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Xcel Energy
Docket No.: E002, ET2/CN-06-1115
Response To: Elizabeth Goodpaster and Mary Marrow, Wind on the Wires, et al — Information Request No. 9
Date Received: March 31, 2008

Question:

Referring to the TC-Brookings Project, Figure 5-8:

a) what low voltage facilities does the Helena 345 KV Substation tie into?

b) why is the Brookings Co. – Lyon Co. 345 KV line only a single circuit? Will it be built for a future double circuit?

Response:

a) The purpose of the Helena Substation is to tie the proposed Twin Cities -- Brookings County 345 kV line in with the existing Wilmarth (Mankato) – Blue Lake (Twin Cities) 345 kV line. Additionally, there will be space available at the substation to connect lower voltage facilities. There are no lower voltage facilities planned as part of this project. However, Xcel Energy has submitted a preliminary plan to the Midwest Independent Transmission System Operator ("MISO") to place a lower voltage facility at the Helena Substation location. The details of this plan have not been made public.

b) In the Southwestern Minnesota Study, planning engineers initially developed and studied the "Base Plan" which was a single circuit 345 kV line from Brookings County, South Dakota to the Twin Cities, a 345 kV line from Lyon County Substation to a new Hazel Creek Substation and a 230 kV line from the Hazel Creek Substation to the Minn Valley Substation. In further analysis, planning engineers determined that the highest power flow would be on the Lyon County – Franklin – Helena segment. Planning engineers concluded that by double circuiting these segments of the 345 kV line, system performance could be enhanced. Specifically, this configuration would

reduce both system losses and inadvertent flow associated with the transfer of power from the Buffalo Ridge area to the Twin Cities area. This refined option is the proposed Twin Cities – Brookings County 345 kV Project.

The 345 kV segment between Brookings County and Lyon County Substations is proposed as a single circuit because a second circuit would not improve system performance or generation outlet. The transfer capability of the transmission system is limited not by the capacity of this segment or line impedance, but rather is limited by the adjacent and underlying transmission systems.

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