Minnesota Public Utilities Commission

Staff Briefing Papers

Meeting Date: February 26, 2016  
Company: Minnesota Power  
Docket No. E015/TL-14-21

In the Matter of the Application of Minnesota Power for a Route Permit for the Great Northern Transmission Line Project in Roseau, Lake of the Woods, Beltrami, Koochiching and Itasca Counties

Issues: Should the Commission find that the environmental impact statement is adequate?  
Should the Commission adopt the administrative law judge’s Findings of Fact, Conclusions of Law, and Recommendation?  
Should the Commission issue a route permit to Minnesota Power identifying a specific route and permit conditions for the Great Northern Transmission Line Project?

Staff: Michael Kaluzniak | 651-201-2257 | mike.kaluzniak@state.mn.us

Relevant Documents

Minnesota Power Application (24 parts) ................................................................. April 15, 2014  
Minnesota DOT Comments ................................................................. August 14, 2014  
Minnesota DNR Comments (4 parts) ................................................................. August 15, 2014  
Public Comments (89 parts) ........................................................................... August 22, 2014  
Minnesota Power Amendment to Border Crossing .................................... October 29, 2014  
Minnesota Department of Commerce EERA EIS Scoping Decision (5 parts) ........ January 9, 2015  
Minnesota Power Testimony (8 parts) ............................................................. March 16, 2015  
Province of Manitoba Comments ................................................................. June 5, 2015  
Minnesota DOC-EERA Draft EIS (70 parts) ....................................................... June 19, 2015  
Minnesota DOC-EERA Notice of EIS Availability and Public Hearings .......... June 22, 2015  
Minnesota Power Letter from Manitoba Hydro .............................................. July 30, 2015  
Minnesota Power Surrebuttal Testimony (14 parts) ......................................... July 31, 2015
Minnesota Power Relative Merits Table ......................................................... August 4, 2015
Minnesota DNR Comments (3 parts) ......................................................... August 7, 2015
Minnesota DOT Comments ......................................................................... August 10, 2015
Minnesota Power Draft EIS Response ...................................................... August 10, 2015
Minnesota DNR Comments (4 parts) ......................................................... September 1, 2015
Minnesota Power Updated Relative Merits Table ................................... September 21, 2015
Minnesota Power Initial Brief and Proposed Findings of Fact (5 parts) ........ September 28, 2015
Minnesota DOC-EERA Final EIS (57 parts) ............................................ October 30, 2015
Minnesota Power Reply Brief (3 parts) ..................................................... November 6, 2015
Minnesota DOC-EERA Proposed Findings of Fact .................................... November 6, 2015
Minnesota Power Supplemental Testimony (7 parts) .......................... December 3, 2015
U.S. Department of Interior Comments on the FEIS ............................... December 4, 2015
U.S. Environmental Protection Agency Comments on the FEIS .......... December 4, 2015
Minnesota DOC-EERA Final EIS (11 parts) .......................................... December 18, 2015
Minnesota DOC-EERA Exceptions to ALJ Report ................................ January 19, 2016
Minnesota DNR Exceptions Letter ......................................................... February 3, 2016
Minnesota Power Response to DNR Letter ........................................... February 5, 2016

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

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Attached Documents

Proposed High Voltage Transmission Line Route Permit

Statement of the Issues

Should the Commission find that the environmental impact statement is adequate?

Should the Commission adopt the Administrative Law Judge’s Findings of Fact, Conclusions of Law, and Recommendation?

Should the Commission issue a route permit to Minnesota Power identifying a specific route and permit conditions for the Great Northern High Voltage Transmission Line Project in Roseau, Lake of the Woods, Beltrami, Koochiching and Itasca Counties?

Project Overview

Minnesota Power has proposed to construct an approximately 220 mile long, 500 kilovolt (kV) overhead single-circuit alternating transmission line that would cross the international border in Roseau County, and depending on final route, would be located in Roseau, Lake of the Woods, Beltrami, Koochiching and Itasca counties. The Project includes construction of associated substation facilities, a 500 kV series compensation station and a proposed Iron Range 500 kV Substation located adjacent to Minnesota Power’s existing Blackberry Substation near Grand Rapids in Itasca County.

The Project is part of a new 500 kV international transmission interconnection between Manitoba, Canada and the United States. Manitoba Hydro will be constructing the Canadian portion of this new international interconnection. The intended purpose of the line is to provide delivery of, and access to, power generated by Manitoba Hydro from hydroelectric stations in Manitoba, Canada in order to fulfill the applicant’s power purchase agreement with Manitoba Hydro, to meet regional energy demand, to strengthen system reliability and to increase the applicant’s generation diversity and renewable portfolio.\footnote{In Minnesota, only hydroelectric power facilities with a capacity of less than 100 megawatts are considered eligible energy technology for purposes of renewable energy objectives, see Minn. Stat. §216B.1691, Subd. 1.}

Once completed, the Project is expected to provide approximately 883 megawatts of transfer capability. Minnesota Power intends to begin construction on the Project in 2017 and complete
construction in 2020. Minnesota Power estimated that the Project costs are between $557.9 million and $710.1 million in 2013 dollars.

Statutes and Rules

Under Minn. Stat. § 216E.03, subd. 1, no person may construct a high-voltage transmission line without a route permit from the Commission. A high-voltage transmission line may be constructed only along a route approved by the Commission.\(^2\) A route permit issued by the Commission must specify the design, routing, right-of-way preparation, facility construction, and any other conditions it deems appropriate.

The Application was filed under the full permitting process set forth in Minn. Stat. § 216E.03 and Minn. R. 7850.1700 – 2700 and 7850.4000 – 4400.

Under Minn. Stat. § 216E.03, subd. 5, and Minn. R. 7850.2500, the commissioner of the Department of Commerce is required to prepare an environmental impact statement (EIS) on proposed high-voltage transmission lines. The EIS must contain information on the potential human and environmental impacts of a proposed Project and of alternative sites or routes considered and must address mitigation measures for identified impacts.

Minn. R. 7850.2500, subp. 10 and 7850.2700, subp. 2 require that the Commission determine the adequacy of the final environmental impact statement before making its decision on issuing a route permit. An environmental impact statement is adequate if it addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application; it provides responses to the timely substantive comments received during the draft environmental impact statement review process; and it was prepared in compliance with the procedures in parts 7850.1000 to 7850.5600.\(^3\)

The Project is subject to Minn. Stat. § 216E.03, subd. 7, which requires that high-voltage transmission lines be routed consistent with state policy and in a manner that minimizes adverse human and environmental impact while insuring continuing electric power system reliability and integrity and insuring that electric energy needs are met and fulfilled in an orderly and timely fashion. In determining whether to issue a permit for a high-voltage transmission line the Commission must consider the factors contained under Minn. R. 7850.1400

\(^2\) The Commission granted a certificate of need for the Project on May 15, 2015 (Commission Docket Number E015/CN-12-1163). Because the Commission granted the certificate of need for the Project, questions of need (including size, type, and timing), questions of alternative system configurations, and questions of voltage are not considered when deciding whether to issue a route permit for the Project (see Minn. R. 7850.4200).

\(^3\) The Commission is authorized to determine adequacy for purposes of state environmental review, the United States Department of Energy is the federal lead agency for federal environmental review per 40 CFR 1501.5(b).
Procedural History

Minnesota Power filed its application for a route permit for the Great Northern High-Voltage Transmission Line (Project) on April 14, 2014.

On April 15, 2014, Minnesota Power applied to the United States Department of Energy (DOE) for a Presidential permit to cross the U.S./Canadian border in Roseau County. DOE acts as federal joint lead agency with the Minnesota Department of Commerce Energy Environmental Review and Analysis (DOC-EERA) acting as state joint lead agency under applicable federal regulations and Minnesota law. DOE and DOC-EERA elected to prepare a single environmental impact statement for the Project in order to provide process efficiencies and avoid duplication in environmental review procedures.

The Commission issued an order on July 2, 2014, finding the application complete, adopting the DOC-EERA’s recommendations for formation of an advisory task force and referring the matter to the Office of Administrative Hearings for a contested case proceeding.

The DOE and DOC-EERA conducted eight public scoping meetings in the Project area between July 16, 2014 and July 24, 2014 and solicited comments on the Project from agencies and the public through August 15, 2014.4

On July 31, 2014, Commission staff contacted state agencies and technical representatives requesting participation in the development of the Project record and the public hearings. The Commission also requested comments on the proposed Project’s ability to comply with state agency standards, rules, and policies.5

At the request of DOC-EERA, the Commission issued an order on September 24, 2014, modifying its charge and structure for the advisory task force.6

On October 29, 2014, Minnesota Power submitted an amendment to their route permit and Presidential permit applications changing the proposed location of the international border crossing.


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On January 9, 2015, the Deputy Commission of the Department of Commerce issued its Notice of Environmental Impact Statement Scoping Decision. The Scoping Decision identified 22 route segment alternatives and nine alignment modifications to be evaluated alongside the Orange and Blue alternatives provided by Minnesota Power in the application.

On January 26, 2015, Minnesota Office of Administrative Hearings Administrative Law Judge (ALJ) Ann C. O’Reilly issued a Second Prehearing Order setting a tentative schedule for the proceedings and establishing an April 15, 2015 deadline for intervention. No parties or persons other than Minnesota Power and DOC-EERA filed a notice of appearance to the proceeding during the period established by the Administrative Law Judge.\(^7\)

Based on route alternatives, alignment modifications and variations identified in the Scoping Decision, DOC-EERA provided notification to approximately 646 additional landowners potentially affected by the Project.\(^8\)

On March 16, 2015, Minnesota Power filed direct testimony for the contested case proceeding.

On June 5, 2015, the Government of Manitoba submitted a letter describing the Canadian federal and Manitoba provincial legal regime and regulatory processes for authorizing an international transmission line. The letter concluded that any decision by the Commission that would require a border crossing other than the proposed border crossing would necessitate significant new studies to address the change in route to a different border crossing as part of the regulatory process in Canada. Manitoba Hydro concluded that it would be very unlikely that the necessary studies and the regulatory process would be completed in time to meet the proposed 2020 in-service date as per the agreements between Manitoba Hydro and Minnesota Power; and therefore additional regulatory requirements associated with relocating the international border crossing would effectively jeopardize the Project.


