MOORHEAD PUBLIC SERVICE COMMISSION

MEETING AGENDA

Tuesday, April 22, 2025 - 4:30 PM

Hjemkomst Center
202 First Avenue North, Moorhead
Auditorium

Commissioners:
Joel Paulsen, Chairperson
Paul Baker, Vice Chairperson
Lisa Borgen, Secretary
Heidi Durand
Matt Leiseth
Jason Ness

Travis L. Schmidt, General Manager

The Moorhead Public Service Commission welcomes and encourages customer input on issues listed on the agenda or of general water/electric utility interest—time and Commission permitting. Speakers are limited to 3-minute presentations. Customers wishing to address the Commission regarding a specific agenda item will be afforded an opportunity during the discussion of that item. Customers wishing to speak on matters not listed on the agenda will be given the opportunity to do so under the heading "Customers to Be Heard/Recognitions." Each person requesting the opportunity to speak is asked to fill out a *Request to Speak Form (*located on the table in the back of the room) and present it to the Administrative Assistant in attendance at the meeting. Any follow-up or feedback will be done by e-mail on anything that cannot be resolved this evening.

1. Call to Order

2. Approve Agenda

3. Approve Consent Agenda

All agenda items listed with an asterisk (*) are on the consent agenda and are considered routine or non-controversial. These items may be enacted by the Commission in one motion, which is a motion to approve the consent agenda. No discussion is expected for the items on the consent agenda; however, prior to approving the consent agenda, the Commission may request specific items be removed from the consent agenda for discussion and separate action.

***4. Approve Minutes of March 18, 2025**

***5. Approve Bills for Payment**

6. Customers to Be Heard/Recognitions

7. Old Business

8. **Reports**
   a. **City Council**
   b. **Public Service Commission**
   c. **General Manager's Report**
   d. **Accept Report on Capacity Improvements Study Prepared by DGR Engineering**

*9. **Approve Task Order No. 13 with DGR Engineering for Control Building and Capacitor Banks at Southeast Substation**

*10. **Approve Task Order No. 3 with Terracon Consultants, Inc., for 2025 Construction Materials Testing**

11. **Approve Request to Mayor and Moorhead City Council to Approve Resolution of Application for MPS' 2025 Lead Service Line Replacement Project**

*12. **Approve Professional Services Agreement with MunicipalH2O for Chlorine Safety Management**

*13. **Approve Revised 2025 Delegates**

14. **Close Meeting for Executive Session (if needed)**

15. **Upcoming Meetings**

   a. **Public Service Commission Meetings**
      May 6, 2025 (if needed)
      May 20, 2025

   b. **Meeting Opportunities for Commissioners[(A)]**
      - **Tours of MPS Water Treatment Plant, Aquifer, Power Supply Grid, MPS Worksites, Employee Gatherings**
        (Available Upon Request)
      - **MRES Annual Meeting**
        May 7-8, 2025, Sioux Falls, SD
      - **APPA National Conference**
        June 6-11, 2025, New Orleans, LA
      - **AWWA Annual Conference**
        June 8-11, 2025, Denver, CO
      - **MMUA Summer Conference**
        August 18-20, 2025, Rochester, MN

16. **Adjourn**

How to obtain Public Service Commission agendas:
View on the Internet. Any attachments that are not available online may be viewed at the offices of Moorhead Public Service. E-mail subscription: mps@mpsutility.com
Request a copy at Second Floor City Hall, 500 Center Avenue (Moorhead Center Mall).Upon request, accommodations for individuals with disabilities, language barriers, or other needs to allow participation in Commission meetings will be provided. To arrange assistance, call Moorhead Public Service at 218.477.8003 (voice) or 711 (TDD/TTY).**Moorhead Public Service Commission meetings are broadcast live on Channel 12-Moorhead Community Access Television in Moorhead and digital Channels 67 and 68 for the metro area.****

Commissioner Heidi Durand will be participating in this meeting via interactive technology from the address of 3625 22nd Avenue South, Moorhead, MN 56560, which location is open and accessible to the public during the meeting.

Commissioner Matt Leiseth will be participating in this meeting via interactive technology from the address of 428 5th Ave NW 281Aberdeen SD, 57401, which location is open and accessible to the public during the meeting.

[(A)] APPA = American Public Power Association - www.publicpower.org
MMUA = Minnesota Municipal Utilities Association - www.mmua.org
MRES = Missouri River Energy Services - www.mrenergy.com
AWWA = American Water Works Association - www.aww.org
MN AWWA = American Water Works Association-Minnesota Section - www.mnawwa.org
RRBC = Red River Basin Commission - www.redriverbasincommission.org

Minutes of the Moorhead Public Service Commission
Hjemkomst Center, Auditorium
Tuesday, March 18, 2025 – 4:30 PM

MEMBERS PRESENT: Lisa Borgen, Matthew Leiseth (Interactive Technology—Business), Jason Ness, and Joel Paulsen

MEMBERS ABSENT: Paul Baker and Heidi Durand

OTHERS PRESENT: Staff Members Adam Benhardt, Taylor Holte, Jake Long, Kurt McClain, Mark Moilanen, Susan Orth, Marc Pritchard, and James Sumba; MPS Attorney John Boulger

1. CALL TO ORDER.

Chairperson Paulsen called the meeting to order at 4:36 PM. A quorum of the following members was present: Borgen, Leiseth, Ness, and Paulsen.

2. APPROVE AGENDA.

Commissioner Ness made a motion to approve the agenda. Commissioner Borgen seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

3. APPROVE CONSENT AGENDA.

Commissioner Borgen made a motion to approve the consent agenda. Commissioner Leiseth seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

[The consent agenda approved above includes all items shown herein with an asterisk (*). These items were considered routine or non-controversial by the Commission and were enacted by the Commission in one motion, which is the motion above to approve the consent agenda.]

***4. APPROVE MINUTES OF FEBRUARY 18, 2025.**

Commissioner Borgen made a motion to approve the minutes of February 18, 2025. Commissioner Leiseth seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

***5. APPROVE BILLS FOR PAYMENT.**

Commissioner Borgen made a motion to approve the bills for payment. Commissioner Leiseth seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

***6. APPROVE SPECIFICATIONS AND AUTHORIZE ADVERTISEMENT FOR BIDS FOR THE ROOF REPLACEMENT AT 415 HIGHWAY 75 NORTH.**

Commissioner Borgen made a motion to approve the specifications and authorize advertisement for bids for the roof replacement at Moorhead Public Service's storage building at 415 Highway 75 North, Moorhead, contingent upon final legal approval. Commissioner Leiseth seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

***7. APPROVE CHANGE ORDER NO. 3 WITH BORDER STATES INDUSTRIES, INC., FOR CIRCUIT BREAKERS AT MOORHEAD DOE SUBSTATION.**

Commissioner Borgen made a motion to approve Change Order No. 3 with Border States Industries, Inc., in the amount of $31,110.00 for the circuit breakers at the Moorhead DOE Substation. Commissioner Leiseth seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

***8. APPROVE REVISED ORGANIZATIONAL STRUCTURE AND NUMBER OF PERSONNEL FOR 2025 AND AMENDED SECTION 5.5 IN MPS' PERSONNEL POLICY MANUAL.**

Commissioner Borgen made a motion to approve Moorhead Public Service's revised Organizational Structure and Organizational Structure – Number of Personnel for 2025, and amended Section 5.5 in Moorhead Public Service's Personnel Policy Manual. Commissioner Leiseth seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

9. CUSTOMERS TO BE HEARD/RECOGNITIONS.

There were no customers to be heard.

Finance Division Manager Mark Moilanen recognized Moorhead Public Service (MPS) Utility Service Worker Dennis Otto for reaching his 10-year employment milestone and Construction Manager Adam Benhardt for reaching his 15-year employment milestone.

10. OLD BUSINESS.

There was no old business to discuss.

11. REPORTS.

City Council.
Commissioner Borgen, along with business owners, Moorhead Area Public Schools, and higher education institutions met with over 15 different legislators March 4-5, 2025, for Moorhead Area Day at the Capitol in St. Paul, Minnesota. The group discussed legislative activities as well as the City of Moorhead's (City's) key priorities. Borgen also stated that, following Moorhead Area Day at the Capitol, a legislative work group meeting was held to discuss Moorhead's priorities with other legislators and authors for the City's legislative bills.

Public Service Commission.
No report was made.

General Manager's Report.
Finance Division Manager Mark Moilanen provided an introduction of the General Manager's Report, which included the update to Moorhead Public Service's (MPS') Spill Prevention, Controls, and Countermeasure Plan, the 2025 flood outlook, tariff impacts on MPS, American Public Power Association's Legislative Rally and federal legislative updates, legislative newsletters from Minnesota Municipal Utilities Association and Missouri River Energy Services, and a thank you note from National Alliance on Mental Illness Moorhead.

Project Engineer Taylor Holte provided background information on MPS' Spill Prevention, Controls, and Countermeasure Plan. Holte responded to questions of the Commission.

Moilanen informed the Commission that Business Office staff has received inquiries from customers concerned with MPS' electric costs being subject to Canadian tariffs. Moilanen stated that MPS is aware of this and staff is taking the necessary steps to avoid any potential impacts to MPS' Electric, Water, and IT Divisions.

Water Plant Manager Marc Pritchard provided information on water sources when flood and drought scenarios are present. Pritchard responded to questions of the Commission. Discussion was held.

Accept Report on MPS' Advanced Metering Infrastructure Project.

Water Distribution Manager Jake Long provided an update on MPS' Advanced Metering Infrastructure Project, the process for replacing meters, and the communication pieces that have been distributed to customers. Long responded to questions of the Commission.

