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October 11, 2019

—Via Electronic Filing—

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

RE: REPLY COMMENTS
UPDATING GENERIC STANDARDS FOR UTILITY TARIFFS FOR
INTERCONNECTION AND OPERATION OF DISTRIBUTED GENERATION
FACILITIES ESTABLISHED UNDER MINN. STAT. §216B.1611
DOCKET NOS. E999/CI-01-1023 & E999/CI-16-521

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed Reply Comments in response to party comments received on September 24, 2019, and the Commission's August 23, 2019 Notice of Comment Period.

We have electronically filed this document with the Minnesota Public Utilities Commission, and copies have been served on the parties on the attached service list. Please contact Amber Hedlund at amber.r.hedlund@xcelenergy.com or (612) 337-2268 or me at holly.r.hinman@xcelenergy.com. or (612) 330-5941 if you have any questions concerning this filing.

Sincerely,

/s/

HOLLY HINMAN
REGULATORY MANAGER

Enclosure
c: Service Lists

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Dan Lipschultz	Commissioner
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
John A. Tuma	Commissioner

IN THE MATTER OF UPDATING THE
GENERIC STANDARDS FOR THE
INTERCONNECTION AND OPERATION OF
DISTRIBUTED GENERATION FACILITIES
ESTABLISHED UNDER MINN. STAT.
§216B.1611

DOCKET NO. E999/CI-16-521

IN THE MATTER OF UPDATING GENERIC
STANDARDS FOR UTILITY TARIFFS FOR
INTERCONNECTION AND OPERATION OF
DISTRIBUTED GENERATION FACILITIES
UNDER MINN. LAWS 2001 CH. 212

DOCKET NO. E999/CI-01-1023

REPLY COMMENTS

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits these Reply Comments in response to comments received on September 24, 2019, and the Commission's August 23, 2019 Notice of Comment Period. We respond to four topics raised by IREC and Fresh Energy.

As a preliminary matter, we commend Commission Staff for spearheading the successful process that resulted in broad agreement on the content of the first version of the Minnesota Distributed Energy Resource Technical Interconnection and Interoperability Requirements (TIIR). Parties have considered a range of issues at the Distributed Generation Workgroup ("Workgroup" or "DGWG") and this resulted in robust discussion, exchange of ideas, collaboration, and considerable consensus. We believe that the process is best served by continuing to follow this approach. As future needs to revise the MN DIP, MN DIA or TIIR arise, these issues should be first vetted with the Workgroup in an attempt to narrow or resolve the issues, rather than through a direct request for Commission intervention.

The issues raised by IREC and Fresh Energy in its September 24, 2019, comments would seem better suited to be addressed, if at all, as part of the Workgroup as a prerequisite to Commission consideration. The Commission's August 13, 2018 ORDER ESTABLISHING UPDATED INTERCONNECTION PROCESS AND STANDARD INTERCONNECTION AGREEMENT,¹ at page 32, ordering clause 21, provided that the Workgroup is to address ongoing implementation and technical issues that arise with the implementation of the MN DIP, MN DIA, or emerging DER technology. This certainly includes the TIIR. This August 2018 order also referred certain issues to that Workgroup that had not been sufficiently developed for immediate resolution by the Commission, and noted that issues can be further developed through the DGWG which can leverage stakeholders' technical expertise.² We do not believe it makes sense to bypass the process that the Commission has recently established for addressing issues like those being raised by IREC and Fresh Energy here.

I. TECHNICAL SPECIFICATIONS MANUAL

A. Technical Specification Manual Filing and Comment Period

IREC and Fresh Energy's comments propose a formal filing, a defined comment period, and Commission ruling on objections to items in the utility's Technical Specifications Manual (TSM). This process is contradictory to the goal of emerging technology adoption through a nimble TSM update process. Annual filing of the TSM should also not be required, as the TSM is not a part of Schedule E under Minn. Rules pt. 7835.0800, which states:

Schedule E must contain the utility's safety standards, required operating procedures for interconnected operations, and the functions to be performed by any control and protective apparatus. These standards and procedures must not be more restrictive than the standards contained in the electrical code under part [7835.2100](#) or the interconnection standards distributed to customers under part [7835.4750](#). The utility may include in schedule E suggested types of equipment to perform the specified functions. No standard or procedure may be established to discourage cogeneration or small power production.

¹ *In the Matter of Establishing Generic Standards for Utility Tariffs for Interconnection and Operation of Distributed Generation Facilities Under Minn. Laws 2001, Ch. 212*, Docket No. E-999/CI-01-1023; and, *In the Matter of Updating the Generic Standards for the Interconnection and Operation of Distributed Generation Facilities Established Under Minn. Stat. § 216B.1611*, Docket No. E-999/CI-16-521.

