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Xcel Energy

Docket No.: E002, ET2/CN-06-1115

Response To: Steve Rakow
MN Department of Commerce

Information Request No. 37

Date Received: November 13, 2007

Question:

The *Community Based Energy Development Transmission Study: West Central (Minnesota) Transmission Planning Zone* dated January 18, 2007 states at page 20:

The CapX utilities have proposed performing a transmission study that would create a fourth generation scenario for the CapX Vision Study. This generation scenario would be CBED focused with CBED generation being dispersed throughout Minnesota. This study would allow for the comparison of how CBED generation would impact CapX transmission facilities versus other generation scenarios.

Regarding this statement, has the "fourth generation scenario for the CapX Vision Study" been completed? If so, please provide the results of this scenario.

Response:

No. The analysis of CBED alternatives have evolved since this statement was made. As part of the development of the 2007 Renewable Energy Standard legislation, a number of utilities worked with CBED proponents and advocates to develop a better approach to transmission study efforts to enhance CBED development opportunities. Through this collaborate efforts, additional study work was identified. This study work, and the expected dates of completion are as follows:

Phase I

Define Study Scope	December 2007
DOC Technical Review Meeting	December 19, 2007
Preliminary Study Results	February 2008
DOC Technical Review Meeting	February 20, 2008
Final Study Results	April 2008
DOC Technical Review Meeting	April 30, 2008

During each study phase, three sets of public meetings are required to: gather public input (occurred in September); discuss preliminary results; and discuss the final report. The latter two meetings have yet to be coordinated by the Department of Commerce.

The second phase of the study will have a similar schedule to Phase I with a completion date of September 15, 2009.

These study efforts will address the issue of locating dispersed renewable generation in various planning zones in Minnesota.

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Regarding the CapX southeast line, would using the Prairie Island end point, considering the likely routing option(s), result in the Prairie Island – North Rochester line and the Prairie Island – Byron line being considered as a single line for purposes of determining N-1 scenarios?

If yes, please explain the consequences of the two lines being treated as one in terms of the proposed needs.

Response:

There is an existing 345 kV circuit between Prairie Island and Byron Substation just west of Rochester. Rochester relies on the Byron Substation as its main electrical connection to the power supply system. There are some circumstances in which the proposed 345 kV line to North Rochester is needed to maintain reliable service if the existing Prairie Island – Byron circuit fails. If both circuits were to fail at the same time, electrical service to Rochester area customers would be at risk.

If the proposed 345 kV circuit to North Rochester were terminated at Prairie Island, the alignment of the existing Prairie Island – Byron line would be a prime candidate for routing.

Technically, the new line and the existing Prairie Island – Byron line would be considered a single line only if both circuits were on the same set of structures, that is if the existing circuit were replaced with a double circuit line. In such a case, the N-1 failure would be the loss of the Prairie Island – Byron / Prairie Island – North Rochester double circuit line.

If the proposed line were routed immediately adjacent to the existing line, the two circuits could be less than 100 feet apart, for most if not all of the 40 miles between Prairie Island and Rochester. While the two circuits would be treated separately in

system analyses, that is, the loss of both lines would not be assumed in an N-1 analysis, the risk of loss of both circuits due to storm damage would remain.

The proposed Hampton Corner configuration reduces the risk of losing both circuits and therefore increases system reliability. The new 345 kV line would be geographically separated from the existing Prairie Island – Byron 345 kV line, thereby reducing the potential that both 345 kV lines would fail due to a single storm event. Indeed, any route that maximizes the distance between the new 345 kV line and the Prairie Island – Byron line will reduce outage risk. Reliability will be further enhanced by the addition of breakers at the Hampton Corner Substation which will provide additional electrical separation between the two 345 kV lines. With this configuration, if one of the lines were to fail, the other could continue to serve the Rochester area.

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