

Staff Briefing Papers

Meeting Date August 1, 2024

Agenda Item 2**

Company Minnesota Power

Docket No. E-015/CN-22-607
E-015/TL-22-611

In the Matter of the Application of Minnesota Power for a Certificate of Need and Route Permit for a High Voltage Transmission Line for the HVDC Modernization Project in Hermantown, Saint Louis County

Issues Should the Commission adopt the Administrative Law Judge's Findings of Fact, Conclusions of Law, and Recommendations?

Should the Commission find that the Environmental Assessment and the record created at the public hearing adequately address the issues identified in the scoping decision?

Should the Commission grant a Certificate of Need for the HVDC Modernization Project in Saint Louis County?

Should the Commission issue a Route Permit identifying a specific route and permit conditions for the HVDC Modernization Project in Saint Louis County?

Staff Bret Eknes

Bret.Eknes@state.mn.us

651-201-2236

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The attached materials are work papers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

✓ Relevant Documents

	Date
Minnesota Power (MP) Combined Application and Appendices (9 Parts, 1 Trade Secret, one 22-607 only)	June 1, 2023
PUC Order Accepting Applications as Complete	August 8, 2023
American Transmission Company, LLC (ATC) Intervention	August 9, 2023
ATC Scoping Comments and Proposed Route Alternative	September 15, 2024
DOC EERA Scoping Recommendations (filed to docket 22-611 on October 10, 2023)	October 5, 2023
PUC Order Identifying Alternative Proposal for Environmental Assessment (EA) Scope, Granting Variance, and Notice and Order for Hearing (2 parts)	November 29, 2023
DOC EERA EA Scoping Decision (Revised on 12/27/23)	December 1, 2023
PUC Sample Site Permit	January 31, 2024
MP Direct Testimony – Gunderson, McCourtney & Winter (13 Parts, 7 Trade Secret)	February 14, 2024
LPI Direct Testimony - Maini	February 14, 2024
ATC Direct Testimony – Bradley, Dagenais, Johanek, Lee, Larsen, and McKee (41 Parts, 11 Trade Secret)	February 14, 2024
DOC DER Direct Testimony – Zajicek (22-607 only)	February 14, 2024
DOC EERA Environmental Assessment (2 Parts)	February 29, 2024
MP Rebuttal Testimony (5 Parts, 2 Trade Secret)	March 11, 2024
ATC Rebuttal Testimony (29 Parts, 6 Trade Secret)	March 11, 2024
LPI Rebuttal Testimony	March 11, 2024
ATC Rebuttal Testimony and Errata (3 Parts)	March 12, 2024
Public Comment – World Organization for Landowner Freedom (W.O.L.F) (4 Parts)	March 13, 2024
DOC DER Errata to Zajicek 2-14-24 Rebuttal Testimony (22-607 only)	March 14, 2024
Public Comment – W.O.L.F (2 Parts)	March 18, 2024
ATC Rebuttal Testimony – Dagenais Corrected	March 19, 2024
MP Hearing Exhibits (2 Parts)	March 20, 2024
ATC Corrections to Johanek Testimonies	March 20, 2024
ATC Comments on Environmental Assessment	March 28, 2024
W.O.L.F	March 28, 2024
Public Comments (2 Parts)	

✓ Relevant Documents

	Date
MP Comments on Environmental Assessment	March 28, 2024
DNR Comments	March 28, 2024
DOC EERA Response to Comments from Public Hearing and Sample Route Permit (2 parts)	April 15, 2024
MP Initial Brief	May 3, 2024
DOC Initial Brief	May 3, 2024
LPI Initial Brief	May 3, 2024
ATC Initial Brief and Proposed Findings of Fact (2 parts)	May 3, 2024
DOC EERA Reply Comments	May 21, 2024
MP Reply Brief and Motion for Administrative Notice (3 parts)	May 22, 2024
DOC Reply Brief and Response to MP Proposed Findings of Fact (3 parts)	May 22, 2024
DOC Reply Brief and Response to MP Proposed Findings of Fact (3 parts)	May 22, 2024
ATC Reply Brief	May 22, 2024
MP Motion for Administrative Notice – Minnesota Session Law (2 parts)	May 28, 2024
OAH Notice of Judicially Cognizable Facts	June 3, 2024
ATC Reply to MP Motion to take Administrative Notice	June 6, 2024
ATC Reply to Minnesota Power Motion to take Administrative Notice	June 11, 2024
DOC Letter on Minnesota Power Motion to take Administrative Notice	June 12, 2024
LPI Response to MP Motion to Take Notice	June 18, 2024
OAH ALJ Report including Findings of Fact, Conclusions of Law, and Recommendations	June 21, 2024
DOC EERA Exception to ALJ Report	June 24, 2024
MP Exceptions to ALJ Report and Clarifications	July 1, 2024
LPI Exceptions to ALJ Report	July 1, 2024
ATC Exceptions to ALJ Report	July 1, 2024

Attachment A: Proposed Route Permit

I. ISSUES

Should the Commission adopt the Administrative Law Judge's Findings of Fact, Conclusions of Law, and Recommendations?

Should the Commission find that the Environmental Assessment and the record created at the public hearing adequately address the issues identified in the scoping decision?

Should the Commission grant a Certificate of Need for the HVDC Modernization Project in Saint Louis County?

Should the Commission issue a Route Permit identifying a specific route and permit conditions for the HVDC Modernization Project in Saint Louis County?

II. PROJECT DESCRIPTION

On June 1, 2023, Minnesota Power (MP or Applicant) filed a combined certificate of need and high-voltage transmission line route permit application with the Commission for the MP HVDC Modernization Project (project or MP alternative). The MP HVDC line is a 465-mile, ± 250 kilovolt (kV), 550-megawatt (MW) High-Voltage Direct-Current (HVDC) transmission line first placed into service in 1977 and is also known as the Square Butte Transmission Line. The HVDC converter stations are located near the Arrowhead Substation in Hermantown, Minnesota and the Center Substation in Center, North Dakota where the DC electricity is converted into alternating current (AC), and then interconnected to the transmission system.

MP asserted that the main driver for the project is the age and condition of the converter facilities at the ends of the HVDC Line. The HVDC line currently provides Minnesota with access to 600 MW of wind generation. MP noted the existing facilities have operated beyond their designed life and that terminal outages are increasing due to failures in the control system, power electronics, transformers, and other components.

The purpose of the proposed project is to facilitate the continued delivery of wind-generated electricity from North Dakota to northeastern Minnesota. The HVDC Modernization Project includes modernizing and upgrading both the North Dakota and Minnesota terminals for the HVDC Line and interconnecting the upgraded HVDC terminals to the existing AC transmission system at the existing points of interconnection.

In addition to replacement of the existing HVDC terminal equipment, the project would include an upgrade to the best-available voltage source converter technology to continue its support for the reliable transition to clean energy. The project would also enable bi-directional transfer

of electricity between the North Dakota and Minnesota terminals.

According to MP's application, the proposed project is scheduled to be placed in-service between December 2028 and April 2030. The cost of construction, including the North Dakota portions, is expected to be between approximately \$600 million and \$940 million. Minnesota ratepayers would pay for the project, including portions physically located in North Dakota.

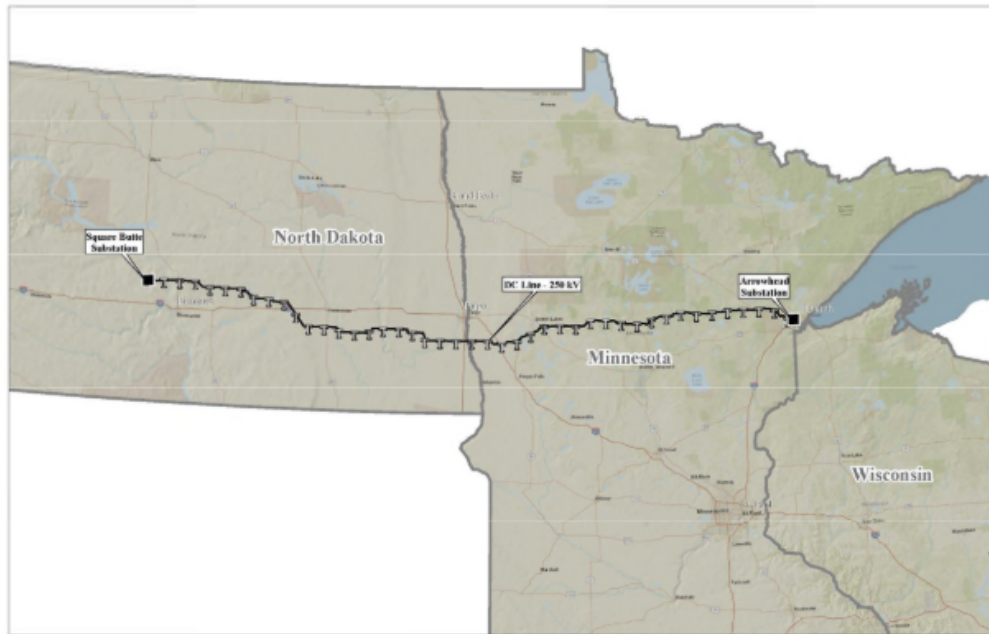


Figure 1: Minnesota Power HVDC (Square Butte) Transmission Line

As proposed, in order to connect the new MP HVDC terminal to the existing AC system in Minnesota, the Project requires construction of a new Saint Louis County 345 kV/230 kV substation to be located less than one mile west of the current Arrowhead Substation near the city of Hermantown. The new MP HVDC terminal will connect to the new St. Louis County Substation by less than one mile of 345 kV high-voltage transmission line (HVTL) and the new St. Louis County Substation would be connected to the existing Arrowhead Substation by two parallel 230 kV HVTLS less than one mile in length. Additionally, a short portion of the existing ± 250 kV MP HVDC Line in Minnesota will need to be reconfigured to terminate at the new HVDC terminal. In North Dakota, similar project development and construction activities will occur.

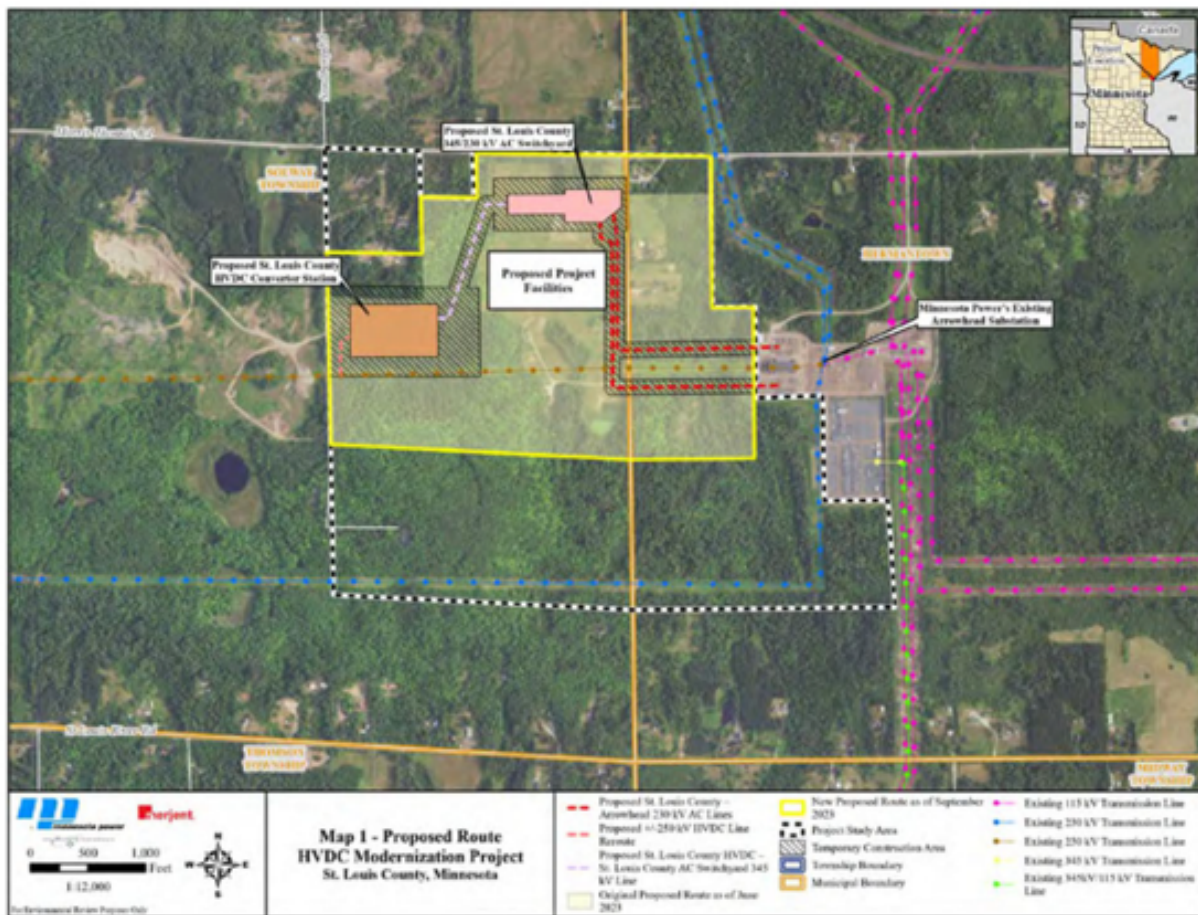


Figure 2: Minnesota Power HVDC Project Final Proposed Route

III. STATUTES AND RULES

A. Certificate of Need

Minn. Stat. § 216B.243, subd. 2, provides that no large energy facility shall be sited or constructed in Minnesota without the issuance of a certificate of need by the Commission. The proposed high-voltage transmission line is defined as a large energy facility under Minn. Stat. § 216B.2421, subd. 2 (2) because it is a HVTL with a capacity of 200 kilovolts (kV) or more and is longer than 1,500 feet.

Minnesota Rule 7849.0120 provides that the Commission must grant a certificate of need if it determines that:

- The probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states;
- A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record;
- By a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health; and;
- The record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

B. Route Permit

Minn. Stat. § 216E.03, subd. 2, provides that no high-voltage transmission line shall be constructed in Minnesota without the issuance of a route permit by the Commission.

Under Minn. Stat. § 216E.01 subd., 4, a high-voltage transmission line is defined as a conductor of electric energy and associated facilities designed for and capable of operation at a nominal voltage of 100 kilovolts or more and that is greater than 1,500 feet in length. The proposed project includes a HVTL with a capacity of 200 kV or more and is greater than 1,500 feet in length and, therefore, requires a route permit from the commission.

The proposed project qualifies for alternative review under Minn. Stat. § 216E.04, subd. 2(4) because it is a high-voltage transmission lines in excess of 200 kilovolts and less than 30 miles in length in Minnesota. Under the alternative permitting process: (1) the applicant is not required to propose alternative routes in its application but must identify other routes it examined and discuss the reasons for rejecting those routes; (2) an environmental assessment is prepared instead of an environmental impact statement; and (3) a public hearing is conducted and a contested case hearing is not required.

