted territory today. Existing regulatory, legal, and industry frameworks provide little guidance with respect to data security protections and customer privacy and confidentiality considerations as it relates to distribution grid data. This is particularly true as compared to other grid data, such as at the transmission or generation level, which is informed by National Institute of Standards and Technology (NIST), and governed by the North American Electric Reliability Corporation (NERC) and Federal Energy Regulatory Commission (FERC).

Utility release of grid data to third parties unrelated to the provision of regulated utility service may present a risk to grid security – and to customer privacy and confidentiality. Similar to the Commission’s examination of the collection and release of Customer Energy Usage Data in Docket No. E,G999/CI-12-1344, we believe the Commission has broad authority to impose and enforce data protection and release requirements and standards on utilities and their contractors through the promulgation of either rules or a general policy. However, that authority does not extend to third parties unrelated to the provision of regulated utility service – and there is not an alternative legal framework in Minnesota like there is in other states such as California that allows the Commission to impose or enforce privacy, confidentiality or security requirements on third parties. Therefore, while a registration process for third party access to grid maps and data as suggested by IREC may be an appropriate protection protocol, it will be necessary to consider the Commission’s jurisdiction and authority in relation to this potential solution – as well as administration considerations.³

Further, it is unclear whether the Commission’s authority extends to all data potentially maintained by utilities. For example, the Citizens Utility Board of Minnesota (CUB) asked whether the Commission believes electric vehicle (EV) ownership information is the type of information that needs protection from disclosure. We are unclear whether the Commission’s authority extends to EV ownership information. While utilities may gather this information from customers for purposes of sizing their electrical requirements, it is not generally related to regulated service any more than a customer’s other electrical loads that factor into our requirements calculations. An exception to this would be customers on rates specific to EVs. Additionally, customers may not want their EV ownership status or information about DER they own and connect to the system to be publicly known.

³ See April 18, 2014 Xcel Energy Reply Comments in Docket No. E,G999/CI-12-1344 for additional discussion of Commission jurisdiction of release of data to unregulated third parties.

We believe the Commission has broad authority over the reasonableness and standards of utility service that supports the promulgation of either rules or a general policy regarding distribution grid and other data associated with the provision of regulated utility service. We also believe those requirements extend to utility contractors through utility contractual arrangements. In considering expanded access of distribution grid or other data outside of utilities and their contractors, it will be important for the Commission to balance public policy objectives with security, and customer privacy and confidentiality interests in a Minnesota context. It will also be important for the Commission to consider the potential administrative and financial burdens associated with such access has on utilities and their customers.

In the interim, we believe it is important that utilities continue to navigate these issues applying their judgement and expertise from managing similar issues, including at the transmission and generation levels.

C. Standards

We agree with the Advanced Energy Economy Institute (AEE Institute) that both interconnection and interoperability standards are important. However, we also believe standards in the areas of equipment loading, which relates to reliability, service quality (i.e. voltage limits, power quality limits), and safety are important.

D. Issues Specific to Xcel Energy

In this section, we respond to comments specific to Xcel Energy, which were generally in the areas of the interrelatedness of our planning processes, forecasting, and next steps procedurally. Some parties additionally commented on our most recent and upcoming hosting capacity analyses⁴. We believe those comments are better addressed in the context of that proceeding, so we do not address them here.

We address these concerns below and note that we are transitioning to new system capabilities that will expand our visibility of the system and options available to customers – focusing on foundational elements such as improved communications, applications and tools. However, we have a responsibility to provide safe, reliable adequate service to customers. Therefore, in this period of transition and with moderate levels of DER on the system, we believe it is reasonable, necessary, and prudent to plan to a “worst case scenario” approach that excludes DER and relies on traditional distribution infrastructure to meet our customers’ energy needs.

⁴ See Docket No. E002/M-15-962, IN THE MATTER OF XCEL ENERGY’S 2015 BIENNIAL DISTRIBUTION-GRID-MODERNIZATION REPORT. The Company will file its next hosting capacity analysis on November 1, 2017, as part of the 2017 Biennial Distribution Grid Modernization Report.