Commissioner Leiseth made a motion to accept the report on Moorhead Public Service's Advanced Metering Infrastructure Project. Commissioner Ness seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

12. APPROVE TASK ORDER AGREEMENT FOR PROFESSIONAL SERVICES WITH SHORT ELLIOTT HENDRICKSON, INC.

Water Plant Manager Marc Pritchard provided background information regarding the Ozone Generator and Equipment Replacement Project at MPS' Water Treatment Plant. Pritchard stated that, in order for Short Elliott Hendrickson, Inc., to continue working on this Project, a Task Order Agreement for Professional Services is needed because the existing agreement will expire in August 2025.

Commissioner Ness made a motion to approve the Task Order Agreement for Professional Services with Short Elliott Hendrickson, Inc., contingent upon final legal approval. Commissioner Borgen seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

13. APPROVE 2025 COOPERATIVE AND SELF-PERFORMED WATERMAIN IMPROVEMENT PROJECTS.

Water Distribution Manager Jake Long provided information on MPS' self-performed watermain projects, as well as coordinated watermain projects planned with the City of Moorhead in 2025. Long responded to questions of the Commission. Discussion was held.

Commissioner Leiseth made a motion to approve 2025 Cooperative Projects for Watermain Improvements with the City of Moorhead's Street and Underground Utility Improvement Projects and Moorhead Public Service's Self-Performed Watermain Improvements Projects. Commissioner Borgen seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

14. AWARD BID FOR 2025 WATER DISTRIBUTION PIPE AND FITTINGS.

Water Distribution Manager Jake Long provided information on the materials needed for inventory as well as annual watermain replacement projects.

Commissioner Leiseth made a motion to award the bid for 2025 Water Distribution Pipe and Fittings to Ferguson Waterworks in the amount of $284,520.17, as shown on the attached Bid Tabulation Sheet attached hereto and made a part of these minutes. Commissioner Borgen seconded the motion. The motion passed with a 4-0 vote. Voting Yes: Borgen, Leiseth, Ness, and Paulsen. Voting No: None.

15. APPROVE SPONSORSHIP REQUEST FROM MOORHEAD LEGACY EDUCATION FOUNDATION FOR MOORHEAD PUBLIC SERVICE SCHOLARSHIP.

Finance Division Manager Mark Moilanen provided information on the sponsorship request from the Moorhead Legacy Education Foundation. Administrative Assistant Susan Orth provided clarification on the sponsorship request, as well as the marketing sponsorship request which was included in the agenda item for the Commission's information. Moilanen responded to questions of the Commission. Discussion was held.

Commissioner Borgen made a motion to approve the sponsorship request from Moorhead Legacy Education Foundation for a Moorhead Public Service Scholarship in the amount of $2,500. Commissioner Ness seconded the motion. The motion passed with a 3-0 vote. Voting Yes: Borgen, Ness, and Paulsen. Voting No: None. Abstaining: Leiseth.

16. CLOSE MEETING FOR EXECUTIVE SESSION.

The meeting was not closed for executive session.

17. UPCOMING MEETINGS.

Upcoming meetings of the Moorhead Public Service Commission are scheduled for April 8, 2025, if needed, and April 22, 2025.

18. ADJOURN.

The meeting adjourned at 5:23 PM.

The minutes herein are approved on this 22nd day of April, 2025.

APPROVED BY: ***ATTEST:***

Joel Paulsen ***Lisa Borgen***
Chairperson [i] ***Secretary*** [i]

[i] Pursuant to the Bylaws of the Moorhead Public Service Commission adopted January 18, 2022, Article 3, Section 11, states, "The Chairperson and Secretary shall sign, execute, and acknowledge all instruments authorized by the Commission or as are incident to the office. If either the Chairperson or Secretary is unavailable to execute an instrument, the Vice Chairperson may execute the instrument in place of the unavailable officer. Execution of instruments by two officers is required.

***Preliminary* Bid Tabulation Sheet**
for
2025 Water Distribution Pipe and Fittings

March 5, 2025, at 2:00 PM
MPS Dispatch Operations Center, 2nd Floor Conference Room

BIDDER'S NAME	CHECK OR BID BOND	BID ITEM #1: Water Distribution Pipe and Fittings TOTAL PRICE
Core and Main Supply	Bid Bond	$297,938.15
Dakota Supply Group	Bid Bond	$305,309.97
Ferguson Waterworks	Bid Bond	$284,520.17

General Manager's Report

1. **NERC Update.**

During the first quarter of 2025, MPS completed an annual review of the North American Electric Reliability Corporation (NERC) requirements and verified compliance with all updated standards. There were no new standards implemented in 2025; however, multiple standards were updated as a result of the major expansion projects at the Moorhead DOE Substation. The annual review also identified a subset of a NERC standard that was not previously being documented. Moorhead Public Service (MPS) was already compliant with the requirements and the proper documentation is now being performed and recorded.

During the second quarter of 2024, MPS was selected by Midwest Reliability Organization to perform a self-certification on one requirement of a NERC standard. MPS staff submitted the report stating that MPS does not have any assets regulated by the specific NERC standard.

There will be two updated NERC standards implemented in April 2025, two additional updated NERC standards that will be effective on July 1, 2025, and a third standard that will take effect on October 1, 2025. At this time, MPS is compliant with all of NERC's updated standards.

2. **Power Factor Assessment.**

Each year, Missouri River Energy Services (MRES) assesses whether MPS has maintained an acceptable power factor. MPS is required to maintain a power factor greater than, or equal to, 0.95. To account for possible errors in data, MPS is allowed to fall below the minimum power factor requirement for a maximum of 10 summer hours. In 2024, MPS had zero hours below the requirement. Therefore, MPS has met the screening criteria used by MRES (see attached). This year's performance in the assessment was the same as in 2023. MPS has not had any hours below the minimum acceptable power factor since 2019.

Since the removal of the capacitor bank at MPS' Northeast Substation during the summer of 2015, MPS staff has updated its internal power factor assessment of MPS' electric distribution system to determine whether additional capacitance is needed in the system. MPS staff has been in contact with some of MPS' larger electric customers that have low power factors to discuss options for adding capacitance on the circuits that supply these customers. In particular, American Crystal Sugar has added capacitance at its facilities. MPS staff assisted with the design of the capacitor bank that the City of Moorhead purchased for its Wastewater Treatment Facility. These projects have contributed to MPS meeting the power factor requirements set forth by MRES.

3. **2025 AWWA Drinking Water Week (May 4-10).**

Each year, American Water Works Association, and members like MPS, promote Drinking Water Week as a unique opportunity for both water professionals and the communities they serve to recognize the vital role of water in our daily lives.

Water utilities, water organizations, government entities, environmental advocates, schools, and others throughout North America are encouraging consumers to learn more about where their water comes from and the importance of water services and water infrastructure in maintaining public health.

Recognizing Drinking Water Week is an ideal way to help educate the public, connect with your community, and promote employee morale. Too often, water utilities are in the spotlight only when something unfortunate happens—a main break in a busy street, water restrictions, boil orders, etc.

Drinking Water Week provides an opportunity to promote the positive aspects of our drinking water infrastructure and appreciate the hard work performed by water professionals in maintaining the world's most precious resource. Whether it is an engineer designing a project, an operator ensuring the safety and quality of drinking water as it flows through a treatment facility, or distribution crews fixing a watermain break, MPS' Water Division works 24/7 to ensure that Moorhead and Dilworth have the best quality water "on tap."

4. **Update on LIHEAP Funds Availability for Minnesota Department of Commerce Energy Assistance Program.**

The Minnesota Department of Commerce (DOC) oversees the State's Energy Assistance Program (EAP) for Minnesota. EAP receives the majority of its funding through a federal block grant program approved by Congress that authorizes the U.S. Department of Health and Human Services (HHS) to allocate funding on an annual basis to states, territories, and tribes, in order to assist households with low incomes meet their home energy needs.

For the 2024-2025 EAP year, Minnesota's Low Income Home Energy Assistance Program (LIHEAP) awarded benefits, up to $1,400, to qualifying households, plus additional benefits were available for qualified households to respond to emergencies. LIHEAP is open to both renters and homeowners, and eligibility is based on income and household size.

In October 2024, the HHS, Administration for Children and Families, Office of Community Services, and the Division of Energy Assistance announced the release of $3.7 billion of LIHEAP funding. This announcement included approximately $3.6 billion of federal Fiscal Year 2025 regular block grant funding to LIHEAP grant recipients. At that time, the State of Minnesota was awarded approximately $112.5 million, or approximately 90 percent of its program year allotment, with the remaining 10 percent to be allocated in 2025.

As of the end of March 2025, it was estimated that approximately $378 million would still be distributed, of which Minnesota's portion was $11.25 million. However, on April 2, 2025, all personnel overseeing the federal program within HHS were laid off. As a result of this, there is uncertainty about the remaining funds and the future of LIHEAP.

At the Minnesota state level, it is estimated that the initial 90 percent program year allotment will be expended on or around April 24, 2025. In 2024, funds were available for LIHEAP through July 4, 2024, and 1,400 households were approved to receive LIHEAP assistance. As of April 16, 2025, 1,532 households have been approved to utilize LIHEAP.

5. **State Legislative Update.**

As a member of MRES and MMUA, MPS benefits from lobbying efforts that are in MPS' best interest. Attached are the most recent newsletters from MRES and MMUA.

Division/Response Person: Travis L. Schmidt, General Manager.

MISSOURI RIVER® ENERGY SERVICES

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February 28, 2025

Travis Schmidt
Moorhead Public Service
PO Box 779
Moorhead, MN 56561

Dear Mr. Schmidt:

This letter is intended to give you an indication as to the performance of your utility with respect to maintaining an acceptable power factor. Missouri River Energy Services (MRES) performs this assessment annually to provide timely feedback to your utility so it can make plans for improving its power factor as needed.