The proposed project is subject to Minn. Stat. § 216E, which requires that high-voltage transmission lines be routed in a manner consistent with the state's goals to conserve resources, minimize adverse human and environmental impacts, and other land use conflicts, and ensure the state's electric energy security and reliability through efficient, cost-effective power supply and electric transmission infrastructure. The statute also allows the Commission to specify the design, route, right-of-way preparation, facility construction, and any other

necessary conditions when issuing a high-voltage transmission line permit. The operative rules for the review of high-voltage transmission line route permit applications under alternative review are found in Minnesota Rules Chapter 7850.2800 to 7850.3900

C. Environmental Assessment

Minn. Stat. § 216E.04, subd. 5, requires the Commissioner of the Department of Commerce to prepare an environmental assessment on behalf of the Commission, on proposed high-voltage transmission lines being reviewed under the alternative permitting process. The environmental assessment must contain information on the potential human and environmental impacts of a proposed project and of alternative routes considered and must address mitigation measures for identified impacts.

IV. PROCEDURAL HISTORY

On June 1, 2023, the applicant filed a combined application for a certificate of need and high-voltage transmission line route permit for the HVDC Modernization Project.¹

On August 4, 2023, the Commission and DOC EERA issued a notice of public information and environmental assessment scoping meetings. The meetings were held at Solway Town Hall in Cloquet on August 29, 2023 and online on August 30, 2023. Comments on the scope of the environmental assessment and alternatives were accepted through September 23, 2023.²

On August 8, 2023, the Commission issued an order accepting the joint application as complete. The Commission directed joint review of the applications under the alternative review process, requested the DOC EERA prepare a combined environmental assessment of the project in lieu of an environmental report, and requested that the Office of Administrative Hearings (OAH) assign an Administrative Law Judge (ALJ) to preside over the public hearing and prepare a full report, including findings of fact, conclusions of law, and recommendations on the merits of the project.

On August 9, 2023, the American Transmission Company LLC filed a Petition for Intervention as a party to the proceeding.

¹ Minnesota Power filed the Trade Secret version of Appendix N (Technical Drawings of Proposed Structures) of the application (20236-196464-01) on June 9, 2023. Minnesota Power also filed corrected versions of Application Figure 2-1 (20238-198164-03) and public and Trade Secret versions of Appendix P (Cultural Resources) ([20238-198164-05](#) and 20238-198164-07, respectively) on August 10, 2023.

² DOC EERA filed the Public Meetings transcripts ([20239-198862-01](#) and [20239-198862-02](#)) on September 12, 2023.

On September 13, 2023, Minnesota Power filed comments expanding its proposed route by adding two parcels in the project area and requested they be included in the EA Scoping Decision.

On September 15, 2023, ATC proposed an alternative end point to the proposed project (see Figure 3).

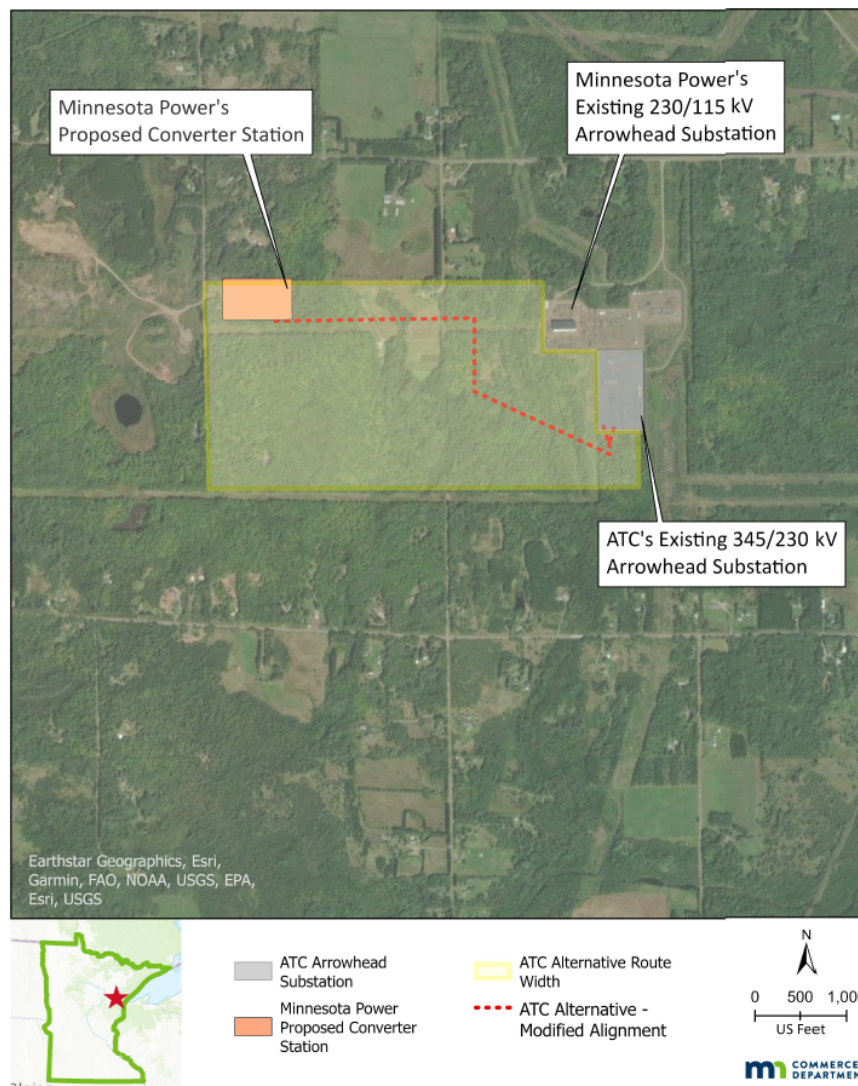


Figure 3: ATC Alternative, as Revised (12/27/23)

By the close of the EA scoping public comment period on September 23, 2023³, oral comments were received from seven members of the public and written comments were received from four members of the public, Minnesota Power, ATC, DNR, and the Solway Town Board of Supervisors.

On October 5, 2023, DOC EERA filed its EA scoping recommendations which included evaluation of Minnesota Power's proposed route, including the expanded route width, and the ATC Alternative. DOC EERA also filed a summary of public comments received during the public comment period.

On November 7, 2023, the Large Power Intervenor (LPI), a group of MP customers comprised of several large industrial ratepaying companies filed comments noting the HVDC project had not been fully evaluated in MP's recent integrated resource plan (IRP) and asked the Commission to fully examine the effect the project would have on LPI members.⁴

On November 29, 2023, the Commission issued an Order identifying the scope of the EA. The Commission requested DOC EERA include Minnesota Power's preferred alternative as expanded and the alternative proposed by ATC. The Commission also requested that the EA incorporate the items identified in DNR's September 22, 2023 comments. The Commission revised its application acceptance order by directing a contested case hearing for the evaluation of the project. The Commission requested the ALJ focus record development on the viability of ATC's alternative.

On December 1, 2023, DOC EERA issued its EA scoping decision.⁵

On January 9, 2024, the World Organization for Landowner Freedom (W.O.L.F) filed a petition for intervention which was denied on February 12, 2024.⁶

³ On August 4, 2023, DOC EERA and Commission staff issued a notice of the public information and EA scoping meetings with a comment period through September 13, 2023 ([20238-198002-01](#)). In response to concerns raised by landowners near the project area, a supplemental notice soliciting comments and extending the public comment period through September 23, 2023, was issued on September 12, 2023 ([20239-198883-02](#)).

⁴ LPI also filed comments during the application completeness comment period ([20236-196686-04](#), June 20, 2023 and [20236-197125-03](#), on June 30, 2023).

⁵ DOC EERA subsequently modified its EA scoping decision in response to a request from ATC to revise the route alignment of the ATC Alternative ([202312-201554-02](#), December 27, 2023).

⁶ ATC and Minnesota Power filed objections to W.O.L.F's intervention petition on January 16 & 17, 2024, respectively ([20241-202225-01](#) and [20241-202284-01](#)). W.O.L.F filed a reply brief in response to ATC and Minnesota Power on January 17, 2024 ([20241-202273-01](#)). On January 22, 2024, Judge Mortenson denied W.O.L.F's petition for intervention ([20241-202442-02](#)). On the same day, W.O.L.F filed a petition for reconsideration of Judge Mortenson's decision ([20241-202501-01](#)). On February 12, 2024, Judge Mortenson

On January 16, 2024, the International Union of Operating Engineers Local 49 and North Central States Regional Council of Carpenters (Local 49/NCSRCC) filed a petition for intervention which was granted on January 26, 2024.⁷

On January 17, 2024, LIUNA of Minnesota and North Dakota filed a petition for intervention which was denied on February 8, 2024.⁸

On February 14, 2024, Minnesota Power filed direct testimony of Daniel Gunderson, Daniel McCourtney, and Christian Winter.

On February 14, 2024, ATC filed direct testimony of Robert McKee, Thomas Dagenais, Dustin Johanek, Amy Lee, Tobin Larsen, and Michael Bradley.

On February 14, 2024, LPI filed direct testimony of Kavita Maini.
2/14/24 DOC DER direct testimony

On February 21, 2024, Minnesota Power filed a wetland report and vegetation Management Plan for the proposed project.⁹

On February 29, 2024, DOC EERA filed the Environmental Assessment in lieu of an environmental report.

On March 1, 2024, the Commission issued a *Notice of Public and Evidentiary Hearings, Availability of the Environmental Assessment and Comment Period*. Public meetings were held online and at that Solway Town Hall on March 13, 2024. The evidentiary hearing was held on March 19, 2024, at the Commission's offices in Saint Paul.

On March 11, 2024, Minnesota Power filed the rebuttal testimony of Daniel Gunderson, Daniel McCourtney, and Christian Winter.

issued an order denying W.O.L.F's petition for reconsideration of the January 22, 2024 order ([20242-203304-01](#)). On January 29, 2024, W.O.L.F filed a motion for certification of its petition for Intervention asking Judge Mortenson to refer the decision on W.O.L.F's intervention status to the Commission ([20241-202773-01](#)). Judge Mortenson filed an Order Denying W.O.L.F's Motion to Certify its Petition to Intervene on February 12, 2024 ([20242-203304-01](#)).

⁷ Local 49/NCSRCC's petition was filed as Document ID [20241-202219-02](#).

⁸ LIUNA's petition was filed as Document ID [20241-202232-03](#). On February 8, 2024, Judge Mortenson issued an Order Denying Intervention of LIUNA ([20242-203206-02](#)).

⁹ Document IDs [20242-203661-01](#) to [20242-203665-14](#).

On March 11, 2024, LPI filed rebuttal testimony of Kavita Maini.

On March 11, 2024, ATC filed rebuttal testimony of Robert McKee, Thomas Dagenais, Justin Johaneck, Amy Lee, Tobin Larsen, and Michael Bradley.¹⁰

On March 11, 2024, DOC DER filed rebuttal testimony of Michael Zajicek in the certificate of need docket.

On March 13, 2024, W.O.L.F filed public comments.¹¹

On March 14, 2024, DOC DER filed an erratum to the rebuttal testimony of Michael Zajicek which added a citation and its attachment.

On March 19, 2024, ATC filed corrections to the Dagenais rebuttal testimony because the original version inadvertently contained trade secret information.

On March 28, 2024, Minnesota Power, ATC, and DNR filed comments on the EA. W.O.L.F filed a public comment.

On April 15, 2024, DOC EERA filed a response to the substantive comments on the EA received during the hearing process; special permit conditions to mitigate potential impacts. DOC EERA included a red-lined version of its proposed route permit for the project.

On May 3, 2024, Minnesota Power, LPI, DOC, and ATC filed their initial post-hearing briefs. MP and ATC filed proposed findings of fact.

¹⁰ On March 12th 2024, ATC filed an errata letter correcting the Johaneck rebuttal testimony ([20243-204253-04](#)) which added an additional cost estimate for the ATC Arrowhead Substation alternative with a tax gross-up in response to the one provided in the February 14, 2024 direct testimony of Gunderson and Winter. On March 13th, MP filed a motion to strike the ATC errata claiming that the filing appears to be a supplement to the Johaneck rebuttal testimony ([20243-204290-02](#)). On March 15, 2024, ATC filed a response to MP's Motion to Strike reiterating that the erratum was filed to correct the erroneous filing of an earlier version of the Johaneck rebuttal testimony ([20243-204410-02](#)). ATC also filed a Motion to Strike portions of the Gunderson and Winter rebuttal testimonies related to cost estimates, claiming the information was not in response to any direct testimony ([20243-204391-04](#)). On March 18, 2024, MP filed a response to ATC's March 15 motion to strike stating that ATC's motion to strike should be denied because all identified portions of Mr. Gunderson's and Mr. Winter's Rebuttal Testimonies are responsive to ATC's Direct Testimony, as well as the DOC DER direct testimony, and could not have reasonably been included in an earlier round of pre-filed testimony ([20243-204421-02](#)). On March 20, 2024, Minnesota Power filed Exhibits 133 and 134 which were admitted into the record at the March 19, 2024, evidentiary hearing ([20243-204520-02](#) and [20243-204520-04](#) (Trade Secret), respectively).

¹¹ W.O.L.F filed additional public comments on March 18th and March 28th, 2024 ([20243-204437-01](#), [20243-204437-03](#), and [20243-204710-02](#)).

On May 21, 2024, DOC EERA filed its Reply Comments, with responses to Minnesota Power's proposed findings of fact on May 22, 2024.

On May 22, 2024, Minnesota Power, ATC, DOC, and LPI filed reply briefs. LPI filed proposed findings of fact.¹²

Also on May 22, 2024, Minnesota Power filed a motion and notice requesting Judge Mortenson take administrative notice of a May 8, 2024 order from the Federal Energy Regulatory Commission (FERC) accepting filing of the facilities construction agreements (FCAs) between Minnesota Power and the Midcontinent Independent System Operator Inc. (MISO) for the project.

On May 28, 2024, Minnesota Power filed a motion for administrative notice of Minnesota Session Law Chapter 127.¹³

On June 3, 2024, Judge Mortenson filed a Notice of Juridically Recognizable Facts taking official notice of Minnesota Power's May 22, 2024 request for administrative notice, absent an objection before June 10, 2024.

On June 6, 2024, ATC filed a reply to MP's May 28, 2024 motion for administrative notice of FERC's acceptance of the FCAs for the project.

On June 11, 2024, ATC filed a reply opposing Minnesota Power's May 28, 2024 motion for administrative notice of Minnesota session law Chapter 127.

On June 12, 2024, DOC filed a letter indicating it took no position with regarding to the Minnesota Power's May 2024 motion for administrative notice of Minnesota Session Law Chapter 127.

On June 18, 2024, LPI filed a letter in response to Minnesota Power's May 28, 2024 motion for administrative notice noting that the Commission expressly found that issues related to project size, type, and timing were relevant for the analysis of the need for the project and requested the ALJ develop a full record of the size, type, and timing of the proposed project for the Commission's consideration.

