

**STATE OF MINNESOTA
ENVIRONMENTAL QUALITY BOARD**

In the Matter of the Route Permit
Application by Xcel Energy for the Split
Rock to Lakefield Junction 345-kV
High Voltage Transmission Line, the
Nobles County to Chanarambie 115-kV
High Voltage Transmission Line, and
Nobles County Substation in Rock,
Nobles, Jackson, and Murray Counties,
Minnesota

**FINDINGS OF FACT,
CONCLUSIONS, AND ORDER
ISSUING ROUTE PERMIT FOR
CONSTRUCTION OF TWO HIGH
VOLTAGE TRANSMISSION LINES,
ONE SUBSTATION, AND
ASSOCIATED FACILITIES**

MEQB DOCKET NO. 03-73-TR-XCEL

The above-described matter came before the Minnesota Environmental Quality Board (MEQB) at a regular meeting on June 16, 2005, pursuant to an application by Xcel Energy to construct a 345-kV high voltage transmission line, a 115-kV high voltage transmission line and a new substation in southwestern Minnesota..

The project was reviewed under the contested case procedures set forth in Minn. R. 1405.0200-1405.2600. The Administrative Law Judge issued his Report and Recommendation on May 3, 2005. The Findings below are based largely on the Administrative Law Judge findings but include amendments adopted by the EQB in the course of its deliberations on June 16, 2005.

STATEMENT OF ISSUES

1. Which route should be permitted by the MEQB for Xcel Energy to construct a 345 kV high voltage transmission line from the Lakefield Junction Substation west to the Minnesota border that will connect with the Split Rock Substation in South Dakota?
2. Which site should be permitted by the MEQB for Xcel Energy to construct a new Nobles County Substation?
3. Which route should be permitted by the MEQB for Xcel Energy to construct a 115 kV high voltage transmission line from the existing Chanarambie Substation to the new Nobles County Substation?

Based upon all of the proceedings herein, the Minnesota Environmental Quality Board makes the following:

FINDINGS OF FACT

Procedural History and the Parties

4. Xcel Energy is a public utility under the laws of the state of Minnesota. Xcel Energy and its parent public utility holding company, Xcel Energy Inc., are headquartered in Minneapolis, Minnesota. Xcel Energy Inc. has 1.5 million electricity customers in its upper Midwest service territory which includes parts of Minnesota, Wisconsin, Michigan, North Dakota and South Dakota.

5. On March 11, 2003, the Minnesota Public Utilities Commission (Commission) granted certificates of need to Xcel Energy to construct four new high voltage transmission lines (HVTLs) in Southwestern Minnesota, primarily to move 825 megawatts of wind generation from the Buffalo Ridge area. A new 345 kV line from the Lakefield Junction Substation in Jackson County, Minnesota to the Split Rock Substation in Minnehaha County in South Dakota and a new 115 kV line from the Chanarambie Substation to a new Nobles County Substation were two of the four lines the Commission approved.

6. On March 25, 2004, in anticipation of Xcel Energy's application for a route permit for the new 115 kV and 345 kV lines, the MEQB Chair authorized the MEQB Staff to form a MEQB Citizen Advisory Task Force and sought members in accordance with Minn. Stat. § 116C.59.¹

7. On April 30, 2004, Xcel Energy filed an application with the MEQB for a route permit (Application).² In the Application, Xcel Energy requested authorization to construct the following facilities (collectively, the Project):

A. A 345 kV HVTL, approximately 86-miles long, running east from the Split Rock Substation to the Lakefield Junction Substation.³ The cost of the new 345 kV line ranges from \$50,643,815 to \$58,549,163 depending on the location of the new Nobles County Substation and the route selected.⁴

B. A 115 kV HVTL, approximately 40-miles long, connecting a new substation near Reading, Minnesota in Nobles County (Nobles County Substation) with the existing Chanarambie Substation in Murray County.⁵ The

¹ Exhibit 1.

² Exhibit 3.

³ Exhibit 3, p. 1.

⁴ Exhibit 53, attached Exhibit PR-1.

⁵ Exhibit 3, p. 1.

cost of the new 115 kV line ranges from \$13,417,520 to \$15,695,480 depending on the routes and substation site selected.⁶

C. A new Nobles County Substation which will, in part, interconnect the two transmission lines. The cost for the new Nobles County Substation is estimated at \$18 million.⁷

D. Modifications to the Lakefield Junction Substation, owned by Alliant Energy, will include equipment changes and additions, including three 161 kV circuit breakers to accommodate the new 345 kV line. No expansion of the substation's footprint will be required.⁸ Costs are estimated at \$1,260,000.⁹

E. Modifications to the Chanarambie Substation, including adding a 115 kV line connection and a new breaker. No expansion of the substation's footprint will be required.¹⁰ Costs for these modifications are estimated to be \$750,000.¹¹

8. On May 12, 2004, the MEQB accepted Xcel Energy's Application and began the review process.¹²

9. On May 11, 2004, Xcel Energy mailed notice of the filing of the Application and in an announcement of open house/scoping meetings to be held by the MEQB Staff to those persons on the MEQB General Contact List, local officials and property owners along its proposed route. Such notice satisfies the requirements of Minn. Stat. § 116C.57, subd. 2b, and Minn. R. 4400.1350, subp.2.¹³

10. Between May 17 and May 20, 2004, notice of the filing of the Application and open house/scoping meetings to be held by MEQB Staff was published in the

⁶ Exhibit 53, attached Exhibit PR-1.

⁷ Exhibit 3, p. 17.

⁸ Exhibit 3, p. 41.

⁹ Exhibit 3, p. 17. Xcel Energy will also make modifications to the Split Rock Substation, including upgrading the existing 345 kV, 4-position ring-bus configuration into a 5-position ring to provide a line termination for the new 345 kV transmission line, and installing a line-termination dead end, one new breaker, and associated switches and line relaying. The substation work will require a one-acre expansion of the existing substation area. The cost is estimated at \$2,500,000. Xcel Energy is seeking approval for these improvements from South Dakota authorities. Exhibit 3, p. 40-41.

¹⁰ Exhibit 3, p. 42.

¹¹ Exhibit 3, p. 17.

¹² Exhibit 4.

¹³ Exhibits 6 & 7.

Jackson County Pilot, the Rock County Star Herald, the Worthington Daily Globe, the Murray County Wheel-Herald, the Pipestone County Star and the Brandon Valley Challenger.¹⁴

11. On May 24, 2004, notice of the Application and open house/scoping meetings was published in the MEQB Monitor, vol. 28, no. 11.¹⁵

12. MEQB Staff conducted open house/scoping meetings between June 1 and June 10 at Lakefield, Wilmont, Chandler and Luverne. In addition, during July, the staff also held three meetings with the Citizens Advisory Task Force in Reading, MN.¹⁶

13. On September 24, 2004, the MEQB Chair issued the environmental impact statement (EIS) scoping decision.¹⁷

14. In October 2004, the EQB staff mailed Notice of EIS Scoping Decision, along with a tentative schedule, maps and aerial photos to a Landowners List, Line Segments List, New Route Affected Persons List, Power Plant Siting, Interested Parties List and the Project List.¹⁸

15. On October 14, 2004, notice of routes selected for further consideration in EIS Scoping Decisions was provided to residents and landowners near potential Xcel Energy transmission line routes.¹⁹

16. On November 2, 2004, additional notice was provided to landowners who would be near the additional routes selected for further consideration in the EIS scoping process.²⁰

17. In January 2005, notice of public hearings and the Draft Environmental Impact Statement (DEIS) availability was provided to those on the “government

¹⁴ Exhibits 8 – 13.

¹⁵ Exhibit 14.

¹⁶ Exhibit 51.

¹⁷ Exhibit 51

¹⁸ Exhibit 28.

¹⁹ Exhibit 29.

²⁰ Exhibit 30.

contacts” service list.²¹ This same notice was also sent to the persons listed in footnote 21.²²

18. Also in January 2005, notice of the DEIS availability and pre-hearing DEIS information meeting were served on the MEQB’s service list used for mailing.²³

19. On January 20, 2005, notice of the public hearings and DEIS availability was published in the Pipestone County Star, the Rock County Star Herald, and the Jackson County Pilot.²⁴

20. On January 24, 2005, notice of public hearings and DEIS availability was published in the Murray County Wheel-Herald and on January 18, 2005 notice was published in the Worthington Daily Globe.²⁵

21. In January, 2005, the EQB sent copies of the Notice of Public Hearings and EIS Availability to the Landowners List, Line Segments Lists and New Route Affected Persons List. This mailing also included the Notice of Draft EIS Availability and Pre-hearing Draft EIS Information Meetings.²⁶

22. On February 10, 2005, the Rural Minnesota Energy Board and Community Wind South filed Petitions to Intervene.

23. On February 14, 2005, Xcel Energy submitted the prefiled testimony of Pamela J. Rasmussen, Team Lead, Siting and Permitting, Xcel Energy Services Inc.; Grant D. Stevenson, Transmission Project Manager, Xcel Energy Services Inc.; and Walter T. Grivna, P.E., Manager Transmission Reliability Assessment – Minnesota, Xcel Energy Services Inc. These were filed with the Administrative Law Judge, the MEQB, and seven public libraries or city halls in the affected area.

24. On February 18, 2005, Xcel Energy notified the ALJ that it had no objection to the intervention petitions filed by the Rural Minnesota Energy Board and Community Wind South.

25. On February 23, 2005, the ALJ issued two orders granting the Petitions to Intervene filed by the Rural Minnesota Energy Board and Community Wind South.

²¹ Exhibit 34. This list included local town and city clerks, county officials and the southwest RDC.

²² Exhibit 36.

²³ Exhibit 35. This service list included MEQB Technical Representatives and Board Members, the Xcel/Split Rock Interested Parties list and the Interested Parties Power Plant Siting List.

²⁴ Exhibits 38, 39 & 40. See also Exhibit 41.

²⁵ Exhibit 42 & 43.

²⁶ Exhibit 37.

26. Prior to the hearings that began March 1, 2005, the ALJ received written comments from the following: the Minnesota Department of Natural Resources; Ray Brake; Elmer Brake; Horace Thompson; Teresa and William Korth; Randy Groves (Murray County engineer); William J. Head, P.E., Chief Operating Officer, MAPPCOR, Contractor to the Midwest Reliability Organization; Michael Steckelberg, Project Engineer, Great River Energy (GRE); and Doug Collins, Director – System Planning, Interstate Power and Light Co., an Alliant Energy Company. The EQB staff also filed letters which it had received from the Eric Post family, Dwaine Rossow, Post Swine Farms, Inc., and the Fuerstenberg family.

26.1. The ALJ conducted public hearings at 2 p.m. and 7 p.m. on the following dates at the identified locations: Tuesday, March 1, 2005, at the Lakefield Senior Center; Wednesday, March 2, 2005, at the Wilmont Community Center; Thursday, March 3, 2005, at the Luverne Rock County Library; and Friday, March 4, 2005, at the Chandler City Center. Each hearing session continued until all persons desiring to speak had done so.

27. On March 1, 2005, the first day of the hearing, Public Intervenors Network (PIN), represented by Carol Overland, Attorney at Law, 402 Washington St. So., Northfield, MN 55057, filed a Petition to Intervene. Copies of the petition were handed out to the parties that day, then emailed to all parties on March 2, 2005.

