



414 Nicollet Mall  
Minneapolis, MN 55401

November 20, 2025

—Via Electronic Filing—

Sydney Lieb  
Assistant Commissioner  
Minnesota Department of Commerce Division of Energy Resources  
85 7th Place East, Suite 500  
St. Paul, MN 55101-2198

RE: COMMENTS  
IN THE MATTER OF TECHNICAL REFERENCE MANUAL VERSION 5.0  
DOCKET NO. E,G999/CIP-18-694

Dear Dr. Lieb:

Northern States Power Company, doing business as Xcel Energy, submits these Comments in response to the Proposed Decision filed by Staff of the Minnesota Department of Commerce, Division of Energy Resources on October 29, 2025 regarding the Minnesota Technical Reference Manual version 5.0.

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 Luke Anderson at 612-216-9238 or [Luke.Anderson@xcelenergy.com](mailto:Luke.Anderson@xcelenergy.com) or contact me at (612) 330-7974 or [Christopher.J.Shaw@xcelenergy.com](mailto:Christopher.J.Shaw@xcelenergy.com) if you have any questions regarding this filing.

Sincerely,

/s/

CHRISTOPHER SHAW  
MANAGER, REGULATORY POLICY

Enclosures  
cc: Service Lists

STATE OF MINNESOTA  
BEFORE THE  
MINNESOTA DEPARTMENT OF COMMERCE

IN THE MATTER OF TECHNICAL  
REFERENCE MANUAL VERSION 5.0

DOCKET NO. E,G999/CIP-18-694  
**COMMENTS**

**INTRODUCTION**

Northern States Power Company, doing business as Xcel Energy, submits these Comments in response to the Proposed Decision filed by Staff of the Minnesota Department of Commerce, Division of Energy Resources on October 29, 2025 regarding the Minnesota Technical Reference Manual version 5.0 (TRM v5.0).

We appreciate the Department's considerable time and effort in updating the Minnesota Technical Reference Manual (TRM) and for the opportunity to participate in the TRM Advisory Committee (TRMAC). We find the process through which Department Staff engages stakeholders and thoroughly reviews feedback to be an exemplary process as it allows stakeholders to provide feedback and generally reach a consensus decision. For example, the Company provided several informal comments as part of this process and appreciated the full review of analysis by the TRMAC regarding efficient air conditioning equipment leading to the ultimate decision not to adjust the measure as it is technically viable today. In contrast, the addition of last-minute changes to TRM v5.0 deviates from this exemplary process, was not fully vetted by the TRMAC and results in technical deviations and potential errors within the proposed TRM v5.0. Many of these process concerns are addressed through comments filed jointly with other utilities.

Our comments here focus primarily on the technical deviations we have identified as part of our TRM v5.0 review. While we have provided several informal comments throughout the TRMAC process from May – October of 2025, there are several items that were new in the Proposed Decision so we have focused our response on these. In addition, we provide further context regarding what we believe are unintended consequences of some of these technical determinations.

Based on these comments we recommend maintaining the baseline for furnace and boiler measures at 80 percent AFUE in TRM v5.0 in order to review market

implications in Minnesota as well as fully assess the impacts of a change to the baseline.

## COMMENTS

### I. Technical Review

The following section addresses specific technical detail as proposed by the Department. Where the Company has not commented, we have no additional feedback on those items, and we appreciate the work of the TRMAC moving towards consensus on many of these adjustments.

#### A. Residential HVAC – ECM Blower Motors

**Proposed Change:** Update baseline (existing) furnace efficiency default to 90 percent if unknown.

Electronically Commutated Motors (ECM) are required in furnaces manufactured after 2019. As such, updating the baseline efficiency does not seem applicable to a retrofit only measure that only affects a subset of furnaces greater than six years old. As such the Company suggests that the baseline efficiency be maintained at 80 percent.

#### B. Residential HVAC – Furnaces and Boilers

**Proposed Change:** Update baseline efficiency to 90 percent for single family furnaces and boilers.

The Company opposes the baseline adjustment to 90 percent for single family furnaces and boilers and would recommend maintaining the baseline for furnace measures at 80 percent AFUE in TRM v5.0.

The proposed decision indicates that incremental costs for furnaces and boilers are “derived from data in” a report produced by Itron for the California Measure Advisory Committee, and that the costs with various sizing assumptions and “\$300 additional installation costs for existing construction due to the installation of venting.”<sup>1</sup> It is unclear how this can be the case, since Table 3 of the TRM gives the same costs for both new construction and replace on fail, and the listed incremental

---

<sup>1</sup> *Proposed Decision*, p. 107.

cost is below \$300 for four of the six furnace efficiency levels listed.<sup>2</sup> Moreover, only three of the fifteen incremental cost values given appear to have been updated since TRM 4.2 – though this is difficult to interpret given that TRM v5.0 uses different incremental cost categories from version 4.2, with no explanation given for the change.<sup>3</sup> Even if the TRM 4.2 incremental costs were correct, the change to a 90 percent AFUE baseline should logically have resulted in a change to most if not all of the incremental costs of replacement and it is unclear why this is not the case.

