
INTERIM EVALUATION OF HYDRO QUEBEC IMPORT CAPABILITY



On June 1, 2000 the NYISO increased the Hydro Quebec (HQ) import limit from 1200 MW to 1800 MW for the NYISO Day-Ahead (DAM) and Real-Time Markets. The increase in import limit has created real-time voltage problems that have forced the NYISO to curtail, in real-time, a number of transactions from HQ to New York that were scheduled in the DAM.

When substantial quantities of energy are flowing from HQ to New York, voltage support problems have occurred in actual operation at critical busses of the NYISO Secured System. With HQ transfers above 1200 MW, there are increased power flows and reactive losses on the Massena-Marcy 765kV and the Marcy-South 345kV transmission paths. As the reactive losses on the transmission system increase, additional demands are placed on the limited reactive resources in the Central New York area.

Previous studies indicated the need to limit Central-East interface power flows to protect against voltage and reactive limitations. However, those analyses had not considered the effect of varying levels of HQ import transfers above 1200 MW. The interim NYISO evaluation indicates that when transfers exceed 1200 MW, voltage support problems will occur at critical busses of the NYISO Secured System. These findings are consistent with those identified in recent operational experience, which demonstrate HQ transfers above 1200 MW have a detrimental impact on certain critical bus voltages. Specifically, maintaining acceptable voltage levels at the Edic 345kV substation with HQ import levels above 1200 MW has been operationally problematic.

In recognition of these real time limitations, and in order to avoid the adverse system effects associated with low voltage levels, the NYISO will undertake an extensive study to help it develop a more accurate HQ import limit. In the interim, the NYISO will limit the HQ import capability to 1500 MW.

The plot shows the impact of the HQ to New York import level on NYISO Secured System voltages. For all levels of HQ imports, Central-East transfers were maintained at a constant value. These results indicate that HQ imports must be limited to 1500 MW in order for the Edic substation voltage to be maintained within acceptable pre-contingency operating limits.

Edic Voltage vs. HQ to New York Import Level