On June 22, 2015, DOC and DOE issued a Notice of Availability of Draft Environmental Impact Statement, State Public Information Meetings and Federal Public Hearings. DOC-EERA and DOE held Public Information Meetings and Federal Public Hearings on the DEIS and Presidential permit in Roseau, Baudette, Littlefork, International Falls, Kelliher, Bigfork and

\(^7\) Amended Third Prehearing Order, Minnesota Office of Administrative Hearings, e-Dockets filing Number 20155-110418-01, May 14, 2015.
Grand Rapids, Minnesota between July 15, 2015 and July 22, 2015. DOC-EERA and DOE accepted public comments on the DEIS through August 10, 2015.

On July 23, 2015, the Commission filed a Notice of Public Hearings.

On July 31, 2015, Minnesota Power filed surrebuttal testimony.

On August 4, 2015, Minnesota Power issued its Relative Merits Table. On September 21, 2015, Minnesota Power updated the table.

On August 5, 6, 11, 12, and 13, 2015, Combined Public and Evidentiary Hearings were held in Roseau, Baudette, Littlefork, Kelliher, Bigfork and Grand Rapids.


Prior to the close of public comments on September 1, 2015, the OAH, DOC-EERA and the Commission received hundreds of comments from members of the public, and representatives of Canadian, federal, state and local governments.

On September 28, 2015, Minnesota Power filed its Initial Brief and Proposed Findings of Fact.


On November 6, 2015, Minnesota Power filed its Reply Brief.

On November 6, 2015, DOE-EERA filed its Proposed Findings of Fact.

On December 3, 2015, Minnesota Power filed its supplemental testimony.

On December 4, 2015, U.S. Department of Interior filed comments on the FEIS

On December 4, 2015, the U.S. EPA filed comments on the FEIS.

On December 18, 2015, DOC-EERA filed the remaining portions of the FEIS.

On January 4, 2016, the Office of Administrative Hearings issued its Findings of Fact, Conclusions of Law and Recommendation (ALJ Report). On January 14, 2016, the OAH issued its Amended Findings of Fact, Conclusions of Law and Recommendation which corrected a minor formatting inaccuracy.
On January 19, 2016, DOC-EERA issued a letter indicated that it had no exceptions to the ALJ Report.

On January 19, 2016, Minnesota Power issued its *Exceptions to the ALJ Report*.

On February 3, 2016, Minnesota DNR issued its *Exceptions to the ALJ Report*.

On February 5, 2016, Minnesota Power filed its *Response to the DNR Exceptions*.

**Environmental Impact Statement**

In its application, Minnesota Power proposed two route alternatives (known and the Blue Route and Orange Route). Minnesota Power indicated that the Blue Route was their preferred alternative.

On June 20, 2014, the Commission and DOC-EERA jointly issued a Notice of Public Information and Environmental Impact Statement (EIS) Scoping Meetings. Eight public meetings were held in the cities of Roseau, Baudette, Littlefork, International Falls, Kelliher, Bigfork and Grand Rapids between July 16 and 24, 2014 to provide Project information and to identify issues and route alternatives to be addressed in the EIS. Public comments on the scope of the EIS were accepted until August 15, 2014.

In accordance with Minn. Stat. § 216E.08 and Minn. R. 7850.2400, the DOC-EERA established an advisory task force and conducted task force meetings on June 21, July 19, and July 23, 2014. The task force was established to assist in determining the scope of the EIS by identifying specific impacts and issues of local concern, and potential site and route alternatives to be assessed. In response to a September 5, 2014 request from the DOC-EERA, the Commission issued an order amending its structure and charge for the advisory task force.9

During the scoping comment period, 46 people provided oral comments at the scoping meetings and 122 written comments were received from individuals, government agencies and non-governmental agencies. Substantive comments related to scoping and environmental issues were received from federal and state agencies, including the Minnesota Department of Natural Resources (DNR), Minnesota Department of Transportation (MnDOT), the United States Environmental Protections Agency (EPA) and the United States fish and Wildlife Service (USFWS). DOC-EERA filed its *Scoping Summary Report* on November 13, 2014.

On January 9, 2015, the deputy commissioner of the Department of Commerce issued the EIS Scoping Decision in accordance with Minn. R. 7850.3700, subp. 2. DOC-EERA identified 22

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route segment alternatives and nine alignment modifications to be studied in the EIS, along with the Blue and Orange Route Alternatives. The scoping decision identified the issues to be addressed in the EIS including potential human and environmental impacts, alternative sites or routes, and a schedule for completion of the EIS.

On June 19, 2015, DOC-EERA filed the Draft EIS on the proposed Project in accordance with Minn. R. 7850.2500.³ The Draft EIS contained a comprehensive description of the Project and alternatives to the Project; a discussion of alternatives required under Minn. R. 7849.1500, a discussion of potential impacts of the Project and any alternatives on the human and natural environment; reasonable mitigation measures that could be implemented to minimize any identified adverse impacts; and required permits and approvals.

On June 22, 2015, the DOC-EERA issued a Notice of Availability of Draft Environmental Impact Statement, State Public Information Meetings and Federal Public Hearings. DOC-EERA and DOE staff held eight public meetings in the cities of Roseau, Baudette, Littlefork, International Falls, Kelliher, Bigfork and Grand Rapids between July 16 and July 22, 2015, to provide an opportunity for the public to comment on the Draft EIS. A comment period for submission of written comments was open until August 10, 2015.

On October 30, 2015, the DOC-EERA filed portions of the Final EIS for the Project. The FEIS was an amended version of the Draft EIS that incorporated and identified the necessary changes in the appropriate places. The Final EIS responded to the timely substantive comments received on the Draft EIS consistent with the scoping decision. Written comments on the Draft EIS and responses to those comments were included as Appendix Y in the Final EIS. DOC-EERA issued the required notices of availability of the Final EIS pursuant to Minn. R. 7850.2500, subp. 9.

On December 18, 2015, DOC-EERA filed the remaining portions of the Final Environmental Impact Statement.

Public Hearing and Comments

Notice of the hearing was mailed and published in accordance with Minn. Stat. § 216E.03, subd. 6 and Minn. R. 7850.2600. On August 5, 6, 11, 12, and 13, 2015, Administrative Law Judge, Anne O’Reilly with the Office of Administrative Hearings presided over combined public and contested case hearings that were conducted in the cities of Roseau, Baudette, Littlefork, Kelliher, Bigfork and Grand Rapids. The public comment period was open until September 1, 2015.

The hearing procedures included a brief presentation of the proposed Project; an explanation of the process to be followed; introduction of documents to be included in the record; and an opportunity for any person to present and to ask questions of the applicant, DOC-EERA staff, and Commission staff. A court reporter was present to transcribe the public hearings.
Administrative Law Judge Report

On January 4, 2016, the Administrative Law Judge filed her *Findings of Fact, Conclusions of Law and Recommendations*.10

The ALJ Report included 704 findings of fact, including a summary of public comments and government agency participation, 26 conclusions of law and a recommendation on route selection. The ALJ Report documented that the procedural requirements were followed, and presented findings of each of the decision criteria under Minn. R. 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; and facts related to the adequacy of the EIS.

The ALJ Report included the following conclusions and recommendations.

1. All procedure requirements under rule and law for issuance of the permit were met.

2. That the FEIS is adequate for use by the Commission in this proceeding.

3. The evidence in the record demonstrates that, overall, the Blue Route best satisfies the route permit criteria set forth in Minn. Stat. § 216E.03, subds. 7(a) and (b), and Minn. R. 7850 for all areas except in the Effie Variation Area in the Project’s East Section. In that area, the Effie Variation, including the East Bear Lake Variation, better meet the route permit criteria set forth in Minnesota rule and law.

4. The ALJ recommended that the Commission select the proposed Blue Route for all portions of the route except for the Effie Variation Area. In the Effie Variation Area, the Commission should select the Effie Variation, which includes the East Bear Lake Variation.

5. The ALJ recommended that the Commission select the Trout Lake Alignment Modification so as to minimize the impact of the Blue Route on residences in that alignment area. Other alignment modifications should be considered during the Plan and Profile process.

6. The Standard Route Permit Conditions including those related to Electric Fields (and Applicable Codes should be incorporated into the Route Permit.

10 The ALJ Report was subsequently amended on January 14, 2016 to correct a minor formatting inaccuracy.
7. The Commission may determine, in its expertise, whether Minnesota Power’s request to utilize the NESC 5 mA Rule is acceptable for remote areas of the line where human habitation and use is minimal.

8. Special Route Permit Conditions identified in Conclusion 24 should be included in the route permit for the Project.

Positions of the Parties

Minnesota Power

On September 25, 2015, Minnesota Power filed its initial brief. Minnesota Power noted that it had an unprecedented level of public involvement including its coordination with both the United States Department of Energy and DOC-EERA in the route development, refinement and selection process.

Minnesota Power stated that it is committed to making a positive impact on the communities in which it operates by efficiently providing its customers, the State and the region with clean, reliable and emission-free energy that will meet Minnesota Power’s customers’ and the region’s growing demand for energy.

Minnesota Power stated that the Project fulfills its commitments under its Power Purchase Agreements with Manitoba Hydro as reviewed and approved by the Commission which offer unique benefits to Minnesota Power and its customers.\textsuperscript{11} The Project was designed to strengthen overall system reliability by providing a critical new international tie line to Canada. As such, entities such as the Midcontinent Independent System Operator (MISO) and other regional utilities recognize the benefits associated with the Project and with Minnesota Power’s preferred route.

Minnesota Power noted that it had engaged in an extensive stakeholder process before and during the entire proceeding. Minnesota Power stated that it held more than 75 agency and public meetings or open houses prior to submitting its application in order to gather information, receive input and engage the public, landowners, agencies, tribes, local governments, and non-governmental organizations in an upfront, comprehensive outreach program. Minnesota Power cited support for the Project from numerous members of the public along with federal, state and local governments.

\textsuperscript{11} Minnesota Power’s EnergyForward resource strategy that anticipated hydroelectric resources additions was approved by the Commission in September 2013 as part of Minnesota Power’s 2013 Resource Plan (MPUC Docket No. E015/RP-13-53). Two Power Purchase Agreements for purchase of hydroelectric power from Manitoba Hydro have been reviewed and approved by the Commission (MPUC Dockets Nos. E015/M-11-938 and E015/M-14-960).
Minnesota Power maintained that the record of this proceeding shows that Minnesota Power, together with the public and local units of government, have designed sound route alternatives for the Project. Of these alternatives, Minnesota Power stated that the proposed international border crossing and Blue Route best balance all of the relevant factors for route selection and enjoy substantial public support.

