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Xcel Energy

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

Response To: Elizabeth Goodpaster and Mary Marrow
WOW, et al

Information Request No. 22

Date Received: April 7, 2008

Question:

Please explain how the 70% of summer peak was established as a standard for testing maximum power flow transfers out of a wind turbine area.

Response:

Based on hourly import/export graphs of Minnesota (graphs that show whether the state is importing power or exporting power on an hourly basis) assembled by Midwest Independent Transmission System Operator, the average actual off-peak load level for the state of Minnesota is in the range of 60 to 70 percent of peak load. A 70 percent of summer peak level has long been the standard measurement in engineering studies for evaluating off-peak conditions in the upper Midwest and remains an accurate test of the transmission system during off-peak conditions.

This standard has been reevaluated in the context of upcoming studies associated with the Renewable Energy Standard. This reevaluation is due to the fact that off-peak conditions are typically also high wind conditions. As a result, areas of high wind generation experience maximum power flow transfers when the local load is at or near a seasonal low. To account for this phenomenon in the renewable energy standard studies, the utilities anticipates using a value closer to 60 percent (61.2%) of peak load, which will likely increase the stress on regional flow-gates. Off-peak scenarios stress the system differently than peak scenarios and the transmission rights of all pre-existing generators must be maintained in any future transmission scenario. Testing both scenarios is done to ensure that existing generators' current rights are preserved on the transmission system as required by Federal Energy Regulatory Commission.

In other studies, it is anticipated that off-peak load levels will likely be determined on a case-by-case basis.

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