1. *Planning Processes*

As we explained in our responses to the Notice, our annual hosting capacity and annual capacity planning processes are currently conducted separately. We acknowledge IREC's concern that these analyses are not currently interrelated. As we have explained, this is due to limitations associated with our existing planning tools and need to further develop foundational investments in advanced grid technologies and equipment that will enable greater visibility into the system and greater planning capabilities. We have these improvements and investments underway, and discussed how we contemplate evolving our planning tools and processes in Figure 6 on page 18 of our July 21, 2017 comments.

IREC observed that we do not appear to be considering state goals regarding DER or renewable energy generally. As we have explained, our current annual distribution planning activities are focused on capacity planning, which comprises approximately 20 percent of the overall distribution business area budget – and an even smaller portion of our overall NSP System.⁵ We are keenly aware of and compliant with our renewable energy standard requirements – and on track to meet Minnesota's renewable energy and climate objectives. We expect as we complete the necessary foundational investments in the system and our planning tools, we will be able to more fully integrate renewable energy and climate considerations into an enhanced planning process.

2. *Forecasting*

Fresh Energy raised concerns regarding aspects of our forecasting – pointing to the forecast that formed the basis of our most recent IRP in Docket No. E002/RP-15-21, and various example charts and graphs included in our Section C response. Others also expressed concern because we do not currently include DER in our distribution planning forecasts.

a. NSP System Forecast for the 2016-2030 IRP

Fresh Energy suggested that our most recent IRP forecast overestimated our expected peak demand. However, forecasts, including load forecasts, used in IRP proceedings for system planning purposes are intended to be reflective of a likely range of

⁵ The NSP System is comprised an integrated transmission and generation grid that serves customers in the Northern States Power-Minnesota (Minnesota, North Dakota, South Dakota) and Northern States Power-Wisconsin (Michigan, Wisconsin) Xcel Energy operating companies.

outcomes. The forecast that formed the basis for our 2016-3030 IRP was the Fall 2014 Load Forecast, and was just that. The IRP proceeding concluded in late 2016, which we followed by proposing to add 1,550 MW of wind resources (*See* Docket No. E002/M-16-777). In our March 16, 2017 filing in that proceeding, we discussed our most recent (Fall 2016) Load Forecast and the Fall 2014 Load Forecast, as the IRP Order approving the potential wind acquisition was contingent upon the facts surrounding the proposed projects and other information such as whether the demand and energy forecasts fall within the bands studied in the last IRP.

To summarize our discussion, the Fall 2016 and Fall 2014 forecasts have pertinent differences, with the changes between forecasts being primarily driven by actual sales and peak demand results in 2015 and 2016 in both the residential and C&I sectors.⁶ The Department compared our updated/Fall 2016 forecast that we provided in the Supplement to the forecast bands it used in Strategist for the 2016-2030 IRP. The Department concluded that the new forecast, while lower than the IRP base case, remained within the contingency bands.⁷ Therefore, the IRP forecast functioned as expected for planning purposes.

b. Distribution System Forecasting

We agree with Fresh Energy that forecasting at the distribution level is very different than forecasting at an overall system level. For example, growing, flat or declining loads can and are occurring on a per feeder basis that, on an overall level, may look like flat or some slight growth. Even if an overall load forecast is reasonable, if we fail to properly plan for individual feeders where more growth is occurring, we risk customer reliability.

We therefore use both a top-down and bottom-up forecasting approach – considering the corporate forecast, past measured/actual peak load information, weather, and known or expected growth, decreasing, or flat load patterns. We start by assessing our current overall distribution system loads by feeder and substation transformer, then correlate those with our corporate forecast of projected load growth by state to determine an overall peak load forecast using a regression model that relates historical monthly base peak demand to energy requirements and weather. We also apply projections of economic activity for our various service areas provided by IHS Global Insight, Inc., which projects continued growth in key economic indicators. We also apply a number of key forecast variables, including taking into account our

⁶ *See* Supplement, IN THE MATTER OF THE PETITION OF XCEL ENERGY FOR APPROVAL OF THE ACQUISITION OF WIND GENERATION FROM THE COMPANY'S 2016-2030 INTEGRATED RESOURCE PLAN, Attachment L (March 16, 2017).