The applicant requested that the Administrative Law Judge recommend, and that the Commission approve, Minnesota Power’s proposed international border crossing and the Blue Route for the Project. Additionally, Minnesota Power requested that the permit include a lower limit for electrical field exposures.

On January 19, 2016, Minnesota Power filed its exceptions to the ALJ Report. Minnesota Power indicated that it supports most of the ALJ’s route selection recommendations except the Effie Variation, the East Bear Lake Variation and the Trout Lake Alignment Modification. Minnesota Power also stated that it filed additional exceptions to provide clarity or otherwise correct certain Findings of Fact in order to ensure a clear and accurate Commission order.

**Department of Commerce EERA**

DOC-EERA offered no pre-filed or other witness testimony during the evidentiary hearings.\(^{12}\)

DOC-EERA filed Proposed Findings of Fact in response to Minnesota Power’s Proposed Findings of Fact. DOC-EERA’s proposed findings indicated, among other things, that the Blue Route best satisfies the route permit criteria but that the Commission should consider adoption of variations in the Project area including the Roseau Lake WMA-2 Variation in the West Section and the Effie Variation in the East Section.

On January 19, 2016 DOC-EERA filed a letter indicating that there was no need to file any exceptions.

**Public Participation**

Public participation opportunities are provided at several times during application review process. The EIS Scoping Meetings provided a description of the Project, an overview of the Commission’s application review process and an opportunity for public comment. Specifically, members of the public were provided the opportunity to recommend particular route alternatives and environmental impacts to be studied in the EIS for the Project. Citizen work group meetings provided additional opportunities for local government representatives to discuss concerns,

develop potential alternative route segments, review potential zoning conflicts and ensure local participation in development of the EIS scope.

The *Scoping Summary Report* incorporates public and agency comments. The major issues included in the report are four border crossing alternatives, concerns about impacts to private property and human settlements, agricultural use, outstanding natural resources, and Scientific Natural Areas. The report identified the benefits of following existing transmission corridors to minimize impacts, and provided a discussion of several route alternatives, adjustments and modifications.

Upon issuance of the DEIS, the eight State Public Information Meetings and Federal Public Hearings held jointly by DOC-EERA and DOE provided an opportunity for the public to comment on the Draft EIS. Two hundred and eight substantive comments received responses in Appendix Y of the FEIS (Volume II, Parts 5-6).

An additional comment period was established by the Commission and DOC-EERA to accept input on the DEIS for the public and evidentiary hearings held by the Administrative Law Judge. During these hearings, witnesses appeared on behalf of the applicant to address questions from the public. Seventy-six oral comments and numerous written comments were accepted before the close of the public record.

**Staff Discussion**

Based on information in Minnesota Power’s route permit application; the analysis provided in the Draft and Final EISs; public comments, testimony, briefs, the ALJ Report and exceptions received in this matter; and other evidence in the record, staff provides the following discussion and recommendations.

**A. Adequacy of the Environmental Impact Statement**

Staff has reviewed the Draft and Final EISs and agrees with the ALJ that (1) DOC-EERA and DOE conducted an appropriate environmental analysis of the Project for purposes of the proceedings; (2) the FEIS addressed the issues and alternatives raised in scoping; (3) the FEIS provided responses to the timely and substantive comments received during the Draft EIS review process; and (4) the FEIS was prepared in compliance with the procedures in Minn. R. 7850.1000 to 7850.5600. Therefore, staff recommends that the Commission find that the FEIS is adequate pursuant to Minn. R. 7850.2500, subp. 10.
B. Administrative Law Judge Report

Staff believes the ALJ Report is well reasoned, comprehensive, and thorough. Based on its review, staff recommends that the Commission adopt the ALJ Report in its entirety with corrections and clarifications. The report documented that the procedural requirements were followed, and it presented findings of fact for each of the decision criteria that must be considered for a route permit.

Enclosed as Attachment A is an Exceptions Table that provides staff’s analysis and recommendation of exceptions raised by Minnesota Power. Staff recommends that the ALJ Report be adopted as modified by staff in Attachment A to these papers.

C. Route Permit Approval

Based on the ALJ Report and the record as a whole, staff recommends that the Commission conclude that all relevant statutory and rule criteria necessary to obtain a route permit have been satisfied and that there are no statutory or other requirements that preclude granting a route permit.

Staff agrees that Minnesota Power has satisfied the criteria set forth in Minnesota law for a route permit for the Project. Staff recommends that, upon consideration of the permitting criteria contained in Minn. Stat. § 216E.03, subd. 7(b) and Minn. R. 7850.4100, the Commission should grant Minnesota Power a route permit for the Great Northern Transmission Line Project including the Blue Route, as modified by the Effie Variation.

Commission Decision Alternatives

A. Environmental Impact Statement

1. Find that the EIS meets the requirements of Minn. R. 7850.1500, subp. 10, in that it:

   • Addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application;
   • Provides responses to the timely substantive comments received during the draft environmental impact statement review process; and
   • Was prepared in compliance with the procedures in parts 7850.1000 to 7850.5600.

2. Take some other action deemed appropriate.
B. Findings of Fact, Conclusions of Law and Recommendation

1. Approve and adopt the ALJ’s Findings of Fact, Conclusions of Law and Recommendation for the Great Northern Transmission Line Project.

2. Approve and adopt the ALJ’s Findings of Fact, Conclusions of Law and Recommendation for the Great Northern Transmission Line Project with modifications to findings and permit conditions, as proposed by staff in the Exceptions Attachment.

3. Approve and adopt the ALJ’s Findings of Fact, Conclusions of Law and Recommendation for the Great Northern Transmission Line Project with modifications to findings and permit conditions, as proposed by Minnesota Power in their Exceptions filing.

4. Approve and adopt the ALJ’s Findings of Fact, Conclusions of Law and Recommendation for the Great Northern Transmission Line Project with partial modifications to findings and permit conditions, as proposed by staff in its Exceptions Attachment and further modified by the Commission.

5. Take some other action deemed appropriate.

C. Approval of Route Permit and Conditions

1. Find that the draft route permit satisfies the considerations of permitting criteria contained in Minn. Stat. § 216E.03, subd. 7(b) and Minn. R. 7850.4100 and grant Minnesota Power a route permit for the Project with conditions.

2. Take some other action deemed appropriate.

Staff Recommendation: A1, B2, and C1
MINNESOTA POWER EXCEPTIONS

2. East Bear Laker Variation: Finding Number 609
3. Effie and East Bear Lake Variation Routing: Exhibit B: Effie Variation Proposed Centerline
4. Tout Lake Alignment Modification: Findings Numbers 687-688/ALJ Recommendation No. 21
5. Route Permit Conditions: Findings Numbers 689-704/ALJ Recommendation Number 23 and Findings Numbers 216 & 217/ALJ Recommendation Number 25
6. Various Corrections and Modifications: Findings, Numbers 317 and 301

MINNESOTA DEPARTMENT OF NATURAL RESOURCES EXCEPTIONS

7. 230 kV Variation, Finding of Fact Number 277
8. Presidential Permit, Finding of Fact Numbers 302 & 70
9. East Bear Lake Variation, Finding of Fact Number 597

COMMISSION STAFF EXCEPTION

10. Citation for State Agency Participation

1. EFFIE VARIATION

1.A Finding of Fact #577

577. In the case of the Effie Variation, the middle line would be Xcel Energy’s 500 kV line. In its comments, Xcel explained that having three lines in one corridor may make it more difficult for Xcel to employ helicopters for infrequent inspections and it may require more precaution when servicing its line. However, Xcel did not express opposition to the Effie Variation. Under Minn. Rules part 7850.4100, the Commission considers many factors in determining whether to issue a permit for a high voltage transmission line, such as the effect on public health and safety. Xcel Energy requested that the Commission consider the access, maintenance, and employee safety impacts that would result from having two 500 kV and one 230 kV high voltage transmission lines sharing a common corridor. Xcel stated particular concerns regarding helicopter access, maintenance difficulties, and the safety concerns presented by placing three major transmission lines in such a common corridor.

Staff Comments: Deletion of the word “infrequent” is acceptable because the word is somewhat ambiguous in this context. However, in reviewing Xcel’s filing, it is correct to say that Xcel did not directly state its opposition to the Effie Variation. Further, Xcel’s filing was considered by the ALJ in the context of the relevant siting criteria (see Finding of Fact 235-237), and therefore quoting the filing in greater detail does not serve to improve the record. Therefore, staff does not support incorporation of the Exception to this Finding.

1.B Findings of Fact # 578-581

Minnesota Power stated that “Findings 578 through 581, provide partial summaries of Minnesota Power’s testimony and evidence related to the Effie Variation and reliability and other concerns with
having three high voltage transmission lines in the same common corridor.” Minnesota Power requests the deletion of Findings #578-581 and replacement with language as indicated below.

578. In addition, Minnesota Power noted that the construction, operation, and maintenance concerns can be mitigated by increasing the distance between the GNTL and the existing transmission line.

579. With respect to unexpected outages, Minnesota Power asserts that where a HVTL shares a common corridor with other HVTLs, a simultaneous unexpected outage due to a catastrophic event (such as lightning, icing, high winds, tornadoes, wildfires, or terrorism) could have impact on electrical system reliability for the area as a whole because more lines are impacted by the same event. The rarity of these events, and the ability of Minnesota Power to engineer its facilities to withstand weather conditions, counters these concerns. For example, since Xcel’s 500 kV line was energized in 1980, there have only been two tornadic events that have impacted that entire 500 kV line, a line which runs all the way to the Canadian border. Moreover, there is no evidence that such tornadic events occurred in the Effie Variation Area or even resulted in simultaneous outages of the other 230 kV line in the Effie Variation Area.

580. With respect to EMFs and noise, Minnesota Power noted that there is a potential for incrementally higher EMF and audible noise due to the addition of a third line in the same corridor. Minnesota Power, however, did not provide any data on how much more EMFs and audible noise might result from an additional line, rendering this claim merely speculative.

581. While there are challenges related to triple-parallelizing HVTLs, Minnesota Power acknowledges that these issues are not insurmountable and do not render the Effie Variation impractical or impossible.

Regarding the Effie Variation, Mr. Winter testified that if the Project must locate in a common corridor with the two other major international tie lies, electric field impacts would drive structure heights higher than they would otherwise be, in order to meet safety code. He further testified:

. In addition, magnetic fields would also be higher as compared to a standalone or even a situation where we would be paralleling one of those lines in a given corridor. There is no way, by the way, to really quantify how much higher without running some simulations and calculating what the impact would be, but there’s no mitigation directly for that as there aren’t any standards pertaining to it.

