



Brookings County – Hampton 345 kV Transmission Line Project

Final Environmental Impact Statement
January, 2010

PUC Docket No. ET2/TL-08-1474



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ABSTRACT

Pursuant to the provisions of Minnesota Statutes, Chapter 216E (Power Plant Siting Act), Great River Energy and Xcel Energy (applicants) filed a route permit application with the Minnesota Public Utilities Commission (Commission) on December 29, 2008, for a permit to construct the Brookings County–Hampton 345 kilovolt (kV) transmission line facility consisting of a series of 345-kV and lower-voltage transmission line connections between Brookings County, South Dakota, and the southeast Twin Cities, Minnesota (project).

The proposed project includes a 345 kV high-voltage transmission line, approximately 230 to 270 miles long, depending on the route selected, between the existing Brookings County substation near White, South Dakota, and a new substation near Hampton, Minnesota, as well as a new transmission line between the Lyon County substation near Marshall, Minnesota, and the Minnesota Valley substation near Granite Falls, Minnesota. The project also requires the construction of four new substations, the expansion of four existing substations, and construction of electric system interconnections to tie existing high-voltage transmission lines to the project. Construction of the project is scheduled to begin in fall 2011 with an expected in-service of spring 2013.

The Minnesota Office of Energy Security (OES) issued the draft environmental impact statement for the project on October 20, 2009. As required by Minnesota Rule 7850.2500, subp. 9, OES prepared this final environmental impact statement (FEIS). This FEIS

responds to timely substantive comments received on the draft environmental impact statement (DEIS) consistent with the DEIS Scoping Decision Document. The FEIS also contains corrections/revisions to the DEIS. The DEIS and FEIS serve as the complete EIS for the proposed project. Copies of the route permit application, the DEIS, the FEIS, and other documents relevant to this project are available at the following websites:

<http://energyfacilities.puc.state.mn.us/Docket.html?Id=19860> and

<https://www.edockets.state.mn.us/EFiling/search.jsp> (“08” year and “1474” number).

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Section 1.0 Introduction

The Minnesota Department of Commerce, Office of Energy Security (OES) has prepared an Environmental Impact Statement (EIS) to evaluate the proposed project in accordance with Minnesota Rules 7850.1000 to 7850.5600 (full permitting process).

The purpose of the EIS is to:

- Evaluate the potential environmental effects of the proposed project;
- Consider alternative routes and alignments;
- Explore mitigation measures for reducing adverse impacts;
- Provide information to the public and project decision-makers; and
- To aid in making permit decisions.

The EIS provides information to the public and decision makers, but does not identify the agency's preferred alternative nor does it approve or disapprove a project.

As described in more detail in Section 1.3 below, the OES issued the Draft EIS for this project on October 20, 2009. Under the applicable rules, OES must respond to the timely substantive comments received on the draft environmental impact statement consistent with the scoping decision and prepare the final environmental impact statement. The commissioner may attach to the draft environmental impact statement the comments received and its response to comments without preparing a separate document. Minnesota Rules Chapter 7850.2500, subp.9

This introduction is divided into the following five subsections:

- 1.1 Project Overview
- 1.2 Project Purpose
- 1.3 Comment Review Process and Procedures
- 1.4 Comment Methodology
- 1.5 Problematic Route Segments

1.1 Project Overview

Great River Energy and Xcel Energy (applicants) propose to construct and operate a 345 kV (kilovolt) transmission line, between approximately 230 to 270 miles long, beginning at the state's western border near Hendricks, Minnesota, and ending south of the Twin Cities metro area near Hampton, Minnesota. The applicants have proposed two possible routes for the transmission line – the applicants' preferred and alternate routes.

These routes would cross portions of the following counties: Lincoln, Lyon, Yellow Medicine, Chippewa, Redwood, Brown, Renville, Sibley, Le Sueur, Scott, Rice, and Dakota. Construction of the transmission line is proposed to begin in 2011 with completion by 2013.

The applicants proposal also includes the construction of four new substations and the expansion of four existing substations. New substations include the Hazel Creek substation near Granite Falls, the Helena substation near New Prague, the Cedar Mountain substation near Franklin, and the Hampton substation near Hampton.

The applicants propose using single structure steel poles which would require a 150 foot right-of-way for the majority of the route. A 100 foot right-of-way would be required for the route segment connecting to the Cedar Mountain substation near Franklin, Minnesota. There may be some situations (e.g. river crossings and existing transmission rights-of-way) along the route where specialty structures (H-frames or triple circuit structures) would be necessary. A right-of-way up to 180 feet in width would be required in these instances.