On June 21, 2024, Judge Mortenson filed Findings of Fact, Conclusions of Law, and

¹² Minnesota Power also included a revised version of their May 3, 2024 proposed findings of fact, conclusions of law, and recommendation.

¹³ House File 5427, [20245-207146-05](#).

Recommendations (the ALJ Report).

On June 24, 2024, DOC EERA filed exceptions to the ALJ Report.

On July 1, 2024, Exceptions to the ALJ Report were filed by MP, LPI, and ATC.

VI. PUBLIC HEARING PROCESS

On March 1, 2024, the Commission issued a notice of public and evidentiary hearings, availability of environmental assessment and environmental report, and comment period. Per the ALJ's prehearing order, in-person and online (virtual) public hearings were held on March 13, 2024. Public comments were accepted through March 28, 2024. The hearing procedures included a brief presentation of the proposed Project; an explanation of the process followed; introduction of documents to be included in the record; and an opportunity for any person present to ask questions of the applicant, DOC EERA staff, and Commission staff. The evidentiary hearing was held at the Commission's offices on March 19, 2024. Witnesses on behalf of parties were present to answer questions about their testimony and party positions.

Comments for and against the project were received during the public comment period.¹⁴ Commenters expressed concerns related to noise, lighting, wetlands, tree clearing, and creek setbacks. Parties provided responses to public queries regarding the ATC alternative's impact, noise studies, clarifications of the use of phase shifting transformers, wetland delineation in the project area, and roads used for construction. One commenter spoke in support of the project and the use of union labor to construct portions of the project. One commenter (W.O.L.F.) filed comments opposing ATC's proposed alternative.

Minnesota Department of Natural Resources

The DNR submitted written comments regarding water resources and fisheries, wildlife friendly erosion control, vegetation management plan, water appropriation, and West Rocky Run. DNR noted that a public water works permit would be required from the project if work is planned below the ordinary high-water level not covered by a DND license to cross public water.

Department of Commerce EERA

In its April 15, 2024 comments, DOC EERA provided a proposed route permit based on the sample route permit. The proposed route permit incorporated recommendations based on the analysis of the EA and comments received during the public hearing from parties, members of the public and Tribal agencies. DOC EERA recommended the following conditions in the final route permit for the project:

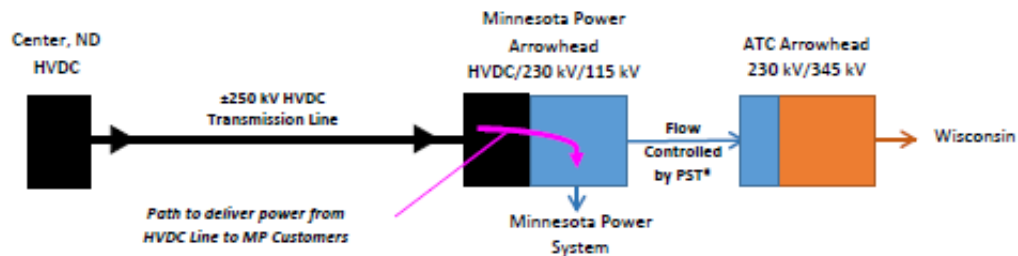
¹⁴ A summary of individual public comments at the public hearings is included as findings of fact 127 to 137 in the ALJ Report.

- Vegetation Retention
- HVDC Converter Station Aesthetics
- Noise Study
- Right-of-Way Restoration Near Trout Streams
- Steep Slopes
- Facility Lighting
- Dust Control
- Wildlife-Friendly Erosion Control
- Vegetation Management Plan, and
- Independent Third-Party Monitoring

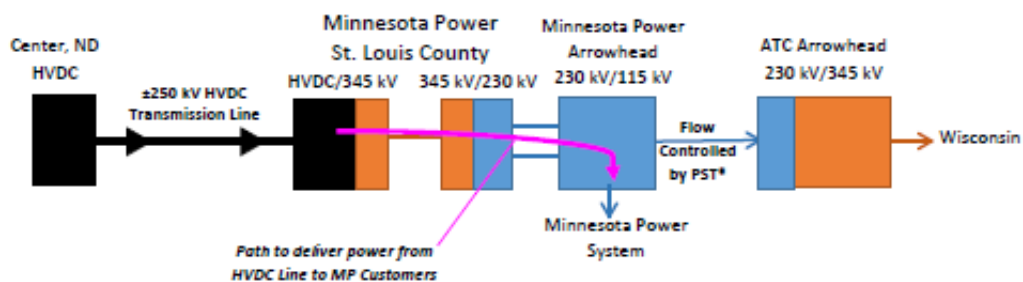
VII. General Brief Summary of Testimony

The ALJ Report is summarized further below. In the Report, the ALJ recommended granting the CN and Route Permit to MP for the HVDC Modernization project, including special conditions to the permit recommended by DNR. In the Exceptions filed to the ALJ Report, the following key issues remain contested by the intervening parties: 1) whether MP's proposed upgrade to accommodate 345 kV transmission capacity is necessary (LPI); 2) whether ATC's Arrowhead Substation Alternative should be selected (ATC); and 3) whether a new statute (Minn. Stat. § 216B.243, subd. 3(6)) prevents the Commission from considering the ATC Arrowhead Substation Alternative (MP). Figure 4 below offers a visual of the system alternatives the Commission is asked to consider.

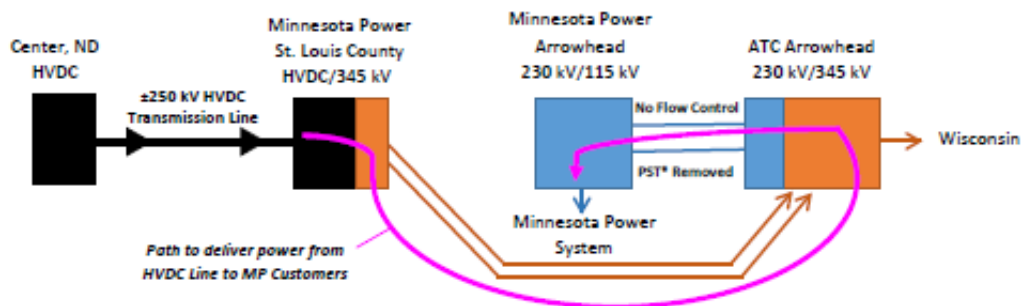
Existing HVDC System Connection



Proposed Minnesota Power HVDC Modernization Project



Proposed ATC Arrowhead Alternative



*PST: "Phase Shifting Transformer"

Figure 4. Diagram of Existing HVDC System compared to MP Proposed and ATC Alternative

Given the size of the record in this matter, staff provides the following brief summary of the parties' testimony and the positions taken.

Minnesota Power

Daniel W. Gunderson – Vice President of Transmission and Distribution provided an overview of the Square Butte HVDC system and the ATC Arrowhead Substation. Mr. Gunderson described

MP's efforts to obtain state and federal funding to mitigate project costs. Mr. Gunderson also discussed funding, in-service, rate impact and cost recovery risks associated with the ATC alternative.¹⁵

Daniel McCartney – Manager, Strategic Environmental Initiatives-Project Siting and Routing provided an overview of the routing efforts prior to filing the Certificate of Need and Route Permit Application, and information on the environmental considerations for the proposed project. Mr. McCartney discussed feedback received on the Project since filing the Application and mitigation measures to limit potential natural and socioeconomic impacts of Minnesota Power's proposed configuration of the Project. Mr. McCartney also provided a route alternative analysis comparing the impacts to resource types and land cover of the proposed MP and ATC projects.

Christian Winter – Manager, Regional Transmission Planning provided testimony describing MP's propose project and the existing AC transmission system from a technical perspective. Mr. Winter explained why existing facilities cannot meet the ongoing needs of MP and its customers, and ways in which the project interacts with the planning processes of the MISO. Mr. Winter also provided MP's evaluation of the ATC alternative and explained why MP's proposal to maintain the interconnection of the HVDC system in its existing configuration in the area at its 230 kV voltage class is the most technically-sound, reasonable, and prudent alternative, in addition to being the most consistent with current and long-term transmission planning needs.

MP estimated the hourly outage cost for the HVDC line being out of service at \$1,825 per hour, which would suggest that outage costs for the next 30 years of the failure of the HVDC line would be \$492,750,000 ignoring inflation.

Minnesota Power emphasized that only two issues remain disputed – LPI's dispute over the overall sizing of the HVDC project, and ATC's dispute over the appropriate interconnection configuration for the project.

Reply to LPI

According to MP, LPI misconstrued the cost estimate for the incremental 350 MW portion of the MP project that would fulfill transmission service request and increase the capacity of the HVDC system from 550 MW to 900 MW. MP argued that LPI did not adequately consider the value of the additional 350 MW of capacity would provide MP and its customers.

Reply to ATC

MP disputed ATC's assertion that its alternative would serve the same purposes as MP's

¹⁵ Further information on project costs, financing, and cost recovery are included in the ALJ Report as Findings of Fact 120-127 (pages 34-36).

proposed project. MP disagreed with ATC that the Arrowhead Substation has sufficient space to interconnect with the HVDC converter station as well as a potential expansion of future transmission in the area. MP argued that the ATC would not have lower environmental impacts compared to MP's project. MP argued that the ATC project would not be a lower cost alternative and does not present a reasonable alternative to the project.

DOC DER

Michael Zajicek – Public Utilities Analysis Coordinator with the DOC DER provided an analysis of the project as proposed by MP and ATC in relation to the certificate of need criteria, whether the ATC alternative is more cost effective and if it would result in delays or other disruptions to the project. Mr. Zajicek's testimony articulated the potential adverse effects on the future adequacy, reliability, and efficiency if the project is denied. The testimony considered the prevalence of outages and their costs in lost energy. Additional costs would arise from congestion impacts, costs to reserve transmission for delivery on other systems, replacement energy costs, and lost production tax credits. Mr. Zajicek concluded that each hour of outage would cost the company \$804, or about \$7,043,726 per year, or about \$211,928,299 over the next 30 years (ignoring inflation) and noted these estimates did not include any added costs required to achieve Minnesota's carbon free goal should MP not have access to the approximately 600 MW of wind generation in North Dakota.

According to DOC DER, since the project is replacing existing facilities to maintain service, it would be more accurate to consider whether MP has demonstrated the need of replacement of the facilities. DOC DER concluded that the increasing rate of outages on the HVDC are likely to continue, eventually leading to a failure of the line altogether. DOC DER concluded that cost of retiring the HVDC transmission line would exceed the cost of the Modernization Project. All other alternatives considered were more expensive than the HVDC project.

The Department acknowledged that the project cost would increase costs for Minnesota customers, however compared to the alternative provided by MP the project is the least cost alternative.

The Department asserted that Minnesota Power's application and filings satisfy the legal requirements for granting a certificate of need and route permit. The record amply establishes that the Project is in the public interest and that Minnesota Power's application for a certificate of need and the April 15, 2024 route permit which incorporated conditions to minimize or mitigate potential human and environmental impacts should be granted.

DOC DER recommended the Commission decline ATC's suggestion that the Commission eliminate the permit condition that limits the power flow through ATC's Arrowhead substation and noted that ATC has the option to pursue modification of a route permit through the

Commission's established procedures for doing so.

According to the DOC DER, no party disputes that the proposed project meets all the requisite criteria for issuance of a certificate of need and route permit. The Department noted the need to replace aging equipment to reduce outages and enable more efficient operation of the power grid.

DOC DER expressed support for DOC EERA's environmental analysis and its proposed modifications to the sample permit.

The Department took no position regarding whether MP's proposal or the ATC alternative is preferable, noting that each alternative offers its own advantages and disadvantages and it lacks the required technical expertise to opine regarding the engineering issues at dispute.

DOC DER expressed skepticism regarding ATC's assertions that MP had not consulted MISO and suggested the Commission should give such concerns little or no weight in its consideration of the case. According to DOC DER, ATC has not demonstrated its proposal provides significant material benefits or that its alternative would not result in net power flows from Minnesota into Wisconsin.

DOC DER found that both parties' construction cost estimates relied upon flawed assumptions, especially as it relates to land costs. ATC's costs were less than those of MP's proposal because under the ATC alternative MP would construct a new substation for the purpose of interconnecting with the AC system while ATC would use its existing substation for that purpose.

Both MP and ATC commented upon the 800 Mega-Volt Amp (MVA) power flow limitation at the Arrowhead Substation. MP and ATC both agree that selection of the ATC alternative would result in an increase greater than 800 MVA, thus necessitating an increase in that limit. DOC DER stated the Commission has jurisdiction to lift the 800 MVA limit based upon the 2005 legislation transferring responsibility for siting and routing of large electric power facilities from the Environmental Quality Board to the Commission. DOC DER recommended that Commission evaluate this only in response to a formal request to allow for full consideration of the issue, possibly through a permit amendment proceeding.

ATC

Robert McKee – Strategic Projects and Execution Director provided testimony on ATC's proposed project, its facilities and operations, discussions with MP regarding the project, ownership of the Arrowhead Substation and introduction of other witnesses.

Michael Bradley – Consultant Transmission Line Engineer provided testimony about ATC's alternative, its proposed facilities the right-of-way width, and the selection of a route for the approximately one-mile long double-circuited 345kV transmission line included in the alternative. The ATC alternative would reuse a segment of MP's HVDC line which will be decommissioned/removed as part of the project. ATC's 345 kV line would be constructed using ATC's current 345 kV transmission line standards and comply with the National Electric Safety Code (NESC) and National Electric Code (NEC). ATC intends to analyze potential impact in a manner consistent with those contained in MP's application. ATC's proposed route would allow MP's HVDC to remain in-service during construction. According to ATC, their alternative would result in fewer impact to human settlement.

Dustin Jahonek – Consultant Project Manager provided testimony regarding cost estimates and issues related to ATC's ability to meet the necessary in-service date (ISD).

ATC's alternative differs from MP's in that it would utilize ATC's existing 234/230kV Arrowhead Substation to interconnect the project instead of building the new St. Louis County Substation. The alternative would replace MP's proposed new 230kv and 345 kV transmission lines with a double-circuited 345 kV line to connect the new converter station to ATC's existing substation by utilizing the existing HVDC right-of-way.

ATC's current cost estimate for its alternative is approximately \$39.5 million, with a range of \$34.9 million to \$47.6 million (in 2022 dollars), including the transmission-related work and the work at the Arrowhead substation. ATC based its cost estimate on consultation with its suppliers and contractors and maintains its approach is more accurate than the one used by MP.

ATC anticipates that MP would own the transmission facilities associated with the ATC alternative and would decide who would construct those facilities. Based on its high-level schedule for construction of its alternative, ATC confirmed that it can meet the April 2040 In-Service Date (ISD) for the project. ATC maintains that its alternative would have lower construction-related impacts with respect to noise, public health and safety, public services, and transportation.

