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May 16, 2016

VIA ELECTRONIC FILING

Daniel Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: *In the Matter of the Request by Minnesota Power for a Route Permit for the Great Northern Transmission Line*
Compliance with Route Permit Order Point 4 – MISO Review
MPUC Docket No. E015/TL-14-21

Dear Mr. Wolf:

Minnesota Power files this letter in compliance with the Minnesota Public Utilities Commission's ("Commission") April 11, 2016 Order Issuing Route Permit With Modifications for the Great Northern Transmission Line ("GNTL"). Order Point 4 requested Minnesota Power undertake the following:

Prior to actual project construction, Minnesota Power shall file a letter stating that the Regional Planning Authority/Planning Coordinator and the Transmission Planner have studied the triple-line corridor as permitted by the Commission and have determined or confirmed that the project conforms with applicable transmission system planning requirements and business practices including all applicable North American Electric Reliability Corporation (NERC) Reliability Standards.

In compliance with this order point, Minnesota Power has consulted with the Midcontinent Independent System Operator, Inc. ("MISO"). MISO is the Regional Planning Authority/Planning Coordinator and the Transmission Planner for GNTL. As detailed in the GNTL Certificate of Need docket (Docket No. E015/CN-12-1163), MISO and Minnesota Power have been coordinating planning for this project and evaluating overall system and reliability impacts since 2011. See MISO Letter dated November 20, 2014 in Docket No. E015/CN-12-1163. In addition, MISO's Board of Directors included GNTL in MTEP2014 Appendix A.

Mr. Wolf
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Based on this ongoing consultation and an April 26, 2016, in-person meeting to review the GNTL triple-line corridor, Minnesota Power and MISO have confirmed that the triple-line corridor as permitted by the Commission and the overall GNTL project conforms with all applicable North American Electric Reliability Corporation (“NERC”) Reliability Standards, and no additional applicable transmission system planning requirements and business practices have been identified. Attached is a letter from MISO that summarizes the considerations that went into making this determination. Minnesota Power agrees with MISO’s interpretation of the matter.

Further, Minnesota Power believes that this interpretation supports Minnesota Power’s consistent position that maintaining separation between the GNTL and the existing transmission lines in the triple-line corridor area, as accomplished by Minnesota Power’s proposed alignment through the area, is important for reliability. Minnesota Power’s proposed alignment maintains a minimum of 500 feet between the GNTL and the existing 500 kV line, and the area between the two lines will not be cleared.

Please contact me if you have any questions or need additional information.

Yours truly,

A handwritten signature in black ink that reads "David R. Moeller". The signature is written in a cursive, slightly slanted style.

David R. Moeller
Senior Attorney
Minnesota Power

DPM:sr
Attach.



Lynn Hecker
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VIA ELECTRONIC DELIVERY

May 16, 2016

Mr. David Moeller
Senior Attorney
Minnesota Power
30 West Superior Street
Duluth, Minnesota 55802-2093

**Re: Midcontinent Independent System Operator, Inc.
Comments Related to Order in Docket No. E015/CN-12-1163**

Dear Mr. Moeller:

Minnesota Power requested the assistance of the Midcontinent Independent System Operator, Inc. (MISO) in connection with an order issued by the Minnesota Public Utilities Commission ("Commission") on April 11, 2016 ("April Order")¹ in the above-captioned docket. In response to the inquiry by the Commission into the transmission corridor approved by the Commission, MISO is satisfied that the triple-line corridor included in the route conforms with the applicable NERC Reliability Standard identified on the subject. MISO has not identified any applicable transmission system planning requirement or business practice relating to the triple-line feature. The remainder of this letter explains more fully how MISO reaches this conclusion.

The Midcontinent Independent System Operator, Inc. (MISO) -- as a regional transmission organization that is responsible for ensuring the regional transmission system is reliably planned -- has worked with Minnesota Power on the Great Northern Transmission Line (GNTL). On April 26, 2016, MISO representatives participated in a meeting with Minnesota Power personnel to discuss the April Order. The meeting addressed a segment of the GNTL route that would bring the new 500 kV line into an existing corridor containing the Riel-Forbes 500 kV and Little Fork-Shannon 230 kV lines.

¹ *In re Great Northern 500 kV Transmission Line*, Docket No. E015/CN-12-1163, Order Issuing Route Permit With Modifications (April 11, 2016).

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The April meeting was requested by Minnesota Power in connection with an issue raised by the Commission in its April Order. The April Order requested that Minnesota Power undertake the following:²

Prior to actual project construction, Minnesota Power shall file a letter stating that the Regional Planning Authority/Planning Coordinator and the Transmission Planner have studied the triple-line corridor as permitted by the Commission and have determined or confirmed that the project conforms with applicable transmission system planning requirements and business practices including all applicable North American Electric Reliability Corporation (NERC) Reliability Standards.