For your reference, below is the section from your contract/transmission service agreement that states the minimum power factor requirement.

WESTERN AREA POWER ADMINISTRATION GENERAL REQUIREMENTS FOR INTERCONNECTION

> SECTION II.A.3. POWER FACTOR CORRECTION
> Western requires that the following conditions be met for all load, and transmission interconnections to Western's transmission system: (1) A power factor between 0.95 lag and 0.95 lead measured at the point of interconnection to Western's transmission system (2) Power factor correction equipment (e.g. shunt capacitors or reactors) installed by the Requestor to meet power factor requirements shall be designed to meet Western's voltage step switching criteria for reactive equipment as outlined in Western Area Power Administration, General Requirements for Interconnection - 2 Attachment C, Technical Requirements Issue Date: 07/14/2011, FINAL, Version 1.0 (Replaces September 1999 Document) Effective Date: 07/22/2011 Western's Planning Criteria Document. The Requestor can contact the appropriate Western Regional office for specific requirements. The power factor correction requirements for generation interconnections are outlined in Western's Tariff. If the power factor requirements are not met for the interconnection, Western may, after giving notice to correct the condition, install power factor correction equipment at the interconnected entity's expense.

Each municipal utility is responsible for maintaining the minimum power factor identified in its transmission service agreement. According to the half-hourly metering data analyzed, your municipal utility has met the screening criteria used by MRES for the calendar year of 2024. The screening criteria used by MRES to determine member power factor requires that your utility must be above the minimum power factor requirement for all periods. To account for possible errors in data, the criteria screened against allows your utility to drop below the minimum power factor requirement for a maximum of ten hours.

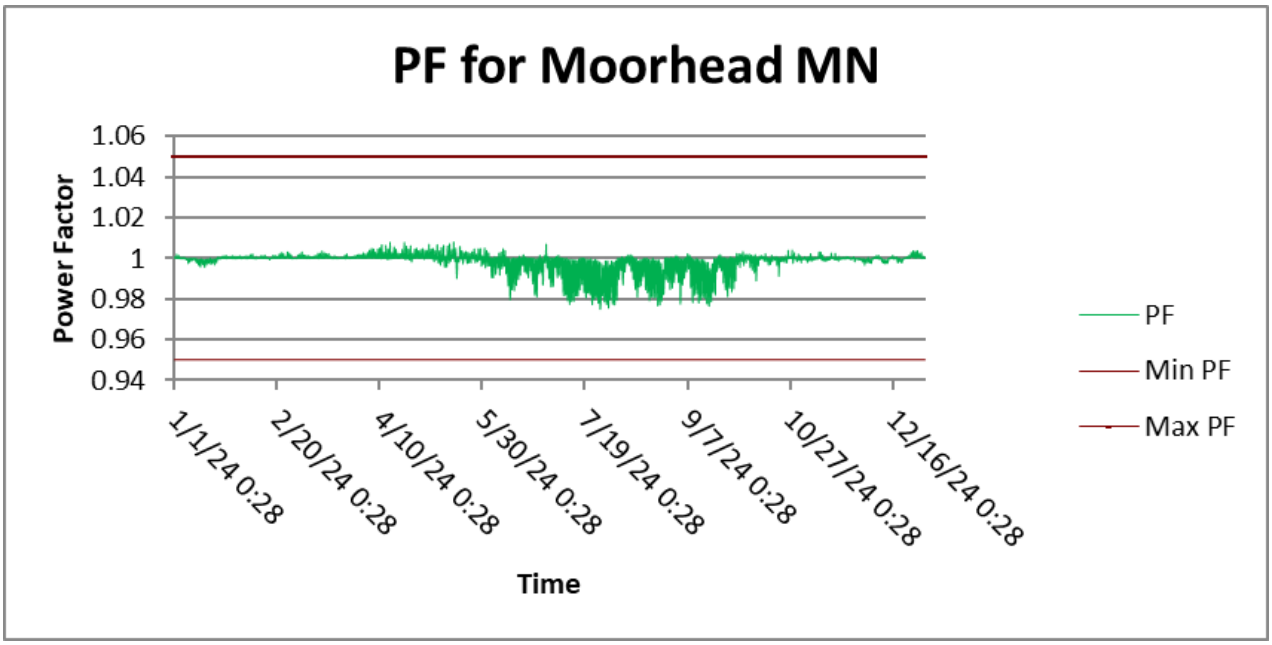
A low power factor puts added stress on the transmission system as additional current flows are required to supply the magnetizing current (for motors, transformers, etc.). A low power factor can also cause/contribute to low voltage situations and transmission line overloads. Maintaining

your contractual minimum or higher power factor, maximizes transformer and line utilization, improves voltage performance of the electrical system, as well as helps defer the need for system improvements on your distribution system. Maintaining a high power factor also helps to reduce losses on both your distribution system and the bulk transmission system, which results in a direct cost savings as it reduces the amount of supplemental power your municipality purchases from MRES. For a more detailed explanation of power factor, the benefits of maintaining a good power factor, what causes it, and how to correct it, please refer to the Power Factor Pamphlet.

Although the power factor assessment for 2024 does not show any violations of the power factor criteria, MRES is sending this letter to make sure you are aware of the importance of power factor and that it should be monitored to ensure you stay in compliance with the contract/transmission service agreement. Some situations to be aware of that may affect the power factor in your municipal utility are; proper operation of any capacitor banks presently installed on your distribution system and any new large motor loads added to your system that do not have power factor correction equipment installed. These types of loads will adversely affect your power factor. Also while criteria was met during 2024, the attached data can be useful to understand how much margin is left in your system to keep-up with the power factor performance criteria in the future.

The attached files contain the power factor assessment Excel file (including data and charts) and the Power Factor Pamphlet. Please take some time to review the materials and confirm the data is correct, and notify me if you find any data that does not appear to be correct. If you have any questions or would like any additional information, please contact me at gezahegne.debale@mrenergy.com or at (605)-330-4891.

Sincerely,
Geza Debale
Transmission Engineer I, Transmission Services


PF for Moorhead MN
Power Factor
1.06
1.04
1.02
1
0.98
0.96
0.94
1/1/24 0:28
2/20/24 0:28
4/10/24 0:28
5/30/24 0:28
7/19/24 0:28
9/7/24 0:28
10/27/24 0:28
12/16/24 0:28
Time
PF
Min PF
Max PF

Power Factor Terminology

Alternating Current (AC) – The type of electrical power source where the flow of electrons reverses periodically in the shape of a sinusoidal wave. AC power provided by electric utilities in North America uses a frequency of 60 cycles per second or 60 Hertz (Hz).

Apparent Power (S) – The combination (Vector-sum) of the real power and reactive power to obtain the total power in an AC circuit measured in Volt-Ampere (VA). Apparent power (S) equals the square root of the real power (P) squared plus the reactive power (Q) squared: $S = \sqrt{P^2 + Q^2}$. For example, if the real power is 400 kW and the reactive power is 300 kVAR, the apparent power equals 500 kVA: $500 = \sqrt{400^2 + 300^2}$.

Current (I) – The rate of electric charge flow in an electric circuit. Current is measured in Amperes (A).

Distribution System – The system used to deliver power from the transmission system to the end user. Common distribution system voltages owned by MRES members include 2.4 kV, 4.16 kV, 7.2 kV, 12.5 kV, and 13.8 kV.

Lagging Power Factor – The ratio of real power to apparent power when the load is *consuming* VARs (inductive load).

Leading Power Factor – The ratio of real power to apparent power when the load is *producing* VARs (capacitive load).

Load – The component of an electric circuit consuming power by the end user. Loads can be resistive (consume watts), reactive (consume or produce VARs), or, most commonly, a combination of the two. Reactive loads can be either inductive (consume VARs) or capacitive (produce VARs).

Power Factor (PF) – The ratio of real power (P) to apparent power (S): $PF = \frac{P}{S}$. For example, if the real power is 400 kW and the apparent power is 500 kVA, the power factor equals 0.8: $0.8 = \frac{400}{500}$. Power Factor is expressed as either a decimal (0.8) or a percentage (80%).

Reactive Power (Q) – The component of AC power consumed or produced by the reactive component of the load. Reactive power is measured in Volt-Amperes Reactive (VARs)

Real Power (P) – The component of AC power consumed by the resistive component of the load. Real power is measured in watts (W).

Transmission System – The bulk power system used to transfer large amounts of electricity at high voltages from generating stations to the consumer's distribution system. The transmission system voltages that transfer electricity to MRES members range from 34.5 kV up to 345 kV.

Volt-Ampere Reactive (VAR) – Unit of measurement of reactive power. Commonly measured in kilovolt-amperes reactive (kVAR). 1 kVAR equals 1,000 VARs.

Volt-Ampere (VA) – Unit of measurement of apparent power. Commonly measured in kilovolt-amperes (kVA). 1 kVA equals 1,000 VA.

Voltage (V) – The electrical potential difference that drives the flow of current in electric circuits. Voltage is measured in Volts (V) or kiloVolts (kV). 1 kV equals 1,000 V.

Watt (W) – Unit of measurement of real power. Commonly measured in kilowatts (kW). 1 kW equals 1,000 W.

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Power Factor:

What is it?
Why does it matter?
What can be done about it?

What is power factor?