. Mr. Winter further noted that, regarding audible noise: we would expect [audible noise] to be slightly incrementally higher, and based on previous experience, evaluating the audible noise along the corridor where we would share a corridor with the existing 500 kV line alone, I would expect that we would be pushing the MPCA limits on audible noise, the nighttime limits at the edge of the right-of-way.

. Mr. Winter noted that none of these issues has been fully considered or evaluated by proposers or supporters of the Effie Variation and that additional design work is necessary to capture those impacts and understand how they affect the final design of the transmission line.
Finally, Mr. Winter noted safety concerns related to helicopter access, given that helicopters are likely to be used in both construction of the new line and in maintenance of the new and existing lines and for emergency restoration in the event of a tower structure failure. This problem would be particularly acute for the “middle” line of the three line corridor as it is the Company’s understanding and belief that some contractors will refuse to fly in between two energized lines, making this middle line particularly inaccessible for helicopter maintenance or inspection.

No record evidence refutes these concerns.

Staff Comments: Finding 578 accurately reflects Mr. Winter’s testimony and should not be stricken. The witness acknowledged that the 3-line corridor could be constructed to meet relevant design criteria.

Finding 579 provides information Minnkota’s letter and identifies their concern but does not provide evidence regarding the probability or adverse effects to reliability (“Minnkota is concerned that the three transmission line corridor established by the Effie and East Bear Lake variations would result in an elevated risk of adverse system reliability impacts in a large area of northern Minnesota...”).

It should be noted, however, that certain outage conditions would require operational responses including load-shedding by transmission owners and operators and cannot simply be mitigated by engineering considerations alone. The cited information related to weather events is a matter of record and therefore should not be stricken. Mr. Winter noted that he was not speaking to the likelihood of outages, but only their outcome.

Regarding Finding 580, staff agrees with the ALJ’s assessment. The FEIS was issued after the public hearings and contains information related to audible noise and EMFs in Volume II, Appendices H, I and K, respectively.

Regarding Finding 581, staff notes that in relation to construction of the 3-line corridor in the Effie Variation Area, Minnesota Power witness Mr. Winter acknowledged that they could “make it work” from a design and construction standpoint.

In relation to Minnesota Power’s requested replacement language, staff does not support modifying the ALJ Report for their inclusion, largely because these items were considered previously. Additionally, much of this language is supposition.

1C Findings of Fact 235-237
Minnesota Power stated that the ALJ Report does not address the reliability concerns related to load brought forward by Minnesota Power, Great River Energy and Minnkota Power Cooperative. Minnesota Power requested that these additional findings be adopted by the Commission.

The Blue Route creates no unique issues related to electrical system reliability.

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1 See Grand Rapids Public Hearing Transcript, Volume 7, at pages 144-170, August 13, 2015.
2 Id.
Minnesota Power eliminated the Effie Variation from consideration during the course of its route selection process due to concerns regarding its potential impact on electrical system reliability and higher Project cost.  

The Company testified:  
The electrical reliability impacts of establishing a common transmission line corridor are much more nuanced than presented in the DEIS, depending primarily on the purpose and expected performance of the transmission lines. In this case, the only parallel corridor scenarios that have any noteworthy [negative] electrical system reliability impacts are those involving the Project and one or more of the existing Manitoba-United States tie lines. None of the common corridor scenarios involving 69 kV, 115 kV, or 230 kV lines that do not connect Manitoba and the United States has any significant impact on electrical system reliability, regardless of how many transmission lines are located in the common corridor. In contrast, where the Project shares a common corridor with the existing 500 kV tie line, a simultaneous unexpected outage could have a significant impact on electrical system reliability because the lines not only share a common purpose, but would also carry similar (and greater) amounts of power. 

The Company further testified:  
It is critical to realize that where the Project would be placed in a common corridor with both of the existing large Manitoba-United States tie lines, as proposed in the Effie and East Bear Lake alternatives, a simultaneous unexpected outage of the three tie lines would have a substantially greater impact to electrical reliability than would paralleling just one of those tie lines. Such an event would leave only two operating tie lines, both of which are far smaller. This would severely weaken the Manitoba-United States transmission interface and put a significant amount of Minnesota load at risk. In fact, establishing a common corridor with the Project, the existing 500 kV tie line and the existing 230 kV tie line - as proposed in the Effie and East Bear Lake alternatives - carries the highest level of risk to electrical system reliability of any proposed route or variation.

A simultaneous outage of three lines such as the Project, the 500 kV line, and the 230 kV line could occur for a variety of reasons, including lightning, icing, high winds, tornadoes, or wild fires.

Similarly, co-location of all three lines presents a larger target for intentional destructive acts.

The Company also included in the record ... information demonstrating that the Effie (and East Bear Lake) Variation “would result in adverse system reliability impacts in a large area of northern Minnesota, putting a significant amount of northern Minnesota load at risk that would not be at risk due to a simultaneous loss of just the Project and the Riel - Forbes 500 kV Line.”
Minnkota Cooperative also raised reliability concerns, stating:

Minnkota is concerned that the three transmission line corridor established by the Effie and East Bear Lake variations would result in an elevated risk of adverse system reliability impacts in a large area of northern Minnesota that includes our member cooperatives.

Minnkota supports Minnesota Power’s preferred blue route and international border crossing, and asks that the Commission take into account Minnesota Power’s efforts to strike a reasonable balance for the GNTL Project between the State’s emphasis on utilizing existing utility corridors for routing and the resulting impacts of establishing these common corridors on the reliability of the power system.  

Great River Energy (“GRE”) voiced similar concerns for its customers. GRE stated that it: serves electric load in northern Itasca County through the Orman substation via the Little Fork – Shannon 230 kV line located in northern Minnesota. GRE does own and operate a networked 69 kV system that can serve as a backup for the loads served by the 230 kV line in the event there is a sustained outage, however serving solely from the 69 kV system adds risk especially during winter periods when load levels are at their highest. . . GRE is in agreement with Minnesota Power that it wants to minimize that amount of common corridor for the 500 kV lines and the Little Fork – Shannon 230 kV line. If a severe weather event were to occur that removes both 500 kV lines, the remaining 230 kV connections would be put under additional burden resulting in GRE likely losing its Orman delivery point and subjecting GRE’s customers in northern Itasca County to an elevated risk of adverse system reliability impacts.

Minnesota Power estimated that without taking into consideration the unique design considerations and challenges of placing a third large transmission line in a common corridor, such as the need for higher and more robust structures, the Effie Variation would cost approximately $11 million more than the Blue Route.

Staff Comments: Staff does not support these changes for several reasons. These items are previously included in the record and were considered by the ALJ. The restatement of record evidence does not, in itself, support modification of the ALJ’s Findings. The proposed changes are not supported by analyses beyond that of the record. The proposed language related to reliability fails to indicate noncompliance with relevant reliability criteria (e.g. NERC Transmission System Planning Performance Requirements (TPL-001-4)).
Staff does not support the proposed finding related to the unique impact to system reliability because it was not well developed in the record and the word “unique” could be applied to all alternatives. Additionally, the record does not provide a robust analysis of this portion of a 3-line corridor in relation to portion of 3-line corridor in the West Section proposed by the applicant.

The applicant provides analysis of the outcomes of various outage scenarios, but absent comparison or consideration of probabilities lessens the weight of this analysis. The applicant acknowledged that the 3-line corridor is feasible and that reliability outages could be managed through existing regional transmission operation or utility outage protocols, including load-shedding.

1.D Finding of Fact #584
584. While it is true that the Effie Variation would pass by more residences, would result in “triple paralleling” of HVTLs, and would be more expensive than either the Blue or Orange Routes, the benefits of the variation outweigh the additional risks and costs.

Staff Comments: Staff does not support the proposed language change to Finding #584. Proximity analysis of residences was considered by the ALJ in her analysis. Similarly, the ALJ noted the incremental cost increase in development of the ALJ Report. The exceptions provided by the applicant do not alter this analysis.

1.E Finding of Fact #582
582. The estimated cost of the Blue Route is approximately $46.6 million; the estimated cost of the Orange Route is $49.4 million, and the estimated cost of the Effie Variation is $57.3 million, making the Effie Variation the most costly option. The Effie Variation is still within 20 percent of the cost of either the Blue or Orange Routes. Therefore, the cost of the Effie Variation is at least 20 percent greater than the Blue Route. These cost estimates do not include segment specific design criteria. If segment specific engineering design considerations unique to the Effie Variation were known at this time and included in the cost comparison, the incremental cost of the Effie Variation compared to the Blue and Orange routes would be further increased.19

Staff Comments: Staff notes that these figures relate only to this portion of the East Section of the Line, not total project costs. Additional project costs by selection of the Effie Variation were noted and considered by the ALJ in developing the report. Staff does not support the changes.

1.F Findings of Fact #587-589
Minnesota Power states that, in relation to Findings 587 through 589, the Commission must balance the costs, risks and benefits of “triple paralleling” three large high voltage transmission lines. While Minnesota law does favor the use of existing utility and highway corridors, Minnesota law also directs the Commission to “ensure the state’s electric energy security” amongst other factors. The Commission
must balance electrical reliability and load impacts with the other factors, including the public support during the hearings for the Effie Variation. Minnesota Power requests that Findings of Fact 587-589 be deleted and replaced with the language below.

587. With respect to the potential drawbacks related to “triple paralleling” of HVTLs, Minnesota Power acknowledges that the challenges in constructing, maintaining, and inspecting the lines can be remedied through increased distance between lines and other forms of mitigation. Consequently, the concerns raised by Minnesota Power do not make the Effie Variation unfeasible. In addition, the Company’s arguments about the risks of catastrophic incidents and simultaneous outages are not supported by data and are mere remote possibilities.

588. Unlike the Effie Variation, the Blue and Orange Routes impact Important Bird Areas, make new corridors with new impacts to the natural environment, increase forest fragmentation in an area of intact old-growth forest, further degrade a critical habitat for the Canada Lynx, and negatively impact more wildlife than the Effie Variation.

589. Moreover, Minnesota law favors the use of existing utility corridors wherever possible. Here, the benefits of paralleling the existing HVTL infrastructure, rather than creating a new utility corridor through an important area of the state, outweigh the risks and costs associated with the Effie Variation. Accordingly, the Administrative Law Judge recommends that the Commission select the Effie Variation in the Effie Variation Area.