Table 1: Arrowhead Substation Alternative Cost Estimate Comparison

	Project Component	ATC Estimate			Owner	MP Estimate ¹²		
		Low	Med	High		Low	Med	High
1	Minnesota Land Acquisition	-	-	-	MP	7	10	13
2	HVDC Line Entrance	-	-	-	MP	1.4	2	2.6
3	HVDC 345 kV Line Entrance for Ckt #2	2.2	3.1	4.0	MP	2.2	3.1	4
4	HVDC-Arrowhead 345kV Double Ckt	7.8	8.7	10.4	MP	4.7	6.7	8.7
5	Arrowhead 345kV Line Reconfiguration	Included in line 4			ATC	1	1.4	1.8
6	Arrowhead 345kV/230 kV Sub Expansion	24.0	27.7	33.2	ATC	15.4	22	28.6
7	Arrowhead 230kV Phase Shifting Transformer	0	0	0	-/ATC	23.5	33.5	43.6
8	Arrowhead 230 kV Bus Reconfigurations	Included in line 6			MP	3.4	4.9	6.4
TOTAL		34.9	39.5	47.6		60	85	110

Figure 5 ATC Project Component Cost Comparison with MP's HVDC Project (Jahonek Rebuttal)

Amy Lee – Principal Environmental and Regulatory Advisor provided testimony demonstrating that the environmental impacts of the ATC alternative would be similar or less than those from MP's proposed project because it would not require construction of the five-acre St. Louis County Substation. ATC maintains that Impacts to human settlement, land-based economics, archeological and historic resources, the natural environment, air quality, water resources, and biota would be less than, or similar to, those of MP's project.

Thomas Dagenais – Director Systems Planning provided testimony with an overview and justification for ATC's proposed project and the planning analysis conducted for their proposed modification to MP HVDC Modernization Project. Mr. Dagenais noted that ATC is not contesting the need for, or adequacy of the project generally. ATC views its alternative as a modification of how it interconnects to the bulk electric transmission system.

ATC conducted several planning analyses of its alternative, including steady state reliability analysis, dynamic stability reliability analysis, and steady state voltage stability analysis. ATC concluded the steady state reliability of its alternative performed as well or better than MP's proposed project. According to ATC, both alternatives performed similarly in the dynamic stability analysis conducted by ATC. The ATC alternative outperformed MP's proposal in ATC's voltage stability analysis.

ATC concluded that its alternative was superior to MP's because it performed better in the

voltage stability analysis and has an advantage in availability and reliability. ATC emphasized that its steady state analysis demonstrated the adequacy of its existing transformer for transfers of up to 900 MW over the HVDC line. ATC argued that its alternative had superior voltage stability performance to MP's proposal based on the stability curves shown in its analysis. ATC stated that its alternative performed comparably, if not better, than MP's proposal, even without the existing Arrowhead phase shifting transformer.

Mr. Dagenais emphasized that expedited system planning could be undertaken such that it would be placed in the same position in the MISO interconnection queue for approval as the MP proposed project and achieve the same ISD.

Tobin Larsen – Team Leader – Contracted Engineering Services provided testimony of the Arrowhead Substation, ATC's alternative, and the work which would need to occur to interconnect the project.

Large Power Intervenorors

Kavita Maini – Principal and owner of KM Energy Consulting, LLC testified on behalf of the Large Power Intervenorors to help develop the record regarding the size, type, and timing issues associated with MP's HVDC project.

Ms. Maini noted that the first-year revenue requirements provided by MP in its certificate of need application range from \$86.4 million to \$101.86 million which equates to a substantive increase of 11.6% to 13.7% respectively, when compared to present revenues. According to MP's application, the estimated rate increase for the MP HVDC project to LPI's members ranges from 9.82% to 14.01%.

LPI supports the need to replace and modernize the Square Butte High Voltage Direct Current Modernization System at its existing capacity, but argued it is not necessary to expand and upgrade the System as Minnesota Power proposes.

LPI noted that the cost of MP's proposed project would approach \$1 billion to triple the capacity of the existing system it would replace. LPI emphasized that is customers would bear most of those costs and believes the Commission should further evaluate the appropriate project size, its cost sharing, rate impacts, availability of regionals transmission solutions, and the benefits to ALLETE and Minnesota Power's unregulated affiliates.

In its exceptions, LPI asserted the ALJ erred in determining MP should expand the HVDC system to meet future regional need. LPI expressed appreciation of the need for additional regional transmission but expressed skepticism of MP's proposed investment of the HVDC project. LPI stated the project should be closely aligned with MP's integrated resource planning (IRP) processes. LPI questioned MP's assertion that the proposed investments do not involve

demand-side or supply-side resource options. According to LPI, there is no provision in state law that permits a utility to deliberately exclude certain resources from the IRP process, only to include those same resources in a subsequent certificate of need filing.

LPI requested that a portion FoF #242 be deleted because MP has acknowledged that the costs of 350 MW capacity expansion are included in the project estimate. According to LPI, the Commission should not allow MP to recover the costs of expandability until MISO has incorporated the use of the HVDC system into its long-range planning and MP can demonstrate the expansion has benefitted its customers.

LPI questioned the lack of justification for the use of a 345 kV interconnection at the new HVDC conversion stations, noting MP found that connecting the new HVDC converters directly into the 230 kV system would be less costly. LPI emphasized that MISO does not presently have plans for expansion of the 345 kV system in northeastern Minnesota and therefore accommodating future expansion should not be a high priority for this project.

LPI argued that If the Commission approves the Proposed Project, it should disallow the incremental cost of the converters because the Company has not proven it is necessary to increase the capability to 345 kV. LPI requested the Commission adopts LPI's recommendations as proposed in its reply brief.

Post-Hearing Motions

On May 22, 2024, MP filed a motion requesting the ALJ take administrative notice of an action recently made by the Federal Energy Regulatory Commission (FERC) related to the facility construction agreements entered into by MP and MISO.¹⁶ On June 3, 2024, Judge Mortenson filed a notice of judicially cognizable facts.¹⁷ The order provided that the Judge would take official notice of MP's filing absent any objection before June 10, 2024. On June 6, 2024, ATC filed an objection to MP's filing.¹⁸ The ALJ Report notes, in part, "the fact is not directly relevant to the outcome of this case, it is noted in this footnote [MP's design for expandability as a significant function of how MP and MISO proceed], and so relevant to that limited extent."¹⁹

On May 28, 2024, MP filed a motion to take administrative notice of Minnesota 2024 Session

¹⁶ eDockets No. [20245-207017-04](#)

¹⁷ eDockets No. [20246-207363-01](#)

¹⁸ eDockets No. [20246-207470-02](#)

¹⁹ ALJ Report, Footnote 292, p. 63

Law Ch. 127, signed into law on May 24, 2024. The 2024 Session Law Ch. 127 made several changes to the certificate of need and route permit pre-application procedures, application requirements, and Commission evaluation standards and criteria. While many of the changes are effective at a later date, certain changes are “effective on the day following enactment and for pending applications.” Specifically, Minnesota 2024 Session Law Ch. 127, Art. 44, Sec. 3 revises Minn. Stat. § 216B.243, subd. 3(6) as follows:

In assessing need, the commission shall evaluate:

(6) possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, loadmanagement programs, and distributed generation, except that the commission must not require evaluation of alternative end points for a highvoltage transmission line qualifying as a large energy facility unless the alternative end points are (i) consistent with end points identified in a federally registered planning authority transmission plan, or (ii) otherwise agreed to for further evaluation by the applicant; . . .

On June 11, 2024, ATC filed a reply to MP’s May 28 motion stating that it had no objection to the ALJ and the Commission taking administrative notice of the law, but strongly objected to MP’s proposed application of the new statute to immediately cease the ongoing consideration of the ATC alternative. On June 12, 2024, DOC filed a letter indicating it took no position regarding MP’s May 28, 2024 motion or interpretation of the statute. On June 18, 2024, LPI filed a response noting that the Commission had previously directed the analysis of the ATC alternative in this proceeding and requested the ALJ to develop a full record of the size, type, and timing of the proposed project for the Commission’s decision.

VIII. ALJ Report

On June 21, 2024, Judge Mortenson filed his Findings of Fact, Conclusions of Law, and Recommendations (ALJ Report). The ALJ Report documented that the procedural requirements were followed and presented findings of each of the decision criteria under Minn. R. 7849.0120 and 7850.4100. The finding of facts included identification of the applicant and other parties to the proceeding; procedural requirements that were conducted; description of the proposed Project; position of the parties; facts related to the certificate of need proceeding; facts related to the route permit proceeding including alternative routes considered; identification of public and government agency participation in the proceedings. The ALJ Report included 574 findings of fact, 14 conclusions, and 4 recommendations.

Adequacy of the Environmental Assessment

The ALJ concluded that DOC EERA conducted an appropriate environmental analysis and environmental review for purposes of considering the certificate of need and route permit

applications. The ALJ noted the proceeding and the EA satisfied the requirements of Minn. R. 7849.1900, subp. 1 and Minn. R. 7850.3700.

ALJ Certificate of Need Recommendations

The ALJ Report considered the entire record, including the ATC Alternative, and determined that the record evidence demonstrates that the Minnesota Power's proposed configuration (including the HVDC converter stations) of the MP HVDC modernization project satisfies the certificate of need criteria set forth in Minn. Stat. § 216B.243, subd. 3, and Minn. R. 7849.0120. The ALJ concluded that no party had demonstrated by a preponderance of the evidence that there is a more reasonable and prudent system alternative to Minnesota Power's proposed configuration of the MP HVDC modernization project.

The ALJ recommended the Commission issue a certificate of need for the Project and find that all the relevant criteria set forth in Minnesota law for a certificate of need have been met.

ALJ Route Permit Recommendations

The ALJ found that all relevant criteria set forth in Minnesota law for a route permit for the MP HVDC Modernization Project have been satisfied; and that there are no statutory or other requirements that preclude granting a route permit based on the record.

The ALJ concluded that the record evidence demonstrates that constructing Minnesota Power's proposed configuration of the HVDC modernization project does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act, Minn. Stat. §§ 116B.01-116B.13, and the Minnesota Environmental Policy Act, Minn. Stat. §§ 116D.01-116D.11. The ALJ determined the Applicant's request for a route width of approximately 0.5 miles wide, 0.7 miles long, parallel to the existing HVDC line, and immediately west of Minnesota Power's Arrowhead 230 kV/115 kV Substation, is reasonable and appropriate for the project. Similarly, the ALJ determined the Applicant's request for a right-of-way of up to 150 feet for operation and maintenance of the DC and AC transmission lines, including additional right-of-way width beyond 150 feet to accommodate final design requirements, is reasonable and appropriate. The ALJ recommended the Commission issue a route permit for Minnesota Power's alternative, including specific conditions recommended by DNR, members of the public, and DOC EERA in its April 15, 2024 filing.

IX. Exceptions to the ALJ Report

Minn. R. 7829.2700 provides that exceptions to the ALJ Report may be filed by parties within 15 days of the filing of the report. DOC EERA, LPI, ATC, and MP provided exceptions. The Commission will consider these exceptions in Decision Options 2-5.

First, the DOC-DER did not file exceptions to the ALJ report; however, in their Reply Brief, DOC-DER states:²⁰

The record amply establishes that the Project is in the public interest and that Minnesota Power’s application for a certificate of need and route permit should be granted. The Commission should decline ATC’s suggestion that the Commission eliminate the permit condition that limits the power flow through ATC’s Arrowhead substation. If ATC wants a modification of the permit, it should follow the Commission’s established process for seeking such a modification.

DOC-DER in the same filing also stated that it takes “no position regarding whether to approve the project as proposed by Minnesota Power or the alternative proposed by ATC.”²¹

DOC EERA Exceptions (Decision Option 2)

DOC EERA requested the findings note the potential impacts of construction activities be included in Findings of Fact 234 and 262, and asked that Finding of Fact 446 be corrected to reflect on May 21, 2024 reply comments as follows:

234. DOC-EERA evaluated the potential impacts to the natural and socioeconomic environments for the Minnesota Power Proposed Configuration and the ATC Arrowhead Alternative in the EA developed for the HVDC Modernization Project. DOC-EERA’s analysis indicated that potential impacts to the natural and socioeconomic environments are anticipated to be minimal with a couple of exceptions. DOC-EERA anticipates that the following elements have the potential for moderate impacts: (i) construction noise, aesthetics, surface water, and topography for both the Minnesota Power Proposed Configuration and the ATC Arrowhead Alternative) and (ii) cultural values for those who place a high value on the rural nature of the HVDC Modernization Project area for the Minnesota Power Proposed Configuration.

262. The DOC-EERA anticipates that the following elements have the potential for moderate impacts: (1) construction noise, aesthetics, surface water, and topography (for both Minnesota Power’s proposed configuration and the ATC alternative); and (2) cultural values for those who place a high value on the rural nature of the project area.

446. In its April 15, 2024, Hearing Comments, the DOC-EERA stated that it did not disagree that ATC had offered a buffer of low-growing vegetation adjacent to West Rocky Run in testimony. The DOC-EERA did not agree that any vegetation buffer at the

²⁰ DOC-DER, Reply Brief (May 22, 2024), p. 1

²¹ DOC-DER, Reply Brief (May 22, 2024), p. 2

crossing under the ATC alternative would change the conclusions in the EA. Therefore, the DOC-EERA concluded that the ATC alternative would present slightly higher potential for warming impacts to the West Rocky Run, as compared to the proposed project.

LPI Exceptions (Decision Option 4A-C)

In its exceptions to the to the ALJ Report (Decision Option 4.A-C) LPI requested the Commission consider delaying its decision on this matter or impose the conditions included in LPI's reply brief (Decision Option 10 or 11.A).

Decision Option 4.A: LPI argued that portions of Finding of Fact 242 are inaccurate and should be stricken because MP has acknowledged that the 350 MW capacity expansion is included in its cost estimate.

242. Minnesota Power has incorporated expandability into its proposed configuration of the project to create optionality and flexibility for the HVDC system's capacity to be increased by 350 MW (to 900 MW) for the transmission service requests held by Minnesota Power for the benefit of its customers, with potential future modifications to the existing HVDC line, which would be increased another 600 MW (to 1500 MW) if the HVDC line is rebuilt. ~~Neither of these increases are included in this proceeding. The incorporation of these expandability and flexibility features into Minnesota Power's proposed configuration accounts for approximately \$100 million of the \$800 million project cost.~~ (citations omitted.)

Decision Option 4.B: LPI noted that MISO's initial draft portfolio for Tranche 2 did not include MP's proposed project or a buildout of MP's transmission system to a 345 kV capacity. LPI argued that MP's proposed upgrade to accommodate 345 kV transmission capacity is not necessary and therefore the Commission should delete Finding of Fact 195 and amend Findings of Fact 192-205 to be consistent with LPI's proposed Findings of Facts shown below.