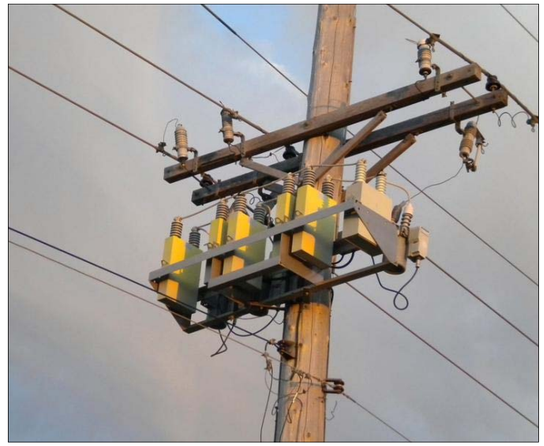
Power factor is the ratio of real power to apparent power. Real power is the amount of power that is actually consumed, while apparent power, which consists of both real and reactive power components, is the total amount of power transmitted to serve the load. The lower the amount of reactive power (and, thus, apparent power), the higher the power factor.

What are the benefits of a good power factor?

Maintaining a high power factor has many benefits to your local utility:

- A high power factor minimizes losses on the system, which saves money. It can also save money by avoiding penalties for low power factor that a transmission provider might impose.
- Supplying VARs locally using capacitor banks frees up capacity on the system, increasing its capability to deliver more real power. This can defer the need for upgrades to the transmission and distribution systems that are not required to deliver the VARs, such as transmission to distribution transformers, distribution feeders, and industrial electrical facilities.
- Maintaining a high power factor keeps voltage levels higher throughout your distribution system. It can also improve the voltage stability of the transmission system.
- A high power factor can improve negotiating leverage with the transmission provider and other utilities. The transmission provider may not be willing to implement transmission solutions for deficiencies driven by a municipal utility's low power factor if the local utility is not doing what it can to maintain an acceptable power factor.

MISSOURI RIVER® ENERGY SERVICES



What causes low power factor?

Each MRES member is contractually required by its transmission provider to maintain a certain level of power factor. A low power factor is typically caused by loads on the system that are VAR-consuming (inductive loads). High VAR-consuming loads that commonly cause low power factor include industrial load (specifically motor load), air conditioners, and transformers. If not corrected, certain lighting loads also contribute to low power factor including fluorescent, high pressure sodium, and mercury vapor lighting. A low power factor is also possible if the system contains too much capacitor bank support if too many capacitor banks are on line that overcorrect the VAR-consuming loads. For more technical information on power factor, see the ***Power Factor Technical Explanation*** in this pamphlet.

How can MRES members correct a low power factor?

The first step MRES members can take to correct low power factors would be to require industrial customers to correct their power factors to a certain level. Large industrial loads with low power factors can have a dramatic impact on the overall power factor of a member's system. To incent industrial customers to maintain a high power factor, penalties can be implemented such as charging for apparent power (kVA) instead of just for real power (kW). Many MRES member utilities already have penalties for low power factor built into contractual agreements with industrial customers, and simply enforcing the power factor penalty may significantly improve the power factor in your community.

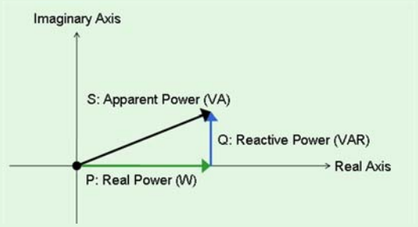
To correct power factor within a member's distribution system, capacitor banks can be added to supply VARs locally. It is most efficient to add capacitor banks where the VAR load is located (on the distribution system or at an industrial site) so the VARs do not need to be provided externally, which takes up capacity on the transmission, distribution, and, in some cases, industrial system. Depending on the profile of the VAR load, capacitor bank support can sometimes differ by season, time of day, or at times during the week such as the weekend. This may require a capacitor bank to be switched on/off as the load changes. In most instances for MRES members, correctly sized fixed capacitor banks will typically correct the power factor within acceptable criteria; however, for some members, especially those with stringent power factor criteria or large loads that switch on and off, a solution with at least some switched capacitor banks may be necessary.

For MRES members who want to add capacitor banks to correct their power factors, hiring a consultant may be helpful to design the most optimal solution. MRES has experience working with consultants in the region and could provide information if requested.

Power Factor Technical Explanation

Power factor shows the relationship between the amount of real power consumed and the apparent power delivered to serve the load. Load is comprised of both a resistive component and a reactive component. The resistive component of the load consumes real power, which is measured in W. The reactive component of the load either consumes or produces volt-amperes reactive (VARs), depending on if it is inductive or capacitive. Inductive loads, such as industrial motor load, air conditioners, transformers, and certain lighting loads, consume VARs while capacitive loads, such as a capacitor bank, produce VARs and inject them into the system. The total power required to deliver both the real and reactive power to the load is called the apparent power, and it is a function of both the real and reactive power. To illustrate the different components of power in AC systems and their relationships, Figure 1 shows the power triangle.

Figure 1: Power Triangle



In Figure 1, apparent power, measured in volt-amperes (VA), is calculated by: $S = \sqrt{P^2 + Q^2}$. Power factor (PF) is calculated by dividing the real power (P) by the apparent power (S) $PF = \frac{P}{S}$. The reactive power component of the power triangle can be positive (for inductive loads) or negative (for capacitive loads). In an inductively loaded AC circuit, the load causes a brief delay in the current with respect to the voltage in the circuit. Because the current lags the voltage, an inductive load has a lagging power factor. In a capacitive loaded AC circuit, the load causes the current to slightly lead the voltage in the circuit. Thus, a capacitive load has a leading power factor. If the load has no reactive power component, the load is entirely resistive, and the power factor is unity because the real power equals the apparent power. A unity power factor is the most efficient and an ideal operating condition because VARs do not need to be provided across the transmission, distribution, and, in some cases, industrial systems.

Case Study: Worthington Public Utilities

Worthington Public Utilities (WPU) is an MRES member located in southwestern Minnesota. For the past several years, WPU has been served through an inadequate transmission source that has the potential for low transmission voltages and thermal constraints on the facilities directly serving Worthington. To compound this problem, WPU previously had a low power factor, which contributed to low 69-kV transmission voltages serving the community. Additionally, in the late 1990s, WPU was being charged an additional fee from its transmission provider due to its low power factor. To improve its power factor, improve voltage levels, and eliminate the fee charged by its transmission provider, WPU implemented a power factor penalty on customers with peak monthly loads of 1 MW or greater that did not maintain a specified power factor criteria. This penalty resulted in a positive response as the power factor levels were improved enough to eliminate the fee charged by its transmission provider. Although WPU noticed an improvement in its power factor, the transmission voltage levels serving the community were still low. As a result, WPU decided to take steps to correct its power factor by adding capacitor banks throughout its system. WPU's consultant assessed the distribution system to determine the best locations to add capacitor banks, and locations were chosen to add capacitor banks as close to the VAR load as practical. In all, 10 capacitor banks, both fixed and switched, totaling 8400 kVAR were added to the distribution system.

By correcting its power factor, WPU has realized multiple benefits. One of the most important benefits is the improved negotiating leverage with other utilities in the area. Transmission providers are more willing to work with municipal utilities served from their systems if those municipal utilities maintain a good power factor. This has been true in discussing the transmission system serving WPU. MRES and WPU have discussed the idea of upgrading the system serving the WPU area with area transmission providers. A transmission upgrade plan is now in place, and upgrades are scheduled to be in service for the WPU area by summer/fall 2011. Another example of where correcting power factor improved negotiating leverage occurred prior to the summer of 2007 when a transmission construction outage in the area was planned by an area transmission provider. The planned outage increased the possibility of running WPU's diesel generation to maintain service to all or part of WPU load. Prior to the summer of 2007, WPU corrected its power factor, which improved the transmission voltages. Because of this correction, the transmission provider was willing to agree to pay the incremental production cost of running WPU's diesel generation if needed during the outage.

One additional benefit WPU has received from correcting its power factor is the improved efficiency of its system. This includes a reduction of losses on the system as well as a more efficient use of distribution facilities (feeders, transformers, etc.) serving WPU's customers. This reduction of losses, although relatively minor and difficult to observe, translates directly into savings for WPU as it reduces the amount of supplemental power WPU purchases from MRES. Additionally, a more efficient system also has the potential for cost savings because a good power factor could delay the need for system upgrades.

Whether the benefit is improved negotiating leverage with other utilities, improved efficiency, reduced losses, or maintaining voltage levels to keep the lights on in Worthington, WPU has benefitted greatly from correcting its power factor.

MRES Legislative Line

Iowa

During the session, visit the Iowa page on the Missouri River Energy Services (MRES) members-only website to follow Iowa bills of interest to MRES members and access the Iowa Legislative Guide for 2025-2026.

Iowa Fast Facts:

- Governor Reynolds energy omnibus proposal that includes nuclear energy, integrated resource plans, and the right of first refusal for new transmission lines is one of the remaining policy bills for the legislature to consider.
- Eminent domain reform legislation is likely dead after being rewritten in the Senate.

Session Update

Legislative activity has largely stalled. Although the Ways and Means and Appropriations committees convened in both the House and Senate, debate was limited. Budget negotiations continue behind closed doors, and the Senate has released an overall budget figure slightly below the Governor's January proposal. A few key policy issues remain unresolved before the end of the session - including the Governor's energy bill.

In an unexpected announcement Friday morning, Governor Kim Reynolds announced in a video that she would not be running for reelection in 2026. She first became governor in 2017 after serving as lieutenant governor under Terry Branstad, who left to become U.S. Ambassador to China and has been elected to two full terms as governor.

Governor's Energy Plan

The Governor has proposed HF 834 and SF 585 as an energy omnibus to encourage reliable, low-cost energy for Iowa residents and businesses. This legislation includes the right of first refusal (ROFR) with joint ownership and other energy and infrastructure proposals.

HF 834 is in the Ways and Means Committee, and SF 585 is in the Appropriations Committee. The Governor's office, House, and Senate continue to negotiate an amendment that we believe will include clarifying the definition of "municipally owned utility," allowing MRES to participate in ROFR projects.