⁷ *See* May 1, 2017 Department Comments at page 9.

conservation programs and changes in customer use due to changing codes and standards – and adjustments to account for expected changes in specific large customers’ electricity usage. These may include reductions in usage due to a customer relocating outside of our service area, a customer adding self-generation capabilities, as well as increases in usage from new customers or planned expansions by existing customers.

From a bottom-up perspective, each Planning Engineer considers and applies adjustments from the overall forecast specific to individual feeders. As we have discussed, our planning engineers are assigned to specific geographies, which allows them to develop specific operating and other knowledge about the distribution facilities in their assigned areas. They use this knowledge to inform their individual feeder forecasts and the overall planning process. Key inputs are historic, actual measured load information combined with weather information. Other considerations are knowledge of new or changing commercial, industrial, and residential customer loads they may have learned of from our Area Engineers, who are typically the primary point of contact within the Company for those types of issues. The Planning Engineers are also informed of residential and city or other local plans and projects that may result in growth or loss of load learned from our Community Relations Managers or other Company resources involved in those discussions and projects. They also consider publicly-available statistics, such as population growth from the Metropolitan Council. Finally, they also apply knowledge and insights learned from their daily work within their assigned geographies.

The Planning Engineers must also consider things such as feeder load shapes/load duration curves. Just like it is important at an overall NSP System level to consider the Company’s peak in relation to the Midcontinent Independent System Operator (MISO) peak, we must consider individual feeder peaks in relation to the Company’s system peak. This will become more important as our planning practices become more integrated. For example, if we interrupt customers for a system peak, it may aid the system – but not aid the peak of an individual feeder, if its peak is non-coincident with the system. Or, if we use a battery to aid a feeder peak, that resource may not be available for a system peak. Traditionally, we’ve considered these resources system resources to relieve the overall system peak. In an enhanced planning future however, we will need to contemplate and determine answers to questions such as whether DER are for the benefit of the system or the benefit of individual feeders.

Today, all changes in customer usage, whether they are due to energy efficiency (EE), demand response (DR), or DER are reflected in both the top-down and bottom-up aspects of the individual feeder forecasting process – in that both processes rely on historic usage and include adjustments for known and measurable changes. As DER

on our system grows however, we will need to overcome the current challenges associated with specific forecasting of DER at a feeder level. For example, DER currently on the system are not firm providers of capacity; we do not know their maintenance schedules or operating patterns – particularly in light of weather, such as sunshine for solar resources. We may also need a better understanding of the specific impacts of EE and DR on feeder by feeder basis.

We have begun our transition to new system capabilities that will expand our visibility of the system and options available to customers – focusing first on foundational elements to support fundamental communications and applications. We are starting to evolve our planning practices to analyze future electricity connections rather than just loads. As we noted in our July 21, 2017 comments, we also believe other input, such as from stakeholders, will help inform our forecasting efforts in the future. However, we have a responsibility to provide safe, reliable, adequate service to customers. Until we have greater visibility into DER and other evolving aspects of our system, improved planning and forecasting tools, and a construct or framework within which to rely on DER and NWA, our capacity planning efforts to meet our customers' energy requirements will need to primarily rely on traditional methods.

3. Procedural Next Steps

Fresh Energy recommended focusing next steps on Xcel Energy – including a specific filing requirement regarding our forecasting processes, and generally focusing on the Company, observing that we have the most current and forecasted DER among the utilities. Fresh Energy also recommended the Commission focus first on improvements to demand and energy forecasting. IREC recommended improvements to the hosting capacity analysis that is underway in a separate proceeding and on track to be filed November 1, 2017.

We are open to submitting a filing that explains our current forecasting in more detail. However, we have provided significant discussion of our current processes and practices to-date, and believe additional detail on current practices will provide little benefit to the proceeding. As we have explained, we are unable to make substantive changes or improvements in our forecasting or other capacity planning practices until we have improved tools and greater visibility into the system through deployment of advanced applications and equipment – all of which are underway.