Moreover, the Company notes that the Itron study used as the basis for the incremental costs was conducted for the California market and published in 2014. While the Company acknowledges that there may not have been a reliable comparable study produced in the decade since the Itron study, it notes that the Itron study gives incremental cost data in real (2014) dollars. It does not appear that the costs listed in the *Proposed Decision* have adjusted the prices given in the Itron study to reflect the considerable inflation that has occurred since that study's publication. It is important for the costs given in the TRM to clearly indicate whether they are given in real or nominal dollars; Minnesota's cost-effectiveness calculations require price inputs in nominal terms and will give distorted results if real prices – especially decade-old real prices – are used instead. Finally, the Company could find no reference to residential condensing boilers in the portion of the Itron study cited by the *Proposed Decision* and requests clarification as to where costs for those measures were sourced.<sup>4</sup>

### **C. Residential HVAC – Furnace Quality Installation/Maintenance**

**Proposed Change:** Updated Replace on Fail AFUE\_base to 90 percent.

The Company does not have a comment on the surrounding assumption of this measure outside of its general comments on the validity of the 90 percent assumption for a baseline furnace.

### **D. Residential HVAC – Ground Source Heat Pump Systems (GSHP)**

**Proposed Change:** Updates to baseline furnace efficiency.

---

<sup>2</sup> *Proposed Decision*, p. 106, Table 3.

<sup>3</sup> Compare Table 3 on p. 106 of the *Proposed Decision* with Table 3 on p. 89 of TRM 4.2. In 4.2, the table lists “New Construction” and “Existing” as the subcategories of Incremental Cost, while in v5.0 the subcategories are “New Construction, Replace on Fail” and “Early Replacement,” but the dollar amounts shown are identical in all cases save three.

<sup>4</sup> Appendix F of the Itron study includes residential boilers with AFUE 85% on page F-10, but residential condensing boilers are not listed and the size of the boiler measure on p. 10 (1.4 MMBTU/h) suggests that it may in fact be a commercial boiler that has been mis-classified in the table.

The Proposed Decision updated the “Eff Base” variable to use a 0.90 AFUE value for furnaces and a 0.80 AFUE value for boilers. This is inconsistent with the rest of the TRM with this most recent update where both furnace and boiler baselines were updated to 0.90 AFUE. Additionally, there is inconsistency in the savings formulas found on pages 63 and 64. Specifically, the only formula that is labeled as “New Construction” uses an ASHP baseline. We are unclear whether the Proposed Decision is using the baseline for “New Construction” as the only valid GSHP measure.

## **E. Residential Envelope – Insulation and Air Sealing**

**Proposed Change:** Update to baseline (existing) furnace efficiency default to 90% if unknown.

For unknown AFUE, the TRM suggests using 0.9 according to Reference 21. The Company notes the link to the Cadmus study is unavailable in the TRM making it hard to track references and verify the validity of the study for those outside of the TRMAC.

## **F. Air-Source Heat Pumps**

**Proposed Change:** None. The Department noted that updating this measure would take more time as it relies on modeled results.

It is unclear to the Company as to why certain alterations to technologies would be made in the TRM but not cascade through all other impacted measures. This is not typical to a TRMAC process for which all details are reviewed in the context of others. If timing is an issue for the complete review of the TRM specific to furnace baselines, we believe that none of the alterations should be made so that it can be consistently reviewed and cascade throughout the TRM – this provides consistency and reduces the opportunity for potential errors. Moreover, it is possible that this analysis may show insight into other changes being made. The inconsistent approach to updating heating baselines appears to indicate a desire to adjust baselines for only certain measures, specifically natural gas appliances, but not their electric counterparts which should logically use the same baseline assumptions.

## **II. Proposed Furnace Efficiency Adjustment**

We oppose changing the furnace or boiler baseline efficiency for residential equipment to 90 percent. First, we do not believe this change had the opportunity to be fully vetted and reviewed by the TRMAC as thoroughly as necessary for a such a

significant change in efficiency values. Second, we believe there are unintended consequences that will ultimately be difficult to rectify in the future—specifically impacting the Minnesota market—that may increase the cost of efficiency for utility customers. Finally, we are concerned that this modification to the furnace technical details appears to be driven by policy preferences rather than technical considerations.

As noted in the Utility Joint Comments, the TRMAC process has established guidelines and requirements for changes to the TRM – these processes were not followed for the change to 90 percent AFUE for furnaces or boilers and this adjustment was not fully vetted. In fact, during the TRMAC process, we agreed with Department Staff not to include this change until further information was identified and reviewed back in July. The abrupt change in methodology, after parties had agreed with Department Staff, is a significant deviation from the process resulting in, what we believe, to be an incomplete TRM. With the proposed baseline change, the TRM is missing specific changes that should have occurred at the same time (notably for air-source heat pumps, low-e storm windows and cellular shade window coverings) and resulting in inconsistent application of the Department’s furnace baseline proposal. These impacts should have been examined and vetted as part of the TRMAC process and, at minimum, utilized historical reference to how modifications had been made to efficiency levels in the past.