The committees await further action until the governor, Senate, and House have finalized an amendment that includes several technical changes to the bill and potentially substantive changes to the integrated resource plan portion.

Opponents of ROFR have been very active the last few weeks, including publicizing a letter from the DOJ Antitrust division that opposed ROFR and claiming that President Trump's executive orders related to energy prove the administration opposes state ROFR laws.

The Governor's energy bill will likely be one of the last policy bills considered by the legislature this year.

Eminent Domain

Earlier this session, the House overwhelmingly passed HF 639, an eminent domain omnibus bill.

The Senate Commerce Committee advanced HF 639 with an amendment significantly altering the original bill. Over the last week, as people have had time to read and digest the Senate amendment, it has been criticized by many members of the House and advocates for eminent domain reform.

The House-passed version of HF 639 included several provisions: increased insurance requirements for operators of hazardous liquid pipelines, an updated definition of "common carrier," a requirement that Iowa Utility Commission (IUC) members be present at all hearings, expanded eligibility for parties allowed to intervene in IUC dockets, a limit on pipeline permits to a single term of no more than 25 years, and a prohibition on the IUC imposing sanctions on intervenors.

The Senate amendment retained the requirement for IUC members to attend hearings and meetings but expanded the bill's scope beyond CO_2 pipelines to include all pipelines, transmission lines, and generation projects. It also mandated that the IUC issue decisions on eminent domain requests within one year of filing. Additionally, the amendment places responsibility for tile repair, crop loss, and topsoil replacement on the project owner and allows entities to pursue voluntary easements outside the designated notice corridor.

With the Senate Commerce amendment to HF 639, it is unlikely that eminent domain legislation will advance any further this year.

Minnesota

Visit the Minnesota page to track bills of interest to MRES members in Minnesota. The MRES Minnesota Legislative Guide for 2025-2026 **has been updated! It reflects the House tie and the re-aligning of the House committees.**

Easter/Passover Break

The Minnesota Legislature is in recess for this week's Easter/Passover break. The break started at noon on Friday, April 11, and lawmakers will return at noon on Monday, April 21.

Minnesota Fast Facts:

PLEASE urge your lawmakers to support an amendment to take language granting the MPCA broad authority to require AIR DISPERSION modeling **OUT** of SF 2077.

- This language would allow MPCA to require this modeling on ANY generation (municipal generation, hospital backup, etc.).
- Federal EPA has stated that air dispersion modeling is NOT appropriate for intermittent or backup generation.
- This would measure the emissions of emergency, limited-run generation as if it were 24/7 generation, thus setting the generation up to fail permitting.
- This would require small generation to put in extremely expensive, unnecessary control equipment---or it would just shut down small, intermittent generation in the state.
- MPCA has attempted to require this modeling for back up generation at several municipal facilities in MN.

State of the State Address

Governor Walz is scheduled to deliver the State of the State Address on Wednesday, April 23, 2025, at 7:00 p.m. in the House Chamber.

Special Election

The Special Primary for Senate District 6 will be held on Tuesday, April 15, with the Special Election on Tuesday, April 29. Eight Republican candidates have filed for the seat. They include Jennifer Carnahan (Nisswa), Steve Cotariu (Nisswa), Keri Heintzeman (Nisswa), John Howe (Grand Rapids), Angel Zierden (Breezy Point), Doug Kern (Brainerd), Josh Gazelka (Pequot Lakes), and Matthew Zinda (Brainerd). Of the four DFL candidates initially filed, only one remains: Denise Slipy (Breezy Point).

Session Update

The omnibus bills began rolling out last week. Below are short summaries of two key omnibus

bills—the Energy Omnibus and the Environmental and Natural Resources Omnibus.

Omnibus Energy Policy Bills

On Monday, the Senate Energy, Utilities, Environment, and Climate Committee took testimony on the Senate Omnibus Energy Policy bill (aka Commerce and Energy Biennial budget bill), SF 2393. On Wednesday, the committee took up several amendments to the bill. It was then voted out of the committee and sent to the Senate Finance Committee.

Some highlights: The bill contains funding for the Minnesota Public Utilities Commission (MPUC), the Department of Commerce (DOC), various state-funded energy programs (e.g., weatherization, low-income assistance, etc.), and funds for small energy projects (e.g., Shakopee waste heat project). Language allowing data centers to waive the certificate of need process for emergency backup generation and the sunset of the Community Solar Garden program remain in the bill. Surprisingly, an amendment was added to repeal the Renewable Development Account (RDA). Xcel ratepayers fund the RDA, which was initially established to provide funds for renewable energy projects in Xcel's service territory. This was the "price" Xcel paid to have dry cask storage in the state for nuclear waste. For years, the RDA has repeatedly been criticized for being a slush fund for pet projects. The repeal of the nuclear moratorium is not in the bill.

On the House side, the Omnibus Energy bill is HF 2442. Although the committee was to meet on Tuesday, April 8, to begin hearing the bill, that hearing was canceled. The bill was finally seen on Wednesday, heard by the committee, and passed to Ways and Means without much fanfare on Thursday. The bill contains funding for the MPUC, the DOC, and some energy projects—and no policy provisions. With the even DFL/GOP split in House committees, finding common ground on many energy policy issues has been difficult. However, Co-Chair Acomb acknowledged that they were still working on the bill but had to pass it out of committee to make the deadline. Discussions will continue, and we could see more changes in Ways and Means.

Omnibus Environment and Natural Resources Policy Bills

The Senate Omnibus Environmental and Natural Resources policy omnibus bill SF 2077 was heard in the Environment, Climate, and Legacy Committee last week. MRES has concerns with one section, which gives the Minnesota Pollution Control Agency (MPCA) the authority to conduct air dispersion modeling on any generation. This would allow the MPCA to require air dispersion modeling for all generation sources—regardless of size or function. This would measure the emissions of emergency, limited-run generation as if operated 24/7, thus setting the generation up to fail permitting. The Chamber of Commerce, MMUA, the Coalition of Greater Minnesota Cities, MRES, and other organizations all opposed this provision, which would impose unrealistic requirements and compliance mechanisms for backup generation. These groups are working to amend this language out of the SF 2077. However, the bill was passed by the Environment and Natural Resources Committee on party lines and was sent to the Senate Finance Committee.

The House version, HF 2439, was heard on Thursday. Like the House Omnibus Energy bill, the House Environment and Natural Resources Omnibus bill focuses on financing governmental agencies and programs and contains almost no policy provisions. It does **not** include the air dispersion modeling language that MRES and others find problematic in the Senate version. The bill was passed out of the House Environment and Natural Resources Finance and Policy Committee last week and sent to the House Ways and Means Committee. Like the House Energy Omnibus bill, the House Environment bill could see additional changes in the House Ways and Means Committee as negotiations and discussions are ongoing.

Next Steps

After the Easter/Passover break, omnibus bills will continue to be heard, and some will get rolled into even larger omnibus bills. MRES and others will continually engage in behind-the-scenes activities and discussions to determine the status of bills before they are heard on their respective floors.

North Dakota

During the session, visit the North Dakota page on the Missouri River Energy Services (MRES) members-only website to follow North Dakota bills of interest to MRES members and to access the North Dakota Legislative Guide for 2025-2026.

North Dakota Fast Facts:
As we begin winding to a close, legislators will have longer floor sessions to push to the end of session and complete all bills.

Session Update

Friday marked the 60th legislative day (out of 80 total available). The House and Senate committees have a deadline to get all bills out of committees by April 16, 2025. More bills have entered the conference committee process involving six conferees, three from each chamber. The week of April 30 remains the target date for *sine die*, with lawmakers potentially finishing that Friday, May 2, the 75th legislative day. If needed, this would leave five legislative days available for the Legislature to return during the interim period.

Bills of Interest

- SB 2339: Limiting wildfire liability for utilities who have taken specific mitigation measures. The bill limits courts from applying a standard of strict liability to a qualified utility in a cause of action if the utility has met wildfire prevention and mitigation measures. Following opposition from the insurance industry, a subcommittee was appointed to work on this bill further. The subcommittee members include Representatives Jason Dockter, Jorin Johnson, Jeremy Olson, and Liz Conmy. At this writing, the committee continues to work on the bill.
- SB 2359: This bill repeals the voluntary renewable energy objective and utilities' reporting requirements. The Governor signed it on April 3.
- SB 2379: This bill would prohibit entry onto private land for surveys for potential public use/eminent domain. It has been amended through the legislative process and now states: Before entering land for a survey, the owner must be provided with written notice of the intent to survey, including appropriate contact information, the nature of the work, and the proposed location of the potential project. Additionally, the notice must be sent via certified mail, and surveys may not be conducted until at least 30 days after the notice is sent. It passed both houses and was signed by the Governor on April 8.
- HB 1258: Provides the Public Service Commission with greater authority to step in and supersede local permitting of transmission facilities if the local regulations are deemed unreasonably restrictive. It has passed both the House and the Senate.
- HB 1579: Provides funding for an interim study on the impacts of large customers (data centers). It passed the House and is pending in Senate Energy and Natural Resources. At this writing, the committee has heard the bill but has not voted on it yet.

South Dakota

Visit the South Dakota page on the Missouri River Energy Services (MRES) members-only website to follow South Dakota bills of interest to MRES members and to access the South Dakota Legislative Guide for 2025-2026.

South Dakota Fast Facts:
- The S.D. legislature adjourned *sine die* on March 31. They will reconvene for a special session in July to consider a new men's prison.

