Transmission Customer Q&A Xcel Energy WMF Question in regards to the Lamar DC tie

Question:

September 15, 2005; Xcel Energy Wholesale Merchant Function (WMF);

Please answer the following questions on the public Q&A site.

1. What is the ramp capability of the Lamar DC tie

2. Please explain if it is possible to carry operating reserves across the Lamar DC tie

3. Please elaborate on the operation and maintenance of the Lamar DC tie as it would compare to operation and maintenance of a rotating machine.

<u>Response:</u>

- Ramping information is posted on the PSCo OASIS under Business practices. Xcel Energy is currently installing a Siemens EMS system that will have a new interface to control the DC tie at Lamar. We expect to have additional ramp capabilities in excess of the current 21 MW/min for the Lamar DC tie when this new EMS interface is delivered and installed.
- 2. It is possible to carry reserves across a DC tie. However, in order to accommodate reserves between two non-synchronous DC connected electrical areas several mechanisms must be in place including, but not limited to, a joint operating agreement to define and describe how the reserved would be deployed; published business practices that describe the reservation and tagging requirements associated with such use; and agreements with the balancing authorities and reserve sharing groups on both sides of the Tie. This operating agreement does not exist for reserves across the Lamar DC tie. The Rocky Mountain Reserve Group, of which Public Service Company is a member, will allow a member to supply 10 minute, cold start, and operating reserves across a DC tie subject to the following:
 - * The RMRG Operations Committee must approve the operating procedure to activate the reserves
 - * This operating procedure should allow secure notification and for rapid initiation of the reserves (i.e. start ramp in 2-3 minutes)
 - * The quick notification Ramp Rate must be documented
 - * There must be a corresponding arrangement on the other side of the tie to allow for the 10 Minute activation of reserves. (i.e. the east side must supply the energy out of someone's reserves-are the necessary arrangements in place?)

Spinning reserves are not allowed to be carried through a DC tie.

3. Public Service Company utilizes conditional assessment based maintenance to maximize the required maintenance of the electrical facilities. In general, a rotating machine will require a higher level of maintenance due simply to the nature of machinery. The DC tie, for the most part, contains electronics and other static devices and that do not require the same level of maintenance as rotating machines.