The TRM should focus on technical details. However, the survey results of contractors participating in Focus on Energy programs in Wisconsin does not provide a sufficient basis for the proposed technical modification. Moreover, we believe there are unintended consequences that may result. The current federal furnace standard is set at 80 percent AFUE and is generally the cheapest option for customers to install in a retrofit scenario. If the Department approves TRM v5.0 as proposed, several things could occur impacting the furnace market and customers. First, we will need to reduce the incentives offered to customers for retrofit furnaces to maintain the cost effectiveness of these measures. This will effectively reduce the purchasing power of consumers who may be interested in upgrading their furnace not only due to failure, but also in a scenario for which a furnace is ultimately replaced when adding an air-source pump. When making a choice, a customer may ultimately choose to go with a less efficient option since the rebate levels may no longer be sufficient to make higher efficiency affordable. Second, we believe this change will result in a 71.4 percent reduction in natural gas savings from version 4.2.<sup>5</sup> This measure is currently a staple of gas utility energy efficiency programming. A change of this magnitude should be considered carefully and not be made on the basis of one single study of debatable

---

<sup>5</sup> Based on comparison of the examples in the Residential Furnace measure in Version 4.2 (11.9 Dth savings) and v5.0 (3.4 Dth savings, using the same assumptions as the 4.2 example)

applicability to the Minnesota market. Considering the Department's ongoing potential study due in the early part of 2026, this change seems premature.

Finally, as indicated by Fresh Energy's informal comments, submitted to the MN TRMAC Collaboration Site on October 31, this change seems to be driven by policy factors rather than technical impact. Fresh Energy's advocacy for this change is "for shifting utility program funding away from rebates for gas furnaces—particularly inefficient models—and towards efficient electric heating technologies."<sup>6</sup> It is unclear what "inefficient models" Fresh Energy refers to, since to the Company's knowledge only high-efficiency furnaces are incentivized through ECO. Nor is Fresh Energy's reference to a determination by the Colorado Commission particularly convincing. Those determinations were based primarily on the Commission's own assumptions and expectations, rather than any empirical assessment of the Colorado HVAC market. The Commission's *Decision* ran contrary to recommendations made by the Southwest Energy Efficiency Project (SWEET) in the proceeding, who had argued that "[A] lot of very inefficient furnaces could be installed ... without continued support by the Company. ... [I]t is too early to end incentives for gas furnaces."<sup>7</sup>

Changing the baseline to a different efficiency level decreases incentives for higher efficiency models and impacts customers first. As described in our informal comments as part of the Department's ECO Incentive Prioritization stakeholder discussions held in June of 2025, customers have different financial situations, different type of homes, etc. Utilities need to plan for a variety of situational factors as not all customers will benefit from being all electric. Indeed, we have heard some customer feedback describing reasons an all-electric system was not viable for them. Many of these customers have instead installed a hybrid system using a gas furnace for back-up heat. Often it is not practical for customers to install electric resistance back up heat for a variety of reasons including:

- Cost to operate even with the Company's updated Electric Space Heating Rate
- Physical limitations based on the size of the air handler required for these systems
- Duct sizing constraints that prevent the system from providing the required airflow to meet the heating needs

But even when the furnace is intended to provide backup to a heat pump, there are more and less-efficient backup furnaces to choose from. It is important to be able to support and influence customer decisions to install the most efficient system that meets their individualized needs.

---

<sup>6</sup> Fresh Energy Comments of October 22, 2025, p. 1.

<sup>7</sup> Hearing Exhibit 1000, Answer Testimony of Justin Brandt, Proceeding No. 22A-0309EG, 39:14-16.

We oppose the proposed modification for a higher baseline when the cost of minimally code-compliant equipment remains the cheapest option. Abruptly reducing rebates that help reduce the higher cost of efficient equipment may cause customers to choose the cheapest option for their homes, particularly for customers facing unplanned equipment replacement. It will take time for the market to transition to new equipment such as heat pumps. Manufacturers, distributors, and trade partners will also need time to adapt their stocking, sales, and installation practices to shift to supporting heat pump installations. Despite the expectation of new federal furnace efficiency standards coming into effect (and regardless of the baseline that is ultimately assumed in Minnesota's TRM), it is likely that customers who currently have an 80 percent AFUE furnace will be able to replace it with a similar furnace throughout the 2027-2029 Triennial period.<sup>8</sup>

While the TRM v5.0 is not eliminating furnace rebates, the proposal adjusting the efficiency levels, resulting in a change to our ability to cost-effectively incentivize customers to choose more efficient equipment, may ultimately result in same end – the removal of furnace rebates from the portfolio. A change of this magnitude should be thoroughly vetted.