² August 13, 2018 Order, pages 4, 9, 11, 12, 17, 18.

The interconnection standards distributed to customers is described by Minn. Rules pt. 7835.4750:

Before a customer signs the uniform statewide contract, a utility must distribute to that customer a copy of, or electronic link to, the commission's order establishing interconnection standards dated September 28, 2004, in docket number E-999/CI-01-1023, or to currently effective interconnection standards established by subsequent commission order.

Although this issue was not discussed at the Workgroup, if the Commission requires the TIIR to be filed in utility tariffs, the Company believes it would do so in Schedule E every January 1, consistent with Minn. R. 7835.0300 that states in part:

... on January 1, 1985, and every 12 months thereafter, each utility must file with the commission, for its review and approval, a cogeneration and small power production tariff. The tariff for generating utilities must contain schedules A to G, except that generating utilities with less than 500,000,000 kilowatt-hour sales in the calendar year preceding the filing may substitute their retail rate schedules for schedules A and B. The tariff for nongenerating utilities must contain schedules C, D, E, F, and H, and may, at the option of the utility, contain schedules A and B, using data from the utility's wholesale supplier.

We do not believe that it was the intent of the Workgroup that the TSM be part of Schedule E, nor that it be part of the utility tariff. For example, page 2 of the current draft TIIR states that "... the Area EPS Operator's TSM allows for expedited adoption of new industry standards and best practices as they become available without creating conditions where the statewide interconnection standards and national standards become out-of-sync." Also, Annex A to the TIIR provides that the website address for the utility TSM be provided in that Annex.

The Area EPS has ongoing efforts to improve the reliability and operations of the grid while ensuring grid safety. Such efforts include the need to plan, design, operate and maintain the Area EPS for a range of existing technologies, emerging technologies as well as customer load types, and the TSM must be able to reflect these efforts.

For example, grid modernization initiatives can utilize volt-var optimization (VVO) functionality that must work well with existing voltage regulation and emerging technologies, including DER. The Company needs the ability to address DER volt/var settings, within TIIR defined ranges, in view of evolving grid technologies and optimized integration of DER specific to the utility. Grid management efforts, which are solely the responsibility of the Area EPS operator, may not be given the due consideration by stakeholders not charged with this responsibility. For these reasons, the Company is not supportive of Fresh Energy and IREC's recommendations

around formal regulatory processes for the TSM, and believe instead that consideration should be given in the Workgroup with the potential for utility adoption in subsequent revisions of TSMs.

B. Coordination between the TIIR and TSM

IREC and Fresh Energy recommend that the Commission make clear in their order that the TSM is subordinate to the TIIR. We believe that section 1.4 of the draft TIIR provides sufficient language and no clarifying order is required. The TIIR establishes the relationship between the TIIR and TSM. Section 1.4, which IREC and Fresh Energy aided in drafting, states:

The Area EPS Operator's TSM documents are to be designed to provide utility specific details aligned with the TIIR requirements. The Area EPS Operators' TSM document shall be limited to detailing requirements which are in support of the requirements contained within the TIIR and MN DIP. Additional requirements not contemplated by the TIIR may be mutually agreed upon between the Parties.

C. Comment Collection

IREC and Fresh Energy have proposed a required form to file comments on the TIIR. Once again, the Company believes that the current process of encouraging open discussion of DER matters in the TIIR through the use of the Workgroup is the more efficient and constructive path. If there are exceptional circumstances, including an urgent need to revise the MN DIP, MN DIA or TIIR prior to consideration and recommendations from the Workgroup, only then would a party bring a petition before the Commission.

Any proposal for a change, either in the Workgroup or in a petition, should contain relevant information, showing the specific changes that are requested, and explain why the changes are needed. We agree in part with Dakota Electric Association's comments that change proposals should not just identify an issue or problem, but propose a solution as well. Parties do not need to use a prescribed form to convey this basic information. Parties are free to use the IREC-designed form without the need for a Commission order.

II. ENERGY STORAGE SYSTEMS

A. Review of Control Modes

IREC and Fresh Energy state concerns that the current review process for control modes in energy storage systems (ESS) is too restrictive. One cited example by IREC and Fresh Energy is that the ESS will be limited to one control mode, limiting the use of additional modes of operation that are beneficial to both the customer and the Area EPS Operator. While these concerns may have some validity, we believe they are addressed in the TIIR by the inclusion of the plural form of “modes” in section 10.2 of the draft TIIR that refers to the Operating Agreement (which is MN DIA Attachment 5) and states:

iii. The ESS Control Mode(s) reviewed and approved should be documented in an Operating Agreement. The Operating Agreement should also list the ESS Control Mode(s) that is being utilized. ...