28. On March 2, 2005, Xcel Energy filed an Objection to the Petition by handing the objection to the ALJ and Board Staff and emailing it to PIN. Later on March 2, PIN filed a Reply to the Objection.

29. On the morning of March 3, 2005, the ALJ emailed to PIN and all parties an advance notice of his ruling that the Petition to Intervene would be denied and indicated that a formal order would be prepared at a later time.

30. On March 17, 2005, the ALJ issued an “Order Denying Intervention”. The ALJ determined that the Petition to Intervene was untimely and did not meet the standards set forth in Minn. R. 1405.0900, subp. 1. The ALJ did allow PIN’s attorney to participate in the hearing by offering testimony orally and in writing, and asking questions of the witnesses, as provided in Minn. R. 1405.0800.

31. In accordance with Minn. R. 1405.2000, the three Xcel Energy witnesses who submitted prefiled testimony (Rasmussen, Stevenson and Grivna) were available for questioning by interested persons at each hearing session.

32. At the hearings, the following persons made comments on the record:

A. In Lakefield: Dave Cranston; Donald Habicht, General Manager, Worthington Municipal Utilities; Brian Zavesky, senior transmission engineer, Missouri; River Energy Services (MRES), John Nauerth; Ms. Overland; Jennifer Moore, attorney with Interstate Power and Light Company; Milton Fricke; Mr. Head; Mr. Steckelberg; Eric Post; Bob Pauling; Mary Jane Pauling; Merlin

Tordsen; Duane Rosso; Lisa Rogers; Tom Voehl; Lori Henning; and Luke Henning.

B. In Wilmont: Jim Joens, Jr.; Robert and Teresa Fuerstenberg; Jeanne VanBalen; Tim Henning; Bill Madison; Tim Henning; Harold Rutgers; Mr. Steckelberg; Clyde Smith; David Benson; Tom Soderholm; Bob Kirchner; and Paul Schotte.

C. In Luverne: Steven Schnieder, Nobles County Public Works Director; Lloyd DeBoer; Ron Fick; Jim Willers; Lowell Binford; Mr. Steckelberg; Ms. Overland; David Steinhoff; Pat Baustian; Gene DeBeer; and Larry VonHoltum.

D. In Chandler: Marlin Bootsma; Grant Post; Brenda Heard; Richard Amendt; Bill Einck; Gary Carlson; Marlin Boostra; Steve Gleis; Jim Kluis; John Schladweiler; Randy Groves; Gordon Groen; Michael Groen; Glenn Tulsma; and Todd Platt. Questions were also asked on behalf of Vernon Strampe. Additionally, comments were provided by Mr. Johnson of the MEQB Staff on behalf of William Korth.

33. The record remained open for three weeks after the hearings, until March 25, 2005, for written comments. During that comment period, the ALJ received written comments from the following: Xcel Energy; Ronald Fick; Ron Fuerstenberg; Gordon L. Groen; Jeanne Van Balen; Mary J. Pauling; George R. Bodley, executor of the Helen White Trust; Bernice Pauling; Alvin Pauling; Robert Pauling; Michael Groen; David H. Post; Ms. Overland; Dean Darling; Harold and Barbara Springman; Geraldine Albers; Janet McCloud; Beth Soholt, director, Wind on the Wires; and Todd and Margot Lorsung. The record closed on April 5, 2005, upon Xcel Energy's filing of Proposed Findings.

34. On March 25, 2005, the MEQB completed the final EIS and posted it on its website -- www.eqb.state.mn.us.

Description of the Project, Proposed HVTL Routes and Substation Sites

345 kV Transmission Line

35. In its Application, Xcel Energy described its then-preferred route, the Interstate Route. The Interstate Route is 88 miles long and generally follows Interstate 90 (I-90) from the Lakefield Junction Substation in Jackson County, Minnesota to the Split Rock Substation in Minnehaha County, South Dakota. Approximately 9.7 miles of the route is in South Dakota. The one significant deviation from I-90 is around the City of Worthington where the route jogs north and follows an existing Alliant Energy 161 kV transmission line for approximately 12 miles and then heads south back to I-90 to avoid interfering with the Worthington Municipal Airport. Maps showing the Interstate Route are included in Appendix B of the Application. Several of the identifiers for the route segments identified in the Application were modified in the DEIS due to the creation of

additional route segments. Using the route segments identifiers from Figures A1, A2 and A3 in the DEIS, the route segments comprising the Interstate Route are I15, T15, T14, C7, I9, I8, C5, T10, T9, I6 I5, I4, I3, I2 and I1. In the Application, Xcel Energy stated it preferred the Interstate Route due to its lower cost, faster construction time and lower new right-of-way requirements.²⁷

36. In the Application, Xcel Energy also described an alternative route, the “Alliant Route”. The Alliant Route is 85.7 miles long. Approximately 10.1 miles of the Alliant Route is in South Dakota. For the majority of the route, the line generally follows existing transmission line rights-of-way that are located between two and five miles north of I-90. Maps showing the Alliant Route are contained in Appendix B of the Application. The route segments for the Alliant Route are MR1, T14, T13, T12, T11, T10, T9, T8, T7, T6, T5, T4, T3, T2, and T1.²⁸

36.1 The draft and final EIS address the issues and alternative routes raised in scoping. The final EIS includes responses to comments received during the comment period on the draft EIS. The MEQB published notice of the availability of the final EIS in the EQB Monitor on April 11, 2005, and issued a press release announcing the availability of the final EIS to newspapers of general circulation in the project area.

37. In prefiled testimony and at hearing, Xcel Energy stated its preference for a route described in the DEIS as the “Jackson County I-90 Option A”.²⁹ During the hearings, this route was referred to as the “Modified Interstate Route.” The Modified Interstate Route is comprised of the following route segments: I15, T15, T14, T13, J1, I8, C5, T10, T9, I6 I5, I4, I3, I2 and I1. (See Figures A1, A2 and A4 in the DEIS). The Modified Interstate Route differs from the Interstate Route in that Segments C7 and I9 are replaced with Segments T13 and J1. The Company made this change after evaluating comments received about the impacts of Segment I9 on nearby homes along both sides of I-90 in this section and along the tributary to the Little Sioux River. If Segment I9 were used, the line would be placed on the north side of I-90 along Segment I9 to avoid homes close to I-90 on the south side. However, given the proximity of the Little Sioux River tributary and associated wetlands, it would be difficult to minimize impacts in this area. By using Segments T13 and J1, which have costs comparable to Segments C7 and I9, the number of homes within 1000 feet is reduced by one, and the number of public waters crossed declines from 28 to 24. The cost of the Modified Interstate Route is estimated to be \$51,024,950.³⁰

²⁷ Exhibit 3, p. 104-105.

²⁸ Exhibit 53, pp. 4-5.

²⁹ Exhibit 53.

³⁰ Exhibit 53, pp. 5-6, attached Exhibit PR-1.

38. Xcel Energy proposes using steel single pole structures wherever feasible to minimize farming conflicts. For the 345 kV line, the proposed structures would be about 120 to 140 feet tall, with average spans of about 950 feet.³¹

39. Xcel Energy requested a corridor width of 660 feet from the centerline of the designated route to allow for reasonable flexibility in locating the transmission line and minimizing impacts to landowners. This flexibility is important to allow landowner-specific location concerns to be addressed as final design is completed. Special structure types, including H-frames may be necessary near waterfowl areas or interstate crossings.³²

40. Xcel Energy prefers the Modified Interstate Route because it takes 13 months less time to build than the Alliant Route, costs approximately \$7,000,000 less than the Alliant Route and poses a lower electric reliability risk to the surrounding communities during the construction period.³³

Substation Sites

41. Xcel Energy identified three general areas for locating the new Nobles County Substation. These were referred to as Site A, Site B and Site C. The Company would like to be able to acquire at least 40 acres to build the substation and allow for future expansion as well as a buffer to nearby homes. The Company prefers Substation Site A because there is sufficient land available for these purposes, because it is located near a major thoroughfare, T.H. 266, which affords good access for trucks and heavy equipment, and because it is near the town of Reading, where future development may occur. It would also create a shorter route for this 115 kV line than Substation Site B or C.³⁴

42. Substation Site B would require additional road upgrading and a slightly longer transmission line, but would be acceptable to the Company. The Company recommended that Site C be dropped from consideration because a home is planned to be built on the main site being considered in Section 32, Summit Lake Township.³⁵

43. Xcel Energy requested flexibility for the site of the 115 kV and 345-kV/161 kV line around the Nobles County Substation. Once a final substation site is selected, the Company will be able to determine how the lines will enter the substation. The Company requested the flexibility to consider locating and designing any of the lines within a mile of the substation to accommodate additional transmission lines. Xcel

³¹ Exhibit 44, p. 3.

³² Exhibit 53, p. 8.

³³ Stevenson, Tr. 45.

³⁴ Exhibit 53, p. 12.

³⁵ Exhibit 53, pp. 12-13.

Energy stated it would provide the preliminary layout to MEQB for review before finalizing the structures. This way the Company can work to minimize the number of structures around the Nobles County Substation.³⁶

44. Xcel Energy also requested flexibility to design the 115 kV line as a double circuit line around the Chanarambie substation. If wind energy continues to develop in the area as expected, it is likely that other transmission lines will connect at the Chanarambie and Nobles County Substations. Building the first mile of the 115 kV transmission line from the Nobles County substation as double circuit will enable a future line to be consolidated on the same structures.³⁷

45. The Company further requested reasonable flexibility to work with the City of Luverne landowners, the Minnesota Department of Transportation and the City of Luverne to determine the best location for the 345 kV line in this area. Xcel Energy specifically requested that the MEQB issue a permit with a mile-wide corridor — beginning at the center of I-90 and heading south — for the portion of the route beginning two miles east of Highway 75 and ending two miles west of Highway 75. Xcel Energy committed to provide the final alignment for staff review.³⁸

115 kV Transmission Line

46. In its Application, Xcel Energy proposed two routes for the 115 kV transmission line. The West Route is comprised of Segments W3, W4a, W4b, W4c, W4d, W5, W6, and either W2 and EW1, or AW1. Segments EW1 and W2 would be utilized for Substation A or Substation B. Segment AW1 would be utilized if Site C were selected. The East Route is comprised of Segments EW1, E2, E3a, E3B, E3c, E3d, E4, and E5 to connect with Sites A or B. Site C is not an option for the East Route.³⁹

47. In prefiled testimony and at hearing, Xcel Energy stated its preference for a route that combines portions of the East Route and the West Route, referred to as the Modified East Route. This route includes Segments W6, C2, E4, E3d, E3c, E3b, E3a, W3, W2, EW1 and Segment N5 if Site B is chosen. Xcel prefers the Modified East Route to the original East Route because the Modified Route impacts fewer homes, affects fewer wildlife management areas, increases the Company's ability to corridor share because the line follows parts of an existing 69 kV along Segment W6 and reduces the amount of new right of way needed because the new line would follow an existing transmission line.⁴⁰

³⁶ Exhibit 53, p. 13.

³⁷ Exhibit 53, p. 13.

³⁸ Exhibit 53, p. 8.

³⁹ Exhibit 53, pp. 8-9.

⁴⁰ Rasmussen, Tr. 31-32; Exhibit 53, p. 10.