1.2 Project Purpose

According to the applicants, the project would provide community load serving benefits to regional communities in western Minnesota. Specifically, the New Ulm, Olivia, Bird Island, and Redwood Falls areas will benefit because the new 345 kV power source in the Franklin area. The Hazel Creek to Lyon County 345 kV segment will strengthen service to the Granite Falls area. Finally, the Brookings County to Hampton project is needed to increase renewable generation outlet capability in the Buffalo Ridge area.

The proposed Brookings to Hampton transmission line project, in particular, will:

Increase community service reliability. The project is needed to alleviate emerging community service reliability concerns by increasing reliability by reducing the chance that failure of a few key system components would temporarily cut off the supply of electricity.

Accommodate system-wide growth. The project is also part of a longer-term plan to strengthen the transmission network to meet 4,000 to 6,000 MW of additional demand for electrical power anticipated in Minnesota and parts of surrounding states by 2020.

Increase generation outlet/renewable energy support. The project will add increments of transmission capacity to the network to support the continuing development of new generation. In particular, the Brookings-Hampton project will allow wind farm development to continue along Buffalo Ridge in southwestern Minnesota and eastern

South Dakota, opening up parts of Buffalo Ridge that currently do not have adequate transmission support.

The Minnesota Public Utilities issued the Certificate of Need for three of the four CAPX transmission line projects, including this one, on May 22, 2009. See <http://www.puc.state.mn.us/PUC/energyfacilities/certificate-of-need/011260>

1.3 Review Process and Procedures

In Minnesota, no person may construct a high-voltage transmission line without a route permit from the Minnesota Public Utilities Commission (Commission). A high-voltage transmission line is defined as a conductor of electric energy designed for and capable of operation at a voltage of 100 kV or more and is greater than 1,500 feet in length (Minn. Stat. 216E.01, subd. 4).

Route permit applications must provide specific information about the proposed project including, but not limited to, applicant information, route description, environmental impacts, alternatives, and mitigation measures (Minn. R. 7850.1900). The Commission may accept an application as complete, reject an application and require additional information to be submitted, or accept an application as complete upon filing of supplemental information (Minn. R. 7850.2000). A route permit was submitted to the Commission by the applicants on December 29, 2008.

The permit review process begins with the determination by the Commission that the application is complete. The Commission has one year to reach a final decision on the route permit application from the date the application is determined to be complete. The Commission may extend this limit for up to three months for just cause or upon agreement of the applicant (Minn. R. 7850.2700). The application was accepted as complete by the Commission on January 29, 2009.

Route permit applications for high voltage transmission lines are subject to environmental review in accordance with Minnesota Rules 7850.1000 to 7850.5600. OES staff collected comments for the scope of the EIS by convening two advisory task forces, holding public scoping meetings throughout the proposed project area, and accepting written comments from January 29, 2009, through April 30, 2009. The EIS Scoping Decision Document was issued on June 30, 2009.

On October 20, 2009, OES staff released the Draft EIS (DEIS). The OES then held ten public meetings in six different locations along the length of the proposed project in order to provide an opportunity for the public to comment on the DEIS. Comments received during the Draft EIS public information meetings and during the DEIS

comment period (October 20, 2009, to November 30, 2009) were reviewed, responded to, and are included in the Final EIS (FEIS).

A total of 17 public hearings in eight different locations along the proposed project were held in November and December 2009. In addition, evidentiary hearings were held between December 15 to 18, 2009, at the Commission hearing room in St. Paul, Minnesota. All of the public hearings and evidentiary hearings were presided over by an administrative law judge (ALJ). The hearings provided members of the public an opportunity to speak at the hearings, present evidence, ask questions, and submit comments to the ALJ.

Prior to a determination of EIS adequacy and route permit decision by the Commission, the ALJ will submit a report to the Commission containing findings of fact, conclusions, and a recommendation on a route permit for the proposed transmission line.

Final EIS

The FEIS responds to timely substantive comments received on the DEIS consistent with the Scoping Decision Document. The FEIS also contains corrections/revisions to the DEIS. The DEIS and FEIS serve as the complete EIS for the proposed project.

The FEIS is organized into the following sections and appendices:

- 1.0 Introduction
- 2.0 Response to Comments
- 3.0 Appendix A: Comments Noted
- 4.0 Appendix B: Figures and Tables
- 5.0 Appendix C: Maps
- 6.0 Appendix D: Crossover Route Information
- 7.0 Appendix E: Agricultural Impact Mitigation Plan (AIMP)
- 8.0 Appendix F: Applicant's Comment Letter
- 9.0 Appendix G: Updated House Count

The Minnesota Public Utilities Commission (Commission) must decide if the EIS has adequately addressed the issues presented in the Scoping Decision Document.