## CONCLUSION

The Company appreciates the opportunity to provide these comments to the Department regarding their proposed TRM v5.0. As discussed in these comments we recommend the following:

- Maintaining the baseline for furnace measures at 80 percent AFUE in TRM v5.0
- Maintaining the baseline for boiler measures at 80 percent AFUE in TRM v5.0

Dated: November 20, 2025

Northern States Power Company

---

<sup>8</sup> Currently, new federal standards are expected to apply to furnaces manufactured (not purchased) after December 2028; dealers are likely to inventory of the older furnaces well after that point. This is the reason that historically, updates to federal standards have been applied to the measures in the TRM with a year of lag.



## CERTIFICATE OF SERVICE

I, Victor Barreiro, 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 No.**

**E,G999/CIP-18-694**

Dated this 20<sup>th</sup> day of November, 2025

/s/

---

Victor Barreiro  
Regulatory Administrator

| #  | First Name | Last Name  | Email                        | Organization                     | Agency                      | Address  | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name |
|----|------------|------------|------------------------------|----------------------------------|-----------------------------|--|--------------------|---------------------------|-------------------|-------------------|
| 1  | Tasha      | Altmann    | tasha.altmann@mrenergy.com   | Missouri River Energy Services   |                             | 3724 W. Avera Drive<br>PO Box 88920<br>Sioux Falls SD, 57109-8920<br>United States   | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 2  | Julie      | Ambach     | juliea@cmmpa.org             | Shakopee Public Utilities        |                             | 255 Sarazin St<br>Shakopee MN, 55379<br>United States                                | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 3  | Kathy      | Baerlocher | kathy.baerlocher@mdu.com     | Great Plains Natural Gas Company |                             | 400 N 4th St<br>Bismarck ND, 58501<br>United States                                  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 4  | Tom        | Balster    | tombalster@alliantenergy.com | Interstate Power & Light Company |                             | PO Box 351<br>200 1st St SE<br>Cedar Rapids IA, 52406-0351<br>United States          | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 5  | Lisa       | Beckner    | lbeckner@mnpower.com         | Minnesota Power                  |                             | 30 W Superior St<br>Duluth MN, 55802<br>United States                                | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 6  | Sasha      | Bergman    | sasha.bergman@state.mn.us    |                                  | Public Utilities Commission |  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 7  | Derek      | Bertsch    | derek.bertsch@mrenergy.com   | Missouri River Energy Services   |                             | 3724 West Avera Drive<br>PO Box 88920<br>Sioux Falls SD, 57109-8920<br>United States | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 8  | Deb        | Birgen     | dbirgen@mrenergy.com         | Missouri River Energy Services   |                             | PO Box 88920<br>Sioux Falls MN, 57109<br>United States                               | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 9  | William    | Black      | bblack@mmua.org              | MMUA                             |                             | Suite 200<br>3131 Fernbrook Lane North<br>Plymouth MN, 55447<br>United States        | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 10 | Matthew    | Brodin     | mbrodin@allete.com           | Minnesota Power                  |                             | 30 West Superior Street<br>Duluth MN, 55802<br>United States                         | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 11 | Christina  | Brusven    | cbrusven@fredlaw.com         | Fredrikson Byron                 |                             | 60 S 6th St<br>Ste 1500 Minneapolis MN, 55402-4400<br>United States                  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 12 | Mike       | Bull       | mike.bull@state.mn.us        |                                  | Public Utilities Commission | 121 7th Place East,<br>Suite 350 St. Paul MN, 55101<br>United States                 | Electronic Service |                           | Yes               | 18-694CIP-18-694  |
| 13 | Ray        | Choquette  | rchoquette@agp.com           | Ag Processing Inc.               |                             | 12700 West Dodge Road<br>PO Box 2047 Omaha NE,                                       | Electronic Service |                           | No                | 18-694CIP-18-694  |