48. Xcel Energy proposes to use steel single pole structures for the 115 kV line. The poles would be about 70 to 80 feet tall with average spans of about 400 feet. Other structure types including H-frames may be necessary near waterfowl areas or interstate crossings.⁴¹

Discussion of Public Comments

General Comments

49. At hearing and in written comments, a number of individuals discussed issues of landowner compensation for transmission line easements, expressed concerns about the effect of EMF on human health⁴² inquired about landowner liability for poles placed on their property, and asked about the location of poles in relation to property boundary lines and potential damage to drain tile systems. Others inquired about the impact of the transmission line on GPS, cell phone and digital TV, and farm equipment computers.

50. In response to these comments, Xcel Energy stated that poles would be placed on section lines where appropriate or about five feet from the edge of road right-of-way if the route follows a transportation corridor. Xcel Energy also noted that, in general, it is liable for damages arising from the construction, operation and maintenance of its poles within the easement area.⁴²

51. Regarding tile systems, Xcel Energy committed to contact the counties and obtain whatever maps are available regarding existing tile systems and also to contact landowners to collect drain tile information to incorporate into the transmission line survey and design.⁴³ Xcel committed to repair any tile lines which it damaged.⁴⁴

52. On the issue of compensation, Xcel Energy described its easement acquisition process, its legal obligation to provide “just compensation” for the land rights it acquires, and the procedure under Minnesota Statutes Chapter 117 for acquiring property by eminent domain. During the compensation discussions, the ALJ informed those present at the hearings that the amount and method of compensation for land taken for utility use is a policy issue outside the scope of the proceeding but that the Minnesota State Legislature was considering amending the law to change the way landowners are compensated when land is needed for new transmission facilities.⁴⁵

⁴¹ Exhibit 44, p. 3.

⁴² See, generally, hearing transcript.

⁴³ Rasmussen, Tr. 499.

⁴⁴ Rasmussen, Tr. 307.

⁴⁵ See, e.g. Klein, Tr. 310-311.

53. After the hearing, Xcel Energy submitted written comments on the issue of interference with communications devices. Xcel Energy wrote:

The utilities Xcel Energy contacted did not report any significant experiences or identify any written industry sources relating to interference between high voltage transmission lines and GPS units, satellite communication devices or cellular phones. Similarly, Company engineers could not identify any circumstances where persons living or working near a high voltage transmission line reported such interference with these communication devices. Rather, the Company's engineers noted that Company survey crews use GPS units. The crews routinely work along and under high voltage transmission lines, including 345 kV lines, and have not encountered interference.

The Company does not anticipate that the new transmission lines will adversely affect GPS, satellite or cellular communications devices. In the unlikely event that these devices are impacted, Xcel Energy will work with the affected persons to resolve the problem and implement appropriate mitigative measures, including relocating satellite antennas. Additionally, prior to construction of the line, the Company will consult with Beaver Creek officials regarding its satellite systems to ensure minimal risk of potential interference.

54. Jim Joens, Jr., Wilmont, Minnesota, expressed concerns about liability for poles and landowner compensation. He also asked about who would maintain the abandoned roads that would provide access to the power lines.⁴⁶ Ms. Rasmussen noted that the Company would pay for any improvements necessary to the minimal maintenance roads for operation and maintenance of the transmission lines. She also noted that it is also unlikely at this time that any new roads would be required to build the transmission line along section lines.⁴⁷

55. Tim Henning, is a livestock and grain farmer near Lismore and president of the Nobles County Farmers Union. He testified that the Minnesota Farmers Union believes that the construction of any power lines through the middle of fields is unacceptable but that keeping power lines away from homes and farmyards must be the top priority. The union is also concerned about the capacity of the 115 kV line, fearing

⁴⁶ Joens, Tr. 211-212.

⁴⁷ Rasmussen, Tr. 215-217.

that it will be at capacity by the time it gets built. Mr. Henning stated: "The development of renewable energy is of vital importance to our nation's long-term interest."⁴⁸

56. Mr. Benson offered testimony as a Nobles County Commissioner and as a member of the Interim Board of Governors of a community wind project called Community Wind South. The Community Wind South board prefers substation Site B in Section 35 of Summit Lake Township. Mr. Benson testified that Site B is preferred "because of the broad community ownership of Community Wind South that we anticipate, this location would be less costly for this community ownership project. It would be of significant benefit to us if that location were chosen." Mr. Benson did not provide further detail of cost savings attributed to Site B.⁴⁹

57. Mr. Schnieder, Nobles County Public Works Director, testified about the potential impacts of the new transmission lines on roads in the county. He requested that Xcel Energy construct the poles such that if, in the future, regrading of the road were required, the dirt around the poles could be removed without affecting the integrity of the poles or requiring relocation. He explained that when roads are regraded, the roadway is sloped back and dirt is taken down to create a more gentle slope, which allows the wind to sweep and blow the snow up over the top without creating snow drifts. Mr. Schnieder also stated that once Xcel Energy posted locations for the poles, local authorities could review and identify areas of concern. Mr. Schneider said that he wanted to make sure there was something in the MEQB permit that said that Xcel Energy would work with the townships and counties to accommodate their concerns.⁵⁰ Ms. Rasmussen stated that Xcel Energy would accept such a permit condition.⁵¹

58. Ms. Overland submitted written comments on behalf of herself individually. In those comments, Ms. Overland objected to the ALJ's denial of PIN's Motion to Intervene. She also stated that two powerflow diagrams entered into the record show that a delay in construction will not delay Buffalo Ridge wind outlet, essentially because the new 345 kV line is not needed for the outlet capability. Ms. Overland stated that she has no position on which route is selected for the 345 kV line but that Xcel's expressed concerns over costs and reliability did not support the Modified Interstate Route. Ms. Overland also noted that Xcel Energy has used leases for transmission infrastructure and that Xcel Energy did not notify persons affected by the 345 kV line of the option afforded by Minnesota Statutes 116C.63, Subd. 4 (sometimes referred to as "Buy the Farm"). This statute allows the property owner the option of requiring Xcel Energy to buy property crossed by a transmission line of 200 kV or greater.⁵²

⁴⁸ Henning, Tr. 239-240

⁴⁹ Benson, Tr. 293-298.

⁵⁰ Schneider, Tr. 353-367.

⁵¹ Rasmussen, Tr. 367.

⁵² Overland February 8, 2002 (sic) Letter. This letter was emailed to the Administrative Law Judge and the parties on March 25, 2005.

Reliability Concerns for 345 kV Line

59. Donald Habicht, General Manager testified on behalf of Worthington Public Utilities. Worthington Public Utilities is a member of the MRES, and works closely with its transmission planners to obtain adequate and reliable transmission service. Mr. Habicht stated the company's preference for the route of the 345 kV line. He said Worthington Public Utilities "urged the Minnesota Environmental Quality Board to select the I-90 Modified Interstate Route to minimize the adverse impacts on the service to 11,300 citizens in Worthington." He explained that the Elk Substation is the substation that primarily serves the City of Worthington. When the Elk Substation is on a radial (single) source feed, the City of Worthington is at risk for transmission-related outages if that feed went down. He also stated that the local 69 kV system has inadequate voltage support without a tie to the Elk Substation. Mr. Habicht also noted that when unplanned transmission outages occur, the City of Worthington and its customers are exposed to significant financial cost. Mr. Habicht described the transmission related power outage caused by the failure of the Alliant Energy 161 kV transmission system that occurred on January 21, 2005. The outage lasted approximately 1½ hours for Worthington's No. 1 substation and 3 hours for the No. 2 substation, both of which are normally served by the Elk Substation. Partial service was restored to the customer load from a 14-megawatt diesel generation plant. One of the businesses affected was a large pork processing plant that employs 850 production workers. During the outage the plant had only emergency lighting and there was \$35,000 in lost labor costs, two hours of downtime to restore boiler temperature, product loss of hogs that could not be processed and a lost gross margin on 2,000 hogs. A 15-minute outage on August 3, 2004 caused similar impacts to the pork processing plant and other Worthington businesses.⁵³

60. Brian Zavesky, Senior Transmission Engineer, MRES, provided testimony on behalf of MRES' utility member loads whose reliability would be affected by the route selection for the 345 kV line: Adrian Public Utilities, Jackson Municipal Utilities, Lakefield Public Utilities, Westbrook Public Utilities and Worthington Public Utilities, which combined serve 16,400 Minnesotans. This load is fed by the 69 kV system which is in turn supported by the Elk, Magnolia, and Heron substations. He testified that currently the system is looped, which allows the unplanned outage of one path to be replaced by another path without interruption. But when service is not looped, *i.e.* radial, an unplanned outage can cause load service to be interrupted or "go black." He said: "The extent of this threat to reliability can be significantly affected by the choice of proposed routes." If the Alliant Route is selected, the loads would be served from a single transmission source for approximately 80 weeks, compared to 18 weeks if the Modified Interstate Route were selected. In addition to outage risks, the ability of MRES to utilize its resources to serve its load would be impaired during construction, which would require MRES to rely on generation supplied by the market at a rate approximately 5 percent higher than its own generation sources. Additionally, the generation that could

⁵³ Habicht, Tr. 54-59.

not reach load also might not be able to reach the Midwest Independent System Operation (MISO) Day-2 market.⁵⁴

61. Jennifer Moore, Attorney with Interstate Power and Light Company, a subsidiary of Alliant Energy (Alliant Energy), and Ken Leier, a transmission planning engineer for Alliant also testified in favor of the Modified Interstate Route for the 345 kV line, based on concerns about reliability during construction. Ms. Moore noted the additional concern that if the Lakefield 161 kV line to the Triboji Substation⁵⁵ loses power, the outage would affect load, not only in Southern Minnesota, but also in Northwestern Iowa. That line also serves Mid-American Corn Belt Power and AMRON. "[S]ome of those reliability concerns are heavy on our mind," she said. "[T]o mitigate some of those concerns, the modified route would be the way we'd prefer to go in this case." In addition, Mr. Leier stated that Alliant Energy had reliability concerns post-construction because when two circuits are on a single tower, as would be the case if Xcel double circuited with the Alliant Route, a loss of a single tower takes both lines out of service.⁵⁶ However, that is always the case with double circuiting. The critical issue is whether the loss of both circuits creates an unacceptable situation, which is a case-by-case analysis.

62. William Head testified on behalf of the MRO, a not-for-profit organization dedicated to ensuring the reliability of the bulk power system in the Upper Midwest part of North America. Mr. Head's testimony related to the 115 kV line, specifically, whether it would be appropriate for the MEQB to order double circuit structures so that some future line could be put on the same poles as Xcel's 115 kV line. Mr. Head offered no opinion regarding Xcel Energy's engineering analysis regarding outlet capability on the Buffalo Ridge, but discussed the planning standards that Xcel Energy must adhere to when making system improvements. He testified that as a member of the MRO, one of ten regional reliability councils of the North American Electric Reliability Council (NERC), Xcel Energy must follow NERC reliability standards and any additional regional standards set by the MRO. The Federal Energy Regulatory Commission (FERC) considers compliance with NERC standards to be good utility practice and the MRO assesses its members for compliance with reliability standards and reports violations to their companies, state regulators and FERC. Mr. Head explained that the standard relating to the double circuit structures is NERC Version 0 Standard TPL-003-0, System Performance Following Loss of Two or More Bulk Electric System Elements. The standard requires transmission planners to perform periodic assessments that demonstrate that its portion of the interconnected transmission system is planned such that the network can be operated reliably under specified contingency conditions. One such contingency is an event resulting in the loss of any two circuits of a multiple circuit towerline. If outlet capacity is not increased off the Buffalo Ridge because the loss of

⁵⁴ Zavesky, Tr. 61-72.