The Blue Route creates no unique issues related to electrical system reliability.

Minnesota Power eliminated the Effie Variation from consideration during the course of its route selection process due to concerns regarding its potential impact on electrical system reliability and higher Project cost.

For the reasons provided by Minnesota Power, other utilities, and overall electrical system reliability for northern Minnesota, the Effie Variation should not be utilized for the Great Northern Transmission Line’s route.

Furthermore, to the extent necessary, ALJ Recommendations 18 through 20 should be modified to reflect the Commission’s selection of a Route Permit that does not include the Effie Variation.

Staff Comments: Minnesota Power did not dispute the veracity of these findings or cite alternative analyses related to Findings 587-589. Instead, Minnesota Power is requesting deletion of accurate findings despite their support in the record. Because they accurately reflect the record, staff does not support deletion of Findings 587-589, nor the adoption of Minnesota Power’s proposed language.

2. EAST BEAR LAKE VARIATION - Finding #609

Minnesota Power stated that the ALJ correctly identified that the East Bear Lake Variation is a portion of the Effie Variation and therefore there is no need to separately recommend the East Bear Lake
Variation. Minnesota Power stated that its objections to the East Bear Lake Variation were also those of the Effie Variation itself and that the East Bear Lake should be removed from Recommendations.

609. The East Bear Lake Variation is a portion of the Effie Variation. As set forth above, the Administrative Law Judge has determined that the Effie Variation best satisfies the factors set forth in Minn. R. 7850.4100. Accordingly, there is no need to separately recommend the East Bear Lake Variation.

Staff Comments: Staff notes that only a portion of the East Bear Lake Variation (not its entirety) is included in the Effie Variation. If the Effie Variation is chosen, it is unlikely that the additional portion of the East Bear Lake variation outside of the Effie Variation would be chosen during the Plan and Profile review because it results in a “spur”. The findings therefore do not need to be corrected, but administrative notice should be taken of the fact that a portion of the East Bear Lake Variation would be included in the Effie Variation.

3. EFFIE AND EAST BEAR LAKE VARIATION ROUTING
Minnesota Power indicated in their Exceptions filing that, if the Effie Variation were selected, it would likely require a revised anticipated centerline alignment than the one contemplated in the FEIS and ALJ Report. Minnesota Power supplied a Proposed Centerline Map for the Effie Variation as Exhibit B to their Exceptions. This modification does not result in a route change itself because Attachment B relies on the existing Effie Variation route corridor.

Staff Comments: Staff supports incorporation of the anticipated centerline alignment into the Commission’s permit and notes that final selection addresses the concerns raised by proponents of the East Bear Lake variation.

4. TROUT LAKE ALIGNMENT MODIFICATION: FINDINGS #687-688 AND ALJ REPORT RECOMMENDATION #21
Minnesota Power stated that the following Findings rely only on information from the FEIS and omit information supplied by the applicant.

4.A Finding of Fact 687
687. The Trout Lake Alignment Modification is located in the central portion of the Blackberry Variation Area (FEIS Map 4-17). This alignment modification is the same length as the comparable segment of the Blue Route. There are three residences within 1,000 feet of the comparable segment of the Blue Route. For about half of its length on the north end, the comparable segment of the Blue Route crosses corporate land and then follows the boundary between corporate and private land.683

Staff Comments: Minnesota Power did not provide specific requested changes to Finding 687.
4.B Finding of Fact 688

688. The Trout Lake Alignment Modification shifts the centerline away from the two residences located west of the comparable segment of the Proposed Blue Route, so only one residence would be located within 1,000 feet of the alignment. All other land ownership along the Trout Lake Alignment Modification is corporate. Although the Alignment Modification would avoid impacts to the landowner’s private property, it would be 150 feet longer and would add three additional angle structures, raising cost and feasibility concerns.

In addition to the Variations discussed above, a number of Alignment Modifications (or shifts of the anticipated alignment of the Project within the currently designated route) were included in the environmental review of the Project. Generally, such shifts of the precise alignment come forward during the “Plan and Profile” stage of routing. Once a route is approved, the Company will work with landowners and gain additional “on the ground” information, including conducting field surveys. That information often leads to the Company and landowners agreeing to move the alignment to some place other than originally anticipated and designated in the record.

Staff Comments: Minnesota Power asserted that their proposed Finding of Fact was not included in the ALJ Report. Staff does not object to incorporating this language because it improves the record. Staff recommends that the alignment be identified as the anticipated alignment, but that the applicant be required to provide an information filing regarding the cost of angle structures, specific feasibility concerns and an overall comparison of impacts previously identified in the record. DOC-EERA is asked to provide additional analysis of these materials and make a recommendation to the Commission for a final determination as part of the Plan and Profile process.

4.C ALJ Recommendation Number 21

Minnesota Power stated that because of the reasons identified in their exceptions to Findings #687 and 688, the ALJ’s Recommendation No. 21 should be modified as follows:

21. The Administrative Law Judge further recommends that the Commission adopt the Trout Lake Alignment Modification so as to minimize the impact of the Blue Route on residences in that alignment area. Other alignment modifications shall be considered during the Commission’s final review and in the Plan and Profile process and that Minnesota Power work with landowners to minimize impacts to landowners in determining route alignments.

Staff Comments: Staff agrees that evaluation during the Plan and Profile may identify compelling reasons for rejecting the ALJ’s Findings and recommendation on the Trout Lake Alignment Modification. As noted above, staff recommends that the Order incorporate the Trout Lake Modification with the provision that Minnesota Power be asked to provide additional information regarding the cost of angle structures, specific feasibility concerns and an overall comparison of impacts previously identified in the record. DOC-EERA will then evaluate the record matter, including further discussion between Minnesota
Power and the landowners during the Plan and Profile process and provide its recommendations for a final alignment to the Commission’s Executive Secretary.

5. **Route Permit Conditions:**

5.A **ALJ Recommendation #23 and Finding #704**

Minnesota Power filed an exception to the Electric Field standard identified in Section 4.7.2 of the Generic Route Permit. Minnesota Power requested to utilize the National Electrical Standards Code (NESC) 5mA (milliamp) Rule in remote areas of the line where human habitat is minimal. 704. The DOC-EERA did not expressly oppose the Company’s request to use the NESC 5 mA Rule for remote areas of the line. **The record supports the Company’s request to provide this limited modification to the Electric Field General Condition. However, the Administrative Law Judge is without sufficient information in the record to provide analysis of the Company’s request and can, therefore, make no informed recommendation related to this request.**

**Staff Comments:** Staff agrees with the ALJ that the record does not provide sufficient evaluation of the matter to determine that the use of the 5 mA level is more appropriate. Minnesota Power’s testimony supporting the modifications to the electrical field limit are partially based on the assumption that the MN Environmental Quality Board limit was apparently designed to prevent serious hazards from shocks when touching large conductive object. However, more well-known and comprehensive research\(^3\) cite additional health concerns resulting from experimental and epidemiological study. The data cited for State Electric Field Limits Relevant to 500 kV Transmission Lines\(^4\) does not consider more restrictive limits at right of way edges\(^5\). Additionally, staff notes Minnesota Power has not proposed a robust mechanism for calculation, evaluation, notification and administration of the NESC 5mA level. Minnesota Power also declined to provide analysis of the proposed change using the criteria that the Commission would use if it were considering the matter as a Variance Request under the Commission’s Rules.\(^6\)

DOC-EERA in their Proposed Finding of Fact #609 included the 8.0 kV/m rms electric field standard for design, construction and operation of the project as identified in the Generic Route Permit. DOC-EERA did not elect to modify the ALJ Report recommendation on this matter. Therefore, staff recommends, rejecting Minnesota Power’s proposed addition and incorporating the DOC-EERA’s Proposed Finding of Fact #609 as indicated below.

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\(^3\) For example, see United Nations Environmental Program/World Health Organization/International Radiation Protection Association *Environmental Health Criteria 35, Extremely Low Frequency Fields*, World Health Organization (1984) citing several additional experimental and epidemiological health effects related to electric field exposure.


\(^5\) For example, Edge Right-of-Way standards include Montana (1 kV/m), New York (1.6 kV/m) and Florida (2 kV/m), WHO, *ibid*.

Staff Recommendation:

704. The DOC-EERA did not expressly oppose the Company’s request to use the NESC 5 mA Rule for remote areas of the line. The Generic Route Permit includes standards for electric performance including for electric fields. Specifically, section 4.7.2 of the Generic Route Permit states “The transmission line shall be designed, constructed, and operated 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.” However, the Administrative Law Judge is without sufficient information in the record to provide an analysis of the Company’s request and can, therefore, make no informed recommendation related to this request.

Recommendation #23

Minnesota Power requested that Recommendation #23 should be modified to the extent necessary to reflect the Commission’s granting Minnesota Power’s limited request.

23. The Commission may determine, in its expertise, whether Minnesota Power’s request to utilize the NESC 5 mA Rule is acceptable for remote areas of the line where human habitation and use is minimal.

Staff Comments: The Recommendation that the NESC 5mA standard should apply in “remote areas of the line where human habitation and use is minimal”. DOC-EERA indicates that Minnesota Power is requesting that the 8 kV/m rms standard would only apply to road crossing and on agricultural lands and that the NESC 5 mA standard would apply for the vast majority of the project. It is not readily apparent that these two designations identify identical areas of the project.

Should the Commission elect to grant Minnesota Power’s request, it is not necessary to change this language. Staff does not support modifying this recommendation for reasons cited above.

5.B ALJ Recommendation #25 and Findings #216 & 217

These items relate to the comments made by Charolette Neigh, a member of the public. Minnesota Power maintains that Findings 216 and 217 and Recommendation 25 are already addressed in the Generic Route Permit (cite location) and therefore should be deleted.