The FEIS is determined 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;

- provides responses to the timely substantive comments received during the DEIS review process; and
- was prepared in compliance with the procedures in Minnesota Rules 7850.1000 to 7850.5600.

The Commission will then make a determination on which route to permit and what conditions to include in the route permit.

1.4 Comment Methodology

A total of 272 written and oral comments were received during the comment period. OES staff considered and responded to all comments to the extent practicable. An identification number (FEIS ID #) was assigned to each commenter, including those who expressed comments orally at the public meetings. Individuals who submitted comments in multiple separate submissions were assigned a separate commenter number for each submission.

Based on the comments received on the DEIS, OES prepared responses and modified text, tables and figures of the DEIS where appropriate. All changes or additions to the DEIS are described further below.

Written Comments

Of the 272 total comments, 165 were written comments. Section 2 of the FEIS provides responses to written comments these written comments. In this section, the written comments have been arranged alphabetically, with the exception of comment letters provided by local, state or federal government personnel. Letters provided by local, state or federal government personnel are grouped together at the end of Section 2.

Each comment letter is provided in Section 2 with the commenter and the FEIS comment ID identified and labeled on each document. Individual issues raised within each comment letter were designated with the FEIS ID number as well as a unique letter from the alphabet. For example, in the first comment letter (FEIS ID#1), individual issues raised in the comment letter are designated as 1a, 1b, 1c, and so on. Labels using this number/letter scheme have been added to the left-hand side of each letter to identify the location in the comment letter of each unique issue for which OES is providing a response.

On the right-hand side of each comment letter, OES has provided a written response corresponding to letter/number codes on the left-hand side of the page. In cases where subsequent comments address the same issue, references are made to an earlier

comment number for the appropriate response. Comment letters with large attachments are referenced as being received and incorporated into the administrative record for this docket, but not included in the Final EIS document in an effort to reduce bulk. Letters that did not provide substantive comments on the completeness, accuracy or adequacy of the DEIS did not receive a response from OES. These letters have been compiled in Appendix A.

Oral Comments

A total of 107 oral comments were submitted during ten public comment meetings held at six different locations along the route over the period November 12, 2009, to November 19, 2009. Section 3 of the FEIS provides responses to oral comments. In this section, responses to oral comments have been grouped according the meeting at which the comment was provided and arranged in the order in which commenters spoke.

The response format for oral comments differs somewhat from the response format for written comments. Similar to the written comments, each oral comment and issue raised in the comment was assigned a unique FEIS ID number. However, the responses are not provided in a “side by side” format for the oral comments. Instead, each response begins with a heading including the commenter’s name, details regarding the meeting at which the comment was provided and FEIS ID number—followed by the response. Complete transcripts for all oral comments have not been included in the FEIS document. Instead, each issue raised within an individual comment has been identified using the number/letter scheme described. Each issue is summarized, or directly quoted and a response has been provided by OES. Complete transcripts of all oral comments provided during the public comment meetings are available at:
<http://energyfacilities.puc.state.mn.us/Docket.html?Id=19860>.

Appendix A: Non-EIS Related Comments

Sixty-two written comment letters did not provide specific, substantive comment on the content of the DEIS. Therefore, although these comments were carefully considered, OES has not provided individual responses for these comment letters. Instead these comment letters have been incorporated into the FEIS as Appendix A. Appendix A provides a list of these comments, identified by FEIS ID number and commenter name and arranged alphabetically with the commenter and the FEIS comment ID identified and labeled on each document.

Appendix B: Tables and Figures

In response to specific comments, OES has prepared new tables and figures for the FEIS, which are provided in Appendix B. In each instance where the OES response to a

comment includes a table or figure, the written response provided by OES in the main body of the FEIS directs the reader to the appropriate table or figure in Appendix B.

Appendix C: FEIS Maps

In certain cases, maps were prepared as part of OES's response to a comment. All maps prepared for the FEIS have been compiled in Appendix C. In each instance where the OES response to a comment includes a map, the written response provided by OES in the main body of the FEIS directs the reader to the appropriate map in Appendix C.

Appendix D: AIMP

Appendix D contains the Agricultural Impact Mitigation Plan (AIMP) prepared jointly by the Minnesota Department of Agriculture and the applicants. This information has been included in the FEIS in response to a specific comment (FEIS ID#267).

Appendix E: Applicant's Comment Letter

The applicants submitted a comment letter (FEIS ID#254) specifically in response to concerns raised by the Minnesota Department of Transportation (MN/DOT). This comment letter provided information relevant to the FEIS, but did not require responses from OES. Therefore, the letter has been included in the FEIS as an appendix, Appendix E.