⁵⁵ The Triboji substation is located in northern Iowa, south of the Lakefield substation. It receives power through the Lakefield substation. Leier, Tr. 82-83.

⁵⁶ Moore, Tr. 78-81.

both circuits of a multiple tower line are treated as a single contingency, he said, it could cause requests for transmission service reservations to be denied or conditioned. This, in turn, could lead to the need to construct another line on separate right of way to increase capability.⁵⁷ This point was repeated in the testimony of Mr. Grivna, who used it to argue that it would be a waste if the EQB required Xcel to build double-circuit structures for a portion of the 115 kV line because Xcel would likely not get “credit” for two lines on the same structure.⁵⁸

63. Michael Steckelberg testified on behalf of GRE Systems Operations and GRE members whose service reliability may be affected by the route selection for the new 345 kV line. Mr. Steckelberg testified that this area is “one of the more critical areas in terms of reliability, and it is primarily due to weather.” Even in the absence of construction, there are approximately five outages per year on average at the substations, some related to the 69 kV system, some to the 161 kV system.⁵⁹ Mr. Steckelberg spoke during each of the hearings on March 1, 2 and 3 and expressed concerns regarding reliability during construction and stated that weather conditions in Southwestern Minnesota, including icing, blizzards, and high wind, can have “catastrophic effect on the electrical transmission since the damage to the transmission can be quite extensive, for example, miles of transmission on the ground. This type of delay can take days, weeks or months to repair.” He also noted that the Brewster Substation is the direct connection for the Minnesota Soybean Processors from the existing Alliant Energy-owned 161 kV line. Costs associated with outages are difficult to quantify, but the Minnesota Soybean Processing Plant incurs costs between \$3,000 and \$3,500 per hour of outage.⁶⁰ He summarized his testimony as follows: “I recommend on behalf of GRE and its members that the EQB approve the Interstate Route, the I-90 route, for the following reasons: the amount of time that load is at risk is significantly less, 18 weeks versus 80 weeks; less total cost of construction, saving [seven] million dollars; [and] faster construction, it’s in service 1 year earlier.”⁶¹

64. Beth Soholt, of Wind on the Wires, stated support for the Modified Interstate Route because of the detrimental impact of the Alliant Route on wind generators and consumers. Ms. Soholt wrote: “Adding 13 months to the construction schedule is unacceptable to wind developers who are counting on an in-service date of Fall 2007 at the latest. A 13-month delay would potentially have large financial impacts

⁵⁷ Head, Tr. 95-98.

⁵⁸ Grivna, Tr. 47-51.

⁵⁹ Steckelberg, Tr. 517. In support of this statement, Mr. Steckelberg offered Exhibit 69 “Systems Operations Outage Tracking from GRE” which shows outages and the causes in Nobles County for the years 2000 to 2005. (Tr. 548-549).

⁶⁰ Steckelberg, Tr. 103-109.

⁶¹ Steckelberg, Tr. 103-109. Mr. Steckelberg relied on the data, analysis and conclusions of Xcel’s Grant Stevenson concerning construction time and costs for the two routes. Mr. Steckelberg reviewed them, and found them to be “reasonably accurate.” Steckelberg, Tr. 386.

to wind developers, utilities purchasing the wind energy, and to consumers who ultimately pay for the wind power.”⁶²

65. Janet McCloud owns property in Section 13 of Olney Township. She argues that Alliant Energy and Xcel should be forced to “sit down at the table and work out a proposal” that would allow for double circuiting the two lines and avoid creating a second corridor.⁶³

66. In addition to the general comments listed above, several speakers identified property-specific concerns.

345 kV Transmission Line – Property-Specific Concerns

67. Laurie Henning, of Section 8 Rost Township, has a home located along Segment T13, right under the number “T13” on the map.⁶⁴ The house is a little bit more than a thousand feet away from the proposed route. She testified about how her oldest daughter was diagnosed with a benign brain tumor in May of 2003 and how a number of her neighbors had tumors. She stated her concerns about exposing persons with pre-existing conditions to EMF.⁶⁵

68. Bob Pauling, of Section 11 of Rost Township, said he had concerns about health issues and sought clarification about where the route would go past his home. Ms. Rasmussen advised that it would be approximately 300 feet away.⁶⁶ His wife, Mary Jane Pauling, testified that she was diagnosed with a brain tumor in April and that she believes “there are too many health issues along this line and this route.”⁶⁷ After the hearing, Mr. Pauling wrote a letter favoring the Nauerth proposal, which is discussed below.

69. Merlin Tordsen, Section 10, Rost Township, lives between the Hennings and the Paulings. His house would be within 115 feet of the 345 kV transmission line if Segment T13 were selected. He expressed frustration that the line could not be placed further away from his home.⁶⁸

⁶² Soholt March 25, 2005 Letter.

⁶³ Janet G. McCloud March 21, 2005 letter.

⁶⁴ This, and other references to “the map,” refer to Figures A1 – A6 from the Draft EIS, Exhibit 44. These figures were enlarged, pasted to display boards, and used during the hearings. In the case of Ms. Henning, the reference is to Figure A3.

⁶⁵ Laurie Henning, Tr. 147-149.

⁶⁶ Bob Pauling Tr., 152-154.

⁶⁷ Mary Jane Pauling, Tr. 155.

⁶⁸ Tordsen, Tr. 156. Mr. Tordsen has lived there for 50 years, but he has sold most of his acreage, retaining only 15 acres roughly in the middle of the section. The southern border of his property is the half-section line that Xcel has selected as part of its modified interstate route, its preferred route. There is no existing road on that half-section line.

70. Dwaine Rossow, of Section 12, Rost Township, lives along Segment T14, which is also the route of the existing 161 kV Alliant line (just right of the T14 designation on the route map). He testified that he used to have a dairy operation but closed it down due to infection.⁶⁹ He indicated that he wanted to build a large hog facility to replace the dairy, but that there were zoning rules that limited where he could place the hog operation. He feared that the combination of those zoning rules and Xcel's required setbacks and height restrictions might effectively prohibit him from pursuing the hog operation.

71. Lisa Rogers, expressed concerns about the location of the 345 kV line by Section 18 of Ewington Township, property that has been in her mother's family (Guenther family) for four generations. Ms. Rasmussen clarified that the Modified Interstate Route would place the line on the north side of the Interstate in front of the property. Ms. Rogers had no objection to the line being placed on the north side of I-90.⁷⁰

72. An objection to Xcel's initial plan was raised by the Eric Post family, which owns land bisected by I-90 in Section 18 of Rost Township, which is at the far western end of Rost. A small tributary to the Little Sioux River runs east and west on the North side of the I-90 fence in Section 18 of Rost Township on Post's land. Just north of that tributary is an earthen berm that separates the tributary from a gravel pit. The Posts assert that the berm is used as a driveway, and thus poles could not be placed on the berm itself. Xcel had initially suggested that the line could run along the north side of I-90 and still be 280-285 feet from the Post's home. But the Posts believed that the obstacles would cause any poles along the north side of I-90 to end up being much closer to their home.⁷¹

73. In response to the Post's concern, and in consideration of the difficulties posed by the Little Sioux Tributary and the location of other homes on the south side of I-90, Xcel decided to modify its preferred route.⁷² The preferred route had followed I-90

⁶⁹ Rossow, Tr. 157-158.

⁷⁰ Rogers, Tr. 164-168.

⁷¹ Final EIS, Section 3, page 34, responding to Xcel's reply to EQB Data Report Number 10 in Appendix E of the Draft EIS.

⁷² Early in the process, Xcel had considered just crossing I-90 to avoid the problems around the Post home, but rejected that crossing because of cost (it would add about \$425,000) and difficulty dealing with the wet ground caused by the tributary. See, Xcel Response to EQB Data Request No. 10, dated November 15, 2004. At that time, Xcel preferred to stay on the North side of I-90, as originally proposed. Then later in the process, Xcel decided to avoid the Post home all together by making the modification. The Administrative Law Judge assumed that Xcel reconsidered its rejection of the I-90 crossing option when it decided to make the modification, and decided that the modification was preferable to the crossing option. It would seem that the modified route would cost more and it does create problems for Merlin Tordsen (115 feet), the Bob Paulings and others (all more than 300 feet). Therefore, if the primary problem with the original Xcel Energy route is the one home on the north side of I-90, using the modified route does not make sense. The modified route requires six miles of new right-of-way and comes near

from the west until it jogged north for one mile on Segment C7, which is four miles east of the Eric Post farm. Xcel's modification moved the northerly jog four and one half miles to the west, so that it would leave I-90 and head north in the middle of Section 13, Ewington Township, on a new part of segment J1. It would run north for one mile, to the center of Section 12, Ewington Township, and then turn east and join segment T13 in the Rost Township and follow it (including Alliant's Wisdom line) to the Lakefield Junction Substation. After the hearing, Eric Post's father, David Post, who owns land in both Section 18 of Rost and Section 12 of Ewington, indicated that this proposed modification would avoid problems for Eric and although the modification would affect David's land in Section 12 of Ewington, he favored it. He urged that Mr. Nauerth's proposal be adopted.

73.1 Xcel Energy's originally proposed route along I-90 near the Post's residence is the best of the options in the area; however, Xcel Energy's estimated extra \$425,000 for the I-90 crossing option is a high price to pay to avoid the Post residence, which would likely be about 250 feet from the new HVTL if it were to go along the north side of I-90. Therefore, during detailed design for the original I-90 route using segment I9, Xcel Energy should work with affected landowners on both sides of I-90 to minimize impacts to the extent possible—including detailed consideration of the I-90 crossing option or a variation of it that might have lower construction costs. The crossing option is worth analyzing further because it both avoids using new right-of-way (by staying along I-90) and avoids problems around the Post residence and the residences on the south side of I-90.

74. John Nauerth III was a member of the Citizens Advisory Task Force. His farm is bisected by I-90, which runs east and west through it. His home is along the north border of Section 13, Rost Township, which is roughly five miles west of the Lakefield Junction Substation, at the east end of the 345 kV line. From the start of the process, Xcel has avoided following I-90 in this area because of the Summers Wildlife Management Area, which is located just south of I-90, directly south of the City of Lakefield. Xcel had initially proposed to follow I-90 from the west until it reached the middle of Section 14 of Rost Township. At that point, the route would turn north along segment C7 for one mile, to the middle of Section 11. The route would then turn east, and proceed along segments T13 and T14, through Sections 11 and 12 of Rost township and into Sections 7, 8 and 9 of Hunter Township. One of the advantages of this proposal is the possibility of double-circuiting with an existing 161 kV line (Alliant's Wisdom Line) that crosses I-90 along segment C7 and then follows segments T14 and T15 to the east all the way to the Lakefield Junction substation.

to the same number of residences as the originally proposed route along I-90. It comes within 300 feet of one home and within 1000 feet of three other homes. Staying on I-90 minimizes the use of new right-of-way. Construction costs for both options are similar. Xcel Energy's Interstate Route as originally proposed makes the most sense.