216. Charlotte Neigh, Bovey, Minnesota, submitted written comments regarding conditions to include related to ROW maintenance in any Route Permit issued in this case. Ms. Neigh explained that she owns property where power lines are located and has given an easement to Minnesota Power to enter her property to maintain the lines within the ROW. Ms. Neigh stated that although the easement agreement is specific as to whether the Company can trim trees outside the ROW, the tree trimmers are often unaware of these specifications and trim trees in violation of the easement. She suggested that any Route Permit issued in this case require the Company to give landowners reasonable notice of any
maintenance that will occur to the lines; advise landowners if trees outside the ROW will be cut before they are cut; and place limits on the amount of vegetation removal that can occur outside the ROW.269

217. In addition to her timely comments, Ms. Neigh submitted comments after the close of the comment period in response to Minnesota Power’s legal briefs. Ms. Neigh requested that the conditions on the Route Permit include conditions on the maintenance of the lines, as well as the construction. She also suggested that the Commission require Minnesota Power to provide the Department of Commerce’s Rights-of-Way and Easements for Energy Facility Construction and Operation Fact sheet to all affected landowners. Ms. Neigh further requested that the Commission include all of its standard conditions in any Route Permit issued in this case. Ms. Neigh urged the Commission to include conditions in route permits that protect landowners from abuses by utility companies, not only during construction but as a result of maintenance and repair of lines.270

25. The Administrative Law Judge also respectfully recommends that the Commission review the General Conditions in its Route Permit Template to address the ROW construction and maintenance issues raised by commenter Charlotte Neigh.702

Staff recommendation: The ALJ Report requests that the Commission consider this matter. Because the items are matters of record and should be considered by the Commission, it is not necessary to delete the Findings or Recommendation.

As to the merit of the Findings themselves, it would be excessively burdensome for MP to consult with each landowner prior to every maintenance clearing. Staff notes that tree trimming and vegetation management for transmission line right of way maintenance is subject to Federal Standards (NERC Reliability Standard FAC-003-3 (Transmission Vegetation Management). Staff recommends that Minnesota Power consider this matter and identify anticipated landowner pre-notification timing and other applicable changes as part of the Vegetation Management Plan and Right-of-Way agreements for the project.

6. VARIOUS CORRECTIONS AND MODIFICATIONS

6.A Findings of Fact #87 and 88

Minnesota Power noted that the notice referenced in these findings can be found at DOC-EERA’s website.

87. The DOC-EERA served the Notice of Availability of the DEIS, State Public Information Meetings, and Federal Public Hearings upon the individuals and entities identified on the Commission’s project contact list, as required by Minn. R. 7850.2500, subps. 7 and 8.142 The DOC-EERA also placed the notice in the Environmental Quality Board Monitor, which was published on June 22, 2015.143 The notice gave the public until August 10, 2015, more than 10 days after the close of the informational meetings, to submit comments on the DEIS, as required under Minn. R. 7850.2500, subp. 8.144
88. The record is silent as to whether the DOC-EERA posted the notice on its agency webpage. The Notice discussed in Findings 87 and 88 was posted on the DOC-EERA’s website at: http://mn.gov/commerce/energyfacilities/documents/33847/FINAL%20GNTL%20Info%20Scoping%20Notice%20+%20Map.pdf.

Staff Recommendation: Staff notes that the DOC-EERA website is not part of the record, but has no objections to including additional language pertaining to the location of the notice.

6.B Finding of Fact #301

301. Manitoba Hydro asserts that if it is required to amend its application to the NEB to address a different border crossing location and thus select a different route for the Canadian portion of the line, such change will “jeopardize” the Project as a whole because it will cause delays in the process and could potentially impact the June 2010 2020 in-service date agreed to by Minnesota Power and Manitoba Hydro in their contracts for this Project. The record reflects that the formal Canadian approval process began in November 2014 and is based on a specific international border crossing. Unfortunately, the record is unclear as to how long the Canadian approval process could take if a border crossing location is selected other than the Proposed Border Crossing.349

Staff Recommendation: Staff agrees that the modified finding more accurately reflects the record. Staff notes that the Commission has the legal authority to establish a permit at a location other than the single one provided by Minnesota Power. Minnesota Power would be able to work with appropriate governments and agencies to accommodate another location. However staff agrees with Minnesota Power, the DOC-EERA and Administrative Law Judge that the proposed location satisfies the relevant criteria in statute and rule and therefore should not be changed.

RESPONSE TO MINNESOTA DEPARTMENT OF NATURAL RESOURCES EXCEPTIONS

The Minnesota Department of Natural Resources (DNR) filed Exceptions to the ALJ Report on February 3, 2016. Minnesota Power filed a response objecting to the filing on February 5, 2016, indicating that DNR’s filing was not timely and that the DNR was not a formal party to the proceedings. Staff notes that the Commission specifically requested DNR’s participation in the development of the record and public hearing for the proceeding on August 1, 2014 and responds to the DNR’s letter below.7

the Highway 310 Variation.324 Public comment overwhelmingly opposed any HVTL that could interfere with this airstrip important to residents in the area.

Staff Comments: Staff agrees that the modified language provides less ambiguity than the original language and therefore recommends that the Commission approve the change.

8. Findings of Fact #302 and #70

DNR notes that Findings #302 and #70 indicate different statuses of the Presidential Permit and that a clear understanding of its status is necessary because the ALJ Recommended in Findings of fact 294 – 308 that international considerations and related consequences outweigh the Commission’s routing factors contained in Minnesota Rule 7850.4100. DNR recommends inclusion of an additional or modified Finding of Fact that updates the record describing the status of international and state/provincial government-to-government coordination, the status of government decisions in both Canada and the U.S. regarding the border crossing, a clear description of the allowable width, location, and any allowable flexibility of the border crossing Right-of-Way in Canada.

70. Minnesota Power’s Presidential Permit Application is currently awaiting approval by the DOE.105 However, both the U.S. Department of Defense and the U.S. Department of State have advised the Department of Energy that they have reviewed the DEIS and the Presidential Permit Application and have no objection to the issuance of the Presidential Permit to the Applicant.

302. Similarly, if a border crossing location other than the Proposed Border Crossing is selected by the Commission in this proceeding, Minnesota Power will need to amend or re-start the Presidential Permit process to obtain federal approval for a new international border crossing. Minnesota Power’s Presidential Permit Application has already been amended once during this process, in 2014. That process took approximately 30 days to complete. The Presidential Permit Application has already received approval by the United States Departments of Defense and State. Accordingly, for Minnesota Power to amend its Presidential Permit Application, there would be an unknown additional delay in the start of the Project and no assurances that the DOE would approve a different border crossing location.

Staff Comments: Staff notes that concurrence from the Departments of Defense and State are prerequisites for DOE to issue a Presidential Permit under the DOE’s federal regulations and applicable Executive Orders. As such, the letters indicate this concurrence but not the formal issuance of the permit itself. It is staff’s understanding from the record that DOE will formally issue of the Presidential Permit after the Commission finalizes its decision regarding the location of the international border crossing.

9. Finding of Fact #597

DNR recommended that this finding be deleted or corrected because its review indicates that there is no agricultural land use along the East Bear Lake Variation. DNR notes that the connector from the Orange Route to the Effie Variation is 1.2 miles in length and is comprised of County Tax Forfeit land.
597. The East Bear Lake Variation would cross nearly two times more agricultural land than the Orange Route (160 acres versus 85 acres). Both the Orange Route and the East Bear Lake Variation would cross a relatively similar amount of state forest land. The East Bear Lake Variation would cross more expired or terminated mineral lease lands. However, the East Bear Lake Variation would parallel an existing utility corridor for the majority of its length.

Staff Comments: Staff agrees with DNR and recommends striking Finding of Fact #597. Staff believes that deletion of the finding does not significantly alter the analysis regarding the route selection for this area.

COMMISSION STAFF EXCEPTION

10. FINDING OF FACT #59

Commission staff would like to correct the citation for Finding of Fact related to the Commission’s request for participation from state agencies.

59. In addition to soliciting public comment at the scoping meetings, on July 31, 2014, the Commission sent a letter to various state agencies requesting their participation in the development of the record, the environmental review, and the public hearings for the Project.77


Staff Comments: Staff supports this change in order to improve the accuracy of the record.

NOTES

Proposed text to be added is indicated in blue underlined text.

Proposed deletion of text is indicated in red stricken text.

In addition, Staff’s recommended additions are included in green underlined text.

For purposes of clarity and brevity, footnotes to the findings and recommendations are not included. It should be understood that the Order will incorporate addition, deletion or modifications necessary to align the ALJ Report in accordance with the Commission’s decisions on the respective Findings or Recommendations.
STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

ROUTE PERMIT FOR CONSTRUCTION OF A HIGH-VOLTAGE TRANSMISSION LINE AND ASSOCIATED FACILITIES

IN
ROSEAU, LAKE OF THE WOODS, BELTRAMI, KOOCHICHING AND ITASCA COUNTIES

ISSUED TO
MINNESOTA POWER

PUC DOCKET NO. E015/TL-14-21

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 construct a single-circuit 500-kilovolt alternating current High Voltage Transmission Line and associated facilities from the U.S./Canada International Border in Roseau County to a new substation near the existing Blackberry Substation in Itasca County.

The transmission line and associated facilities shall be built within the route identified in this permit and as portrayed on the official route maps, and in compliance with the conditions specified in this permit.

Approved and adopted this ____ day of __________, 2016

BY ORDER OF THE COMMISSION

___________________________________________
Dan P. Wolf,
Executive Secretary
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FIGURES

Route Maps

ATTACHMENTS

Attachment A - Table of Township, Range and Section Data for the approved route
Attachment B - Complaint Procedures
Attachment C - Compliance Filing Schedule
Attachment D - Exhibit B - Anticipated Alignment Changes for the Effie Variation
1.0 ROUTE PERMIT

The Minnesota Public Utilities Commission (Commission, MPUC) hereby issues this route permit to Minnesota Power (Permittee) pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850. This permit authorizes Minnesota Power to construct a single-circuit 500-kilovolt alternating current (AC) High Voltage Transmission Line from the U.S./Canada International Border in Roseau County to a new substation near the existing Blackberry Substation in Itasca County, and as identified in the attached route permit maps, hereby incorporated into this document.

2.0 PROJECT DESCRIPTION

Minnesota Power proposed construction and operation of the Great Northern Transmission Line, which is an approximately 229-mile, 500 kilovolt (kV) overhead, single-circuit, alternating current (AC) transmission line. The transmission line would cross the U.S. and Canada Border in Roseau County, Minnesota and connect into the proposed Iron Range 500 kilovolt Substation adjacent to the existing Blackberry Substation near Grand Rapids, Minnesota.

The project also includes associated substation facilities and transmission system modifications at the Blackberry Substation site, construction of a new 500 kV series compensation station, necessary access roads, construction lay-down areas and fly-in sites. A new Iron Range 500 kV Substation for the project will be constructed east of the existing Blackberry 230/115 kV Substation.