We believe the proceeding would be better served by focusing on the framework of an enhanced planning process that includes forecasting and scenario analysis expectations. This approach recognizes current planning realities, and focuses all parties on the future state. An enhanced planning framework will also provide utilities

important insights into future expectations – providing a way for them to measure the actions they are taking today to evolve their tools and processes – to ensure they are aligned with the Commission’s long-term direction and vision.

CONCLUSION

Xcel Energy appreciates this opportunity to reply to the comments submitted in response to the Commission’s Notice. The increasing complexity of our industry requires a rethinking of the current framework to ensure it is still aligned. Minnesota has long been a leader in developing supportive regulatory frameworks to align achievement of policy objectives with business objectives. We appreciate the Commission’s thoughtful approach to these changes thus far. We look forward to continued dialogue with stakeholders and guidance from the Commission as Minnesota joins other leading states to prepare for the future.

CERTIFICATE OF SERVICE

I, Lynnette Sweet, hereby certify that I have this day served copies or summaries of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States Mail at Minneapolis, Minnesota

xx electronic filing

Docket No. E999/CI-15-556

Dated this 21st day of September 2017

/s/

Lynnette Sweet
Regulatory Administrator

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Nathan	Franzen	nathan@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Amy	Fredregill	Amy.S.Fredregill@xcelenergy.com	Xcel Energy	414 Nicollet Mall Minneapolis, MN 55401	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John	Fuller	john.fuller@senate.mn	MN Senate	75 Rev Dr Martin Luther King Jr Blvd Room G-17 St. Paul, MN 55155	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Hal	Galvin	halgalvin@comcast.net	Provectus Energy Development llc	1936 Kenwood Parkway Minneapolis, MN 55405	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Edward	Garvey	garveyed@aol.com	Residence	32 Lawton St Saint Paul, MN 55102	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Bruce	Gerhardson	bgerhardson@otpc.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Allen	Gleckner	gleckner@fresh-energy.org	Fresh Energy	408 St. Peter Street Ste 220 Saint Paul, Minnesota 55102	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Bryan	Gower	bgower@apx.com	APX, Inc.	N/A	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Timothy	Gulden	info@winonarenewableenergy.com	Winona Renewable Energy, LLC	1449 Ridgewood Dr Winona, MN 55987	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Tony	Hainault	anthony.hainault@co.hennepin.mn.us	Hennepin County DES	701 4th Ave S Ste 700 Minneapolis, MN 55415-1842	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Todd	Headlee	theadlee@dvigridsolutions.com	Dominion Voltage, Inc.	701 E. Cary Street Richmond, VA 23219	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Duane	Hebert	duane.hebert@novelenergy.biz	Novel Energy Solutions	1628 2nd Ave SE Rochester, MN 55904	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Kimberly	Hellwig	kimberly.hellwig@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
John	Helmrs	helmrs.john@co.olmsted.mn.us	Olmsted County Waste to Energy	2122 Campus Drive SE Rochester, MN 55904-4744	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jared	Hendricks	hendricksj@owatonnautilities.com	Owatonna Public Utilities	PO Box 800 208 S Walnut Ave Owatonna, MN 55060-2940	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Annete	Henkel	mui@mnuutilityinvestors.org	Minnesota Utility Investors	413 Wacouta Street #230 St.Paul, MN 55101	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Shane	Henriksen	shane.henriksen@enbridge.com	Enbridge Energy Company, Inc.	1409 Hammond Ave FL 2 Superior, WI 54880	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Paul	Hernandez	Paul.Hernandez@energycenter.org	Center for Sustainable Energy	426 17th Street, Suite 700 Oakland, CA 94612	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Michael	Hoppe	il23@mtn.org	Local Union 23, I.B.E.W.	932 Payne Avenue St. Paul, MN 55130	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jim	Horan	Jim@MREA.org	Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Lori	Hoyum	lhoyum@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jan	Hubbard	jan.hubbard@comcast.net		7730 Mississippi Lane Brooklyn Park, MN 55444	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Casey	Jacobson	cjacobson@bepc.com	Basin Electric Power Cooperative	1717 East Interstate Avenue Bismarck, ND 58501	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