75. Nauerth has proposed a slightly different alignment for the 345 kV line in this area. The difference between Xcel's modified preferred route and the Nauerth proposal is that Nauerth would go one mile farther north, one mile farther away from I-90, than Xcel prefers. Xcel would use segments T13 and T14 to run east-west, while Nauerth prefers segment J3 for the east-west line. Nauerth's work on the Task Force included driving along these routes, and comparing the number of affected properties. Nauerth testified that his proposed route would place the line "further from residences," but he did not have any precise house counts.⁷³ Xcel's modified preferred route goes within 115 feet of the Tordsen farmstead, and there are four other residences within 1000 feet. Nauerth's alternative has no homes within 300 feet, but there would be 6 residences within 1000 feet.⁷⁴ Given the opportunity to double circuit on Xcel's preferred route, but no opportunity to do so on Nauerth's, plus the shorter distance (thus lesser cost) of Xcel's over Nauerth's, Xcel's makes more sense than Nauerth's.

76. Mr. Madison testified he was concerned about the 345kV line through Section 34 of Lismore Township in Nobles County. He would prefer that the line be placed on the same poles as the existing line rather than on a separate right-of-way next to the existing poles.⁷⁵ Ms. Rasmussen clarified that in Section 34 of Lismore, the Company proposed to tear out the existing H-frame structures and replace them with single pole structures holding both lines.⁷⁶

77. Mr. Soderholm, Elk Township Board Supervisor, stated that his primary concern is the section of the 345 kV line from west of Reading to west of Brewster. He questioned whether the new double circuit 345 kV line holding both the new 345 kV and the 161 kV would ultimately be capable of upgrading to two 345 kV lines.⁷⁷ Ms. Rasmussen stated that this structure would be built capable of operating at 345 kV on both sides.⁷⁸

78. Mr. Schotte expressed concern about Segment C4 on the 345 kV route because it bisects a section rather than following the section line. He farms the north half of Section 7, Dewald Township. He plants the corn rows north and south and the soy beans east and west. He said it would be much easier if the line were on the section line,

⁷³ Nauerth, Tr. 93-94.

⁷⁴ These counts are based on the large maps, Figure A3 in the DEIS. It may be that Nauerth's testimony is based on the actual closeness of homes to the line, in the sense that a home 400 feet from the line is closer than one 900 feet from the line. Figure A3 does not distinguish between the two – it merely reports them as two homes within 1000 feet.

⁷⁵ Madison, Tr. 243-244.

⁷⁶ Rasmussen, Tr. 244.

⁷⁷ Soderholm, Tr. 300-06.

⁷⁸ Rasmussen, Tr. 302.

reducing impacts on agriculture.⁷⁹ Ms. Rasmussen explained that if Substation Site C were selected, Segment C4 would be the best route for the line heading to the substation, but that there were homes close to the roads on both sides of the section and that is why Xcel selected to go down the middle.⁸⁰ There is a property boundary that separates the east half from the west half in the southern half of the section, but Mr. Schotte does own the entire north half, so there is no boundary line to follow. The Administrative Law Judge believes that it is unlikely that segment C4 will be used because Xcel does not want to use Site C.

79. Mr. Fick who owns a 104-acre parcel in Luverne at the Interstate 90 exit stated that routing of the 345 kV line along the interstate will affect the development potential of his property which is classified as a Minnesota Job Zone.⁸¹ Xcel has asked for flexibility in this area in order to minimize the impact on Mr. Fick and similarly situated landowners.

80. Mr. Binford, who has three miles of the existing 161 kV line on his property, asked if the H-frames along that portion of the line would be replaced for single pole structures.⁸² Ms. Rasmussen advised that if the north line is selected, those lines would be replaced.⁸³

81. Mr. Baustian, chairman of the Quintin Aanenson Field Airport in Luverne, testified that he wanted to make sure the height of the poles stayed below the glide slope path. Mr. Stevenson assured him that that analysis had been done.⁸⁴

82. Mr. Amendt, Section 4, Rost Township, who lives along Segment J3 of the 345 kV line route in Lakefield, said he would prefer that the line be on the south side of the road to be further from his house. Specifically, he would like the line placed just south of the dredge ditch which bisects the section.⁸⁵ This segment is not part of the Modified Interstate Route.⁸⁶

83. Mr. Bodley wrote regarding Segment I-14 of the 345 kV line which crosses the 80-acre Helen White Trust property in Section 10, Hunter Township, Jackson

⁷⁹ Schotte, Tr. 313-314.

⁸⁰ Rasmussen, Tr. 313. The transcript has Ms. Rasmussen referring to Site B, but the Administrative Law Judge believed she was referring to Site C.

⁸¹ Fick, Tr. 372-376, and March 11, 2005 letter.

⁸² Binford, Tr. 378-381.

⁸³ Rasmussen, Tr. 379.

⁸⁴ Baustian; Stevenson, Tr. 494.

⁸⁵ Amendt, Tr. 592-93.

⁸⁶ Exhibit 66.

County. He requested that the existing transmission lines on the property be consolidated on one electrical tower.⁸⁷ Mr. Bodley's request is consistent with Xcel Energy's Modified Interstate Route. The proposal would be to double circuit the new line with the existing Alliant Energy 161 kV line along segment I14.⁸⁸

115 kV Transmission Line – Property-Specific Comments

84. Robert and Teresa Fuerstenberg, who farm the south half of Section 15 in Wilmont Township, recommended that the 115 kV line follow a road and not cut across the middle of their farm field. Specifically, the Fuerstenbergs objected to Segment N2 because it would bisect their field. If the line has to come through that area, it would be better for them to locate the line on a road to the east or to the west.⁸⁹ Mr. Fuerstenberg's cousin, Jeanne VanBalén, stated she also supports the Modified East Route because it would not utilize Segment N2.⁹⁰

85. After the hearing, Ron Fuerstenberg wrote and reiterated the concerns about Segment N2. Segment N2 would run through the middle of the Fuerstenbergs' fields and interfere with the farming operations. The line would run north to south, while the crops are planted east to west. Ms. Van Balén also wrote to oppose Segment N2. Additionally, she stated that Segment E3b of the East Route and the Modified East Route and W4b of the West Route would also have some negative impact on the farm because they would run along the edge of the property.⁹¹

86. Steve Brake lives on the northeast corner of Section 15, Wilmont Township, the same section as the Fuerstenbergs. His home is 155 feet from the proposed line on Segment E3b. It would be possible to avoid his house by moving the line a half mile to the west, but that interferes with the Fuerstenberg's farming operations.

87. A solution to the difficulty posed by the Steve Brake house and the Fuerstenberg's field would be to follow Segment N2 through the north half of Section 15, and then at the half section line, make a 90° turn and follow the half section line to Erickson Avenue, where it would connect with Route E3b. This would avoid the Steve Brake house, and avoid the Fuerstenberg's field.

88. Elmer Brake lives in Section 34 of Fenton Township about 2 ½ miles north of Steve Brake. His house is on the north side of 100th Street, 150 feet from the

⁸⁷ Bodley Feb. 21, 2005 Letter.

⁸⁸ Exhibit 66.

⁸⁹ Fuerstenbergs, Tr. 233-236.

⁹⁰ VanBalén, Tr. 237. There is some confusion about the labeling of the north-south route that would run through the Fuerstenberg's field. Some speakers referred to it as N1, others called it N2. The ALJ believed it to be N2.

⁹¹ Furstenberg March 8, 2005 letter and Van Balén March 7, 2005 Letter.

proposed line in Segment E3c. He urged that the line be set back at least 300 feet from all residences. He proposed using Route N2 so the line would enter Wilmont Township between Section 4 and 5, proceeding south for two miles where it would meet Route N2 and turn East for 1 ½ miles until it got to the middle of Section 15, where it would turn south through the Furestenberg's field. Brake thought this would be better than Xcel's preferred route through Wilmont Township because it would meet the goal of being at least 300 feet from any residence.⁹²

89. Comparing Brake's Route N2 with Xcel's Preferred Route E3a, E3b, E3c and E3d, there are no houses within 300 feet on N2, while there are three houses within 300 feet on Xcel's preferred route (Elmer Brake – 150 feet; Roger Lewis – 250 feet, and Steve Brake – 155 feet). In terms of houses between 300 and 1000 feet, the Brake N2 segment has three (if N1 is used) or four (if W4a is used). Xcel's preferred route has only two. In terms of residences, especially residences less than 300 feet, the N2 route is preferable to the E3a, E3b, E3c and E3d route. However, the N2 route segment requires one mile of completely new right-of-way, disrupts operations on the Fuerstenberg farm and requires two additional corner structures (line turns) compared to Xcel Energy's preferred route in the area. In addition, on Xcel Energy's route the 115-kV line can be placed on the opposite side of the road from all three houses within 300 feet. Therefore, Xcel Energy's preferred route minimizes impacts to agriculture, maximizes the use of existing roadway right-of-way, and reduces the number of corner structures required.

90. Mr. Bootsma expressed concerns about whether the existing 69 kV line along his land in Sections 17 and 20 of Chanarambie Township on the 115 kV route would be taken down and the new line and the existing 69 kV line placed on the same new poles.⁹³ Ms. Rasmussen stated that the plan was to consolidate lines and use single pole structures in this area where appropriate.⁹⁴

91. Grant Post lives on the south side of 91st Street, which runs east-west along the northern border of Section 21, Chanarambie Township. He testified that a 69 kV line and the 34.5 kV lines go past his property. He would like all those lines to be consolidated with the new 115 kV line.⁹⁵ Ms. Rasmussen noted that the Company had committed to move to the north side of the road and to consolidate the existing facilities as much as possible. How much can be consolidated will be a function of who owns the feeder lines and, if not Xcel, whether agreement can be reached with the owner(s) of the existing facilities.⁹⁶ Mr. Post's problem is similar to others who are in the midst of

⁹² Elmer Brake, February 21, 2005 letter. His first choice of all the routes was the far West route, W5 and W6, but if that was not possible, then he favored this N2 alternative over Xcel's preferred route.

⁹³ Bootsma, Tr. 583-84.

⁹⁴ Rasmussen, Tr. 584.

⁹⁵ Post, Tr. 585.

⁹⁶ Rasmsussn, Tr. 586.

turbines or who are near the substations. There is a congestion issue, and Xcel should try to relieve it by double circuiting whenever possible.

92. Mr. Gleis, Section 33, Cameron Township, lives on Segment E5 of the 115 kV East Route. He stated he prefers that the line to go on the south side of the road, opposite the house.⁹⁷ This preference is consistent with Xcel Energy's request in this area. Xcel Energy prefers that the line be placed on the south side of the road if the East Route were selected.⁹⁸ Segment E5 is not part of the Modified East Route.⁹⁹

93. Jim Kluis lives in Section 32 of Fenton Township. He has two unusually large groves of trees on both sides of the road (70th Avenue) in front of his house. If the line went along Segment W5 (70th Avenue, the western route), it would be 130 feet from his house. He suggested that instead of using 70th Avenue, the line could be moved a half-mile, or a mile, to the east.¹⁰⁰ That would involve Segment M2 for a mile, or Segment M2 for a half-mile and then Segment M1. If Segment M2 is used for the full mile, that would avoid Mr. Kluis' home, but it would bring the line within 220 feet of the Elmer Hart home, which is near the junction of M2 and M1. The Elmer Hart home would be avoided by the use of the M2 and M1 combination, but that would bring the line within 140 feet of the John Busman home, and within 95 feet of the Irving Busman home (near the northwest corner of Section 5, Wilmont Township) This latter conflict makes the M2 + M1 alternative unacceptable. So long as the line stayed on the north side of 11th Street, across from the Hart house, Segment M2 is preferable to Segment W5 in Section 32.

