

Hydro Quebec - NYISO 765kV Interconnection

Update to Proposed Operation for Transfers above 1500MW

Market Structures Working Group
March 13, 2006

NYISO Energy Market Operations
Draft – For Discussion Only

HQ 765kV Interconnection Operation

➤ **Current Operation**

- *Total Transfer Capability (TTC) is limited to 1500MW South to NYISO, 1000MW North to HQTE*
- *1500MW limit based on impact to NYISO voltage/reactive performance as observed in Real-Time operation*
- *Prior ISO Operating Studies have verified the reduction of NYISO Central-East interface transfer capability for levels of HQ interconnection operation above 1500MW limit*

HQ 765kV Interconnection Operation

➤ Proposed Operation

- *Allow transfers above 1500MW (up to 1800MW limit) for Real-Time Market (RTM) operation when system conditions permit*
- *RTM Interconnection limit will be based on actual and forecast ISO voltage/reactive performance as observed in operating day*
- *In addition, the RTM Interconnection limit will be based on the status of critical generation and transmission facilities, as well as defined system operating conditions (eg. severe weather operation, thunderstorm alert operation)*
- *Day-Ahead Market (DAM) Interconnection limit will remain at 1500MW limit*

HQ 765kV Interconnection Operation

➤ Timeline / Operational Impacts

- ***Operating Procedures will require the implementation of automated monitoring and alarming associated with area voltage/reactive conditions, critical facility statuses, and defined special operating conditions***
- ***Additional Operating Studies need to be performed to verify sensitivity of HQ Imports to ISO voltage/reactive conditions as well as to critical facility outage conditions***
- ***Implementation of proposed RTM operation expected for Summer 2006 Capability period, subject to implementation of automated monitoring capabilities, operating procedures, and Operator training***
- ***The increased HQ Interconnection limit will allow increased scheduling of HQTE wheel-through transactions to PJM, ISONE, and IESO but does not increase the 1200MW limit for imports to the NYCA based on the NYCA reserve requirement***

HQ 765kV Interconnection Operation

- Specific Operational Requirements
 - ***Area voltage/reactive conditions***
 - ▶ The following station voltages must be expected to be 352kV or higher prior to initiating HQ transfers in excess of 1500MW
 - ▶ Marcy
 - ▶ Edic
 - ▶ New Scotland
 - ▶ Leeds
 - ▶ Rock Tavern
 - ▶ Gilboa
 - ▶ Ramapo

HQ 765kV Interconnection Operation

- Specific Operational Requirements
 - ***Area voltage/reactive conditions***
 - ▶ At least two (2) of the following station capacitors must be available prior to initiating HQ transfers in excess of 1500MW
 - ▶ **Marcy bank #1**
 - ▶ **Marcy bank #2**
 - ▶ **Edic bank**
 - ▶ **Fraser bank #1**
 - ▶ **Fraser bank #2**
 - ▶ **New Scotland bank #1**
 - ▶ **New Scotland bank #2**
 - ▶ **New Scotland bank #3**

HQ 765kV Interconnection Operation

- Specific Operational Requirements
 - ***Area voltage/reactive conditions***
 - ▶ The following reactive resources must be in operation in order to allow HQ transfers in excess of 1500MW

 - ▶ **Marcy Statcom**
 - ▶ **Fraser SVC**
 - ▶ **Leeds SVC**
 - ▶ **3 of the 5 Oswego Complex generating units**

HQ 765kV Interconnection Operation

- Specific Operational Requirements
 - ***Critical facility statuses***
 - ▶ The following 345kV transmission facilities must be in service in order to allow HQ transfers in excess of 1500MW
 - ▶ **Marcy/Edic 345kV transmission to Pleasant Valley 345kV**
 - ▶ **Marcy/Edic 345kV transmission to Ramapo 500kV**
 - ▶ **Marcy/Edic 345kV transmission to Watercure 345kV**
 - ▶ **Marcy/Edic 345kV transmission to Clay 345kV**
 - ▶ **Marcy/Edic 345kV transmission to the Oswego Complex 345kV**

HQ 765kV Interconnection Operation

- Specific Operational Requirements
 - ***Defined special operating conditions***
 - ▶ If the following ISO special operating conditions are active, then HQ transfers in excess of 1500MW are not permitted
 - ▶ **Thunderstorm Alert**
 - ▶ **Adverse Operating Conditions**
 - ▶ **Solar Magnetic Disturbance Alerts**

HQ 765kV Interconnection Operation

- Specific Operational Notifications
 - ***NYISO OASIS used for all notices that HQ transfers can be allowed in excess of 1500MW***
 - ▶ **Market Data / Power Grid Data / ATC-TTC webpage**
 - HQ-NYISO HAM TTC will be modified when the specific operational requirements have been met
 - HQ-NYISO HAM TTC will be evaluated on a hour by hour basis
 - Advance notice for HAM TTC changes is 25 minutes prior to normal HAM transaction submission deadline