John S.	Jaffray	jjaffray@jirpower.com	JJR Power	350 Highway 7 Suite 236 Excelsior, MN 55331	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Richard	Johnson	Rick.Johnson@lawmoss.com	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Nate	Jones	njones@hcpd.com	Heartland Consumers Power	PO Box 248 Madison, SD 57042	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Michael	Kampmeyer	mkampmeyer@a-e-group.com	AEG Group, LLC	260 Salem Church Road Sunfish Lake, Minnesota 55118	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Mark J.	Kaufman	mkaufman@ibewlocal949.org	IBEW Local Union 949	12908 Nicollet Avenue South Burnsville, MN 55337	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
John	Kearney	jmkearney@MnSEIA.org	MnSEIA	2512 33rd Ave S Minneapolis, MN 55406	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Jennifer	Kefer	jennifer@dgardiner.com	Alliance for Industrial Efficiency	David Gardiner & Associates, LLC 2609 11th St N Arlington, VA 22201-2825	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julie	Ketchum	N/A	Waste Management	20520 Keokuk Ave Ste 200 Lakeville, MN 55044	Paper Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Madeleine	Klein	mklein@socoreenergy.com	SoCore Energy	225 W Hubbard Street Suite 200 Chicago, IL 60654	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Brad	Klein	bklein@elpc.org	Environmental Law & Policy Center	35 E. Wacker Drive, Suite 1600 Suite 1600 Chicago, IL 60601	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Thomas	Koehler	TGK@IBEW160.org	Local Union #160, IBEW	2909 Anthony Ln St Anthony Village, MN 55418-3238	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Brian	Krambeer	bkrամbeer@tec.coop	Tri-County Electric Cooperative	PO Box 626 31110 Cooperative Way Rushford, MN 55971	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jon	Kramer	sundialjon@gmail.com	Sundial Solar	3209 W 76th St Edina, MN 55435	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Michael	Krause	michaelkrause61@yahoo.com	Kandiyo Consulting, LLC	433 S 7th Street Suite 2025 Minneapolis, Minnesota 55415	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Matthew	Lacey	mlacey@greenergy.com	Great River Energy	12300 Elm Creek Boulevard Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
James D.	Larson	james.larson@avantenergy.com	Avant Energy Services	220 S 6th St Ste 1300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Dean	Leischow	dean@sunrisenrg.com	Sunrise Energy Ventures	315 Manitoba Ave Wayzata, MN 55391	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Benjamin	Lowe	ben.lowe@alevo.com	Alevo USA Inc.	2321 Concord Parkway South Concord, North Carolina 28027	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Susan	Ludwig	sludwig@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Kavita	Maini	kmairi@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Samuel	Mason	smason@beltramelectric.com	Beltrami Electric Cooperative, Inc.	4111 Technology Dr. NW PO Box 488 Bemidji, MN 56619-0488	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Erica	McConnell	mcconnell@smwlaw.com	Shute, Mihaly & Weinberger LLP	396 Hayes St San Francisco, California 94102-4421	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Dave	McNary	David.McNary@hennepin.us	Hennepin County DES	701 Fourth Ave S Ste 700 Minneapolis, MN 55415-1842	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John	McWilliams	jmm@dairy.net	Dairyland Power Cooperative	3200 East Ave SPO Box 817 La Crosse, WI 54601-7227	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Thomas	Melone	Thomas.Melone@AllcoUS.com	Minnesota Go Solar LLC	222 South 9th Street Suite 1600 Minneapolis, Minnesota 55120	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Herbert	Minke	hminke@allete.