We agree with IREC and Fresh Energy that developments in standards and application guides will further inform how ESS is treated during the interconnection review steps, but do not believe the current process is restrictive. All ESS is subject to net energy metering integrity requirements that may require export limitations and the typical thermal and voltage considerations to which load and generation are subject. New standards and application guides are not expected to lift restrictions on these requirements and considerations, but will simplify the review process.

The draft TIIR contemplates that the energy storage section will be updated in the future. Section 10.1 states:

The absence of guidance on ESS best practices and standards at a national level makes it likely that this section will require future revision sooner than other sections in the document. The intent of this document is to adopt standards as they become available.

The current language in the TIIR is sufficient to address needed updates to ESS requirements in the Workgroup without being specifically addressed in a Commission order

B. Energy Storage Operating Agreements

IREC and Fresh Energy submitted recommendations that the Energy Storage Operating Agreements should be updated in the near future so as to provide clarity

on the usage of control modes, as the usage of the term “control modes” is broad in nature. The Company believes the language in the Operating Agreement (MN DIA Attachment 5) for ESS provides sufficient clarity as to the control modes.

We agree that control mode name usages are inconsistent from vendor to vendor, and can be a source for confusion when working among different vendors, but note that the Operating Agreement is intended to include the name of the specific control modes as used by the vendor, so that there is no confusion about which control modes are being agreed to. Given the breadth of geographic areas that ESS vendors operate in, it will be difficult to define control modes at the state level and expect consistency with energy storage vendors until national standards are established. We do not support the inclusion of additional clarifying language.

C. Power Control Systems

We support Fresh Energy and IREC’s recommendation that the future revisions of the TIIR should begin to consider the role power control systems (PCS) have in integrating ESS. We appreciate their comments and look forward to working with them and other stakeholders in the Workgroup to address this in the future.

III. VOLTAGE REGULATION

A. Volt-Reactive Power Control Settings

IREC and Fresh Energy recommend that the Commission order the Workgroup to revisit voltage-reactive power (volt-var) settings within the next two years and update the TIIR accordingly. We do not object to this issue going to the Workgroup in this timeframe, as this would allow reasonable time to collect better information about when to implement these settings. The Company does not agree that a Commission Order is strictly necessary, however.

Volt-var not expected to be a “one size fits all” solution to optimize DER integration. Its efficacy may change based on the inherent properties of the conductor with which the Area EPS is constructed, as some conductors exhibit less reactive impedance properties than others that volt-var is meant to counteract. Research by EPRI has indicated that in some scenarios, volt-var can become unstable. Other considerations about how these schemes interact with other autonomous voltage regulation devices, such as capacitor banks and regulators, are not trivial. While several states have already made volt-var a default setting, there are no UL 1741 certified inverters on the

market with volt-var capability at this time. There are currently no approved test protocols for the volt-var functions required by IEEE 1547-2018.³ Because of this, no direct comparison with these other states is possible until approved test protocols can be compared.

These and other issues identified over the next few years will inform the discussion around when it is appropriate to use volt-var as a default setting and will be included in the utilities TSM. Volt-var functionality has a high probability of being a valuable tool that the Area EPS Operator will be able to deploy in the appropriate scenarios, and will likely see significant use in the future as its impacts are better understood.

B. Voltage Regulation in Operating Agreements

IREC and Fresh Energy have raised concerns that the reactive power demand of a DER is limitless, and that the adjustment of the reactive power function of the DER as requested by the Area EPS Operator may impact its real power production. They recommend that limits should be placed in the Operating Agreement that restricts the amount of reactive power that can be called upon by the Area EPS Operator.

IEEE 1547-2018 provides minimum reactive power limits the DER is required to be capable of in section 5.2, Table 7. IEEE 1547-2018 goes on to explain in section 5.3.2 the following for constant power factor mode:⁴

The target power factor shall be specified by the Area EPS operator and shall not require reactive power exceeding the reactive capability requirements specified in 5.2.

By this, IEEE 1547-2018 gives the DER Operator a reactive power range they can include in their design so as to avoid curtailment of real power, and limits the reactive power range that the Area EPS Operator can request of the DER when the default constant power factor mode is used. These parameters are sufficient and further limits related to the reactive power capability of the DER are not necessary.

While volt-var controls allow for a range of reactive power demand, discussion around limitations of reactive power for this control mode should occur in future Workgroup meetings when volt-var is being discussed as a possible default voltage regulation setting.