MISO understands that this requirement on Minnesota Power seeks a MISO determination that the feature of the triple-line corridor set by the Commission for a portion of the GNTL, as opposed to the requirements that apply in the absence of this feature, meets applicable standards.

The factual background provided by Minnesota Power was that the triple-line corridor mentioned in the Commission's April Order is approximately 40 miles long. In the existing corridor, the Riel-Forbes 500 kV Line and the Little Fork-Shannon 230 kV Line (two of the four existing Manitoba-United States transmission tie lines) are located a minimum of approximately 130 feet apart from one another. Minnesota Power's proposed centerline for the GNTL maintains a minimum of 500 feet between the GNTL and the Riel-Forbes 500 kV Line. Minnesota Power does not plan to clear the space between the GNTL right-of-way and the Riel-Forbes 500 kV Line right-of-way.

The relevant North American Electric Reliability Corporation (NERC) Reliability Standard pertaining to the system impact of the establishment of the above-described triple-line corridor is NERC Standard TPL-001-4 for transmission planning. The purpose of this NERC standard is to:

Establish transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.

The relevant requirements of TPL-001-4 are Requirement 3 (R3), which pertains to steady state analysis of the transmission system, and Requirement 4 (R4), which pertains to stability analysis of the transmission system. Both of these requirements refer to Table 1 of the standard, which describes the types of contingency events that must be evaluated.

The applicable sub-requirements from R3 and R4 state the following:³

² April Order, page 19 (ordering paragraph 4).

- R3, Part 3.2** Studies shall be performed to assess the impact of the extreme events which are identified by the list created in Requirement R3, Part 3.5
- R3, Part 3.5** Those extreme events in Table 1 that are expected to produce more severe System impacts shall be identified and a list created of those events to be evaluated in Requirement R3, Part 3.2. The rationale for those Contingencies selected for evaluation shall be available as supporting information. If the analysis concludes there is Cascading caused by the occurrence of extreme events, an evaluation of possible actions designed to reduce the likelihood or mitigate the consequences and adverse impacts of the event(s) shall be conducted.
- R4, Part 4.2** Studies shall be performed to assess the impact of the extreme events which are identified by the list created in Requirement R4, Part 4.5.
- R4, Part 4.5** Those extreme events in Table 1 that are expected to produce more severe System impacts shall be identified and a list created of those events to be evaluated in Requirement R4, Part 4.2. The rationale for those Contingencies selected for evaluation shall be available as supporting information. If the analysis concludes there is Cascading caused by the occurrence of extreme events, an evaluation of possible actions designed to reduce the likelihood or mitigate the consequences of the event(s) shall be conducted.

The feature of the triple-line corridor that is the subject of the April Order relating to MISO is the subject of the underlined portion of the relevant steady state extreme event description from Table 1 of TPL-001-4, as described below.

Steady State

2b. Local area events affecting the Transmission System such as: Loss of all Transmission lines on a common Right-of-Way.⁴

MISO is satisfied that the triple-line corridor as permitted by the Commission conforms with the applicable NERC Reliability Standard identified above, and no additional transmission system planning requirements and business practices have been identified relating to the triple-line feature permitted by the Commission in the April Order. The Midwest Reliability Organization (MRO) Standard Application Guide for TPL-001-4 provides an advisory definition for a “common Right-of-Way” as “either a single right-of-way or multiple rights-of-way physically adjacent to one another (i.e. no separation between rights-of-way).”⁵ MISO agrees

³ TPL-001-4 – Transmission System Planning Performance Requirements, pages 5-7.

⁴ *Id.* (emphasis added). The criterion “[e]xcludes circuits that share a common structure (Planning event P7, Extreme event steady state 2a) or common Right-of-Way (Extreme, steady state 2b) for 1 mile or less.” *Id.*, Table 1 – Steady State & Stability Performance Footnotes, footnote 11.

⁵ “Midwest Reliability Organization Standard Application Guide – TPL-001-4 (Version 2.0,” Midwest Reliability Organization, September 18, 2015, page 25 (“SS-E2.b (all transmission lines in a common right-of-way”).

with this definition since a sufficient physical separation between rights-of-way would prevent any cascading effects due to tower structure failures. The alignment provided by Minnesota Power for the GNTL segment in question shows that the right-of-way for the GNTL would be a minimum of 500 feet from the right-of-way for the existing Riel-Forbes 500 kV Line everywhere except in the area where the two lines cross (with the crossing point explicitly excluded by TPL-001-4, being under 1 mile in length). This situation does not meet the definition of a "a common Right-of-Way" and therefore the corridor, as described, would not require additional study to be in compliance with the steady state extreme event definition 2b from Table 1 of NERC TPL-001-4.

I trust that this letter addresses the matter raised in the Commission's April Order as it relates to the triple-line corridor and MISO's review as the appropriate regional planning authority.

Sincerely,



Lynn Hecker
MISO Manager of Expansion Planning
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