Appendix F: Revised House Counts

A number of comments were received regarding homes that were potentially missing or mis-aligned when impacts to homes were assessed for the DEIS. As a result, OES again reviewed aerial photographs, maps provided by comments, and other information to confirm these comments. In addition, OES reviewed house counts in portions of Dakota, Scott, Rice and Le Sueur Counties using the counties online interactive GIS mapping websites. A revised summary of house counts is provided in Appendix F. This revised house count is intended to serve as a response to all general comments raised regarding house count and proximity to homes. The revised house count also serves as a supplement to the responses that have been provided in the FEIS for specific comments regarding house count. Appendix F also provides an overview of the house count methodology.

Appendix G: Acronyms

Appendix G contains a list of acronyms used throughout the FEIS.

1.5 Problematic Route Segments

The following is a list of suggested alternative route segments, alternative route alignments, or portions of the applicant's preferred and alternative routes that were found through further analysis in the EIS to have significantly more impacts and obstacles or were far less superior when compared to other similar routes the segment was intended to replace.

For the reasons stated below, OES staff believes the following alternatives should be removed from further consideration for this project:

6P-01, 6P-04, and 6P-05 – HVTLs can conflict with airport navigation systems such as Very High Frequency Omnidirectional Radio Range ("VOR") and Automated Weather Observation Stations ("AWOS). Federal Aviation Administration (FAA) Order 6820.10 "VOR, VOR/DME, and VORTAC Siting Criteria," specifies the distance setback requirements for VOR's from trees, buildings, and metallic structures. These regulations specify that overhead transmission line structures with conductors should be located beyond 1,200 feet of the VOR antenna to avoid communication interference. Additionally, metallic structures are required to subtend vertical angles of 1.2 degrees or less, measured from the ground elevation of the VOR facility. Therefore, according to these FAA guidelines, a VOR air navigational station should not be located within 6,206 feet away from a 130 foot high steel structure in order to avoid potential interference with the operation of the facility. Structures of 175 feet in height should be 8,354 feet away from a VOR.

The location of the Airlake Airport VOR (which is located outside the airport itself) is shown on map in FEIS appendix C, Map (FEIS ID# 262b). As illustrated by this map, route alternative 6P-05 crosses within 50 feet of this VOR. As a result, this alternative is not a viable option. Likewise 6P-04 is just outside the 1,200 foot transmission line setback, making this alternative route an unlikely option also.

Finally, alternative route 6P-01 runs about 4000 feet away from the Airlake Airport VOR, so this route falls within the 6,000-8,000 foot FAA structure setback recommendation. Determining whether there is a transmission line structure option along this route that would be acceptable to the FAA could only be made by filing a notice request from the FAA and /or MN/DOT. The applicants would need to file all necessary notice requirements with FAA and work with both FAA and MN/DOT to ensure compatibility between the transmission lines and air navigation stations and equipment during detailed design should this route be selected in this area.

5P-03 – This alternative route segment would entail running along County Highway 2/Main Street from Jonquil Avenue through the city center of Elko New Market to Interstate 35. There are a combination of variables that make this alternative route

segment far less superior when compared to other similar segments. This route would pass directly through Elko New Market proper, potentially impacting 70 additional residents/businesses than other routes. This area was also determined to be a pinch point or narrow area that if selected would likely displace a number of structures unless undergrounded.

5A-04 – This route was suggested as alternative to the applicants' Alternative route in this area. The route would move the transmission line approximately 3,031 feet from the Sky Harbor Airpark runway. While at these distances and relative elevations, a transmission line could be installed along route alternative 5A-04 by reducing structure height. It should be noted however, that even at these reduced heights the line at this distance from Sky Harbor Airpark may have the potential to create a safety hazard to air navigation. There are other route alternatives in the area that would be far superior to route alternative 5A-04 for these reasons. Another option for this alternative if selected would be to place the line underground in this area.

6P-08 – This route alternative located in the Lake Marion to Hampton segment would not connect to the existing Lake Marion substation and therefore does not meet stated need as described in the Certificate of Need for this project. The Certificate of Need for this project was issued in May 2009 and details regarding the need process can be found at: <http://www.puc.state.mn.us/puc/energyfacilities/certificate-of-need/011260>.

The Preferred Route - A route alignment that would cross the Minnesota River utilizing the existing 169 bridge would not be permissible under MN/DOT standards. A route alignment following State Highway 169 from the State Highway 112 interchange north to the point the alignment would turn east towards County Highway 28 may not be feasible. Existing MN/DOT scenic easements located along both sides of State Highway 169 in this area would likely prohibit MN/DOT from permitting a transmission line right-of-way agreement in this area.