³ The test protocols are contained in a draft version IEEE 1547.1, which passed its initial ballot in June 2019. Revisions are being made based on comments received during this initial ballot phase, and a second draft is expected to be voted on in 2019.

⁴ This is the default voltage regulation setting in the draft TIIR

C. Reporting on Real Power Curtailment Due to Voltage and Active Power Control

IREC and Fresh Energy raise the concern that the default setting of the voltage and active power control (volt-watt) mode could cause customer's DER energy production to be curtailed enough to impact the DER's economics. Changes in the Area EPS regulation practices or circuits are cited as a possible reason for this curtailment, along with poor installation practices by DER installers.

The default settings for volt-watt in the draft TIIR are set above ANSI C84.1 Range B service voltage threshold. The Area EPS is required to deliver voltages with ANSI C84.1 Range A, a stricter range of voltages than Range B. Voltages in Range B are allowed and should be expected, but should be limited in duration and occurrence.

A significant effort is made during the interconnection review process to ensure that the applied-for DER capacity maintains the customer's voltage at the point of delivery within ANSI C84.1 Range A, and all Area EPS operations are focused on delivering service voltage at Range A during normal conditions. Range B may be experienced during abnormal conditions, but exceeding the upper threshold of Range B is exceedingly rare. With this in mind, it is very unlikely that production will be impacted by voltage excursions caused by the Area EPS.

Using a default volt-watt setting above Range B provides generous overhead for the DER system to continue operating during Area EPS abnormal conditions, and serves as a protective function to prevent damaging overvoltages should voltages reach this threshold. This protective function not only protects the DER customer, but neighboring customers as well.

The TIIR describes a process for addressing voltage issues with DER systems in section 5.4⁵ of the draft TIIR. This description of the complaint process is included in the TIIR as a means to discourage modification of settings without addressing the root cause of the issue, resulting in changes to the settings of the DER that could further exacerbate issues. This is not viewed as describing a process for tracking these issues. The Area EPS operator has little ability to measure or validate loss of production if it is triggered by the volt-watt functionality during voltage excursions

⁵ There is an error in the title of this section in the draft TIIR. The title should be changed from "Voltage and Reactive Power Control" to "Voltage and Active Power Control"

beyond ANSI Range B, and the process as outlined in the TIIR is viewed as sufficient in addressing the unique situations when DER may be impacted.

We do not support IREC and Fresh Energy's suggested requirement for a new report on voltage complaints. Once again, IREC and Fresh Energy are free to bring this issue to the Workgroup.

IV. COMMUNICATION AND INTEROPERABILITY

IREC and Fresh Energy recommend changes to the Operating Agreement regarding Communications and Interoperability. The Operating Agreement is referenced in MN DIA Attachment 5. The terms of MN DIA Attachment 5 allow the Area EPS Operator to provide requirements that must be met by the Interconnection Customer prior to initiating parallel operation, and therefore allows appropriate flexibility to address different types of communication and interoperability issues as appropriate to the type of DER installation being utilized.

The TIIR and IEEE 1547-2018 define specific functions, parameters, and settings in which the interoperability and communication can be established. Similar to MN DIA Attachment 5, the TIIR is intentionally open ended on this topic, as the use of these parameters will be varied and customer dependent on the type of DER installation being utilized. No changes to the Communication and Interoperability sections are warranted.

V. TIMELINES FOR IMPLEMENTATION

A. Defining an Effective Date for Full Implementation of the TIIR

The Company does not oppose a clearly defined date that the full TIIR is to go into effect. However, any dates should consider other contingencies, including the effective date of UL 1741 adoption of IEEE 1547.1, expected to be more than a year from now. Even after UL 1741 adopts IEEE 1547.1, there will likely be a period, perhaps 18 months or so, while existing inventory is used and deployed before UL 1741 as adopted should be reflected in the TIIR.

Once this is reflected in the TIIR, Xcel Energy would no longer be able to accept new applications or new installations that have non-compliant equipment. This issue should be monitored and discussed in the Workgroup after UL 1741 adopts IEEE 1547.1.

B. Interim Exclusion of TIIR Sections

Interim exclusions of portions of the TIIR is another issue that would benefit by first being addressed by the Workgroup before being addressed by the Commission.

As section 1.6 of the TIIR states, the Area EPS Operator cannot require the use of certified equipment that meets IEEE 1547-2018 until it becomes readily available (or an effective date is established). In place of equipment certified to IEEE 1547-2018, equipment certified to IEEE 1547-2003 and IEEE 1547-2014a must continue to be required.