94. Mr. Schladweiler, Department of Natural Resources (DNR) in New Ulm, stated the DNR's preference for the Modified East Route for the 115 kV line. He expressed the DNR's general concerns about wetlands and potential bird strikes.¹⁰¹

95. Even before the Application was filed, Xcel had been working with the DNR because of the number of Wildlife Management Areas and wetlands along the 115 kV line, and to a much lesser extent, the 345 kV line.¹⁰² The only major concern with the 345 kV line was the Summers Wildlife Management Area which lies south of Lakefield, on the south side of I-90. Xcel accommodated that concern by avoiding the Summers WMA.

⁹⁷ Gleis, Tr. 601-602.

⁹⁸ Exhibit 55, p. 4.

⁹⁹ Exhibit 67.

¹⁰⁰ Kluis, Tr. 602-603.

¹⁰¹ Schladweiler, Tr. 606-08.

¹⁰² See letter from Shannon Fisher (DNR) to Michelle Bissonnette (Xcel consultant) dated August 7, 2003, in appendix I of the Application, Exhibit 3.

96. On the 115 kV line, there are numerous wetlands and WMAs. The Department identified a combination of routes that basically used the West Route from Wilmont north to the Nobles-Murray County line, and then used the East Route north to County Road F, where it would proceed west along Segment C2. The Department identified avoidance of the Chandler WMA as the reason for preferring the East Route on the north side of the County line.

97. DNR also submitted comments on the Draft EIS.¹⁰³ In those comments, the Department repeated that for the 345 kV line, there would be fewer natural resource impacts if the I-90 route were selected over the Alliant route. But there were no details provided. For the 115 kV route, the letter indicated that DNR supported the East Route “because of its greater distance from the Chandler Wildlife Management Area in Murray County. Of the alternatives, Xcel preferred alignment will have the fewest natural resource impacts.” The Department also favored Site A for the Nobles County substation because it is further east than Site C and thus would encourage use of the eastern route for the 115 kV line.

98. The West Route is one mile closer to the Chandler WMA than is the last route. However, there is already a 69 kV line running up Segment W5 (which is the West Route in the Chandler WMA area), and there would be an opportunity to double circuit the 115 kV line with that 69 kV line. The structures would be taller, but there could be fewer towers because the towers could be further apart. There is no analysis of the pros and cons of those trade offs in the record.

99. Randy Groves, the Murray County Engineer, expressed concerns about the impact of the new 115 kV line on County Road 29 which could some day be improved, although improvement in the near-term is probably unlikely. He stated a preference for placing the line along County Road 28, which is Xcel’s Modified East Route, because it had been realigned and graded in 1964, and thus was not as likely to be realigned soon.¹⁰⁴

100. Vernon Strampe and his son Curtis live on both sides of 80th Avenue that separates Sections 20 and 21 of Fenton Township. Segment E4 of the preferred Modified East 115 kV route would run in front of their houses, and be 190 feet from Vernon’s house, but more than 300 feet from Curtis’ house.¹⁰⁵ Vernon Strampe stated that he would prefer that Segment W5 be selected instead. If Segment E4 is selected, Mr.

¹⁰³ This Feb. 22, 2005 letter is reproduced in the Final EIS, Section 3, at page 28.

¹⁰⁴ Groves, Tr. 609-10, and letter handed in at hearing.

¹⁰⁵ The measurements of distance which Xcel’s consultant made for the Draft EIS appear to be reliable in most cases. But there are some places where the measurements appear to be inaccurate. The Vernon Strampe house is reported to be 195 feet, but the ALJ’s visual inspection suggested that it is much closer than that. The ALJ did not make any actual measurements, so he could not say with certainty that the consultant was incorrect, but it appeared to be much closer than 195 feet.

Strampe asked that the line be located on the east side of the road. He also requested that Xcel Energy remove a large cottonwood tree there.¹⁰⁶

101. Gordon Groen provided written comments regarding the 115 kV line route. He lives 190 feet from the line in Section 16 of Fenton Township. He recommended that the 70th Avenue route (Western Route) be used rather than the 80th Avenue route (East Route) because it is not a through road and has less traffic. He also noted that the Western Route is closer to the location of the wind turbines, whose owners presumably want this line to be built and who should be happy to have it.¹⁰⁷

Applicable Statutory Considerations

102. Minn. Stat. § 116C.57, subd. 4 provides that the MEQB shall be guided by the following responsibilities, procedures and considerations:

A. Evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;

B. Environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;

C. Evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

D. Evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;

E. Analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

F. Evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;

¹⁰⁶ Strampe, Tr. 614-15.

¹⁰⁷ Gordon Groen March 15, 2005 Letter. At the hearing, both he and his son, Michael, spoke to the same issues. Tr. pp. 645-678.

G. Evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;

H. Evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;

I. Evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

J. Evaluation of the future needs for additional high voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;

K. Evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved;

L. When appropriate, consideration of problems raised by other state and federal agencies and local entities; and

M. No site or route shall be designated which violates state agency rules.

Applicable Rule Considerations

103. Minn. Rules part 4400.3150 requires that the MEQB be guided by specified siting and routing considerations. They are as follows:

A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;

B. effects on public health and safety;

C. effects on land-based economics, including, effects on air and water quality resources and flora and fauna;

D. effects on archaeological and historic resources;

E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;

F. effects on rare and unique natural resources;

G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;

- H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- I. use of existing large electric power generating plant sites;
- J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- K. electrical system reliability;
- L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- M. adverse human and natural environmental effects which cannot be avoided; and
- N. irreversible and irretrievable commitments of resources.

Effects on Human Settlement/Economic Impacts

Economic Impacts

104. Only minimal positive short-term effects to the local community from construction activities are expected from the Project.

105. In the future, the Project could have economic impacts relating to construction and reconstruction of roads. Along many of the routes under consideration, particularly on the 115 kV line, the new transmission line will parallel highways or roadways. And when sharing roadway right-of-way, Xcel Energy plans to install the new poles five feet inside neighboring property. This is partly for safety reasons, but also to avoid potential liability for the cost of moving the poles if the roadway is expanded in the future. That is, if a utility pole must be relocated to accommodate a roadway expansion and the pole is within the public right-of-way, the utility is liable for the relocation cost. But if the pole is outside of the public right-of-way, the local unit of government must pay for the relocation. Many of the roadways along the 115 kV route segments are township roads. Representatives of Nobles and Murray Counties have both expressed concern about the potential for future local government expense should the poles along new routes need to be relocated in the future. For the 345 kV routes along I-90, the Minnesota Department of Transportation describes its policy in a letter in Appendix I of the Xcel Energy Application. (Utility poles are required to be placed outside the right-of-way except in hardship situations.)¹⁰⁸

106. To assess the potential economic impact on local government presented by the various route options, local roadway expansion plans were reviewed. A summary of these plans are provided by county in Appendix G to the DEIS. The only potential conflict between a route segment under consideration and a known roadway expansion

¹⁰⁸ Exhibit 44, p. 65.

plan is in Nobles County, where transmission line Segments C1 and E3 parallel the road 3.5 miles along C.R. 72.

107. To minimize potential impacts relating to pole relocation associated with road construction, Xcel Energy committed to work with the County Highway Departments to ensure the construction of the transmission lines will not conflict with planned roadway projects within the counties. Specifically, Xcel Energy will work with Nobles County to locate the poles and avoid needing to move poles along C.R. 72 if segments C1 and/or E3 are chosen for the transmission line route.¹⁰⁹

108. Also, Xcel Energy committed to work with the counties and townships to address their concerns regarding placement of poles along township and county roads.¹¹⁰

Displacement

109. None of the routes under consideration would require the displacement of any occupied residences or business.¹¹¹ However, along the 345 kV line, there may be instances where landowners choose to require Xcel Energy to purchase property in accordance with the “Buy the Farm” statute, Minnesota Statutes section 116C.63, Subd. 4.¹¹²

Noise

110. Operation of the new transmission lines will result in a perceptible increase in noise levels in the immediate area during times of light rain, dense fog, snow, and similar weather conditions. During these times, there will be audible noise that exceeds rural background levels and is similar to household background levels. But there will not be any violation of MPCA noise standards.¹¹³

111. The new Nobles County substation will generate some audible noise. Xcel hired a private engineering firm to take noise measurements at the existing Chanarambie substation and at the three possible sites for the new Nobles County substation, and to estimate the noise impacts at the nearest receptors at each of the three sites. The conclusion of the study was that it would be “unlikely” that there would be any

¹⁰⁹ Exhibit 44, p. 63; Rasmussen, Tr. pp. 353-367.

¹¹⁰ Rasmussen, Tr. 367.

¹¹¹ Exhibit 3, p. 107, 149.

¹¹² Xcel Energy’s Application referenced the Buy the Farm provisions. Exhibit 3, p. 60. At hearing, both Xcel Energy and members of the public raised the issue. (See e.g. Rasmussen, Tr. 306 and 497 and Overland, Tr. 87.) This option is only available for properties affected by the 345 kV line. It is not available for properties affected by the 115 kV line.

¹¹³ Ex. 3, pp. 60-62.

noise impacts associated with any of the three sites.¹¹⁴ Xcel has pledged to locate and plan the site so as to maximize the distance from homes in the area.¹¹⁵

Aesthetics

112. Nobody testified that the proposed lines or poles would be aesthetically pleasing. Instead, those persons who addressed the issue directly viewed the lines and poles to be a detriment.¹¹⁶ The issue of aesthetics is also part of the issue of land values. There are no areas with significant visual importance that will be impacted by the new transmission lines. The majority of the routes follow existing disturbed corridors. However, visual impacts will occur where the poles are placed and where a line of poles can be seen. The single pole structures are less visually intrusive than lattice, or H-frame structures.

113. The new Nobles County Substation will convert primarily agricultural land to a more industrial use and will be visible to landowners adjacent to the parcel containing the new substation. From substation Site A, the substation would be visible to those in the town of Reading, just a mile away. Substation sites B and C would have limited local visibility.¹¹⁷

114. Segment I5 of the Modified Interstate Route could potentially impact the expanding industrial area around the Interstate near Luverne. To minimize these impacts, the Company has offered to restrict the line to the south side of the Interstate along this segment.¹¹⁸

Cultural Values

115. Residents in the Project area have begun to view wind-generated energy as a new “crop” for historically agricultural land. Construction of the Project will improve the transmission infrastructure to support existing and future wind generation development in the Project vicinity.

Recreation

116. For the Modified Interstate Route for the 345 kV line, there would be minimal impact to the WMAs and local parks in the area. No direct impacts are anticipated. With Segment T4 (used in the Alliant Route and the Modified Interstate Route), there would be direct impact to the WMA at Rock River as a result of replacing

¹¹⁴ Exhibit 3, pp. 115-116. This conclusion is buttressed by the fact that the nearest receptor at any of the three was at Site C, which Xcel asked to be withdrawn from further consideration.