195. ~~While this alternative would have a lower cost in the near term, the long-term cost would likely be significantly higher than developing an initial interconnection at 345 kV.²²⁸ The northeastern Minnesota transmission system is built around a 230 kV backbone infrastructure.²²⁹ However, as the regional transmission system continues to develop to support the clean energy transition, the region will eventually need a 345 kV backbone network. The HVDC system has long-term significance for the regional transmission system, enabling efficient and flexible long-distance transfer of high-value and zero-fuel-cost renewable energy resources in North Dakota to customers throughout the MISO area. As the use and significance of this existing HVDC system evolves over the life of the proposed HVDC converter stations, it will become increasingly~~

~~important for the HVDC system to be directly interconnected to the regional 345 kV network, rather than the underlying local 230 kV network. However, to move the point of interconnection from the 230 kV system to the 345 kV system later would require an expensive replacement of the converter transformers to change the winding voltage on the AC system side. Because the HVDC converter transformers account for approximately 20 percent of the overall cost of the HVDC converter station itself, there would be a significant sunk cost at the time the transition from 230 kV to 345 kV is made in the future, when conditions warrant this interconnection. Therefore, alternative AC transmission voltages are not a more reasonable or prudent alternative to the HVDC modernization project~~ (citations omitted).

LPI 13. The Proposed Project scope and expansion is cast in further doubt because MISO does not appear to have any present plans to expand the local 345 kV system in northeastern Minnesota. Therefore, as the Department notes, the ability to accommodate future expansion is not a high priority for this project. In early March 2024, MISO released its initial draft portfolio for LRTP Tranche 2, which does not include the Proposed Project. (citations omitted)

LPI 14. The Commission could consider delaying its decision in this matter until the Company has explained the ramifications of MISO LRTP on the viability of this Project.

Decision Option 4.C: LPI argued that because there is no need, Minnesota Power’s customers should not bear the costs incurred to upgrade the HVDC System. Moreover, if the excess capacity does become useful, it will, at least in part, be used to benefit the MISO region, and not Minnesota Power customers exclusively. Therefore, Finding 246 should be modified to disallow the costs of the capacity increase:

246. Further, if MISO identifies that an increase in capacity of the HVDC system is above what is needed for Minnesota Power customers, MISO could determine that costs necessary to effectuate those increases could be subject to cost allocation. Therefore, while the HVDC modernization project, itself, is not eligible for cost allocation through MISO, **the Commission will disallow the costs of the capacity increase.** Minnesota Power shall continue to explore opportunities for cost allocation associated with the potential future expansion. (citations omitted)

LPI argues that MP has not met its burden of proof on the need for capacity expansion and recommends the Commission either delay a decision to further vet how the project fits in the MISO LRTP or other national transmission buildouts and whether a merchant transmission line solution is a better option. LPI flagged its concerns over the impacts of the large investments claiming a “tripling of Minnesota Power’s rate base” requires the Commission to slow

investments to ensure rates remain just and reasonable. If the Commission proceeds, the project should be limited to replacing the aging infrastructure at its existing capacity and with a cost cap (Decision Option 11). LPI also requested any capacity expansion costs be capped and conditional on demonstrated benefit to MP customers since the expansion would benefit the MISO region not just MP customers (Decision Option 11.A).

ATC Exceptions (Decision Option 3)

ATC did not offer specific modifications or additions to the ALJ Report, but used its exceptions filing to argue that the record of this proceeding demonstrates that the Arrowhead Substation Alternative provides a more efficient, more reliable, and less impactful alternative than the MP Proposal, providing significant benefits to Minnesota and the region. ATC also argued that MP has made several efforts to thwart the ATC Alternative since pivoting from a stated preference for the ATC Alternative in 2022.

ATC stated the HVDC project has not been vetted through the MISO Transmission Expansion Plan (MTEP) stakeholder review process. ATC noted that MP has opposed ATC's alternative despite its advantages. According to ATC its alternative:

- 1) Makes the most efficient use of existing resources;
- 2) Meets the purpose and need for the Project, while also providing the capability to expand should future needs arise;
- 3) Provides more reliable and efficient electric transmission service to meet MP's and regional energy needs;
- 4) Provides the lower cost means of interconnection to the AC transmission system; and
- 5) Minimizes impacts to the natural and human environment.

ATC argued that the ALJ Report does not provide a critical review of the project alternatives in seeking the most efficient, reliable, and least impactful interconnection proposal for the project.

ATC challenged MP's claim that the ATC alternative would result in significant power flow to Wisconsin, to the detriment of Minnesota. According to ATC, the ALJ Report did not consider or meaningfully weigh the full evidentiary record. ATC alleged the report ignored evidence it entered into the record in support of its positions on the availability for federal funding and relative merits of the ATC alternative. ATC asked that the Commission provide an independent review of the record.

MP Exceptions (Decision Option 5.A-H)

Minnesota Power provided the following exceptions to clarify the record.

Decision Option 5.A: MP requested that the ALJ Report include references to the following two

eDockets filings:

28a. On September 29, 2023, Minnesota Power filed its Response to Route Alternative and Conditions Proposed to be Evaluated in the Environmental Assessment.^{36a}

28b. On October 3, 2023, Minnesota Power filed a Supplement Response to Route Alternative and Conditions Proposed to be Evaluated in the Environmental Assessment.^{36b}

(citations omitted)

Decision Option 5.B: MP requested the label of map on Finding 82 be corrected.

82. ... Figure 1~~1~~: ATC (Arrowhead Substation) Alternative ...

Decision Option 5.C: Minnesota Power proposes a correction to Finding 97 to correct an internal figure reference in the finding. Minnesota Power proposes a correction to Finding 98 to correct a minor typographical error.

97. Based on feedback from stakeholders and the public, as well as technical guidelines, routing constraints, and routing opportunities, Minnesota Power identified in its Combined Application a single proposed route as identified in ~~Error! Reference source not found.~~ Figure 2 above. The proposed route maximizes the need for project proximity to existing Minnesota Power facilities near the Arrowhead Substation in need of modernization. The proposed route will include land owned in fee by Minnesota Power to the extent possible, while avoiding routing constraints to the extent practicable.¹³⁶

98. Minnesota Power further modified the proposed route by including additional parcels that it had acquired within the project's route width. These additional parcels are located to the north of the proposed HVDC converter station and northeast of the proposed St. Louis County Substation. Expansion of the proposed route width will afford the Applicant an additional buffer of land to use for construction and fencing as may be needed for the Project. The updated Proposed Route is shown in Figure 3_{below}.¹³⁷

(citations omitted)

Decision Option 5.D: MP requested the Commission add a footnote to Finding 164 interpreting a recent legislative change to Minn. Stat. § 16B.243, subd.3(6)

163. Minn. Stat. § 216B.243, subd. 3 identifies the criteria the Commission must evaluate when assessing the need for a large energy facility, which includes:

- (6) possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation;^{205a}

205a Minn. Stat. § 216B.243, subd. 3(6) was amended to prevent the Commission from requiring the “evaluation of alternative end points for a high-voltage transmission line qualifying as a large energy facility” except in two scenarios. Minn. Sess. Law Ch. 127, Ar. 44, Sec. 2 (2024). The effective date was May 25, 2024 and the amendment “applies to all pending application. This legislation was directed at the HVDC Modernization Project and, as written, would terminate further evaluation of the ATC Arrowhead Alternative in this proceeding. Labor Intervenors’ correspondence, dated June 17, 2024 (eDocket No. 20246-207734- 01), provides a description of the legislative history of the amendment.

Decision Option 5.E: Minnesota Power proposed a revised footnote to Finding 240 to reflect recent actions taken by MISO to include an Iron Range – St. Louis County – Arrowhead 345 kV Project in its near-final Long Range Transmission Plan Tranche 2.1 portfolio, and by including this project to acknowledge that the St Louis County 345 kV/230 kV Substation is a planned facility that is contemplated to be constructed prior to and separately from the LRTP Tranche 2.1 portfolio in the configuration and location proposed by Minnesota Power for the HVDC Modernization Project.²²

ATC has argued that MISO only considered the St. Louis County 345 kV/230 kV Substation as a “conceptual proposal” and never endorsed the specific iteration or location of the” St. Louis County 345 kV/230 kV Substation.⁵ Further, ATC argued that “in early March, MISO released its initial draft portfolio for LRTP” Tranche 2, which does not include any new transmission projects in northeastern Minnesota.”⁶

As demonstrated by MISO’s recent actions for LRTP Tranche 2.1, MISO considers the St. Louis County 345 kV/230 kV Substation to be more than a “conceptual proposal” and has now, in fact, begun to propose and evaluate at least one new transmission project in northeastern Minnesota that assumes the St. Louis County 345 kV/230 kV Substation is constructed as proposed by Minnesota Power in this HVDC Modernization Project proceeding. In its most recent LRTP stakeholder workshops, MISO has indicated that this project, the Iron Range – St. Louis County – Arrowhead 345 kV Project, is recommended for inclusion in the near-final portfolio for LRTP Tranche 2.1. MISO’s consideration of the St. Louis County 345 kV/230 kV Substation as more than a “conceptual proposal” is further demonstrated in the signing of the Facility Construction Agreements and obtaining acceptance of those by the Federal Energy Regulatory Commission.⁷

²² ed. note – Staff has added the two paragraphs that correspond to footnotes 5-7.

5 ATC Initial Br. at 41.

6 ATC Initial Br. at 41.

7 ALJ Report at n.292; MISO LRTP Tranche 2 Reliability & Economic Alternative Review

<https://cdn.misoenergy.org/20240529%20LRTP%20Workshop%20Item%2003%20Reliability%20%20Economic633034.pdf> (slide 4 and slide 29) (May 29, 2024).

Decision Option 5.F: Minnesota Power proposed typographic revisions to Findings 564 and the Heading to Section XIII of the ALJ Report.

564. Minn. Stat. § 216E.03, subd. 7(12) requires the Commission to examine, when appropriate, issues presented by federal and state agencies and local units of government. The majority of the issues presented by federal, state, and local units of government are addressed as part of the analysis of the Commission's routing factors in Section ~~Error! Reference source not found.~~ The issues that have not previously been addressed are discussed below.⁶²⁷

Decision Option 5.G: Minnesota Power proposes a new Finding 565a to correct an error in formatting between the Findings and the next section heading.

565a. The Judge Recommends that the Applicant Follow these DNR Recommendations to the Extent Not Already Required By Conditions in the Standard Route Permit Template Summary of Certificate of Need Recommendations

~~XIII. The Judge Recommends that the Applicant Follow these DNR Recommendations to the Extent Not Already Required By Conditions in the Standard Route Permit Template Summary of Certificate of Need Recommendations~~

In conclusion, Minnesota Power requested the Commission: (1) conclude that the amendment to Minn. Stat. § 216B.243, subd. 3 apply to the HVDC Modernization Project and the ATC Arrowhead Alternative is, as a matter of law, precluded from further evaluation in this proceeding by the Commission (Decision Option 5.H); (2) adopt the ALJ Report with the exceptions identified in MP's exception filing (Decision Option 5.A-G); and (3) grant a Certificate of Need and issue a Route Permit for Minnesota Power's proposed configuration of the HVDC Modernization Project for the reasons set forth in the ALJ Report (Decision Option 13).

Minnesota Power stated it had no objections to DOC EERA's exceptions to the ALJ Report. (Decision Option 2)

X. STAFF DISCUSSION

Environmental Assessment

Staff reviewed the entire record, including the EA, public comments, and the testimony of parties and agrees with the ALJ that all procedural and notice requirements have been met. Staff believes that the EA addressed the items in the scoping decision. (Decision Option 6)

Certificate of Need

The ALJ Report states no party disputed that the proposed HVDC Modernization Project is necessary (167); however, LPI has disputed whether the need for capacity expansion has been met. If the Commission agrees with LPI, the options are to either deny or delay the CN decision (Decision Option 10) or limit and condition the CN (Decision Option 11.A). Staff agrees with the ALJ that the statutory and rule criteria have been met and a certificate of need should be granted.

Staff does however, agree with LPI that the Commission should ensure MP ratepayers receive all the benefits available to them from MP's investment in the HVDC Modernization project.

Route Permit

Staff agrees with the ALJ, DOC EERA, DOC-DER, MP, and the DNR that the Commission should issue a route permit for Minnesota Power's proposed configuration of the HVDC Modernization project as identified in the proposed route permit, including the Special Conditions in Section 6 (Attachment A to these briefing papers).

Staff notes that the draft vegetation management plan and wetland report filed by the applicant will be evaluated as part of the post-permit compliance review.

Exceptions to the ALJ Report

Staff agrees with the exceptions filed by DOC EERA. (Decision Option 2)

Staff agrees with most of MP's exceptions (Decision Options 5.A-C, 5.E-G). Staff defers to the Commission's legal staff on MP's request to modify Finding of Fact 164 (Decision Option 5.D) and Decision Option 5.H related to change to Minn. Stat. § 216B.243, subd. 3(6) which states in part: "...the commission must not require evaluation of alternative end points for a high-voltage transmission line qualifying as a large energy facility unless the alternative end points are (i) consistent with end points identified in a federally registered planning authority transmission plan, or (ii) otherwise agreed to for further evaluation by the applicant."

Staff also takes no position on the withholding of cost recovery requested by LPI (Decision Option 4.C, 11, 11A.).

External Funding

The ALJ Report addresses Minnesota Power obtaining \$75 million in state and federal grant funds for necessary equipment and a 2nd round application for another \$50 million from the Department of Energy Grid Resilience and Innovation Partnership (GRIP) Program (122, 247-248). The Commission may wish to request an update from MP on the GRIP application at the hearing; as well as, request a filing on round 1 milestones and the impact of delays in the project on those funds (Decision Option 16). DOC-DER recommended the Commission require MP provide this information prior to a Commission decision or give little weight to unconfirmed 2nd round funding. This filing is especially relevant if the Commission chooses to delay a decision on whether to proceed with the MP Proposal or ATC Alternative and associated route permits.

Lastly, LPI recommended MP be required to provide quarterly affiliate filings on usage of ALLETE's other HVDC lines given ALLETE is proposed to be acquired, in part, by Global Infrastructure Partners and together the two entities will be "part owners of 935 miles of 3,000 MW HVDC lines stretching across the West and Midwest regions" (Decision Option 17). LPI suggests the MP HVDC Proposal may be better suited as a merchant project rather than a MP-owned investment, and that these filings would help understand how benefits flow to MP (ALLETE) and its potential new owners. Staff appreciates LPI flagging this issue to ensure MP ratepayers are the beneficiaries of MP investments but suggests this compliance filing would be better addressed in the proceeding regarding the potential acquisition of ALLETE (Docket No. E015/PA-24-198.)

Administrative

Staff requests that the Commission delegate authority to modify the route permit to address any typographical issues and changes needed for consistency with the Commission's decision in this matter (Decision Option 17.)

XI. DECISION OPTIONS

ALJ Report

1. Adopt the ALJ Report to the extent it is consistent with the Commission's decisions.

AND/OR [in addition to Decision Option 1, the Commission may adopt any of the following departures from the ALJ Report in Decision Options 2-5]

2. Adopt the modifications to ALJ Findings of Fact numbers 234, 262, and 446 requested by DOC EERA in its June 24, 2024 comments. (MP, DOC EERA, Staff)

AND/OR

3. Find that the Arrowhead Substation Alternative proposed by ATC is preferable to MP's proposal based on the criteria and considerations set forth in applicable statute and rule. (ATC) *Staff Note: If adopted, also adopt Decision Option 13.*

AND/OR

4. Adopt the following recommendations from LPI's July 1, 2024 Exceptions to the ALJ Report: (LPI)
 - A. Decline to adopt the last two sentences of Finding 242 of the ALJ Report.
 - B. Decline to adopt Finding 195 of the ALJ report and adopt LPI's Proposed Findings 13 and 14.
 - C. Adopt LPI's proposed modification to ALJ Finding 246 to disallow recovery of costs of the capacity increase.