| #  | First Name | Last Name          | Email                              | Organization                           | Agency  | Address   | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name |
|----|------------|--------------------|------------------------------------|--|---|---|--------------------|---------------------------|-------------------|-------------------|
|    |            |                    |                                    |  |   | 68103-2047<br>United States   |                    |                           |                   |                   |
| 14 | Generic    | Commerce Attorneys | commerce.attorneys@ag.state.mn.us  |  | Office of the Attorney General - Department of Commerce | 445 Minnesota Street Suite 1400<br>St. Paul MN, 55101<br>United States  | Electronic Service |                           | Yes               | 18-694CIP-18-694  |
| 15 | George     | Crocker            | gwillc@nawo.org                    | North American Water Office            |   | 5093 Keats Avenue<br>Lake Elmo MN, 55042<br>United States               | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 16 | Bradley    | Davison            | bradley.davison@mdu.com            | Great Plains Natural Gas Company       |   |   | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 17 | Charles    | Drayton            | charles.drayton@enbridge.com       | Enbridge Energy Company, Inc.          |   | 7701 France Ave S Ste 600<br>Edina MN, 55435<br>United States           | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 18 | Jim        | Erchul             | jerchul@dbnhs.org                  | Daytons Bluff Neighborhood Housing Sv. |   | 823 E 7th St<br>St. Paul MN, 55106<br>United States                     | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 19 | Greg       | Ernst              | gaernst@q.com                      | G. A. Ernst & Associates, Inc.         |   | 2377 Union Lake Trl<br>Northfield MN, 55057<br>United States            | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 20 | Melissa S  | Feine              | melissa.feine@semcac.org           | SEMCAC                                 |   | PO Box 549<br>204 S Elm St<br>Rushford MN, 55971<br>United States       | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 21 | Sharon     | Ferguson           | sharon.ferguson@state.mn.us        |  | Department of Commerce                                  | 85 7th Place<br>E Ste 280<br>Saint Paul MN, 55101-2198<br>United States | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 22 | Lisa       | Fischer            | lisa.fischer@mrenergy.com          | Missouri River Energy Services         |   | PO Box 88920<br>Sioux Falls SD, 57109-8920<br>United States             | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 23 | Karolanne  | Foley              | karolanne.foley@dairylandpower.com | Dairyland Power Cooperative            |   | PO Box 817<br>La Crosse WI, 54602-0817<br>United States                 | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 24 | Tyler      | Glewwe             | tyler.glewwe@centerpointenergy.com | CenterPoint Energy                     |   | 505 Nicollet Mall<br>Minneapolis MN, 55402<br>United States             | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 25 | Jenny      | Glumack            | jenny@mrea.org                     | Minnesota Rural Electric Association   |   | 11640 73rd Ave N<br>Maple Grove MN, 55369<br>United States              | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 26 | Jason      | Grenier            | jgrenier@otpc.com                  | Otter Tail Power Company               |   | 215 South Cascade Street<br>Fergus Falls MN, 56537<br>United States     | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 27 | Jeffrey    | Haase              | jhaase@greenergy.com               | Great River Energy                     |   | 12300 Elm Creek Blvd<br>Maple Grove                                     | Electronic Service |                           | No                | 18-694CIP-18-694  |

| #  | First Name | Last Name | Email                              | Organization                                     | Agency | Address  | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name |
|----|------------|-----------|------------------------------------|--|--------|--|--------------------|---------------------------|-------------------|-------------------|
|    |            |           |                                    |  |        | MN, 55369<br>United States   |                    |                           |                   |                   |
| 28 | Curtis     | Hanson    | chanson@franklinenergy.com         | Franklin Energy                                  |        | 2303 Wycliff Street, Suite 2E<br>St. Paul MN, 55114<br>United States           | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 29 | Kurt       | Hauser    | kurt.hauser@mrenergy.com           | Missouri River Eenrgy Services                   |        | 3724 W Avera Dr<br>PO Box 88920<br>Sioux Falls SD, 57109-8920<br>United States | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 30 | Joe        | Hoffman   | ja.hoffman@smmpa.org               | SMMPA  |        | 500 First Ave SW<br>Rochester MN, 55902-3303<br>United States                  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 31 | Travis     | Jacobson  | travis.jacobson@mdu.com            | Great Plains Natural Gas Company                 |        | 400 N 4th St<br>Bismarck ND, 58501<br>United States                            | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 32 | Dave       | Johnson   | dave.johnson@aeoa.org              | Arrowhead Economic Opportunity Agency            |        | 702 3rd Ave S<br>Virginia MN, 55792<br>United States                           | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 33 | Jennifer   | Kimmen    | jennifer.kimmen@wecenergygroup.com | Minnesota Energy Resources Corporation (HOLDING) |        | 2685 145th St W<br>Rosemount MN, 55033<br>United States                        | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 34 | Zach       | Klabo     | zach.klabo@mdu.com                 | Great Plains Natural Gas Company                 |        |  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 35 | Deborah    | Knoll     | dknoll@mnpower.com                 | Minnesota Power                                  |        | 30 W Superior St<br>Duluth MN, 55802<br>United States                          | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 36 | Tina       | Koecher   | tkoecher@mnpower.com               | Minnesota Power                                  |        | 30 W Superior St<br>Duluth MN, 55802-2093<br>United States                     | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 37 | Dean       | Laube     | deanlaube@franklinenergy.com       | Franklin Energy Services                         |        | 2215 East Clairemont Avenue<br>Eau Claire WI, 54701<br>United States           | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 38 | Martin     | Lepak     | martin.lepak@aeoa.org              | Arrowhead Economic Opportunity                   |        | 702 S 3rd Ave<br>Virginia MN, 55792<br>United States                           | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 39 | Christine  | Marquis   | regulatory.records@xcelenergy.com  | Xcel Energy                                      |        | 414 Nicollet Mall<br>MN1180-07-MCA<br>Minneapolis MN, 55401<br>United States   | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 40 | Josh       | Mason     | jmason@rpu.org                     | Rochester Public Utilities                       |        | 4000 E River Rd NE<br>Rochester MN, 55906<br>United States                     | Electronic Service |                           | No                | 18-694CIP-18-694  |