The transmission line is expected to carry at least 750 megawatts (MW) to facilitate agreements and transmission service requests between Minnesota Power and Manitoba Hydro plus exports and transmission service requests by Manitoba to other utilities.

2.1 Project Location

The approved transmission line will cross the U.S. / Canadian border at latitude 49 00 00.00 N and longitude 95 54 50.49 W, approximately 2.9 miles east of Highway 89 in Roseau County. The transmission line would cross the border between the U.S. and Canada in Roseau County, Minnesota, and connect into the proposed Iron Range 500 kilovolt (kV) Substation adjacent to the existing Blackberry Substation near Grand Rapids, Minnesota. The route includes locations in Roseau, Lake of the Woods, Koochiching, and Itasca Counties.
2.2 Associated Facilities and Substations

The project includes construction of associated facilities including the proposed Iron Range 500 kV Substation, a new 500 kV Series Compensation Station, and three regeneration stations with permanent and temporary access roads. Additionally, construction of the proposed Project would require temporary and permanent access roads, temporary laydown areas, temporary stringing areas, and temporary fly-in sites.

The project includes the expansion of the site of the Permittee’s existing 8.8 acre Blackberry 230/115 kV Substation near Grand Rapids, Minnesota to incorporate the new Iron Range 500 kV Substation. It will be constructed adjacent to and east of the existing Blackberry Substation and is expected to permanently impact approximately 23 acres. The Iron Range 500 kV Substation would accommodate the new 500 kV transmission line, existing 230 kV transmission lines, and all associated 500 kV and 230 kV equipment.

The Permittee will locate a new 500 kV Series Compensation Station within or adjacent to the approved route. The precise location for the 500 kV Series Compensation Station will be determined by electric design optimization studies and final route selection, but is anticipated to be located at the approximate midpoint between the existing Dorsey Substation in Canada and the proposed Iron Range 500 kV Substation located just east of the existing Blackberry Substation. The Series Compensation Station will permanently impact approximately 6 acres.

The Permittee is permitted to locate three regeneration stations within or adjacent to the approved route. The sites would be 75 feet by 75 feet and located on upland areas. The Permittee will construct temporary access roads within the right-of-way for construction. The Permittee will work with local property owners to identify suitable access locations during final design. The typical width of the temporary access road will be 16 feet.

The Permittee intends to establish a permanent “2-track” trail on uplands within the permanent right-of-way as a result of construction traffic. This 2-track trail would be unimproved and it is assumed that there will be no grading or filling for this permanent access.

The Permittee is permitted to establish a main staging area for temporary storage of materials and equipment. There would be other temporary staging areas located along the approved right-of-way for laydown and framing prior to structure installation. The laydown areas would be approximately 20 to 40 acres, and would be located along suitable roadways approximately 40 to 50 miles apart, and would be within 5 miles from the approved route. Upland areas with prior disturbance will be preferred; however other areas may be approved as part of the plan and profile process in instances where this is not feasible. These yards would be in place for at least
one year and used to store equipment and materials and include the construction offices. The Permittee will identify specific staging areas during final design.

The Permittee may establish temporary stringing sites within or adjacent to the approved route. The sites would be approximately 2.8 acres in size and spaced approximately 2 miles apart.

The Permittee is allowed to establish fly-in sites that would be approximately 10 acres in size, located as near to the right-of-way as possible, and approximately 5 to 7 miles apart. These sites may be in place for up to 1 year to assemble structures for helicopter (sky crane) construction. Upland areas with prior disturbance will be preferred; however, there may be some areas where this is not feasible and other areas would be used. The Permittee will identify fly-in sites during final design.

2.3 Structures and Conductors

The project will be located in new right-of-way that would be approximately 200 feet wide. A wider right-of-way may be required for certain spans of the project, at angle and corner structures, for guyed structures, or where special design requirements are dictated by topography. The Permittee is evaluating several steel structure types and configurations including a self-supporting lattice structure, a lattice guyed-V structure, and a lattice guyed-delta structure.

The transmission towers will be steel lattice structures for the majority of the route, with the exact type of structure in any given location dependent on land type, land use, and potential effect on the surrounding landscape.

The transmission tower heights will range from approximately 100 to 170 feet. In some locations, such as where the project crosses an existing transmission line, taller structures may be required. None of the structures are anticipated to be taller than 200 feet in order to meet Federal Aviation Administration (FAA) lighting standards. Approximately 4 to 5 structures are anticipated per mile of transmission line and the structures would be placed approximately 1,000 to 1,700 feet apart, with a maximum span of 1,700 feet. Where the transmission line crosses farmland, the Permittee will use self-supporting lattice structures to minimize interference with farm operations. The area of permanent impact for the guyed structures is anticipated to be 1,936 square feet per structure, with a temporary construction disturbance footprint of approximately 0.92 acres per structure.

The table below details specifics on the various structure types as presented in the route permit application.
<table>
<thead>
<tr>
<th>Line Type</th>
<th>Conductor</th>
<th>Structure Type</th>
<th>Foundation</th>
<th>Height</th>
<th>Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Circuit 500 kV AC overhead transmission line</td>
<td>Aluminum Conductor Steel Reinforced (ACSR)</td>
<td>3-conductor bundle 1192.5 kcmil ACSR with 18 inch sub-spacing</td>
<td>NESC approved ACSR rated for 500 kV operation</td>
<td>100-170 feet</td>
<td>Approximately 1,000 to 1,450 feet (0.20-0.25 miles)</td>
</tr>
</tbody>
</table>

The transmission line and associated facilities shall be designed to meet or exceed all relevant local and state codes, the National Electric Safety Code (NESC), and North American Electric Reliability Corporation (NERC) 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. The transmission line shall be equipped with protective devices to safeguard the public if an accident occurs.

### 3.0 DESIGNATED ROUTE

The route designated by the Commission in this permit is the route described below and shown on the route maps attached to this permit. Enclosed as Attachment A is a summary of Township, Range and Section data of the project. The route is generally described as follows:

The location of the international border crossing at the U.S. / Canadian border is located at latitude 49 00 00.00 N and longitude 95 54 50.49 W, approximately 2.9 miles east of Highway 89 in Roseau County.

The approved route proceeds southeast 0.5 miles to 410th Street, approximately 0.16 of a mile from the intersection of 410th Street and County Road 3. The approved route travels south 2 miles to 390th Street and turn east following 390th Street for 10.5 miles (where 390th street then turns into County Road 118). At 0.25 miles from Highway 310 further east the approved transmission line would turn southeast and continue for another 12 miles. At 0.5 miles from 510th Avenue further southeast the approved transmission line would again turn and travel 2.3 miles east to join the existing Minnkota Power 230 kV transmission line. The proposed Project would parallel the existing Minnkota Power 230 kV transmission line southeast for 1.8 miles and then turn south where it would meet the existing Xcel Riel-Forbes 500 kV transmission line. Further southeast and beginning at a tenth of mile north of US Highway 11, the proposed
transmission line would parallel the existing Xcel 500 kV transmission line route for 36 miles after which it would turn east, leaving the Xcel 500 kV transmission line 2 miles southeast of the intersection of Faunce Forest Road and 19th Street Southwest in Lake of the Woods County (the Proposed Blue Route enters the Central Section in this location).

The approved route proceeds east for 5.8 miles and then turn northeast to rejoin the existing Minnkota Power 230 kV transmission line at its intersection with Pitt Grade Trail. The proposed transmission line would then parallel this existing 230 kV transmission line in an easterly direction for 31 miles to a point 1.5 miles west of County Road 86 in Koochiching County where it would then proceed southeast for 8.3 miles and then south for 1.8 miles. At this point, the proposed Project would be roughly 1.5 miles south from the intersection of County Road 32 and County Road 36 in Koochiching County. The transmission line would then continue southeast for 21.3 miles and intersect Highway 71 roughly 4.5 miles northeast of Big Falls, where it would continue an additional 9.6 miles to the southeast where it would rejoin the existing Minnkota Power 230 kV and Xcel Riel – Forbes 500 kV transmission lines (230/500 Corridor). The transmission line continues southeast approximately 0.9 miles and then proceeds in an east-southeasterly direction following the 230/550 Corridor for approximately 11.1 miles as it crosses Forest Road 138. The transmission lines proceed in a southeasterly direction for approximately 6.9 miles. The project continues south along the 230/550 Corridor for approximately 7.0 miles, proceeds approximately 1.0 miles to the southwest. The project continues to follow the 230/500 Corridor for approximately 13.8 miles until the 230/550 Corridor proceeds to the southeast in Township 59N, Range 23W, Section 12 in Itasca County. The approved route then exits the 230/500 kV Corridor and proceeds in a south by southwest direction for approximately 4.5 miles where it connects with the Proposed Orange Route in Township 59N, Range 23W and Section 34 and proceeds by southwest for approximately 3.3 miles and then proceeds southwest until it joins the Proposed Blue Route in Township 58N, Range 23W and Section 20.

The identified route widths will provide the Permittee with flexibility for minor adjustments of the specific alignment or right-of-way to accommodate landowner requests and unforeseen conditions. The final alignment (i.e., permanent and maintained rights-of-way) will be located within this designated route unless otherwise authorized below.

3.1 Right-of-Way

The approved route varies from 650 to 3,000 feet wide in order to provide flexibility during detailed design to try to accommodate landowner’s preferences once the route is selected by the Commission. The approved route widths with anticipated alignments are shown on the detailed maps provided in Volume II: Part 3, Appendix S of the Final Environmental Impact Statement for the project.
The approved right-of-way width for the project is up to 200 feet. This permit anticipates that the right-of-way will generally conform to the anticipated alignment as noted on the attached route permit maps unless changes are requested by individual landowners and agreed to by Permittee or for unforeseen conditions that are encountered or are otherwise provided for by this permit. The anticipated alignment may be modified to incorporate changes identified by Minnesota Power in Attachment D (Exhibit B to its Exceptions filing, January 19, 2016, E-Dockets No. 20161-117422-04).

Any alignment 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 alignment identified in this permit, and shall be specifically identified and documented in and approved as part of the plan and profile submitted pursuant to section 4.1 of this permit.

Where the transmission line route 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, the other requirements of this permit, and for highways under the jurisdiction of the Minnesota Department of Transportation (Mn/DOT) rules, policies, and procedures for accommodating utilities in trunk highway rights-of-way.

4.0 GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction of the transmission line and associated facilities over the life of this permit.

