Gregory Johnson

From: Hantz Presume [HPRESUME@velco.com]
Sent: Thursday, February 02, 2006 9:42 AM
To: Dean LaForest; Gregory Johnson
Subject: RE: System Impact Study

Greg,

We have received a draft report discussing the results of the steady state analysis and the short circuit analysis. I believe these analyses are complete, but we have not discussed them with the ISO yet. What is remaining is the stability analysis. GE is creating the cases to be tested. I don't know what progress GE has made with respect to the wind turbine models.

My suggestion would be that you request a meeting with the ISO to discuss the preliminary results of the analysis. The worst that can happen is that the ISO will respond NO.

I looked at the last draft report, and the overall conclusion is that the Sheffield plant does not have a significant impact on the system, positive or negative.
Let me try to give you a brief summary of the analysis.

The steady state analysis was performed with and without Sheffield. When Sheffield was turned on, an equal amount of generation was removed from the Comerford and Moore hydro plants. The analysis was performed at 100% and 75% of summer 2007 peak. The report showed some voltage and thermal violations. But those were unrelated to Sheffield, and when Sheffield was turned on, these violations either remained the same or were slightly reduced. The analysis also looked at N-2 conditions. These are conditions where a facility is out of service initially, and then a set of contingencies are simulated subsequent to the initial outage. The intent of this analysis is to determine whether any violations can be eliminated by operating actions, such as generation reductions. The maximum amount of generation run back allowed is 1200 MW. This N-2 analysis showed that Sheffield will need to be run back to approximately 15 MW after the initial outage, when that initial outage is loss of the Sheffield to St Johnsbury line section of loss of the Irasburg to Highgate line. The limiting factor is an overload of the 46 kV and 35 kV path from Irasburg to Lowel and to Johnson. There were other violations, but they were either unrelated to Sheffield or they could be addressed by generation reductions.

The short circuit analysis was also performed with and without the Sheffield plant. No units were shut down when Sheffield was turned on. This analysis showed that the Sheffield plant will increase the fault duty on the system, but the increase will be 700 Amps or less at the point of interconnection. Increase will be lower the farther the location. For example, the short circuit current increase was in the order of 575 Amps at St Johnsbury. The breaker interrupting capabilities were not listed, but I do not believe any breaker interrupting capability will be exceeded.

If you have any questions, please email or call me.

Hantz.
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