| #  | First Name | Last Name  | Email                            | Organization                       | Agency | Address   | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name |
|----|------------|------------|----------------------------------|------------------------------------|--------|---|--------------------|---------------------------|-------------------|-------------------|
| 41 | Scot       | McClure    | scotmcclure@alliantenergy.com    | Interstate Power And Light Company |        | 4902 N Biltmore Ln<br>PO Box 77007<br>Madison WI, 53707-1007<br>United States   | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 42 | David C.   | McLaughlin | david.fhmab@midconetwork.com     | Missouri River Energy Services     |        | 25 NW 2nd St Ste 102<br>Ortonville MN, 56278<br>United States                   | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 43 | Tim        | Miller     | tim.miller@mrenergy.com          | Missouri River Energy Services     |        | 3724 W Avera Dr<br>PO Box 88920<br>Sioux Falls SD, 57109-8920<br>United States  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 44 | David      | Moeller    | dmoeller@allete.com              | Minnesota Power                    |        |   | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 45 | Andrew     | Moratzka   | andrew.moratzka@stoel.com        | Stoel Rives LLP                    |        | 33 South Sixth St Ste 4200<br>Minneapolis MN, 55402<br>United States            | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 46 | Carl       | Nelson     | cnelson@mncee.org                | Center for Energy and Environment  |        | 212 3rd Ave N Ste 560<br>Minneapolis MN, 55401<br>United States                 | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 47 | Samantha   | Norris     | samanthanorris@alliantenergy.com | Interstate Power and Light Company |        | 200 1st Street SE PO Box 351<br>Cedar Rapids IA, 52406-0351<br>United States    | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 48 | Larry      | Oswald     | larry.oswald@mdu.com             | Great Plains Natural Gas Company   |        | 105 W Lincoln Ave<br>PO Box 176<br>Fergus Falls MN, 56538-9001<br>United States | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 49 | Leah       | Peterson   | lpeterson@mnpower.com            | Minnesota Power                    |        | 30 West Superior St<br>Duluth MN, 55802<br>United States                        | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 50 | Lisa       | Pickard    | lseverson@minnkota.com           | Minnkota Power Cooperative         |        | 5301 32nd Ave S<br>Grand Forks ND, 58201<br>United States                       | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 51 | Joe        | Plummer    | jplummer@franklinenergy.com      | Franklin Energy Services, LLC      |        | 2303 Wycliff St<br>Suite 2E<br>St. Paul MN, 55114<br>United States              | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 52 | Bill       | Poppert    | info@technologycos.com           | Technology North                   |        | 2433 Highwood Ave<br>St. Paul MN, 55119<br>United States                        | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 53 | Dave       | Reinke     | dreinke@dakotaelectric.com       | Dakota Electric Association        |        | 4300 220th St W<br>Farmington MN, 55024-  | Electronic Service |                           | No                | 18-694CIP-18-694  |

| #  | First Name     | Last Name                      | Email                                | Organization                      | Agency  | Address  | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name |
|----|----------------|--------------------------------|--------------------------------------|-----------------------------------|---|--|--------------------|---------------------------|-------------------|-------------------|
|    |                |                                |                                      |                                   |   | 9583<br>United States  |                    |                           |                   |                   |
| 54 | Generic Notice | Residential Utilities Division | residential.utilities@ag.state.mn.us |                                   | Office of the Attorney General - Residential Utilities Division | 1400 BRM Tower 445 Minnesota St St. Paul MN, 55101-2131 United States            | Electronic Service |                           | Yes               | 18-694CIP-18-694  |
| 55 | Anne           | Rittgers                       | arittgers@mnpower.com                | Minnesota Power                   |   | 30 W Superior St Duluth MN, 55802 United States                                  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 56 | Merlin         | Sawyer                         | merlin.sawyer@mrenergy.com           | Missouri River Energy Services    |   | 3724 W AVERA DR PO BOX 88920 Sioux Falls SD, 57109-8920 United States            | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 57 | Jean           | Schafer                        | jeans@bepc.com                       | Basin Electric Power Cooperative  |   | 1717 E Interstate Ave Bismarck ND, 58501 United States                           | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 58 | Ben            | Schoenbauer                    | bschoenbauer@mncee.org               | Center for Energy and Environment |   | 212 3rd Ave N Ste 560 Minneapolis MN, 55401 United States                        | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 59 | Rob            | Scott Hovland                  | rob.scott-hovland@mrenergy.com       | Missouri River Energy Services    |   | 3724 W Avera Dr PO Box 88920 Sioux Falls SD, 57109-8920 United States            | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 60 | Rick           | Sisk                           | rsisk@trccompanies.com               | Lockheed Martin                   |   | 1000 Clark Ave. St. Louis MO, 63102 United States                                | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 61 | Ken            | Smith                          | ken.smith@districtenergy.com         | District Energy St. Paul Inc.     |   | 76 W Kellogg Blvd St. Paul MN, 55102 United States                               | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 62 | Anna           | Sommer                         | asommer@energyfuturesgroup.com       | Energy Futures Group              |   | PO Box 692 Canton NY, 13617 United States  | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 63 | Russ           | Stark                          | russ.stark@ci.stpaul.mn.us           | City of St. Paul                  |   | Mayor's Office 15 W. Kellogg Blvd., Suite 390 Saint Paul MN, 55102 United States | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 64 | Analeisha      | Vang                           | avang@mnpower.com                    |                                   |   | 30 W Superior St Duluth MN, 55802-2093 United States                             | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 65 | Kodi           | Verhalen                       | kverhalen@taftlaw.com                | Taft Stettinius & Hollister LLP   |   | 80 S 8th St Ste 2200 Minneapolis MN, 55402 United States                         | Electronic Service |                           | No                | 18-694CIP-18-694  |

