Preliminary Results of the System Impact Study For GI-2011-2

MISSILE SITE 345kV SUBSTATION

Date: September 9, 2011

The following is preliminary information for the System Impact Study currently being completed for GI-2011-2, a 200MW wind facility to connect to the Missile Site 345kV Substation near Deer Trail, Colorado. This information is based on the wind farm network design and impedances provided by the Interconnection Customer and is subject to revision.

Public Service Company of Colorado Transmission is currently working to complete the base case for the thermal studies as part of the System Impact Study for Interconnection Request GI-2011-2. Preliminary results of these studies indicate that with all facilities in service, capacitors will not be required for the requested 200 MW maximum output to compensate for reactive losses. The 345 kV transmission line and 34.5 kV collector system will provide adequate line charging and result in near unity power factor at the Missile Site 345 kV station.

However, with no wind generation and all facilities in service there are approximately 48.2 Mvars of line charging injected at the Missile Site 345 kV point of interconnection (POI) with the voltage at 1.02pu. Studies show that a 20 Mvar rated reactor at the 34.5 kV side of the main Limon 34.5/345 kV step-up transformer, and a 26.1 Mvar rated reactor at the Limon 345 kV station will result in 0.0 Mvar injected or absorbed at the Missile Site 345 kV POI.