



Preliminary Supplemental System Impact Study Request # GI-2007- 5 & 6

50 MW Wind Generation Expansion Interconnecting at Keenesburg

PSCo Transmission Planning
September 30, 2010

A. Preliminary Observations

This System Impact Re-study determined the impact of expanding the existing 300 MW facility at the Cedar Creek Wind Energy (CCWE1) facility by 50 MW with the Keenesburg Substation 230kV bus being the Point of Interconnection (POI) to the PSCo system. The expected in-service date for this project is January 2011. This in-service date is prior to the completion of the Ft.St.Vrain-Green Valley 230kV loop into the Keenesburg Substation.

The 50 MW of additional generation can be delivered to PSCo from the Cedar Creek Wind Expansion (CCWE2) facility without causing any thermal overloads or steady state voltage violations. No dynamic voltage or frequency violations are observed on the transmission system for faults on the PSCo system. However, a fault on the existing Cedar Creek (CCWE1) facility (and subsequent loss of part or the entire existing 300 MW CCWE1 facility) causes unintended tripping of the wind generation units at the CCWE2 facility (with 50 MW on-line).