THE CAPITOL LETTER
FROM MMUA
Vol. 25, No. 12
April 15, 2025

General session update

The deadline for getting bills out of all relevant finance committees arrived at noon on Friday, April 10, and then the Legislature went home for its Easter/Passover break. The members will return at noon on Monday, April 21. Overall, MMIUA is pleased with where our key issues currently sit, but there is still a lot of work ahead to fix two unfavorable amendments and to shepherd desired language through the floor fights and conference committee processes to come.

The Senate Energy Committee kicked things off on Monday, April 7, by walking through their Omnibus Energy Bill, SF 2393 authored by Sen. Nick Frentz (DFL–North Mankato). During the testimony that followed, MMUA's Director of Government Relations and Senior Counsel thanked the committee for including the framework of the net-metering bill supported by MMUA and the Minnesota Rural Electric Association (MREA). He also made a pitch for amending the text to allow woody biomass to be recognized as carbon-free for the purpose of satisfying the carbon-free by 2040 mandate.

On Wednesday, April 9, the committee started amending the bill. One amendment, offered by Sen. Jason Rarick (R–Pine City), sought to include MMUA's desired biomass language. The amendment passed 6-4 with bipartisan support. Two amendments successfully offered by Sen. Scott Dibble (DFL–Minneapolis) put a bit of damper on things. One of his amendments establishes an effective date for net-metering reform to apply only to applications for interconnection received after December 31, 2026, a date too far out for MMUA's or MREA's liking. The other creates a new and overly broad aggregation of meters process. MMUA understands that both Sen. Frentz and Sen. Dibble are open to discussing both provisions, and it appears both lawmakers are aware that MMUA and MREA would prefer to eliminate the entire net-metering reform effort than to leave these amendments as currently written in the bill.

The House Energy Committee cancelled its scheduled hearing for Tuesday, April 8, saying its omnibus bill would be posted that same day. Nothing was made public until Wednesday, April 9, when a 5-page delete-all amendment to the underlying bill appeared. Then a second delete-all amendment was posted which shrunk the bill down to a single page authorizing the funding for the State's Petroleum Tank Release Cleanup Fund. That second amendment was moved and adopted in under five minutes when the committee met very briefly on Thursday, April 10. The amendment was passed by voice-vote without audible dissent. It is expected that leadership will get involved and eventually other

amendments may get added to the bill. The bill being carried as the House Energy Committee's Omnibus Bill is HF 2442. Officially it was authored by Rep. Patty Acomb (DFL–Minnetonka), but because of the 67-67 tie in the House, all committees are made-up of an equal number of members of both parties and are co-chaired. This means the one-page version is the only one both sides could agree to since a party-line vote would have blocked passage of more inclusive provisions to the bill.

Adding to the fun, MMUA got a chance to participate in the Senate Commerce and Senate Environment Committees. With regards to the Commerce Committee, Sen. Nick Frentz successfully offered an amendment on MMUA's behalf to the Senate's Omnibus Commerce Bill, SF 2216, authored by Sen. Matt Klein (DFL–Mendota Heights). The amendment expressly authorizes the sale of electricity by a non-utility entity provided the sale is limited to electricity from a charging station to an electric vehicle, and so long as the power to the charging station is provided by the utility whose service territory includes the property on which the charging station is located. As for the Senate Environment Omnibus Bill, SF2077, authored by Sen. Foung Hawj (DFL–St. Paul), MMUA is trying to have language removed that grants the Minnesota Pollution Control Agency broad authority to mandate the use of air dispersion modeling. This would be a problematic and expensive mandate for any utility operating generators on a sporadic basis for very limited hours. House Republicans are strongly opposed to this provision and kept it out of the House Omnibus Environment Bill, HF 2439, but time ran out in the Senate hearing before the issue could be addressed. MMUA will work hard to have the provision removed from the Senate bill when it comes up on the Senate floor.

MMUA would greatly appreciate its utility members talking to their legislators while they are in their home districts during the break and encouraging their support for the efforts outlined above.

Other issues

Senate Republicans have filed an ethics complaint against Senate President Bobby Joe Champion (DFL-Minneapolis) for advocating for funding to go to individuals he previously represented in his law practice. Sen. Champion argues that his past representation was done pro bono (without charge) and thus there is no conflict of interest. The Senate Ethics Committee will take the issue up after the break. Because the committee is made up of two members of each party, past precedent suggests nothing will come of this matter.

A primary will be held on April 15 to narrow down the candidates seeking to fill the vacant seat of former Senator Eichorn (R-Grand Rapids). The general election will be held on April 19. The district has been a fairly reliable Republican seat for several elections and is not expected to flip. Even it does flip, the outcome will have no noticeable impact since it would simply increase the DFL majority from one vote to two votes.

MMUA continues to monitor filings to, and hearings of, the Minnesota Public Utilities Commission.

Links/contact

A list of all introduced bills, copies of bills both as introduced and amended, a calendar of all scheduled hearings, and other useful information can be found at the legislature's website.

Please contact Kent Sulem (ksulem@mmua.org) or Bill Black (bblack@mmua.org) if you have any questions or suggestions regarding *The Capitol Letter* or topics covered in any issue throughout the session.

Accept Report on Capacity Improvements Study Prepared by DGR Engineering

RECOMMENDATION:

The General Manager respectfully requests the Commission accept a report on the Capacity Improvements Study that was prepared by DGR Engineering.

BACKGROUND:

In June 2019, Moorhead Public Service (MPS) entered into a Task Order Agreement for Professional Services with DGR Engineering (DGR). Task Order No. 1 was for miscellaneous engineering services, and Task Order No. 2 was for engineering services for modifications at MPS' Centennial Substation. There have also been other various task orders that have been utilized.

Task Order No. 10 was for DGR to perform a Capacity Improvements Study (Study), which will provide modifications to be made to MPS' Electric System Master Plan that was revised and accepted by the Commission in October 2020. This Study is necessary for several reasons, which include, but are not limited to, the following:

- Reliability
- Voltage Regulations
- Future Growth of Moorhead
- Economic Development
- Redundancy
- Maintenance or Replace/Upgrade Aging Infrastructure

MPS is reaching a point where its existing transmission system is limited in capacity under strained circumstances. During normal conditions, MPS has no issues; however, its transmission system must be designed to operate under abnormal circumstances, as well. These abnormal circumstances include, but are not limited to, maintenance, construction, and scenarios that could be considered emergencies. Therefore, MPS needs to plan for capacity improvements at the transmission level. The capacity increase will allow for more flexibility when de-energizing substations for maintenance and upgrades. The improvements will also provide opportunities for future growth of MPS' customer base and electrical load. The increases in MPS' electrical load could be in the form of economic development, as well as electric transportation.

DGR has provided the attached memo that summarizes the findings of the Study up to this point. The memo proposes several capacity improvement projects divided into two stages. These projects consist of transmission, substation, and distribution projects. The projects have been arranged based upon "value and effectiveness" according to DGR. MPS will use these recommendations to coordinate the proposed projects in a way that makes sense—both financially and operationally. This will likely include construction projects from both stages occurring at the same time, which should result in better pricing. The estimated costs for these upgrades is approximately $21 million and is included in MPS' 2025 budget.

Upon the Commission accepting this report, MPS will direct DGR to move forward with preliminary design documentation and more detailed cost estimates for the selected projects. The proposed improvements would allow MPS to serve an additional 35 MW of load under strained conditions. This would increase the total capacity by approximately 42.5 percent.

KEY ISSUES:

- Task Order No. 10 was for DGR to perform a Capacity Improvements Study (Study), which will provide modifications to be made to MPS' Electric System Master Plan that was revised and accepted by the Commission in October 2020.
- The Study is necessary for ensuring reliability, maintain proper voltage regulation, and supporting maintenance and upgrades of MPS' electrical infrastructure which may not meet future capacity demands due to anticipated growth in Moorhead.
- The proposed improvements would allow MPS to serve an additional 35 MW of load under strained conditions.

FINANCIAL CONSIDERATIONS: The estimated costs for these upgrades is approximately $21 million and is included in MPS' 2025 budget.

Respectfully Submitted,

Travis L. Schmidt
General Manager

Division/Response Person: Taylor Holte, Project Engineer.

Attachments:
Memo from DGR Engineering regarding the Moorhead Capacity Improvements Study
Load Growth Area Maps (PSC Only)

Memo

TO: Moorhead Public Service, Moorhead, MN

FROM: Paul Davis, PE, & Chad Rasmussen, PE DGR Engineering

DATE: April 11, 2025

DGR No.: 417023

RE: Moorhead Capacity Improvements Study

BACKGROUND

MPS has limited existing system capacity to provide significant additional power to existing and potential new customers. MRES and MPS recently performed a study of the MPS and surrounding area transmission system which identified potential projects to increase MPS system capacity. MPS wishes to align their recently updated Electric System Master Plan with the recently completed transmission study where appropriate, in order to provide the capability for expanding its load-serving capacity.

This memorandum summarizes potential load growth levels studied and the associated next steps to improve the capacity of Moorhead Public Service (MPS) electric system to accommodate the potential load growth. This includes cost estimates for facility upgrades that are associated with the load expansion. The load growth levels and project identifications were developed in conjunction with the document *"Moorhead, MN: Economic Development; Assessment of Potential Transmission Upgrades to Service an Industrial Park"* developed by MRES and MPS.