AND/OR

5. Adopt the recommendations set forth in Minnesota Power's July 1, 2024 Exceptions to the ALJ Report to: (MP; Staff supports 5 A-C and E-G)
 - A. Adopt new Findings 28a and 28b
 - B. Correct the Figure 1 label
 - C. Correct Findings 97 and 98
 - D. Add a footnote to Finding 164 explaining the 2024 amendment to Minn. Stat. § 216B.243
 - E. Revise Finding 240

- F. Revise Finding 564
- G. Adopt New Finding 565a
- H. Conclude that the amendment to Minn. Stat. § 216B.243, subd. 3 applies to the HVDC Modernization Project and the ATC Arrowhead Alternative is, as a matter of law, precluded from further evaluation in this proceeding. *[Staff note: If this decision option is selected, do not select decision options 9 and 13]*

Environmental Assessment

- 6. Find that the environmental assessment and the record address the issues identified in the scoping decision. (ALJ, MP, DOC EERA, DOC DER, Staff)

OR

- 7. Find the environmental assessment and the record do not address the issues identified in the scoping decision, and request that EERA, within 30 days of the order, file a revision or supplement addressing the deficiencies.

Certificate of Need

- 8. Grant a certificate of need to Minnesota Power for the HVDC Modernization Project. (ALJ, DOC DER, DOC EERA, Staff)

OR

- 9. Grant a certificate of need to Minnesota Power for the HVDC Modernization Project incorporating the Arrowhead Substation Alternative proposed by ATC. (ATC, DOC DER*) [**DOC DER supports granting a certificate of need for the project and expressed no preference between ATC's Arrowhead Substation Alternative (#9) and Minnesota Power's proposal (#8).*]

OR

- 10. Deny a certificate of need for the proposed project. (LPI)

OR (LPI Alternative to #10)

- 11. Grant a certificate of need limited to the replacement of aging components of the HVDC system at its existing capacity with cost recovery limited to [\$660 million or \$800 million]. (LPI) *[Staff note: If this decision option is selected, Commission could choose between the two alternative cost cap amounts proposed by LPI, shown in brackets] AND*

- A. Grant a conditional certificate of need to the capacity expansion component of

the HVDC Modernization Project subject to the condition that Minnesota Power shall not recover incremental costs of *[\$149 to \$372 million]* for capacity expansion until it demonstrates that customers have financially benefited from those costs. *[Staff note: If this decision option is selected, Commission could choose between the two alternative cost cap amounts proposed by LPI, shown in brackets]*

Route Permit

12. Issue a route permit that identifies the Refined Proposed Route as proposed by the applicant for the HVDC Modernization Project in its February 14, 2024 Direct Testimony, incorporating the permit conditions recommended in the ALJ Report. (ALJ, MP, DOC EERA, Staff)

OR

13. Issue a route permit that identifies the Revised ATC Arrowhead Substation Alternative proposed in ATC's February 14, 2024 Direct Testimony, incorporating the permit conditions recommended in the ALJ Report as modified by ATC's March 28, 2024 EA Comments for the HVDC Modernization Project. (ATC)

OR

14. Deny a route permit for the proposed project. (LPI)

External Funding

15. Require Minnesota Power to file information regarding the milestone for obtaining federal funds from the U.S. Department of Energy Grid Resilience and Innovation Partnerships round 1 funding and what portion of those funds might be lost if there are delays that cause the project to not be completed by the 60-month deadline. (LPI, DOC DER, Staff) [Staff Note: This Decision Option is especially relevant if the Commission chooses to delay a decision.]
16. Require Minnesota Power to provide quarterly compliance filings documenting the usage on the SunZia and North Plains Connector HVDC systems. (LPI- if #10 is not adopted; DOC DER)

Administrative

17. Delegate authority to the Executive Secretary to modify the route permit to correct any typographic and formatting errors and to ensure consistency with the Commission's order. (Staff)

Staff Recommendation: 1, 2(A-B), 5(A-C, E-G), 6, 8, 12, 15, 16, and 17.

ATTACHMENT A
Proposed Route Permit

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

**ROUTE PERMIT FOR
THE HVDC MODERNIZATION PROJECT**

A HIGH-VOLTAGE TRANSMISSION LINE AND ASSOCIATED FACILITIES

**IN
SAINT LOUIS COUNTY**

**ISSUED TO
MINNESOTA POWER**

PUC DOCKET NO. E-015/TL-22-611

In accordance with the requirements of Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850 this route permit is hereby issued to:

Minnesota Power

Minnesota Power is authorized by this route permit to upgrade and operate the Square Butte transmission line, a 465-mile, ± 250 kilovolt (kV), 550-megawatt (MW) high-voltage direct-current (HVDC) transmission line from the Minnesota-North Dakota border and Hermantown, Minnesota.

The transmission facilities shall be constructed within the route identified in this route permit and in compliance with the conditions specified in this route permit.

Approved and adopted this ____ day of [Month, Year]

BY ORDER OF THE COMMISSION

Will Seuffert,
Executive Secretary

To request this document in another format such as large print or audio, call 651-296-0406 or 800-657-3782 (voice). Persons with a hearing or speech impairment may call using their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

CONTENTS

1	ROUTE PERMIT	1
1.1	Pre-emption.....	1
2	TRANSMISSION FACILITY DESCRIPTION.....	1
2.1	Structures and Conductors	2
3	DESIGNATED ROUTE	2
4	RIGHT-OF-WAY	3
5	GENERAL CONDITIONS.....	3
5.1	Route Permit Distribution.....	3
5.2	Access to Property	4
5.3	Construction and Operation Practices.....	4
5.3.1	Field Representative	4
5.3.2	Employee Training - Route Permit Terms and Conditions	4
5.3.3	Public Services, Public Utilities, and Existing Easements	5
5.3.4	Temporary Workspace	5
5.3.5	Noise	5
5.3.6	Aesthetics.....	5
5.3.7	Soil Erosion and Sediment Control.....	6
5.3.8	Wetlands and Water Resources.....	6
5.3.9	Vegetation Management	7
5.3.10	Application of Pesticides	7
5.3.11	Invasive Species	8
5.3.12	Noxious Weeds	8
5.3.13	Roads.....	8
5.3.14	Archaeological and Historic Resources	8
5.3.15	Avian Protection.....	9
5.3.16	Drainage Tiles.....	9
5.3.17	Restoration.....	9
5.3.18	Cleanup	10
5.3.19	Pollution and Hazardous Wastes	10
5.3.20	Damages.....	10
5.4	Electrical Performance Standards.....	10
5.4.1	Grounding	10
5.4.2	Electric Field	11
5.4.3	Interference with Communication Devices.....	11
5.5	Other Requirements	11

5.5.1	Safety Codes and Design Requirements	11
5.5.2	Other Permits and Regulations	11
6	SPECIAL CONDITIONS.....	12
6.1	Vegetation Retention	12
6.2	HVDC Converter Station Aesthetics.....	12
6.3	Noise Study.....	12
6.4	Right-of-Way Restoration Near Trout Streams.....	12
6.5	Steep Slopes	13
6.6	Facility Lighting	13
6.7	Dust Control.....	13
6.8	Wildlife-Friendly Erosion Control	13
6.9	Vegetation Management Plan.....	13
6.10	Independent Third-Party Monitoring	14
7	DELAY IN CONSTRUCTION.....	15
8	COMPLAINT PROCEDURES	15
9	COMPLIANCE REQUIREMENTS	15
9.1	Pre-Construction Meeting	15
9.2	Plan and Profile.....	15
9.3	Status Reports	16
9.4	In-Service Date.....	16
9.5	As-Builts	17
9.6	GPS Data	17
9.7	Right of Entry	17
10	ROUTE PERMIT AMENDMENT.....	17
11	TRANSFER OF ROUTE PERMIT	18
12	REVOCATION OR SUSPENSION OF ROUTE PERMIT	18

ATTACHMENTS

Attachment 1 – Complaint Handling Procedures for Permitted Energy Facilities

Attachment 2 – Compliance Filing Procedures for Permitted Energy Facilities

Attachment 3 – Route Permit Maps

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

1 ROUTE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this route permit to Minnesota Power (Permittee) pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850. This route permit authorizes the Permittee to upgrade and operate the Square Butte transmission line, a 465-mile, ± 250 kilovolt (kV), 550-megawatt (MW) high-voltage direct-current (HVDC) transmission line between Hermantown, Minnesota, and Center, North Dakota (HVDC Modernization Project, henceforth known as Transmission Facility). The high-voltage transmission line shall be constructed within the route identified in this route permit and in compliance with the conditions specified in this route permit.

1.1 Pre-emption

Pursuant to Minn. Stat. § 216E.10, this route permit shall be the sole route approval required for construction of the transmission facilities and this route permit shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose governments.

2 TRANSMISSION FACILITY DESCRIPTION

The HVDC Modernization Project will upgrade the HVDC transmission line terminals in Hermantown, Minnesota, and Center, North Dakota and interconnect the upgraded HVDC terminals to the existing alternating current (AC) transmission system at the existing points of interconnection. In Minnesota, the HVDC terminals will interconnect to Minnesota Power's local 230 kV system at the Minnesota Power Arrowhead 230 kV/115 kV Substation, the same location the HVDC system is currently connected.

The Transmission Facility in Minnesota includes the following:

- a new St. Louis County HVDC/345 kV Converter Station;
- a new St. Louis County 345 kV/230 kV Substation;
- relocation of the existing HVDC transmission line to facilitate termination at the new St. Louis County HVDC/345 kV Converter Station;
- less than one mile of new 345 kV single-circuit transmission line between the new St. Louis County HVDC/345 kV Converter Station and the new St. Louis County 345 kV/230 kV Substation;
- less than one mile of new double-circuit 230 kV transmission line between the new St. Louis County 345 kV/230 kV Substation and the existing Minnesota Power Arrowhead 230 kV/115 kV Substation; and
- modifications at the existing Minnesota Power Arrowhead 230 kV/115 kV Substation.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

The Transmission Facility is located in the following counties, cities, and townships:

County	Township Name	Township	Range	Section
St. Louis	Solway	50N	15W	31
St. Louis	City of Hermantown	50N	16W	36

2.1 Structures and Conductors

The table below details specifics on the various structure and conductor types as presented in Minnesota Power's June 2023 Certificate of Need and Route Permit Application for the HVDC Modernization Project (Application).

Line Type	Conductor ¹	Structure		Foundation	Foundation Diameter (feet)	Height (feet)	Span (feet)	Right-of-Way Width (feet)
		Type	Material					
230 kV	ACSR or ACSS	Tubular Pole	Weathering Steel	Concrete Pier	4-12	60-180	200-1000	130
345 kV	ACSR or ACSS	Tubular Pole	Weathering Steel	Concrete Pier	4-12	60-180	200-1000	150
±250 kV	2839 ACSR	Tubular Pole	Weathering Steel	Concrete Pier	4-12	60-180	200-1000	120

Notes: ACSR=aluminum conductor steel reinforced, ACSS=aluminum conductor steel supported. ¹ Bundled configurations (e.g., two sub conductors per phase).

3 DESIGNATED ROUTE

The route designated by the Commission is depicted on the route maps attached to this route permit (Designated Route). The Designated Route is generally described as follows:

The route is designated as a 40-acre polygon approximately 0.5 mile wide from north to south and 0.7 mile long from east to west located in St. Louis County in the cities and townships identified in Section 2 of this route permit.

In the case of this route permit, the route width is intended to provide flexibility to design facilities, to minimize system impacts and outages, to optimize future expandability work with landowners, to address engineering concerns, to avoid sensitive natural resources, and to manage construction constraints as practical.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

Any modifications to the Designated Route or modifications that would result in right-of-way placement outside the Designated Route shall be specifically reviewed by the Commission in accordance with Minn. R. 7850.4900 and Section 10 of this route permit.

4 RIGHT-OF-WAY

This route permit authorizes the Permittee to obtain a new permanent right-of-way for the Transmission Facilities as designated on the route maps and in sections 2 and 2.1 of this route permit.

Any right-of-way modifications within the Designated Route shall be located so as to have comparable overall impacts relative to the factors in Minn. R. 7850.4100, as does the right-of-way identified in this route permit, and shall be specifically identified and documented in and approved as part of the plan and profile submitted pursuant to Section 9.1 of this route permit.

Where the transmission line parallels existing highway and other road rights-of-way, the transmission line right-of-way shall occupy and utilize the existing right-of-way to the maximum extent possible; consistent with the criteria in Minn. R. 7850.4100, and the other requirements of this route permit; and for highways under the jurisdiction of the Minnesota Department of Transportation (MnDOT), the procedures for accommodating utilities in trunk highway rights-of-way.

5 GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction and operation of the Transmission Facility over the life of this route permit.

5.1 Route Permit Distribution

Within 30 days of issuance of this route permit, the Permittee shall provide all affected landowners with a copy of this route permit and the complaint procedures. An affected landowner is any landowner or designee that is within or adjacent to the Designated Route. In no case shall a landowner receive this route permit and complaint procedures less than five days prior to the start of construction on their property. The Permittee shall also provide a copy of this route permit and the complaint procedures to the applicable regional development commissions, county environmental offices, and city and township clerks. The Permittee shall file with the Commission an affidavit of its route permit and complaint procedures distribution within 30 days of issuance of this route permit.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

5.2 Access to Property

The Permittee shall notify landowners prior to entering or conducting maintenance within their property, unless otherwise negotiated with the landowner. The Permittee shall keep records of compliance with this section and provide them upon the request of the Minnesota Department of Commerce (Department of Commerce) staff or Commission staff.

5.3 Construction and Operation Practices

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the permitting record for this Transmission Facility unless this route permit establishes a different requirement in which case this route permit shall prevail.

5.3.1 Field Representative

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this route permit during construction of the Transmission Facility. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative at least 14 days prior to the pre-construction meeting. The Permittee shall provide the field representative's contact information to affected landowners, local government units and other interested persons at least 14 days prior to the pre-construction meeting. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, local government units and other interested persons. The Permittee shall file with the Commission an affidavit of distribution of its field representative's contact information at least 14 days prior to the pre-construction meeting and upon changes to the field representative.

5.3.2 Employee Training - Route Permit Terms and Conditions

The Permittee shall train all employees, contractors, and other persons involved in the Transmission Facility construction regarding the terms and conditions of this route permit. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

5.3.3 Public Services, Public Utilities, and Existing Easements

During Transmission Facility construction, the Permittee shall minimize any disruption to public services or public utilities. To the extent disruptions to public services or public utilities occur these shall be temporary, and the Permittee shall restore service promptly. Where any impacts to utilities have the potential to occur the Permittee shall work with both landowners and local entities to determine the most appropriate mitigation measures if not already considered as part of this route permit.