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Dalene	Monsebroten	dalene@mncable.net	Northern Municipal Power Agency	123 2nd St W Thief River Falls, MN 56701	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Martin	Morud	mmorud@trunorthsolar.com	Tru North Solar	5115 45th Ave S Minneapolis, MN 55417	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Michael	Murray	mmurray@missiondata.org	Mission:Data Coalition	1020 16th St Ste 20 Sacramento, CA 95814	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Ron	Nelson	ron.nelson@ag.state.mn.us	Office of the Attorney General-RUD	Bremer Tower, Suite 1400 445 Minnesota Street Saint Paul, Minnesota 55101	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Carl	Nelson	cnelson@mncee.org	Center for Energy and Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Ben	Nelson	benn@cmpasgroup.org	CMMPA	459 South Grove Street Blue Earth, MN 56013	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Rolf	Nordstrom	rnordstrom@gpsd.net	Great Plains Institute	2801 21ST AVE S STE 220 Minneapolis, MN 55407-1229	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Samantha	Norris	samanthanorris@alliantenergy.com	Interstate Power and Light Company	200 1st Street SE PO Box 351 Cedar Rapids, IA 524060351	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
David	O'Brien	david.obrien@navigant.com	Navigant Consulting	77 South Bedford St Ste 400 Burlington, MA 01803	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jeff	O'Neill	jeff.oneill@ci.monticello.mn.us	City of Monticello	505 Walnut Street Suite 1 Monticello, Minnesota 55362	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Russell	Olson	rolson@hcpd.com	Heartland Consumers Power District	PO Box 248 Madison, SD 570420248	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Dan	Patry	dpatry@sunedison.com	SunEdison	600 Clipper Drive Belmont, CA 94002	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jeffrey C	Paulson	jeff.jcplaw@comcast.net	Paulson Law Office, Ltd.	4445 W 77th Street Suite 224 Edina, MN 55435	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mary Beth	Peranteau	mperanteau@wheelerlaw.com	Wheeler Van Sickle & Anderson SC	44 E. Mifflin Street, 10th Floor Madison, WI 53703	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Jennifer	Peterson	jjpeterson@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Hannah	Polikov	hpolikov@aee.net	Advanced Energy Economy Institute	1000 Vermont Ave, Third Floor Washington, DC 20005	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
David G.	Prazak	dprazak@otpc.com	Otter Tail Power Company	P.O. Box 496 215 South Cascade Street Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Gayle	Prest	gayle.prest@minneapolismn.gov	City of Mpls Sustainability	350 South 5th St, #315 Minneapolis, MN 55415	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Gregory	Randa	granda@lakecountrypower.com	Lake Country Power	2810 Elida Drive Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Mark	Rathbun	mrathbun@greenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Michael	Reinertson	michael.reinertson@avantenergy.com	Avant Energy	220 S. Sixth St. Ste 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
John C.	Reinhardt		Laura A. Reinhardt	3552 26Th Avenue South Minneapolis, MN 55406	Paper Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Craig	Rustad	crustad@minnkota.com	Minnkota Power	1822 Mill Road PO Box 13200 Grand Forks, ND 582083200	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Robert K.	Sahr	bsahr@eastriver.coop	East River Electric Power Cooperative	P.O. Box 227 Madison, SD 57042	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Thomas	Scharff	thomas.scharff@versoco.com	Verso Corp	600 High Street Wisconsin Rapids, WI 54495	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	332 Minnesota St, Ste W1390 St. Paul, MN 55101	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Christopher	Schoenherr	cp.schoenherr@smmpa.org	SMMPA	500 First Ave SW Rochester, MN 55902-3303	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Dean	Sedgwick	N/A	Itasca Power Company	PO Box 457 Bigfork, MN 56628-0457	Paper Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Maria	Seidler	maria.seidler@dom.com	Dominion Energy Technology	120 Tredegar Street Richmond, Virginia 23219	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
William	Seuffert	Will.Seuffert@state.mn.us		75 Rev Martin Luther King Jr Blvd 130 State Capitol St. Paul, MN 55155	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