| #  | First Name | Last Name | Email                              | Organization                       | Agency | Address  | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name |
|----|------------|-----------|------------------------------------|------------------------------------|--------|--|--------------------|---------------------------|-------------------|-------------------|
| 66 | Michael    | Volker    | mvolker@eastriver.coop             | East River Electric Power Coop     |        | 211 S. Harth Ave<br>Madison SD, 57042<br>United States                                 | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 67 | Ethan      | Warner    | ethan.warner@centerpointenergy.com | CenterPoint Energy                 |        | 505 Nicollet Mall<br>Minneapolis MN, 55402<br>United States                            | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 68 | Shawn      | White     | shawn.m.white@xcelenergy.com       | Xcel Energy                        |        | 414 Nicollet Mall<br>Minneapolis MN, 55401<br>United States                            | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 69 | Robyn      | Woeste    | robynwoeste@alliantenergy.com      | Interstate Power and Light Company |        | 200 First St SE<br>Cedar Rapids IA, 52401<br>United States                             | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 70 | Terry      | Wolf      | terry.wolf@mrenergy.com            | Missouri River Energy Services     |        | 3724 W Avera Dr<br>PO Box<br>Sioux Falls SD, 57109-8920<br>United States               | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 71 | Brian      | Zavesky   | brianz@mrenergy.com                | Missouri River Energy Services     |        | 3724 West Avera Drive<br>P.O. Box 88920<br>Sioux Falls SD, 57108-8920<br>United States | Electronic Service |                           | No                | 18-694CIP-18-694  |
| 72 | Cristina   | Zuniga    | czuniga@otpc.com                   | Otter Tail Power Company           |        | 215 South Cascade Street<br>PO Box 496<br>Fergus Falls MN, 56538<br>United States      | Electronic Service |                           | No                | 18-694CIP-18-694  |





| #  | First Name | Last Name | Email                              | Organization                           | Agency                 | Address   | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name        |
|----|------------|-----------|------------------------------------|--|------------------------|---|--------------------|---------------------------|-------------------|--------------------------|
| 12 | George     | Crocker   | gwillc@nawo.org                    | North American Water Office            |                        | 5093 Keats Avenue<br>Lake Elmo MN, 55042<br>United States               | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 13 | Bradley    | Davison   | bradley.davison@mdu.com            | Great Plains Natural Gas Company       |                        |   | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 14 | Charles    | Drayton   | charles.drayton@enbridge.com       | Enbridge Energy Company, Inc.          |                        | 7701 France Ave S Ste 600<br>Edina MN, 55435<br>United States           | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 15 | Jim        | Erchul    | jerchul@dbnhs.org                  | Daytons Bluff Neighborhood Housing Sv. |                        | 823 E 7th St<br>St. Paul MN, 55106<br>United States                     | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 16 | Greg       | Ernst     | gaernst@q.com                      | G. A. Ernst & Associates, Inc.         |                        | 2377 Union Lake Trl<br>Northfield MN, 55057<br>United States            | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 17 | Melissa S  | Feine     | melissa.feine@semcac.org           | SEMCAC                                 |                        | PO Box 549<br>204 S Elm St<br>Rushford MN, 55971<br>United States       | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 18 | Sharon     | Ferguson  | sharon.ferguson@state.mn.us        |  | Department of Commerce | 85 7th Place<br>E Ste 280<br>Saint Paul MN, 55101-2198<br>United States | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 19 | Karolanne  | Foley     | karolanne.foley@dairylandpower.com | Dairyland Power Cooperative            |                        | PO Box 817<br>La Crosse WI, 54602-0817<br>United States                 | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 20 | Tyler      | Glewwe    | tyler.glewwe@centerpointenergy.com | CenterPoint Energy                     |                        | 505 Nicollet Mall<br>Minneapolis MN, 55402<br>United States             | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 21 | Jenny      | Glumack   | jenny@mrea.org                     | Minnesota Rural Electric Association   |                        | 11640 73rd Ave N<br>Maple Grove MN, 55369<br>United States              | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 22 | Jason      | Grenier   | jgrenier@otpc.com                  | Otter Tail Power Company               |                        | 215 South Cascade Street<br>Fergus Falls MN, 56537<br>United States     | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 23 | Jeffrey    | Haase     | jhaase@greenergy.com               | Great River Energy                     |                        | 12300 Elm Creek Blvd<br>Maple Grove MN, 55369<br>United States          | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 24 | Joe        | Hoffman   | ja.hoffman@smpa.org                | SMPMA                                  |                        | 500 First Ave SW  | Electronic Service |                           | No                | ECO SPECIAL              |