LOAD GROWTH LEVELS

Load growth levels that correlate with the smaller candidate transmission upgrades as identified in the transmission study were used as the basis for the analysis. The potential load growth was broken down into two stages to identify what improvements would be needed to accommodate each level of additional capacity. Following is a breakdown of how the potential load growth was applied to the electric distribution system model, in terms of load types (residential, commercial, industrial) so that load could be applied to the correct areas of the system:

EXISTING PEAK DEMAND	82,181	kW
STAGE 1 LOAD GROWTH	22,000	kW
PROJECTED STAGE1 DEMAND	104,181	kW
RESIDENTIAL	9,700	kW
COMMERCIAL	10,300	kW
INDUSTRIAL	2,000	kW
TOTAL SYSTEM GROWTH STAGE 1	22,000	kW
INDUSTRIAL STAGE 2	13,000	kW
PROJECTED STAGE 1 DEMAND	104,181	kW
PROJECTED STAGE 2 DEMAND	117,181	kW

A map showing how the above potential load growth additions were applied geographically to the electric distribution system model is included as an attachment at the end of this memo. With the proposed improvements to the electric distribution system MPS can handle the additional load growth.

Analysis of load growth levels in the 100-200 MW range which would be associated with larger candidate transmission upgrades were discussed but not studied. Load additions of this magnitude would likely require building an additional 230+ kV transmission source(s) that would be interconnected to SPP and/or MISO, and additional studies would need to be performed by MRES and the regional transmission operators (RTO's) to determine the extent of the transmission system upgrades needed. The area to the east of the Opportunity Substation has been identified as a potential location for larger loads to be added. Some other factors that would need to be considered to support large loads of this magnitude include increased operational impacts, possible NERC regulations, and overall rate implications.

Projects of these magnitudes require considerable time to obtain transmission routing and the necessary easements and permitting to construct the lines and substations. It is expected that a potential new substation site would need to allow for at least two transmission feeds initially. The substation site would need to be large enough to accommodate the initial and potential future transmission and distribution equipment. Certain substation equipment, in particular, has longer lead times that may take three years to obtain, so proper planning should allow for this in order to accommodate growth.

CAPACITY IMPROVEMENTS

Following are the projects required to increase capacity on the MPS system to a sufficient level to accommodate the previously described Stage 1 and Stage 2 load levels. The projects have been identified in order of value and effectiveness.

Stage 1 (+22 MW = 104 MW total)

1. Uprate transformer KV1A at the Moorhead DOE Substation.
2. Add single stage 14 MVAR capacitor bank at the Southeast Substation.
3. Add a 115 kV to 12.47 kV load serving substation transformer. It was assumed this transformer would be added at the Opportunity Substation.
    - The substation transformer build-out location could be adjusted based on the actual growth areas.
4. Add mainline 12.47 kV distribution circuitry to accommodate the load additions. For stage 1 estimating purposes it was assumed that extensions to feeders 33, and 56 would be needed.

Stage 2 (+13 MW = 117 MW total)

1. Add a second stage 14 MVAR capacitor bank at the Southeast Substation.
2. Uprate the 115 kV transmission line from 42nd St. to the Brookdale Substation.
3. Replace the three (3) existing 115 kV switches at the Fargo Substation.

The most limiting factors today are the transformer capacity of KV1A for an outage of KV2A and the Fargo-Brookdale 115 kV line, along with voltage limits being exceeded for the outage of Fargo-Brookdale line and Fargo- Moorhead DOE lines. The capacitor bank addition and KV1A transformer upgrade are therefore the first two things needed to increase load serving capacity for the 115 kV loop.

There are switches on the MPS 115 kV terminal in the Fargo Substation that are rated 600 A (119 MVA) which will be approaching their capacity limitations and should be replaced in the coming years.

We would recommend that MPS consider performing other work already identified in its master plan at the same time that the capacitor bank gets added at the Southeast Substation, including the switchgear upgrades and substation building upgrades. This should help to reduce overall costs and substation downtime.

The electrical distribution system will need to be expanded to serve any significant new loads. For purposes of the study, we estimated costs for the most likely areas where expansion would take place in Stage 1. This would likely include an expansion of feeders 33 and 56. In discussion with MPS there have been some adjustments and updates to planned distribution upgrades from the master plan update. This includes feeder 33 being adjusted farther to the north on the map along 3rd Avenue North. MPS has recently completed Feeder 50 from 24th Ave S. south to the Opportunity Substation. Feeder 56 and 50 ties would need to be used during loss of the Opportunity Substation T33 switchgear bus.

In discussion with MPS, Stage 2 costs for distribution system upgrades were not included until we have a better picture of where on the system the Stage 2 load growth occurs.

There are major pieces of equipment that should be ordered early in the design stage to be supplied separate from the construction contract in order to accommodate lead times. This equipment typically dictates the schedule of how soon the project can be constructed. The following are approximate current lead time on major pieces of equipment but are subject to change:

- Substation transformers: 2-3 years
- 115 kV breakers: 2 years
- 15 kV switchgear: 1.5 years
- Capacitor banks: 45 weeks

The outages are listed as approximate times when equipment will need to be installed. These dates will need to be coordinated to ensure that planned outages do not coincide with each other. Estimated start and completion dates:

Project	Start	Completion	Outage Dates
KV1A Replacement	3rd Quarter, 2025	3rd Quarter, 2028	2nd Quarter, 2028
SE Cap bank (1) 14 MVAR #1	2nd Quarter, 2025	2nd Quarter, 2028	2nd Quarter, 2027
Transmission Line rebuild Structure 45A to Brookdale	3rd Quarter, 2026	3rd Quarter, 2028	3rd & 4th Quarter 2028
SE Cap bank (1) 14 MVAR #2	4th Quarter, 2026	3rd Quarter, 2029	3rd Quarter, 2028

PROJECT COSTS

The cost estimate below includes the labor and materials along with engineering and contingencies using third quarter 2024 project cost estimates.

STAGE 1	**Cost**
Moorhead DOE 230/115 kV KV1A Transformer 112/186.7 MVA and construction	$ 6,000,000
Capacitor Bank at SE Substation (1) 14 MVAR	$ 904,000
Electric Distribution Improvements Stage 1*	$ 2,023,000
Opportunity Substation 115 kV Transformer Addition	$ 3,100,000
Stage 1 Total:	$ 12,027,000

STAGE 2	
Capacitor Bank at SE Substation (1) 14 MVAR	$ 904,000
Transmission Line 115 kV rebuild (Structure 45A to Brookdale)**	$ 5,294,000
Replace (3) 115 kV GOAB switches at the Fargo Substation	$ 195,000
Electric Distribution Improvements Stage 2***	$ 2,500,000
Stage 2 Total:	$ 8,893,000

Total Costs:	$ 20,920,000

*Assumed some costs for Stage 1, which could change based on the amount of load growth and where it occurs. This includes extensions to feeders 33, and 56, along with minor extensions to additional feeders.

**Transmission Line capacity upgrade = 4.2 miles

***Stage 2 A placeholder for the distribution was included to account for costs in the future. The costs will need to be updated/revised once there is a better idea of the determined growth areas.

SUMMARY:

These identified improvements would allow for accommodating up to 35 MW of load growth to the MPS electric system. The projects were split into a couple of different stages to prioritize effectiveness. To capitalize on better pricing, there are some projects MPS may want to complete at the same time for logistical reasons, such as the two sets of capacitor banks at the Southeast Substation.

APPENDIX

- Distribution System Load Growth Drawing
- Proposed Distribution System Improvements Map

Approve Task Order No. 13 with DGR Engineering for Control Building and Capacitor Banks at Southeast Substation

RECOMMENDATION:

The General Manager respectfully requests the Commission approve Task Order No. 13 with DGR Engineering for a control building and capacitor banks at Moorhead Public Service's Southeast Substation.

BACKGROUND:

In December 2024, Moorhead Public Service (MPS) entered into a Task Order Agreement for Professional Services with DGR Engineering (DGR). Task Order No. 1 was for miscellaneous engineering services to address items such as a review of relay settings, fault analysis, or other minor engineering needs.

Task Order No. 13 (available upon request) is for a control building and capacitor banks at MPS' Southeast Substation. The tasks associated with this work include developing an overall site plan layout, estimated costs, and contract bidding and procurement for the long lead time for the materials associated with this project. The final result of this project includes a new control building and 15 kV switchgear, along with the addition of two new 115 kV capacitor banks and circuit breakers. The new control building will replace the existing, overcrowded facility, which lacks the space required for additional relay panels. The addition of the capacitor banks will provide voltage support to MPS' local transmission system. The capacitor banks are needed to increase the total load capacity in order to allow for future load growth in Moorhead. Additional engineering task orders will be issued at a later date.

The estimated costs for DGR's work under Task Order No. 13 is $60,000. MPS will be billed using a combination of hourly rates and lump-sum fees for various components of the project.

KEY ISSUES:

- Task Order No. 13 is for a control building and capacitor banks at MPS' Southeast Substation.
- The tasks associated with this work include developing an overall site plan layout, estimated costs, and contract bidding and procurement for the long lead time for the materials associated with this project.

FINANCIAL CONSIDERATIONS:

- The estimated costs for DGR's work under Task Order No. 13 is $60,000. MPS will be billed using a combination of hourly rates and lump-sum fees for various components of the project.

Respectfully Submitted,

Travis L. Schmidt
General Manager

Division/Response Person: Taylor Holte, Project Engineer.

Attachments: Available upon request.

Approve Task Order No. 3 with Terracon Consultants, Inc., for 2025 Construction Materials Testing

RECOMMENDATION:

The General Manager respectfully requests the Commission approve Task Order No. 3 with Terracon Consultants, Inc., for 2025 construction materials testing.

BACKGROUND:

Moorhead Public Service (MPS) utilizes construction materials testing services to accommodate a diverse scope of work related to soil density and compaction, concrete comprehensive strength, and environmental investigation testing. The most common testing service used by MPS is related to soil density and compaction associated with the installation of new watermain or the repair of watermain break excavations. The determination of compaction is required for excavation to ensure that minimal settlement occurs after construction. MPS will require construction materials testing for watermain replacement projects and other maintenance projects in 2025.