The Permittee shall cooperate with county and city road authorities to develop appropriate signage and traffic management during construction. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.4 Temporary Workspace

The Permittee shall limit temporary easements to special construction access needs and additional staging or lay-down areas required outside of the authorized right-of-way. Temporary space shall be selected to limit the removal and impacts to vegetation. The Permittee shall obtain temporary easements outside of the authorized transmission line right-of-way from affected landowners through rental agreements. Temporary easements are not provided for in this route permit.

The Permittee may construct temporary driveways between the roadway and the structures to minimize impact using the shortest route feasible. The Permittee shall use construction mats to minimize impacts on access paths and construction areas. The Permittee shall submit the location of temporary workspaces and driveways with the plan and profile pursuant to Section 9.1.

5.3.5 Noise

The Permittee shall comply with noise standards established under Minn. R. 7030.0010 to 7030.0080. The Permittee shall limit construction and maintenance activities to daytime working hours to the extent practicable.

5.3.6 Aesthetics

The Permittee shall consider input pertaining to visual impacts from landowners or land management agencies prior to final location of structures, rights-of-way, and other areas with the potential for visual disturbance. The Permittee shall use care to preserve the natural

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

landscape, minimize tree removal and prevent any unnecessary destruction of the natural surroundings in the vicinity of the Transmission Facility during construction and maintenance. The Permittee shall work with landowners to locate the high-voltage transmission line to minimize the loss of agricultural land, forest, and wetlands, and to avoid homes and farmsteads. The Permittee shall place structures at a distance, consistent with sound engineering principles and system reliability criteria, from intersecting roads, highways, or trail crossings.

5.3.7 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency (MPCA) Construction Stormwater Program. If construction of the Transmission Facility disturbs more than one acre of land or is sited in an area designated by the MPCA as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System/State Disposal System Construction Stormwater Permit from the MPCA that provides for the development of a Stormwater Pollution Prevention Plan that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the Transmission Facility shall be returned to pre-construction conditions.

5.3.8 Wetlands and Water Resources

The Permittee shall develop wetland impact avoidance measures and implement them during construction of the Transmission Facility. Measures shall include spacing and placing the power poles at variable distances to span and avoid wetlands, watercourses, and floodplains. Unavoidable wetland impacts as a result of the placement of poles shall be limited to the immediate area around the poles. To minimize impacts, the Permittee shall construct in wetland areas during frozen ground conditions where practicable and according to permit requirements by the applicable permitting authority. When construction during winter is not possible, the Permittee shall use wooden or composite mats to protect wetland vegetation.

The Permittee shall contain soil excavated from the wetlands and riparian areas and not place it back into the wetland or riparian area. The Permittee shall access wetlands and riparian areas

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts. The Permittee shall not place staging or stringing set up areas within or adjacent to wetlands or water resources, as practicable. The Permittee shall assemble power pole structures on upland areas before they are brought to the site for installation.

The Permittee shall restore wetland and water resource areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. The Permittee shall meet the USACE, Minnesota Department of Natural Resources (DNR), Minnesota Board of Water and Soil Resources (BWSR), and local units of government wetland and water resource requirements.

5.3.9 Vegetation Management

The Permittee shall minimize the number of trees to be removed in selecting the right-of-way specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and vegetation in areas such as trail and stream crossings where vegetative screening may minimize aesthetic impacts, to the extent that such actions do not violate sound engineering principles or system reliability criteria.

The Permittee shall remove tall growing species located within the transmission line right-of-way that endanger the safe and reliable operation of the transmission line. The Permittee shall leave undisturbed, to the extent possible, existing low growing species in the right-of-way or replant such species in the right-of-way to blend the difference between the right-of-way and adjacent areas, to the extent that the low growing vegetation will not pose a threat to the transmission line or impede construction.

5.3.10 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture (MDA), DNR, and the U.S. Environmental Protection Agency (EPA). Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner at least 14 days prior to pesticide application on their property. The Permittee may not apply any pesticide if the landowner requests that there be no application of pesticides within the landowner's property. The Permittee shall provide notice of pesticide application to landowners and beekeepers operating known apiaries within three miles of the pesticide application area at least 14 days prior to such application. The Permittee shall keep pesticide communication and application records and provide them upon the request of Department of Commerce staff or Commission staff.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

5.3.11 Invasive Species

The Permittee shall employ best management practices to avoid the potential introduction and spread of invasive species on lands disturbed by Transmission Facility construction activities. The Permittee shall develop an Invasive Species Prevention Plan and file it with the Commission at least 14 days prior to the pre-construction meeting. The Permittee shall comply with the most recently filed Invasive Species Prevention Plan.

5.3.12 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil the Permittee shall select site appropriate seed certified to be free of noxious weeds. To the extent possible, the Permittee shall use native seed mixes. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.13 Roads

The Permittee shall advise the appropriate governing bodies having jurisdiction over all state, county, city, or township roads that will be used during the construction phase of the Transmission Facility. Where practical, existing roadways shall be used for all activities associated with construction of the Transmission Facility. Oversize or overweight loads associated with the Transmission Facility shall not be hauled across public roads without required permits and approvals.

The Permittee shall construct the fewest number of site access roads required. Access roads shall not be constructed across streams and drainage ways without the required permits and approvals. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and permits.

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when accessing construction workspace, unless otherwise negotiated with the affected landowner.

5.3.14 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to archaeological and historic resources when constructing the Transmission Facility. In the event that a resource is encountered, the Permittee shall consult with the State Historic Preservation Office and the State Archaeologist.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize Transmission Facility impacts on the resource consistent with State Historic Preservation Office and State Archaeologist requirements.

Prior to construction, the Permittee shall train workers about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction and promptly notify local law enforcement and the State Archaeologist. The Permittee shall not resume construction at such location until authorized by local law enforcement or the State Archaeologist. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.15 Avian Protection

The Permittee in cooperation with the DNR shall identify areas of the transmission line where bird flight diverters will be incorporated into the transmission line design to prevent large avian collisions attributed to visibility issues. Standard transmission design shall incorporate adequate spacing of conductors and grounding devices in accordance with Avian Power Line Interaction Committee standards to eliminate the risk of electrocution to raptors with larger wingspans that may simultaneously come in contact with a conductor and grounding devices. The Permittee shall submit documentation of its avian protection coordination with the plan and profile pursuant to Section 9.1.

5.3.16 Drainage Tiles

The Permittee shall avoid, promptly repair, or replace all drainage tiles broken or damaged during all phases of the Transmission Facility's life unless otherwise negotiated with the affected landowner. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.17 Restoration

The Permittee shall restore the right-of-way, temporary workspaces, access roads, abandoned right-of-way, and other public or private lands affected by construction of the Transmission Facility. Restoration within the right-of-way must be compatible with the safe operation, maintenance, and inspection of the transmission line. Within 60 days after completion of all restoration activities, the Permittee shall file with the Commission a Notice of Restoration Completion.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

5.3.18 Cleanup

The Permittee shall remove and properly dispose of all construction waste and scrap from the right-of-way and all premises on which construction activities were conducted upon completion of each task. The Permittee shall remove and properly dispose of all personal litter, including bottles, cans, and paper from construction activities daily.

5.3.19 Pollution and Hazardous Wastes

The Permittee shall take all appropriate precautions to protect against pollution of the environment. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all waste generated during construction and restoration of the Transmission Facility.

5.3.20 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.4 Electrical Performance Standards

5.4.1 Grounding

The Permittee shall design, construct, and operate the transmission line in a manner so that the maximum induced steady-state short-circuit current shall be limited to five milliamperes root mean square (rms) alternating current between the ground and any non-stationary object within the right-of-way, including but not limited to large motor vehicles and agricultural equipment. All fixed metallic objects on or off the right-of-way, except electric fences that parallel or cross the right-of-way, shall be grounded to the extent necessary to limit the induced short-circuit current between ground and the object so as not to exceed one milliamperes rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the National Electric Safety Code. The Permittee shall address and rectify any induced current problems that arise during transmission line operation.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

5.4.2 Electric Field

The Permittee shall design, construct, and operate the transmission line in such a manner that the electric field measured one meter above ground level immediately below the transmission line shall not exceed 8.0 kV/m rms.

5.4.3 Interference with Communication Devices

If interference with radio or television, satellite, wireless internet, GPS-based agriculture navigation systems or other communication devices is caused by the presence or operation of the Transmission Facility, the Permittee shall take whatever action is necessary to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the Transmission Facility. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.5 Other Requirements

5.5.1 Safety Codes and Design Requirements

The Permittee shall design the transmission line and associated facilities to meet or exceed all relevant local and state codes, the National Electric Safety Code, and North American Electric Reliability Corporation requirements. This includes standards relating to clearances to ground, clearance to crossing utilities, clearance to buildings, strength of materials, clearances over roadways, right-of-way widths, and permit requirements.

5.5.2 Other Permits and Regulations

The Permittee shall comply with all applicable state statutes and rules. The Permittee shall obtain all required permits for the Transmission Facility and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations.

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission an Other Permits and Regulations Submittal that contains a detailed status of all permits, authorizations, and approvals that have been applied for specific to the Transmission Facility. The Other Permits and Regulations Submittal shall also include the permitting agency name; the name of the permit, authorization, or approval being sought; contact person and contact information for the permitting agency or authority; brief description of why the permit,

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

authorization, or approval is needed; application submittal date; and the date the permit, authorization, or approval was issued or is anticipated to be issued.

The Permittee shall demonstrate that it has obtained all necessary permits, authorizations, and approvals by filing an affidavit stating as such and an updated Other Permits and Regulations Submittal prior to commencing construction. The Permittee shall provide a copy of any such permits, authorizations, and approvals at the request of Department of Commerce staff or Commission staff.

6 SPECIAL CONDITIONS

The special conditions shall take precedence over other conditions of this permit should there be a conflict.

6.1 Vegetation Retention

The Permittee may disturb or clear vegetation on the site only to the extent necessary to assure suitable access for construction, and for safe operation and maintenance of the Transmission Facilities. The existing vegetative buffer specifically between the St. Louis County 345 kV/230 kV Substation and Morris Thomas Road must be retained during construction of the Transmission Facilities and for the life of the Transmission Facilities.

6.2 HVDC Converter Station Aesthetics

The Permittee must color its HVDC converter station to blend in with the natural landscape with a neutral color such as a shade of brown or green, or a combination thereof.

6.3 Noise Study

The Permittee must file a pre-construction noise study at least 14 days prior to the pre-construction meeting. The pre-construction noise study must include assumptions made, baseline noise conditions in the area, modeled noise levels, planned minimization and mitigation efforts, and equipment studied. The study must compare modeled noise levels with the State of Minnesota's noise standards (Minn. R. 7030.0040).

6.4 Right-of-Way Restoration Near Trout Streams

The Permittee must restore the right-of-way, forested habitat along existing rights-of-ways, and any rights-of-ways to be decommissioned affected by construction of the Transmission

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

Facilities. Restoration within the right-of-way near trout streams must be coordinated with DNR fisheries staff to ensure that restoration in these areas provide adequate resource protection.

6.5 Steep Slopes

To avoid indirect impacts to surface waters from steep slopes, increased impervious surfaces, erosion, and altered drainage patterns, the Permittee must use rip rap or a similar material to stabilize steep slopes after construction to ensure the existing drainage pattern remains. The Permittee must maintain a well-vegetated buffer between West Rocky Run Creek and graded areas. The Permittee must keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

6.6 Facility Lighting

To reduce harm to birds, insects, and other animals, the Permittee must utilize downlit and shielded lighting at all project facilities. Lighting must minimize blue hue. The Permittee must keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

6.7 Dust Control

To protect plants and wildlife from chloride products that do not break down in the environment, the Permittee is prohibited from using dust control products containing calcium chloride or magnesium chloride during construction and operation. The Permittee must keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

6.8 Wildlife-Friendly Erosion Control

The Permittee must use only “bionetting” or “natural netting” types and mulch products without synthetic (plastic) fiber additives.

6.9 Vegetation Management Plan

The Permittee must develop and use a vegetation management plan (VMP), in coordination with the Vegetation Management Plan Working Group (VMPWG), using best management practices established by the DNR and BWSR. The Permittee must file the VMP and documentation of the coordination efforts between the Permittee and the coordinating agencies with the Commission at least 14 days prior to the plan and profile required under this Route Permit. The Permittee must provide all landowners along the route with copies of the

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

VMP. The Permittee must file an affidavit of its distribution of the VMP to landowners with the Commission at least 14 days prior to the plan and profile. The VMP must include, at a minimum, the following:

- (a) management objectives addressing short term (year 0-5, seeding and establishment) and long term (year 5 through the life of the Project) goals;
- (b) a description of planned restoration and vegetation activities, including how the route will be prepared, timing of activities, and how seeding will occur (broadcast, drilling, etc.), and the types of seed mixes to be used;
- (c) a description of tree removal/planting activities and the timing of such activities;
- (d) a description of how the route will be monitored and evaluated to meet management goals;
- (e) a description of management tools used to maintain vegetation (*e.g.*, mowing, spot spraying, hand removal, etc.), including timing/frequency of maintenance activities;
- (f) identification of any third-party (*e.g.*, consultant, contractor, site manager, etc.) contracted for restoration, monitoring, and long-term vegetation management of the site;
- (g) identification of on-site noxious weeds and invasive species (native and non-native) and the monitoring and management practices to be utilized; and
- (h) a plan showing how the route will be revegetated and corresponding seed mixes.

Best management practices should be followed concerning seed mixes, seeding rates, and cover crops.

6.10 Independent Third-Party Monitoring

Prior to any construction, the Permittee must propose a scope of work and identify an independent third-party monitor to conduct Transmission Facility construction monitoring on behalf of Commerce. The scope of work must be developed in consultation with and approved by Commerce. This third-party monitor will report directly to and will be under the control of Commerce with costs borne by the Permittee.

The Permittee must file with the Commission the scope of work and the name, address, email, and telephone number of the third party-monitor at least 30 days prior to commencing any construction or right-of-way preparation and upon any change in the scope of work or contact information that may occur during construction of the Project and restoration of the right-of-way.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

7 DELAY IN CONSTRUCTION

If the Permittee has not commenced construction or improvement of the route within four years after the date of issuance of this route permit the Permittee shall file a Failure to Construct Report and the Commission shall consider suspension of this route permit in accordance with Minn. R. 7850.4700.

8 COMPLAINT PROCEDURES

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission the complaint procedures that will be used to receive and respond to complaints. The complaint procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the complaint procedures attached to this route permit.

Upon request, the Permittee shall assist Department of Commerce staff or Commission staff with the disposition of unresolved or longstanding complaints. This assistance shall include, but is not limited to, the submittal of complaint correspondence and complaint resolution efforts.

9 COMPLIANCE REQUIREMENTS

Failure to timely and properly make compliance filings required by this route permit is a failure to comply with the conditions of this route permit. Compliance filings must be electronically filed with the Commission.