| #  | First Name | Last Name | Email                                 | Organization                          | Agency | Address   | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name        |
|----|------------|-----------|---------------------------------------|---------------------------------------|--------|---|--------------------|---------------------------|-------------------|--------------------------|
|    |            |           |                                       |                                       |        | Rochester MN, 55902-3303 United States                              |                    |                           |                   | SERVICE LIST             |
| 25 | Travis     | Jacobson  | travis.jacobson@mdu.com               | Great Plains Natural Gas Company      |        | 400 N 4th St Bismarck ND, 58501 United States                       | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 26 | Dave       | Johnson   | dave.johnson@aeoa.org                 | Arrowhead Economic Opportunity Agency |        | 702 3rd Ave S Virginia MN, 55792 United States                      | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 27 | Martin     | Kapsch    | martin.kapsch@centerpointenergy.com   | CenterPoint Energy Minnesota Gas      |        | 505 Nicollet Mall Minneapolis MN, 55402 United States               | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 28 | Zach       | Klabo     | zach.klabo@mdu.com                    | Great Plains Natural Gas Company      |        |   | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 29 | Deborah    | Knoll     | dknoll@mnpower.com                    | Minnesota Power                       |        | 30 W Superior St Duluth MN, 55802 United States                     | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 30 | Kathryn    | Knudson   | kathryn.knudson@centerpointenergy.com | CenterPoint Energy Minnesota Gas      |        | null null, null United States                                       | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 31 | Tina       | Koecher   | tkoecher@mnpower.com                  | Minnesota Power                       |        | 30 W Superior St Duluth MN, 55802-2093 United States                | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 32 | Martin     | Lepak     | martin.lepak@aeoa.org                 | Arrowhead Economic Opportunity        |        | 702 S 3rd Ave Virginia MN, 55792 United States                      | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 33 | Corey      | Lubovich  | coreyl@hpuc.com                       | Hibbing Public Utilities Commission   |        | 1902 6th Ave E Hibbing MN, 55746 United States                      | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 34 | Christine  | Marquis   | regulatory.records@xcelenergy.com     | Xcel Energy                           |        | 414 Nicollet Mall MN1180-07-MCA Minneapolis MN, 55401 United States | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 35 | Josh       | Mason     | jmason@rpu.org                        | Rochester Public Utilities            |        | 4000 E River Rd NE Rochester MN, 55906 United States                | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 36 | Scot       | McClure   | scotmcclure@alliantenergy.com         | Interstate Power And Light Company    |        | 4902 N Biltmore Ln PO Box 77007 Madison WI, 53707-1007              | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |



| #  | First Name | Last Name | Email                              | Organization                       | Agency                 | Address   | Delivery Method    | Alternate Delivery Method | View Trade Secret | Service List Name        |
|----|------------|-----------|------------------------------------|------------------------------------|------------------------|---|--------------------|---------------------------|-------------------|--------------------------|
| 47 | Laura      | Silver    | laura.silver@state.mn.us           |                                    | Department of Commerce | 85 7th Place E, Suite 500<br>St. Paul MN, 55101<br>United States                          | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 48 | Rick       | Sisk      | rsisk@trccompanies.com             | Lockheed Martin                    |                        | 1000 Clark Ave.<br>St. Louis MO, 63102<br>United States                                   | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 49 | Ken        | Smith     | ken.smith@districtenergy.com       | District Energy St. Paul Inc.      |                        | 76 W Kellogg Blvd<br>St. Paul MN, 55102<br>United States                                  | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 50 | Anna       | Sommer    | asommer@energyfuturesgroup.com     | Energy Futures Group               |                        | PO Box 692<br>Canton NY, 13617<br>United States   | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 51 | Russ       | Stark     | russ.stark@ci.stpaul.mn.us         | City of St. Paul                   |                        | Mayor's Office<br>15 W. Kellogg Blvd., Suite 390<br>Saint Paul MN, 55102<br>United States | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 52 | Kodi       | Verhalen  | kverhalen@taftlaw.com              | Taft Stettinius & Hollister LLP    |                        | 80 S 8th St<br>Ste 2200<br>Minneapolis MN, 55402<br>United States                         | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 53 | Michael    | Volker    | mvolker@eastriver.coop             | East River Electric Power Coop     |                        | 211 S. Harth Ave<br>Madison SD, 57042<br>United States                                    | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 54 | Ethan      | Warner    | ethan.warner@centerpointenergy.com | CenterPoint Energy                 |                        | 505 Nicollet Mall<br>Minneapolis MN, 55402<br>United States                               | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 55 | Robyn      | Woeste    | robynwoeste@alliantenergy.com      | Interstate Power and Light Company |                        | 200 First St SE<br>Cedar Rapids IA, 52401<br>United States                                | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |
| 56 | Cristina   | Zuniga    | czuniga@otpc.com                   | Otter Tail Power Company           |                        | 215 South Cascade Street<br>PO Box 496<br>Fergus Falls MN, 56538<br>United States         | Electronic Service |                           | No                | ECO SPECIAL SERVICE LIST |