To comply with construction materials testing requirements, MPS staff proposes using Task Order No. 3 with Terracon Consultants, Inc. (available upon request). Also included in Task Order No. 3 are other potential construction services related to concrete observation and testing, as well as environmental investigations. The hourly rates for these services are included in Task Order No. 3 and are available on an as-needed basis. MPS has preliminarily budgeted $30,000 for construction materials testing for 2025. The total amount spent for construction materials in 2024 was $11,698.

KEY ISSUES:

- The most common testing service used by MPS is related to soil density and compaction associated with the installation of new watermain or the repair of watermain break excavations. The determination of compaction is required for excavation to ensure that minimal settlement occurs after construction.

FINANCIAL CONSIDERATIONS:

- MPS has preliminarily budgeted $30,000 for construction materials testing for watermain replacement projects and other maintenance projects in 2025. The total amount spent for construction materials in 2024 was $11,698.

Respectfully Submitted,

Travis L. Schmidt
General Manager

Division/Response Person: Jake Long, Water Distribution Manager.

Attachments: Available upon request.

Approve Request to Mayor and Moorhead City Council to Approve Resolution of Application for MPS' 2025 Lead Service Line Replacement Project

RECOMMENDATION:

The General Manager respectfully requests the Commission request the Mayor and Moorhead City Council to consider approval of the Resolution of Application for the Minnesota Public Facilities Authority Drinking Water Revolving Fund Application for Moorhead Public Service's 2025 Lead Service Line Replacement Project.

BACKGROUND:

On January 21, 2025, the Commission approved Task Order No. 11 with Apex Engineering Group, Inc., (Apex) to complete the engineering and funding administration services associated with Moorhead Public Service's (MPS') 2025 Lead Service Line Replacement Project (Project). MPS' Water Division proposes completing a project to replace approximately 30 private portions of lead service lines. In 2024, MPS began a pilot project that established the foundation of lead service line replacement projects and allowed for budget planning on future year-round projects. Since the spring of 2022, MPS has submitted applications to be included on the Project Priority List for funding through the Minnesota Public Facilities Authority (MPFA) Drinking Water Revolving Fund (DWRF). Funding for lead service line replacements has become available through a combination of the Bipartisan Infrastructure Law and State of Minnesota matching funds. MPS has prepared applications to seek funds to replace identified lead service lines.

MPS and Apex are currently in the process of submitting the DWRF Lead Service Line Replacement application to the MPFA for the Project. The MPFA requires that several items be submitted, including the attached Resolution of Application approved by the Moorhead City Council.

As part of the MPFA program, a loan and/or grant agreement with the MPFA will be required for the Project, as well as project specifications that must be submitted to the Minnesota Department of Health and MPFA. Since all services within the Project are private, the agreement with MPFA will ultimately result in a reimbursable grant covering 100 percent of the Project costs. These costs include construction, administrative, and engineering expenses required to complete the Project. The MPFA-financed amount is estimated to be $718,000, or the as-bid cost of the Project.

KEY ISSUES:

- On January 21, 2025, the Commission approved Task Order No. 11 with Apex to complete engineering and funding administration services associated with MPS' 2025 Lead Service Line Preplacement Project.
- MPS and Apex are currently in the process of submitting the DWRF Lead Service Line Replacement application to the MPFA for the Project.
- The MPFA requires that several items be submitted, including the Resolution of Application approved by the Moorhead City Council.

FINANCIAL CONSIDERATIONS:

- The MPFA-financed amount is estimated to be $718,000, or the as-bid cost of the Pilot Project.
- Since all services within the Project are private, the agreement with the MPFA will ultimately result in a reimbursable grant covering 100 percent of the Project costs. These costs include construction, administrative, and engineering expenses required to complete the Project.

Respectfully Submitted,

Travis L. Schmidt
General Manager

Division/Response Person: Jake Long, Water Distribution Manager.

Attachments:
Moorhead City Council Resolution of Application

RESOLUTION

Resolution to Approve the Resolution of Application for the Minnesota Public Facilities Authority Drinking Water Revolving Fund Application for Moorhead Public Service's 2025 Lead Service Line Replacement Project

WHEREAS, Moorhead Public Service (MPS) has submitted applications to be included on the Project Priority List for funding through the Minnesota Public Facilities Authority (MPFA) Drinking Water Revolving Fund; and

WHEREAS, funding for lead service line replacements has become available through a combination of the Bipartisan Infrastructure Law and State of Minnesota matching funds; and

WHEREAS, the MPFA requires that several items be submitted, including a Resolution of Application approved by the Moorhead City Council.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Moorhead, that MPS, a public utility of the City of Moorhead, Minnesota, is hereby applying to the Minnesota Public Facilities Authority for a grant from the Drinking Water Revolving Fund for a lead service line replacement project as described in the application.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Moorhead, that MPS, a public utility of the City of Moorhead estimates the MPFA-financed amount to be $718,000, or the as-bid cost of the project.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Moorhead, that the City of Moorhead has the legal authority to apply for the grant, and the financial, technical, and managerial capacity to ensure proper construction, operation, and maintenance of the project for its design life.

PASSED: April 28, 2025, by the City Council of the City of Moorhead.

APPROVED BY:

Michelle (Shelly) A. Carlson, Mayor

ATTEST:

Christina Rust, City Clerk

Approve Professional Services Agreement with MunicipalH2O for Chlorine Safety Management

RECOMMENDATION:

The General Manager respectfully requests the Commission approve the Professional Services Agreement with AssureCo Risk Management and Regulatory Compliance, LLC (dba MunicipalH2O), to support Moorhead Public Service's Risk Management Plan, in the amount of $4,400, with an option for annual renewal at $2,400, contingent upon final legal approval.

BACKGROUND:

Moorhead Public Service's (MPS') Water Treatment Plant has utilized chlorine as part of its disinfection protocol for many years. MPS staff have diligently maintained a Risk Management Plan (RMP) to ensure the safe storage and handling of chlorine, as well as overall operational safety and system management. Oversight of the RMP is part of the U.S. Department of Homeland Security's Hazardous Substances Emergency Events Surveillance (HSEM) system. MPS submits compliance reports to the agency every five years, or following major upgrades to MPS' water system.

Since 1999, MPS staff has developed, maintained, and fully implemented its RMP and support structure. As regulatory standards evolve, increasing requirements for training, documentation, audits, and certifications have made ongoing support and external expertise more critical to keep MPS in compliance.

MPS has previously worked with MunicipalH2O on several external RMP assessments, including the most recent Process Hazard Analysis audit submitted to HSEM. Based on the success of previous engagements and the expenses of one time audit services, MPS staff explored a proposed Professional Services Agreement (available upon request) with MunicipalH2O. Under this Professional Services Agreement (Agreement), MunicipalH2O would assist with MPS' RMP's maintenance and updates, reviews, audits, training, and regulatory compliance activities. Additionally, if an item is missed and MPS is potentially levied a fine by the U.S. Environmental Protection Agency (EPA), MunicipalH2O would be responsible for payment of the potential fine under the structure of this Agreement.

Additionally, because the City of Moorhead's Wastewater Treatment Facility is already a MunicipalH2O subscriber, MPS qualifies for a discounted rate under MunicipalH2O's billing structure. The first-year service fees would include a one-time setup fee of $2,000 and $2,400 for annual activities, for a one-year total of $4,400. If MPS chooses to renew the Agreement, the annual fee is expected to be $2,400. MunicipalH2O reserves the right to increase its annual fee in the future and would provide reasonable prior notice before any increase would take effect.

MPS is confident with MunicipalH2O's expertise in compliance, reporting criteria, and in their ability to further bolster MPS' commitment to chemical safety at MPS' Water Treatment Plant, not only for MPS staff, but also for the surrounding community at large.

KEY ISSUES:

- MPS' Water Treatment Plant has utilized chlorine as part of its disinfection protocol for many years.
- As regulatory standards evolve, increasing requirements for training, documentation, audits, and certifications have made ongoing support and external expertise more critical to keep MPS in compliance.
- Based on the success of previous engagements and the expenses of one time audit services, MPS staff explored a proposed Professional Services Agreement with MunicipalH2O.

FINANCIAL CONSIDERATIONS:

- The first-year service fees would include a one-time setup fee of $2,000 and $2,400 for annual activities, for a one-year total of $4,400. If MPS chooses to renew the Agreement, the annual fee would be $2,400.

Respectfully Submitted,

Travis L. Schmidt
General Manager

Division/Response Person: Marc Pritchard, Water Plant Manager.

Attachments: Available upon request.

Approve Revised 2025 Delegates

RECOMMENDATION:
The General Manager respectfully requests the Commission approve the revised 2025 alternate as shown herein.

BACKGROUND:
Each year in December, it is necessary to reappoint voting delegates and alternates to several organizations to which Moorhead Public Service belongs. The alternate representative for Missouri River Energy Services (MRES) and Western Minnesota Municipal Power Agency (WMMPA) is being revised, as the current alternate is unable to attend upcoming MRES and WMMPA meetings. Listed below are the organizations, delegates, and the updated alternate:

Organization	Delegate	Alternate
American Public Power Association	Travis Schmidt	Eric John
Lake Agassiz Water Authority	Travis Schmidt	Marc Pritchard
Mid-West Electric Consumers Association	Travis Schmidt	Eric John
Midwest Reliability Organization	Travis Schmidt	Kurt McClain
Minnesota Municipal Utilities Association	Travis Schmidt	Jake Long
Missouri River Energy Services	Travis Schmidt	Jake Long*
Western Minnesota Municipal Power Agency	Travis Schmidt	Jake Long*

**Mark Moilanen was the previous alternate.*

Respectfully Submitted,

Travis L. Schmidt
General Manager

Division/Response Person: Travis L. Schmidt, General Manager.

Attachments: None.