David	Shaffer	shaff081@gmail.com	Minnesota Solar Energy Industries Project	1005 Fairmount Ave Saint Paul, MN 55105	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Patricia	Sharkey	psharkey@environmentallawcounsel.com	Midwest Cogeneration Association.	180 N. LaSalle Street Suite 3700 Chicago, Illinois 60601	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Bria	Shea	bria.e.shea@xcelenergy.com	Xcel Energy	414 Nicollet Mall Minneapolis, MN 55401	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Doug	Shoemaker	dougs@mnRenewables.org	MRES	2928 5th Ave S Minneapolis, MN 55408	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Mrg	Simon	mrgsimon@mrenergy.com	Missouri River Energy Services	3724 W. Avera Drive P.O. Box 88920 Sioux Falls, SD 571098920	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Anne	Smart	anne.smart@chargepoint.com	ChargePoint, Inc.	254 E Hacienda Ave Campbell, CA 95008	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Ken	Smith	ken.smith@evergreenenergy.com	Ever Green Energy	1350 Landmark Towers 345 St. Peter St St. Paul, MN 55102	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List
Joshua	Smith	joshua.smith@sierraclub.org		85 Second St FL 2 San Francisco, California 94105	Electronic Service	No	OFF_SL_15-556_OFF_SL_15-556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Trevor	Smith	trevor.smith@avantenergy.com	Avant Energy, Inc.	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Beth H.	Soholt	bsoholt@windonthewires.org	Wind on the Wires	570 Asbury Street Suite 201 St. Paul, MN 55104	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Benjamin	Stafford	bstafford@aee.net	Advanced Energy Economy	1000 Vermont NW Floor 3 Washington, DC 20005	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Sky	Stanfield	stanfield@smwlaw.com	Shute, Mihaly & Weinberger	396 Hayes Street San Francisco, CA 94102	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Tom	Stanton	tstanton@nrri.org	NRRI	1080 Carmack Road Columbus, OH 43210	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Byron E.	Starns	byron.starns@stinson.com	Stinson Leonard Street LLP	150 South 5th Street Suite 2300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
James M.	Strommen	jstrommen@kennedy-graven.com	Kennedy & Graven, Chartered	470 U.S. Bank Plaza 200 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Eric	Swanson	eswanson@winthrop.com	Winthrop & Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Thomas P.	Sweeney III	tom.sweeney@easycleanenergy.com	Clean Energy Collective	P O Box 1828 Boulder, CO 80306-1828	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Steve	Thompson	stevet@cmpasgroup.org	Central Minnesota Municipal Power Agency	459 S Grove St Blue Earth, MN 56013-2629	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Stuart	Tommerdahl	stommerdahl@otpc.com	Otter Tail Power Company	215 S Cascade St PO Box 496 Fergus Falls, MN 56537	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Pat	Treseler	pat.jcplaw@comcast.net	Paulson Law Office LTD	4445 W 77th Street Suite 224 Edina, MN 55435	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Lise	Trudeau	lise.trudeau@state.mn.us	Department of Commerce	85 7th Place East Suite 500 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Karen	Turnboom	karen.turnboom@versoco.com	Verso Corporation	100 Central Avenue Duluth, MN 55807	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Lisa	Veith	lisa.veith@ci.stpaul.mn.us	City of St. Paul	400 City Hall and Courthouse 15 West Kellogg Blvd. St. Paul, MN 55102	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Roger	Warehime	warehimer@owatonnautilities.com	Owatonna Public Utilities	208 South WalnutPO Box 800 Owatonna, MN 55060	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jenna	Warmuth	jwarmuth@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802-2093	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Karlee	Weinmann	kweinmann@ilsr.org	Institute for Local Self-Reliance	1313 5th St SE #303 Minneapolis, MN 55414	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Jason	Willett	jason.willett@metc.state.mn.us	Metropolitan Council	390 Robert St N Saint Paul, MN 55101-1805	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Cam	Winton	cwinton@mnchamber.com	Minnesota Chamber of Commerce	400 Robert Street North Suite 1500 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Thomas J.	Zaremba	TZaremba@wheelerlaw.com	WHEELER, VAN SICKLE & ANDERSON	44 E. Mifflin Street, 10th Floor Madison, WI 53703	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List
Christopher	Zibart	czibart@atcllc.com	American Transmission Company LLC	W234 N2000 Ridgeview Pkw Court Waukesha, WI 53188-1022	Electronic Service	No	OFF_SL_15- 556_OFF_SL_15- 556_Official Service List