4.1 Plan and Profile

At least 30 calendar days before right-of-way preparation for construction begins on any segment or portion of the project, the Permittee shall provide the Commission with a plan and profile of the right-of-way and the specifications and drawings for right-of-way preparation, construction, structure specifications and locations, cleanup, and restoration for the transmission line. 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 permit.

The Permittee may not commence construction until the 30 days has expired or until the Commission has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this 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 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 permit.

4.2 Construction Practices

The Permittee shall follow those specific construction practices and material specifications described in Minnesota Power’s Application to the Commission for a route permit for the Great Northern Transmission Line Project dated April 15, 2014, unless this permit establishes a different requirement in which case this permit shall prevail.

4.2.1 Field Representative

At least 14 days prior to commencing construction, the Permittee shall advise the Commission in writing of the person or persons designated to be the field representative for the Permittee with the responsibility to oversee compliance with the conditions of this permit during construction.

The field representative’s address, phone number, emergency phone number, and email shall be provided to the Commission and shall be made available to affected landowners, residents, public officials and other interested persons. The Permittee may change the field representative at any time upon written notice to the Commission to affected landowners, residents, public officials, and other interested persons.

4.2.2 Local Governments

During 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 would be temporary and the Permittee will restore service promptly. Where any impacts to public utilities have the potential to occur the Permittee will work with both landowners and local agencies to determine the most appropriate transmission structure placement.

The Permittee shall cooperate with county and city road authorities to develop appropriate signage and traffic management during construction.

4.2.3 Cleanup

All waste and scrap that is the product of construction shall be removed from the area and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.
4.2.4 Noise

Construction and routine maintenance activities shall be limited to daytime working hours, as defined in Minn. R. 7030.0200, to ensure nighttime noise level standards will not be exceeded.

4.2.5 Vegetation Removal

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.

Tall growing species located within the transmission line right-of-way that endanger the safe and reliable operation of the transmission facility will be removed by the Permittee. 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 that will not pose a threat to the transmission facility or impede construction.

The Permittee shall avoid construction and maintenance practices, particularly the use of fertilizer, herbicides or other pesticides that are inconsistent with the landowner’s or tenant’s use of the land. The Permittee will provide notification to affected landowners and tenants before using these materials.

4.2.6 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. Care shall be used to preserve the natural landscape, minimize tree removal and prevent any unnecessary destruction of the natural surroundings in the vicinity of the project during construction and maintenance. Structures shall be placed at a distance, consistent with sound engineering principles and system reliability criteria, from intersecting roads, highway, or trail crossings and could cross roads to minimize or avoid impacts.
4.2.7 Site Sediment and Erosion Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency (MPCA) Construction Stormwater Program.

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 facilities shall be returned to pre-construction conditions.

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 consult with landowners on the selection and use of seed for replanting.

Where larger areas of one acre or more are disturbed or other areas designated by the MPCA, the Permittee shall obtain a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater permit from the MPCA.

4.2.8 Wetlands and Water Resources

Wetland impact avoidance measures that shall be implemented during design and construction of the transmission line will 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, construction in wetland areas shall occur during frozen ground conditions. When construction during winter is not possible, wooden or composite mats shall be used to protect wetland vegetation. Soil excavated from the wetlands and riparian areas shall be contained and not placed back into the wetland or riparian area.

Wetlands and riparian areas shall be accessed using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts. No staging or stringing set up areas shall be placed within or adjacent to wetlands or water resources, as practicable. Power pole structures shall be assembled on upland areas before they are
brought to the site for installation. Areas disturbed by construction activities shall be restored to pre-construction conditions.

All requirements of the U.S. Army Corps of Engineers (wetlands under federal jurisdiction), Minnesota Department of Natural Resources (Public Waters/Wetlands), and County (wetlands under the jurisdiction of the Minnesota Wetland Conservation Act) shall be met.

As part of preconstruction reports, the Permittee will include a section evaluating the potential for the occurrence of Aquatic Invasive Species (AIS) in the project area and describing if any best management practices that apply to the project. The Permittee should identify any infested waters or otherwise indicate that aquatic invasive species are not anticipated. The MN DNR must be notified if any AIS are identified in an area not previously identified as infested water.

4.2.9 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when installing the high-voltage transmission line on the approved route. In the event that a resource is encountered, the Permittee shall contact and consult with the State Historic Preservation Office (SHPO). Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize project impacts on the resource consistent with SHPO and State Archaeologist requirements.

Because of the federal decisions required for the Project, review of the Project and consultation with tribes and agencies under Section 106 of the National Historic Preservation Act is required. In light of the significant consultation with potentially affected parties and responsible agencies, the Permittee must defer to the Programmatic Agreement and advise the Commission when the measures to avoid, minimize or mitigate adverse effects to cultural resource and environmental justice impacts identified in the Record of Decision have been fulfilled.

Prior to construction, workers shall be trained 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.

4.2.10 Avian Mitigation

The Permittee’s 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 will consult with the Minnesota Department of Natural Resources regarding type and placement of bird diverters.

4.2.11 Temporary Work Space

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. Temporary easements outside of the authorized transmission line right-of-way will be obtained from affected landowners through rental agreements and are not provided for in this permit.

Temporary driveways may be constructed between the roadway and the structures to minimize impact using the shortest route possible. Construction mats should also be used to minimize impacts on access paths and construction areas.

4.2.12 Restoration

The Permittee shall restore the right-of-way, temporary work spaces, access roads, abandoned right-of-way, and other public or private lands affected by construction of the transmission line. 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 advise the Commission in writing of the completion of such activities.

The Permittee shall fairly compensate landowners for damage to crops, fences, landscaping, drain tile, or other damages sustained during construction.

4.2.13 Notice of Permit

The Permittee shall inform all employees, contractors, and other persons involved in the transmission line construction of the terms and conditions of this permit.
4.3 Periodic Status Reports

The Permittee shall report to the Commission on progress regarding finalization of the route, design of structures, and construction of the transmission line. The Permittee need not report more frequently than monthly.

4.4 Complaint Procedures

Prior to the start of construction, the Permittee shall submit to the Commission the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements set forth in the complaint procedures attached to this permit.

4.5 Notification to Landowners

The Permittee shall provide all affected landowners with a copy of this permit and, as a separate information piece, the complaint procedures at the time of the first contact with the landowners after issuance of this permit. The Permittee shall contact landowners prior to entering the property or conducting maintenance along the route.

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.

4.6 Completion of Construction

4.6.1 Notification to Commission

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

4.6.2 As-Built Specifications

Within 60 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the project.

4.6.3 GPS Data

Within 60 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 line and each substation connected.

4.7 **Electrical Performance Standards**

4.7.1 **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 milliampere rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the NESC. The Permittee shall address and rectify any induced current problems that arise during transmission line operation.

4.7.2 **Electric Field**

The transmission line shall be designed, constructed, and operated 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.

4.7.3 **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 line, the Permittee shall take whatever action is feasible to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the line.

4.8 **Other Requirements**

4.8.1 **Applicable Codes**

The Permittee shall comply with applicable NERC planning standards and requirements of the NESC including clearances to ground, clearance to crossing utilities, clearance to
buildings, right-of-way widths, erecting power poles, and stringing of transmission line conductors.

4.8.2 Other Permits

The Permittee is required to work in continued consultation with applicable state and federal agencies, including the MNDNR and USFWS, to obtain approval for all required permits for this Project. The Permittee must comply with conditions of any permits. The Permittee must submit documentation of permit compliance to the Commission upon request.

4.8.3 Pre-emption

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

4.9 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 permit, the Permittee shall file a report on the failure to construct and the Commission shall consider suspension of the permit in accordance with Minn. R. 7850.4700.

5.0 SPECIAL CONDITIONS

The Permittee shall provide a report to the Commission as part of the plan and profile submission that describes mitigation actions and measures developed and status of the following special conditions. Special conditions shall take precedence over other conditions of this permit should there be a conflict.

5.0.1 Construction Environmental Control Plan (CECP)

Construction Environmental Control Plan. The Permittee shall develop a Construction Environmental Control Plan (CECP) that shall include all environmental control plans and special conditions imposed by permits or licenses issued by state or federal agencies related to agency-managed resources. Plans within the CECP shall include, but not be limited to, the Agricultural Impact Mitigation Plan, the Avian Mitigation Plan, the Vegetation Management
Plan, and a Stormwater Pollution Prevention Plan. The CECP shall be filed with the Commission 30 days prior to submitting the plan and profile for any segment of the Project.

5.0.2 Avian Mitigation Plan and Bird Flight Diverters

Avian Mitigation Plan. The Permittee shall develop an Avian Mitigation Plan (AMP). The AMP shall be developed in consultation with the MNDNR. The Permittee shall submit and implement the plan in accordance with the CECP for the Project. The Purpose of the AMP shall be to identify site-specific risks to avian species from the Project and to identify and implement strategies to avoid and mitigate potential impacts to these species, including but not limited to, the use of bird flight diverters. The AMP shall include documentation of the Permittee’s consultation with the MNDNR and the USFWS.

5.0.3 Agriculture Impact Mitigation Plan

The Permittee shall comply with the Agricultural Impact Mitigation Plan (AIMP) prepared for this Project and approved by the Minnesota Department of Agriculture. The Applicant/Permittee shall distribute the AIMP with the route permit to all affected landowners.

5.0.4 Vegetation Management Plan

The Permittee must develop a Vegetation Management Plan (VMP). The VMP shall be developed in consultation with the MNDNR. The purpose of the VMP shall be to identify measures to minimize the disturbance and removal of vegetation for the Project, prevent the introduction of noxious weeds and invasive species, and re-vegetate disturbed non-cropland areas with appropriate native species in cooperation with landowners and state, federal, and local resource agencies, in such a way that does not negatively impact the safe and reliable operation of the Project. The Permittee shall submit the VMP with the CECP and monitor compliance with the VMP.

5.0.5 Consultation with the United States Fish and Wildlife Service (USFWS)

The Permittee is required to develop avoidance, mitigation and conservation measures for the protection of federally-listed species (including critical habitats) and for migratory birds with the USFWS under Section 7 of the Endangered Species Act. The Permittee is required to document this consultation as part of the Periodic Status Reports.
6.0 PERMIT AMENDMENT

This permit may be amended at any time by the Commission. Any person may request an amendment of the conditions of this 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.

7.0 TRANSFER OF PERMIT

The Permittee may request at any time that the Commission transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer.

The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require to determine whether the new Permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new Permittee, and interested persons such process as is required.

8.0 REVOCATION OR SUSPENSION OF THE PERMIT

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