¹¹⁵ Id.

¹¹⁶ Geraldine Albers, for example, used the word “ugly” to describe them. Albers March 25, 2005 (?) letter.

¹¹⁷ Exhibit 3, p. 116.

¹¹⁸ Exhibit 55, p. 2.

existing H-frame structures with single pole structures. A maximum of two poles will be required to be placed in the WMA property.¹¹⁹

Effects on Public Health and Safety

117. The issue of EMF was widely raised by residents along the routes. The term EMF refers to electric and magnetic fields that are present around electrical conductors and devices. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the line. Both magnetic and electric fields decrease in intensity with increasing distance from the source.

118. No significant impacts on human health and safety are anticipated from the Project. There is at present insufficient evidence to demonstrate a cause and effect relationship between EMF exposure and any adverse health effects. The MEQB has not established limits on magnetic field exposure and there are no federal or Minnesota health-based exposure standards for magnetic fields. There is uncertainty, however, concerning long-term health impacts, and the Minnesota Department of Health, the MEQB and Xcel all recommend a “prudent avoidance” policy in which exposure is minimized.¹²⁰

119. In previous routing proceedings, the MEQB has imposed a permit condition on high voltage transmission line permits limiting electric field exposure to 8 kV per meter at one meter above ground. This permit condition was designed to prevent serious hazard from shocks when touching large objects, such as semi trailers or large farm equipment under extra high voltage transmission lines of 500 kV or greater. Predicted electric field densities are less than half of the 8 kV/Meter permit condition for both the 345 kV line and the 115 kV line.

Other than the “prudent avoidance” standard widely accepted in Minnesota, there is no standard for magnetic field data as set forth in the Draft EIS.¹²¹ In general, the data show that the strength of the magnetic field decreases rapidly as one moves away from the center line, and reaches approximate background levels about 300 feet or less from the lines. According to Xcel Energy, the maximum calculated ground level magnetic field directly below the line expected for the 345 kV line when it is conducting electricity under average operating conditions is approximately 68 milligauss, and 113 milligauss at peak operating conditions. The maximum calculated ground level magnetic field expected for the 115 kV line when it is conducting electricity under average operating conditions is approximately 87 milligauss directly below the line, and 146 milligauss at peak operating conditions. The only two states

¹¹⁹ Exhibit 3, p. 107.

¹²⁰ Exhibit 44, pp. 50-53.

¹²¹ Exhibit 44, p. 52.

that have established standards are Florida (a 150 milligauss limit) and New York State (a 200 milligauss limit). The maximum magnetic field expected from the two new lines is within those limits.¹²²

Effects on Archeological and Historic Resources

120. Xcel Energy requested known cultural resource (archaeological sites, standing structures, other historic sites) location information from the Minnesota State Historic Preservation Office (SHPO) in spring 2004. Appendix E of the Xcel Energy Application contains a detailed accounting of previously recorded cultural resources by the associated route segments.¹²³

121. In November 2004 Xcel Energy requested supplemental information based on the addition of the new alternative route segments described in Sections 4.3 and 4.4 of the EIS. Two architectural properties, bridges over Little Beaver Creek (RK-BCT-012) and a tributary (RK-BCT-008), are near the 345 kV Alternative Route Segment R1 in Rock County. While property RK-BCT-008 is approximately 1 mile south of R1, property RK-BCT-012 spans Little Beaver Creek and is under the existing transmission line. Another property, the Leeds Township Hall (MU-LED-001), is adjacent to the 115 kV Alternative Route Segment M5 in Murray County.¹²⁴ With regard to these cultural resource types, no mitigation measures are needed.¹²⁵

122. No impacts to previously identified archaeological resources or historic structures are anticipated. The probability of archeological artifacts along the proposed routes appears to be low and no impacts to previously unknown cultural resources are anticipated. Also, the proposed project is not expected to physically impact any unrecorded historic structures.

Effects on Land-Based Economies, Including Agriculture, Forestry, Tourism and Mining

123. The construction of the transmission lines and the substation will impact agricultural land throughout the areas of the routes. Impacts include removal of tillable soil, soil compaction, possible drain tile damage during construction, crop damage during and following construction and increased erosion potential of soils if wind breaks are removed. Impacts will be mitigated and minimized by using routes away from cultivated fields where possible, sharing existing rights-of-way with roads and existing transmission

¹²² Id., p. 51.

¹²³ Exhibit 3.

¹²⁴ Exhibit 44, p. 61.

¹²⁵ Exhibit 44, p. 61.

lines, using single pole structures instead of H frames and compensating farmers for construction related impact including damage to drain tiles and crops.¹²⁶

124. Agricultural impacts will be minimized by the use of single pole structures, costing an additional \$8 million over the cost of H-frame structures, to reduce the number of poles on farms and minimize impacts.¹²⁷

125. The route chosen for the 345 kV line will also impact wind generators in the area. The Modified Interstate Route can be completed by the Fall of 2007, which is the date which the Company and wind developers have been relying on and planning for as an in-service date. In contrast, the Alliant Route would take approximately 13 months longer and not be completed until the fall of 2008.¹²⁸ This construction delay would have a significant adverse impact on wind development in the area.¹²⁹

Effects of the Project on the Natural Environment, Including Effects on Air and Water Quality Resources and Flora and Fauna

126. The primary natural features of concern are the many wetlands used by waterfowl and other species, and remnants of virgin prairie, which are scattered throughout the project area. For all route alternatives, the prairie areas can be avoided through detailed pre-construction surveys and designs, as well as careful construction techniques. Also, the Application contains comprehensive lists of protected species and their habitat in the Project area. One section of the Alliant Route and of the Modified Interstate Route, T4 in Jackson County, does cross the Rock River, which is a critical habitat for a federally protected minnow called the Topeka Shiner.¹³⁰ However, there should be no impacts since Xcel Energy can easily span the Rock River, poles will be located away from the site and no equipment will cross the river.¹³¹

127. There are 25 wildlife management areas (WMA) or designated waterfowl production areas (WPA) in the area of the proposed routes. The nearby Heron Lake WMA is particular important for waterfowl. South Heron Lake is located approximately 2 miles from certain 345 kV route segments of the Alliant route in Jackson County. Overall, there are more WMA's along the 115 kV routes than the along the 345 kV routes. The potential impacts to waterfowl cannot be calculated with precision. However, generally the closer the new line is to waterfowl feeding areas and habitat, the

¹²⁶ Exhibit 44, pp. 53-54.

¹²⁷ Rasmussen, Tr. 28.

¹²⁸ Stevenson, Tr. 38-42.

¹²⁹ Soholt (Wind on the Wires) March 25, 2005 Letter.

¹³⁰ Exhibit 44, pp. 47-48.

¹³¹ Exhibit 43, p. 47.

more likelihood of collisions. In locations where the line is close, impacts to the wildlife areas and wetlands can be mitigated by utilizing flight diverter and installing H frame structures instead of pole structures to reduce height and avoid multiple vertical wires.¹³² Xcel Energy has been working cooperatively with the DNR on these issues.¹³³

128. Based upon all of the evidence in the record, the Project will not have a significant impact on the natural environment, regardless of which of the routes under consideration is selected.

Effects on Rare and Unique Natural Resources

129. Along the routes, the DNR and the USFWS identified various rare and unique resources including remnants of prairie land, including the Powesheik Skipper, Topeka Shiners and Plains Toft Minnows and Calcareous Fens.¹³⁴

130. The majority of resources were located along the 345 kV route options. No impacts to these rare and unique natural resources is anticipated.

Design Options that Maximize Energy Efficiencies, Mitigate Adverse Environmental Effects, and Could Accommodate Expansion of Transmission or Generating Capacity

131. The MEQB has the authority to order one or both of the transmission lines to use structures that are capable of expansion to higher voltage or multiple circuits in an effort to increase future transmission capacity without the cost and delay of building a new line using new right-of-way. See Minn. Stat. § 116C.57, Subd. 9(b).¹³⁵

132. Given the growing demand for transmission in the Project area for wind-generated energy, the issue of whether the two transmission lines should be built using double circuit structures was given serious consideration during the proceedings.

133. To build the entire 345 kV line using double circuit structures so that a second 345 kV line could be placed on the poles in the future would cost \$7.5 million. This added cost is not warranted for because it is unlikely that a second 345 kV circuit will be needed along the same route. However, there are congested areas where double circuiting with the existing line is appropriate. In those locations, the 345 kV will be double circuited with the existing 161 kV Alliant line, the structures will be capable of supporting two 345 kV lines.

¹³² Exhibit 44, p. 57.

¹³³ Schladweiler, Tr. 607-608.

¹³⁴ Exhibit 3, p. 83, 101-103, 137 and 147.

¹³⁵ Exhibit 44, p. 70.

134. The issue of whether the 115 kV line should be built using double circuit structures for a portion of the route was also considered. The evaluation focused on whether a second line could be hung on the structures at some point in the future so as to increase the “accredited” outlet capability from the Buffalo Ridge.¹³⁶ Xcel Energy presented the testimony of Mr. Grivna who described how the Company is leading a team in a study looking at additional facilities that would allow the Midwest Independent System Operator (MISO) to approve additional firm transmission to serve generation off the Buffalo Ridge. Study participants include Great River Energy, Missouri River, Otter Tail Power, the City of Marshall and the Western Area Power Administration.¹³⁷

135. One of the limiters identified in the study to increasing outlet capability is the outage or failure of the section of the new 115 kV line from the Nobles County Substation to a new Fenton Substation which is a portion of the new 115 kV line from Chanarambie Substation to Nobles County Substation being permitted in this proceeding.¹³⁸

136. Mr. Grivna testified that available transmission capacity can only be increased in the area if the second 115 kV line between the Nobles County Substation and the Fenton Substation is built on separate poles and located some distance away because the failure of the first new line is the contingency that must be covered. Planning for this contingency is required by the governing rules, North American Electric Reliability Council (NERC) Planning Standards. Also, as a member of the MRO (the successor NERC Reliability Region to the Mid-Continent Area Power Pool (MAPP) Reliability Council), Xcel Energy must meet MAPP Planning Standards in the Xcel Energy region. The NERC Planning Standards for electric transmission systems consider loss of a double-circuit line as a “Category C” event: “Event(s) resulting in the loss of two or more (multiple) elements”. Specifically, Contingency type C-5 is defined as “[a]ny two circuits of a multiple circuit towerline”. For such contingencies, it is required that system stability be maintained, voltages and facility loadings be within applicable ratings, and that no cascading outages of generation or transmission elements result. The loss of the new Nobles County to Fenton line would result in power system performance criteria violations. Giving proper consideration to the NERC Category C-5 definition, if the second Nobles to Fenton 115 kV circuit were installed as a second circuit on the same structures as the first circuit, both circuits would be presumed to fail simultaneously, and there would be no performance improvement attained to address the identified deficiency.¹³⁹

¹³⁶ The Administrative Law Judge recognized that the term “accredited” may be a term of art which he has used improperly in this context. He means to use it for its more common meaning, not any technical one.

¹³⁷ Grivna, Tr. 48.

¹³⁸ Grivna, Tr. 49; Exhibit 57, p. 4.

¹³⁹ Exhibit 57, Exhibit WG-2, pp. 6-8.