9.1 Pre-Construction Meeting

Prior to the start of construction, the Permittee shall participate in a pre-construction meeting with Department of Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the anticipated construction start date.

9.2 Plan and Profile

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission, and provide the Department of Commerce, and the counties where the Transmission Facility, or portion of the Transmission Facility, will be constructed with a plan and profile of the right-of-way and the specifications and drawings for right-of-way preparation,

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

construction, structure specifications and locations, cleanup, and restoration for the Transmission Facility. The documentation shall include maps depicting the plan and profile including the right-of-way, alignment, and structures in relation to the route and alignment approved per this route permit.

The Permittee may not commence construction until the earlier of (i) 30 days after the pre-construction meeting or (ii) or until the Commission staff has notified the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this route permit.

If the Commission notifies the Permittee in writing within 30 days after the pre-construction meeting that it has completed its review of the documents and planned construction, and finds that the planned construction is not consistent with this route permit, the Permittee may submit additional and/or revised documentation and may not commence construction until the Commission has notified the Permittee in writing that it has determined that the planned construction is consistent with this route permit.

If the Permittee intends to make any significant changes in its plan and profile or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission, the Department of Commerce, and county staff at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this route permit.

9.3 Status Reports

The Permittee shall file with the Commission monthly Construction Status Reports beginning with the pre-construction meeting and until completion of restoration. Construction Status Reports shall describe construction activities and progress, activities undertaken in compliance with this route permit, and shall include text and photographs.

If the Permittee does not commence construction of the Transmission Facility within six months of this route permit issuance, the Permittee shall file with the Commission Pre-Construction Status Reports on the anticipated timing of construction every six months beginning with the issuance of this route permit until the pre-construction meeting.

9.4 In-Service Date

At least three days before the Transmission Facility is to be placed into service, the Permittee shall notify the Commission of the date on which the Transmission Facility will be placed into service and the date on which construction was completed.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

9.5 As-Built

Within 90 days after completion of construction, the Permittee shall submit to the Commission copies of all final as-built plans and specifications developed during the Transmission Facility construction.

9.6 GPS Data

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (e.g., ArcGIS compatible map files, GPS coordinates, associated database of characteristics) for all structures associated with the Transmission Facility and each substation connected.

9.7 Right of Entry

The Permittee shall allow Commission designated representatives to perform the following, upon reasonable notice, upon presentation of credentials and at all times in compliance with the Permittee's site safety standards:

- (a) To enter upon the facilities easement of the property for the purpose of obtaining information, examining records, and conducting surveys or investigations.
- (b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations.
- (c) To sample and monitor upon the facilities easement of the property.
- (d) To examine and copy any documents pertaining to compliance with the conditions of this route permit.

10 ROUTE PERMIT AMENDMENT

This route permit may be amended at any time by the Commission. Any person may request an amendment of the conditions of this route permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required under Minn. R. 7850.4900.

PROPOSED ROUTE PERMIT

Minnesota Power HVDC Modernization Project, PUC Docket No. E-015/TL-22-611

11 TRANSFER OF ROUTE PERMIT

The Permittee may request at any time that the Commission transfer this route permit to another person or entity (transferee). In its request, the Permittee must provide the Commission with:

- (a) the name and description of the transferee;
- (b) the reasons for the transfer;
- (c) a description of the facilities affected; and
- (d) the proposed effective date of the transfer.

The transferee must provide the Commission with a certification that it has read, understands and is able to comply with the plans and procedures filed for the Transmission Facility and all conditions of this route permit. The Commission may authorize transfer of the route permit after affording the Permittee, the transferee, and interested persons such process as is required under Minn. R. 7850.5000.

12 REVOCATION OR SUSPENSION OF ROUTE PERMIT

The Commission may initiate action to revoke or suspend this route permit at any time. The Commission shall act in accordance with the requirements of Minn. R. 7850.5100, to revoke or suspend this route permit.

PROPOSED PERMIT

ATTACHMENT 1

Complaint Handling Procedures for Permitted Energy Facilities

**MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLAINT HANDLING PROCEDURES FOR
PERMITTED ENERGY FACILITIES**

A. Purpose

To establish a uniform and timely method of reporting and resolving complaints received by the permittee concerning permit conditions for site or route preparation, construction, cleanup, restoration, operation, and maintenance.

B. Scope

This document describes complaint reporting procedures and frequency.

C. Applicability

The procedures shall be used for all complaints received by the permittee and all complaints received by the Minnesota Public Utilities Commission (Commission) under Minn. R. 7829.1500 or Minn. R. 7829.1700 relevant to this permit.

D. Definitions

Complaint: A verbal or written statement presented to the permittee by a person expressing dissatisfaction or concern regarding site or route preparation, cleanup or restoration, or other permit conditions. Complaints do not include requests, inquiries, questions or general comments.

Substantial Complaint: A written complaint alleging a violation of a specific permit condition that, if substantiated, could result in permit modification or suspension pursuant to the applicable regulations.

Unresolved Complaint: A complaint which, despite the good faith efforts of the permittee and a person, remains unresolved or unsatisfactorily resolved to one or both of the parties.

Person: An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private; however organized.

E. Complaint Documentation and Processing

1. The permittee shall designate a representative responsible for filing complaints to the Commission's eDocket system. This person's name, phone number and email address shall accompany all complaint submittals. The name and contact information for the representative shall be kept current in eDockets.
2. A person presenting the complaint should, to the extent possible, include the following information in their communications:
 - a. name, address, phone number, and email address;
 - b. initial date of the complaint;
 - c. tract, parcel number, or address of the complaint;
 - d. a summary of the complaint; and
 - e. whether the complaint relates to a permit violation, a construction practice issue, or other type of complaint.
3. The permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:
 - a. docket number and project name;
 - b. name of complainant, address, phone number and email address;
 - c. precise description of property or parcel number;
 - d. name of permittee representative receiving complaint and date of receipt;
 - e. nature of complaint and the applicable permit condition(s);
 - f. summary of activities undertaken to resolve the complaint; and
 - g. a statement on the final disposition of the complaint.

F. Reporting Requirements

The permittee shall commence complaint reporting at the beginning of project construction and continue through the term of the permit, unless otherwise required below. The permittee shall report all complaints to the Commission according to the following schedule:

Immediate Reports: All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to the Commission's Public Advisor at 1-800-657-3782 (voice messages are acceptable) or publicadvisor.puc@state.mn.us. For e-mail reporting, the email

subject line should read “PUC EFP Complaint” and include the appropriate project docket number.

Monthly Reports: During project construction, restoration, and operation, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be filed by the 15th of each month to Will Seuffert, Executive Secretary, Public Utilities Commission, using the eDockets system. The eDockets system is located at: <https://www.edockets.state.mn.us/EFiling/home.jsp>. If no complaints were received during the preceding month, the permittee shall file a summary indicating that no complaints were received.

If a project has submitted twelve consecutive months of complaint reports with no complaints, monthly reports can terminate by a letter to eDockets notifying the Commission of such action. If a substantial complaint is received (by the company or the Commission) following termination of the monthly complaint report, as noted above, the monthly reporting should commence for a period of six months following the most recent complaint or upon resolution of all pending complaints.

If a permittee is found to be in violation of this section, the Commission may reinstate monthly complaint reporting for the remaining permit term or enact some other commensurate requirement via notification by the Executive Secretary or some other action as decided by the Commission.

G. Complaints Received by the Commission

Complaints received directly by the Commission from aggrieved persons regarding the permit or issues related to site or route preparation, construction, cleanup, restoration, or operation and maintenance will be promptly sent to the permittee.

The permittee shall notify the Commission when the issue has been resolved. The permittee will add the complaint to the monthly reports of all complaints. If the permittee is unable to find resolution, the Commission will use the process outlined in the Unresolved Complaints Section to process the issue.

H. Commission Process for Unresolved Complaints

Complaints raising substantial and unresolved permit issues will be investigated by the Commission. Staff will notify the permittee and appropriate people if it determines that the

complaint is a substantial complaint. With respect to such complaints, the permittee and complainant shall be required to submit a written summary of the complaint and its current position on the issues to the Commission. Staff will set a deadline for comments. As necessary, the complaint will be presented to the Commission for consideration.

I. Permittee Contacts for Complaints and Complaint Reporting

Complaints may be filed by mail or email to the permittee's designated complaint representative, or to the Commission's Public Advisor at 1-800-657-3782 or publicadvisor.puc@state.mn.us. The name and contact information for the permittee's designated complaint representative shall be kept current in the Commission's eDocket system.

PROPOSED PERMIT

ATTACHMENT 2

Compliance Filing Procedures for Permitted Energy Facilities

**MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLIANCE FILING PROCEDURE FOR
PERMITTED ENERGY FACILITIES**

A. Purpose

To establish a uniform and timely method of submitting information required by Commission energy facility permits.

B. Scope and Applicability

This procedure encompasses all known compliance filings required by permit.

C. Definitions

Compliance Filing: A filing of information to the Commission, where the information is required by a Commission site or route permit.

D. Responsibilities

1. The permittee shall file all compliance filings with Will Seuffert, Executive Secretary, Public Utilities Commission, through the eDockets system. The eDockets system is located at:
<https://www.edockets.state.mn.us/EFiling/home.jsp>

General instructions are provided on the eDockets website. Permittees must register on the website to file documents.

2. All filings must have a cover sheet that includes:
 - a. Date
 - b. Name of submitter/permittee
 - c. Type of permit (site or route)
 - d. Project location
 - e. Project docket number
 - f. Permit section under which the filing is made
 - g. Short description of the filing

3. Filings that are graphic intensive (e.g., maps, engineered drawings) must, in addition to being electronically filed, be submitted as paper copies and on CD. Paper copies and CDs should be sent to: 1) Will Seuffert, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147, and 2) Department of Commerce, Energy Environmental Review and Analysis, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

The Commission may request a paper copy of any electronically filed document.

PROPOSED PERMIT

PERMIT COMPLIANCE FILINGS¹

PERMITTEE:

PERMIT TYPE:

PROJECT LOCATION:

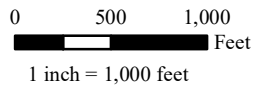
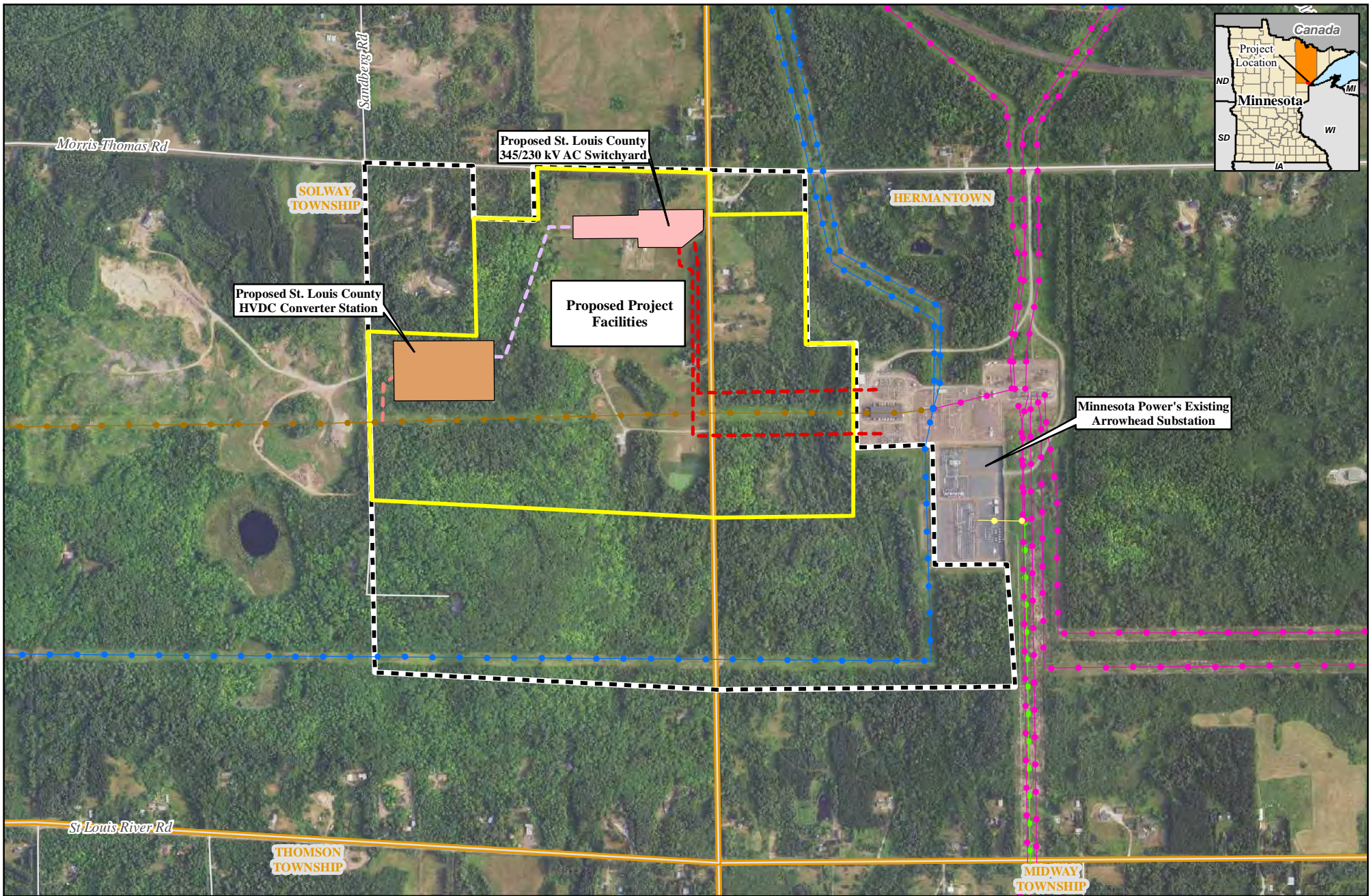
PUC DOCKET NUMBER:

Filing Number	Permit Section	Description of Compliance Filing	Due Date

¹ This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. It is not a substitute for the permit; the language of the permit controls.

PROPOSED PERMIT

ATTACHMENT 3
Route Permit Maps



Proposed Route HVDC Modernization Project St. Louis County, Minnesota

- | | | |
|---|---|--|
| <p>--- Proposed St. Louis County – Arrowhead 230 kV AC Lines</p> <p>--- Proposed +/-250 kV HVDC Line Reroute</p> <p>--- Proposed St. Louis County HVDC – St. Louis County AC Switchyard 345 kV Line</p> <p>□ Proposed Route</p> | <p>--- Project Study Area</p> <p>□ Municipal Boundary</p> <p>--- Existing 115 kV Transmission Line</p> <p>--- Existing 230 kV Transmission Line</p> | <p>--- Existing 250 kV Transmission Line</p> <p>--- Existing 345 kV Transmission Line</p> <p>--- Existing 345kV/115 kV Transmission Line</p> |
|---|---|--|

MPUC Docket No. E-015/CN-22-611