CONCLUSION

We appreciate the opportunity to provide these reply comments, and we recommend the Commission adopt the draft TIIR.

Dated: October 11, 2019

Northern States Power Company

CERTIFICATE OF SERVICE

I, Paget Pengelly, hereby certify that I have this day served copies 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 Nos. E999/CI-01-1023
E999/CI-16-521

Dated this 11th day of October 2019

/s/

Paget Pengelly
Regulatory Administrator

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Jessica	Burdette	jessica.burdette@state.mn. us	Department of Commerce	85 7th Place East Suite 500 St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Daniel T	Carlisle	todd- wad@toddwadena.coop	Todd-Wadena Electric Cooperative	550 Ash Ave NE PO Box 431 Wadena, MN 56482	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Douglas M.	Carnival	dmc@mcgrannshea.com	McGrann Shea Carnival Straughn & Lamb	N/A	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Pat	Carruth	pat@mnvalleyrec.com	Minnesota Valley Coop. Light & Power Assn.	501 S 1st St. PO Box 248 Montevideo, MN 56265	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Kenneth A.	Colburn	kcolburn@symbioticstrategi es.com	Symbiotic Strategies, LLC	26 Winton Road Meredith, NH 32535413	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.st ate.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_16-521_Official Service List PUC
Curtis	Cordt	ccordt@mvec.net	Minnesota Valley Electric Cooperative	125 Minnesota Valley Electric Drive Jordan, MN 55352	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	OFF_SL_16-521_Official Service List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Art	Crowell	acrowell@sundialsolarener gy.com	Sundial Solar	not provided	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Stacy	Dahl	sdahl@minnkota.com	Minnkota Power Cooperative, Inc.	5301 32nd Ave S Grand Forks, ND 58201	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
David	Dahlberg	davedahlberg@nweco.com	Northwestern Wisconsin Electric Company	P.O. Box 9 104 South Pine Street Grantsburg, WI 548400009	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Patrick	Dalton	patrick.l.dalton@xcelenergy .com	Xcel Energy	N/A	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Lisa	Daniels	lisadaniels@windustry.org	Windustry	201 Ridgewood Ave Minneapolis, MN 55403	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
James	Darabi	james.darabi@solarfarm.co m	Solar Farm, LLC	2355 Fairview Ave #101 St. Paul, MN 55113	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
James	Denniston	james.r.denniston@xcelen ergy.com	Xcel Energy Services, Inc.	414 Nicollet Mall, Fifth Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Curt	Dieren	curt.dieren@dgr.com	L&O Power Cooperative	1302 S Union St Rock Rapids, IA 51246	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Cheryl	Dietrich	cheryl.dietrich@nexteraene rgy.com	NextEra Energy Resources, LLC	700 Universe Blvd E1W/JB Juno Beach, FL 33408	Electronic Service	No	OFF_SL_16-521_Official Service List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Robin	Doege	Rdoege@stearnselectric.org	Stearns Electric Association	PO Box 40 Melrose, MN 56352-0040	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Kristin	Dolan	kdolan@meeker.coop	Meeker Cooperative Light & Power Assn	1725 US Hwy 12 E. Ste 100 Litchfield, MN 55355	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Steve	Downer	sdowner@mmua.org	MMUA	3025 Harbor Ln N Ste 400 Plymouth, MN 554475142	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Renee	Doyle		Doyle Electric Inc.	PO Box 295 Amboy, MN 56010	Paper Service	No	OFF_SL_16-521_Official Service List PUC
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Elaine	Garry	egarry@peoplesrec.com	Peoples Energy Cooperative	1775 Lake Shady Ave S Oronoco, MN 55960-2351	Paper Service	No	OFF_SL_16-521_Official Service List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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James	Haler	jhaler@southcentralelectric.com	South Central Electric Association	71176 Tiell Dr P. O. Box 150 St. James, MN 56081	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Burnell	Lauer	blauer.sundial@gmail.com	Sundial Solar	3209 W. 76th St #305 Edina, MN 55435	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Dean	Leischow	dean@sunrisenrg.com	Sunrise Energy Ventures	315 Manitoba Ave Wayzata, MN 55391	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Nick	Lenssen	lenssen.nick@gmail.com		1195 Albion Way Boulder, CO 80305	Electronic Service	No	OFF_SL_16-521_Official Service List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Carl	Linville	clinville@raponline.org	Regulatory Assistance Project	50 State Street Suite #3 Montpelier, VT 05602	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Tim	Mergen	tmergen@meeker.coop	Meeker Cooperative Light And Power	1725 US Hwy 12 E. Suite 100 PO Box 68 Litchfield, MN 55355	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_16-521_Official Service List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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