137. Mr. Grivna explained during hearings that if the outage of a transmission line causes a problem, adding a second circuit on the same structures will not solve the problem. Consequently, if the line were built with double circuit poles, and even if a new line were placed on those poles, outlet capability would not increase.¹⁴⁰

138. William Head, of the MRO, confirmed in his written comments and testimony that Xcel Energy is required to follow NERC requirements when designing new transmission infrastructure. If these rules are not complied with, the MRO must report the non-compliance to FERC and MISO would not authorize additional transmission capacity.¹⁴¹

139. Requiring Xcel Energy to build that portion of the 115 kV line from Fenton to Nobles Substations using double circuit structures is not warranted by the facts in the record.

Use or Paralleling of Existing Rights-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries/Use of Existing Transportation, Pipeline, and Electric Transmission Systems Rights-of-Way

140. The majority of the proposed routes would follow existing transmission or road rights-of-way. Xcel Energy also proposes to consolidate lines when transmission corridors are used resulting in a 161 kV/345 kV double circuit or a 115 kV/69 kV double circuit.¹⁴² In addition, Xcel Energy committed to consider double circuiting with other existing lines and exercise the option when feasible and prudent.¹⁴³

Electrical System Reliability

141. All options under consideration for the new transmission lines would reliably transmit electricity once constructed. However, the proposed routes for the 345 kV line has different reliability implication during the construction period. These differing reliability characteristics render the Alliant Route option less attractive than the I-90 route.

142. There are two types of reliability concerns presented by double-circuiting with existing transmission lines: (1) during construction and (2) after construction. Reliability is not a significant issue for 69 kV/115 kV double-circuit lines or the new 115

¹⁴⁰ Grivna, Tr. 50.

¹⁴¹ Head, Tr. 95-99.

¹⁴² Exhibit 44, p. 4.

¹⁴³ Exhibit 3, p. 19.

kV line, during construction or after. But there are significant reliability concerns associated with construction of the 345 kV line on the 161 kV Alliant Route.¹⁴⁴

143. The current system in this area is a looped system, where there are two 161 kV sources feeding each substation along the 345 kV line route. During construction of the Alliant Route, there would be a critical 22-week period during which time the Elk Substation would be served by a single source (a radial line) and any outage on the Sioux Falls line would cause the City of Worthington to experience a complete power outage until the line outage is restored. In contrast, on the Modified Interstate Route, the Elk Substation is served radially only during a six-week period.¹⁴⁵

144. The possibility of mitigating the reliability concerns associated with Alliant Route by utilizing diesel generation to provide a second source of power to the critical Elk Substation was examined during the hearings. Diesel generation is a proven technology that is usually used in small commercial applications to back up critical load like a computer data center, and is typically coupled with a battery powered uninterruptible power supply. Generators are sized around 1.6 megawatts to 2 megawatts. At the Elk Substation, twenty-two generators would be required to make up for the 161 kV line when out during construction. Mr. Stevenson testified that he was unaware of any situations where temporary diesel generators have been used during transmission line construction to provide an alternate source of power. He opined that diesel generation was ill-suited for this use. Mr. Stevenson also noted that using diesel may be technically infeasible. Worthington Municipal Utilities had considered using a gas turbine and discovered that there was not an adequate gas supply and the gas company would not build a required compressing station for a *permanent* standby installation. It is not likely that it would do so for a *temporary* standby installation.¹⁴⁶

145. The use of diesel generation is not a feasible option to address construction reliability concerns associated with the Alliant Route.

146. Representatives from utilities serving loads in the Project area all testified that the reliability risk associated with the Alliant Line during construction was unacceptably high.¹⁴⁷

147. The MEQB specifically finds that double circuiting using the 161 kV Alliant Route is an unattractive option because of the reliability risks during construction.

¹⁴⁴ Exhibit 44, p. 67.

¹⁴⁵ Stevenson, Tr. 42-44.

¹⁴⁶ Stevenson, Tr. 672-677.

¹⁴⁷ Donald Habicht (Worthington Public Utilities), Brian Zavesky (Missouri River Energy, for Adrian Public Utilities, Jackson Municipal Utilities, Lakefield Public Utilities, Westbrook Public Utilities and Worthington Public Utilities), Mike Steckelberg (GRE) and Ken Leier (Alliant).

Costs of Constructing, Operating, and Maintaining the Facilities Which are Dependent on Design and Route

148. The cost figures for right of way acquisition on the Alliant Route do not include payments to Alliant. Mr. Stevenson testified that he did not believe any such payments would be required given that Xcel Energy would be rebuilding part of Alliant Energy's line. The primary reason for the cost differential is the double circuit structures; they are taller and require a stouter, stronger pole, which means more steel and more cost.¹⁴⁸

Adverse Human and Natural Environmental Effects Which Cannot Be Avoided and Mitigation Strategies

149. The Company's proposed mitigation strategies adequately mitigate the enumerated impacts from the Project.

Irreversible and Irretrievable Commitments of Resources

150. The Project will not require the irreversible or irretrievable commitment of resources.

Prohibited and Excluded Sites

151. Minn. R. 4400.3350 identifies sites where siting of new facilities is prohibited or excluded. The proposed routes for the transmission line are not located in a prohibited or excluded area.

COMPARISON OF ROUTES/SITES

Comparison of 345 kV Routes

152. The Modified Interstate Route is a more appropriate route for the 345 kV line than the Alliant route for the following reasons:

A. The Alliant Route creates significant reliability concerns during construction. There is an 80-week critical period during which one or more substations would be at an increased risk of an outage. With the increased risk period lasting more than a year, scheduling around severe weather would be difficult. The City of Worthington faces one of the most significant risks. Specifically, there would be a 22-week critical period during which the entire City of Worthington would be at an

¹⁴⁸ Stevenson, Tr. 425, 441-42.

increased risk of an outage. With the Modified Interstate Route, the increased risk to all substations is reduced to 18 weeks, 6 weeks of which are a critical period specific to the City of Worthington.

B. The transmission improvements are needed to increase outlet capacity on the Buffalo Ridge to 825 megawatts. Wind developers and Xcel Energy have been planning for and relying on an August 2007 in-service date. The Alliant Route would take approximately 13 more months to build than the Modified Interstate Route. During this delay, wind-generated energy would be stranded.

C. The Alliant Route costs approximately \$7 million more than the Modified Interstate Route in construction expenses alone. The various environmental and land use impacts associated with the two options show they are similar and do not justify this additional cost. The Alliant Route also passes by more homes located within 300 feet of the line than the Modified Interstate Route.

Comparison of Substation Sites

153. The environmental impacts of substation sites A and B are comparable. All are near between 11 and 15 homes, contain wetlands and have similar wind interconnection opportunities, although substation Site A is farther to the North where the probability that wind development will occur is higher.¹⁴⁹

154. Substation A is located near a major thoroughfare, T.H. 266 which provides good access for trucks and heavy equipment. It is also nearest to the town of Reading where future development may occur.¹⁵⁰ But the substation would be visible from Reading.¹⁵¹

155. Substation Site B would require additional road upgrading and a slightly longer transmission line.

156. Substation Site C is not acceptable because of the planned home on the site.

157. Xcel Energy prefers Site A for the substation. DNR also prefers Site A. The only other preference stated in the record is by Community Wind South which prefers Site B. A Community Wind South representative testified that Site B would have economic benefit for Community Wind developers because they would not have to build

¹⁴⁹ Exhibit 44, Table 4, p. 47-48.

¹⁵⁰ Exhibit 53, p. 12.

¹⁵¹ Exhibit 3, p. 116.

as long a feeder line as Site A would require. There were no other advocates for any substation site area.

158. Based on a comparison of the substation sites, the MEQB finds that Substation Site A and Substation Site B are both appropriate sites for the new Nobles County Substation and that Xcel Energy should have the flexibility to build a substation in either siting area.

Comparison of 115 kV Routes

159. The major choice in the Murray County area is whether to use the modified East Route or the West Route. For the nine miles between the Murray-Nobles County line and Segment C2, there are six houses with 300 feet on the East Route (assuming the M2 diversion is used). There is an existing 69-kV line along six miles of the West Route, but no line along the East Route. Therefore, the new 115-kV line could be constructed as a 69-kV/115-kV double-circuit line on these six miles on the West Route. Construction of a new 115-kV/69-kV double-circuit line would require somewhat heavier, taller poles than the existing 69-kV poles. The West Route Option therefore increases construction costs by approximately \$1,000,000 and increases the height of the line. However, requiring Xcel Energy to double circuit with the exiting 69-kV line reduces the need to construct the new 115-kV line on completely new right-of-way on County Highway 28, which in turn reduces the general proliferation of transmission lines in the area. While the West Route option is adjacent to the Chandler Wildlife Management Area, the wetland areas are over one-quarter mile from the route, thus minimizing potential problems with waterfowl collisions. Xcel Energy also has committed to using all reasonable mitigation methods to minimize waterfowl impacts. Therefore, the preferred option in Murray county is to use Route segment W5 (except for the southernmost one-mile segment to avoid residences there.)

160. Notice of the availability of the ALJ Report was mailed to the Project Contact List and posted on the MEQB web site. The deadline for comments and exceptions to the ALJ Report was June 3, 2005. Three exceptions to the ALJ Report were submitted to the MEQB from the following individuals: Rob Fuerstenberg, Jeanne (Fuerstenberg) Van Balen, and Loretta (Fuerstenberg) VandenBrink. All three comments focused on the negative impacts that the ALJ recommended route Segment N2 in Wilmont Township would likely have on Fuerstenberg farm operations. The exceptions recommended the MEQB select Xcel Energy's preferred route instead.

CONCLUSIONS

1. Any of the foregoing Findings more properly designated as Conclusions are hereby adopted as such.
2. The Minnesota Environmental Quality Board has jurisdiction over this matter pursuant to Minn. Stat. §§ 116C.57 and 14.50.
3. All relevant substantive and procedural requirements of law and rule have been fulfilled so as to authorize the MEQB to issue a Route Permit to the Applicant.
4. The MEQB has completed an Environmental Impact Statement on this project as required by Minn. Stat. § 116C.57, subd. 2c, and Minn. Rules part 4400.1700.
5. Constructing the high voltage transmission lines along any of the routes under consideration would not materially adversely affect the environment so as to constitute “pollution, impairment or destruction” of natural resources under the Minnesota Environmental Policy Act, Minn. Stat. Ch. 116D or the Minnesota Environmental Rights Act, Minn. Stat. Ch. 116B.¹⁵²
6. The conditions included in the Route Permit are reasonable and appropriate and will help to minimize the impacts of this new line and are agreed to by the Applicant.

Based on the Findings of Fact and Conclusions contained herein and the entire record of this proceeding, the Minnesota Environmental Quality Board hereby makes the following:

¹⁵² State by Skeie v. Minnkota Power Coop., Inc., 281 N.W.2d 372 (1979).

ORDER

A Route Permit is issued to Xcel Energy for construction of a 345 kilovolt high voltage transmission line and associated facilities in Rock, Nobles, and Jackson County, a 115 kilovolt high voltage transmission line and associated facilities in Nobles and Murray County, and a substation near Reading, Minnesota, in Nobles County. The Permit is issued in the form attached hereto, with a map showing the approved route.

Approved and adopted this _____ day of June, 2005

STATE OF MINNESOTA
ENVIRONMENTAL QUALITY BOARD

Robert A. Schroeder,
Chair