Analysis of HQ-NY Transfers above 1200MW

NYISO Operations Engineering
August 20, 2001

Operation of MSC-7040 above 1200MW

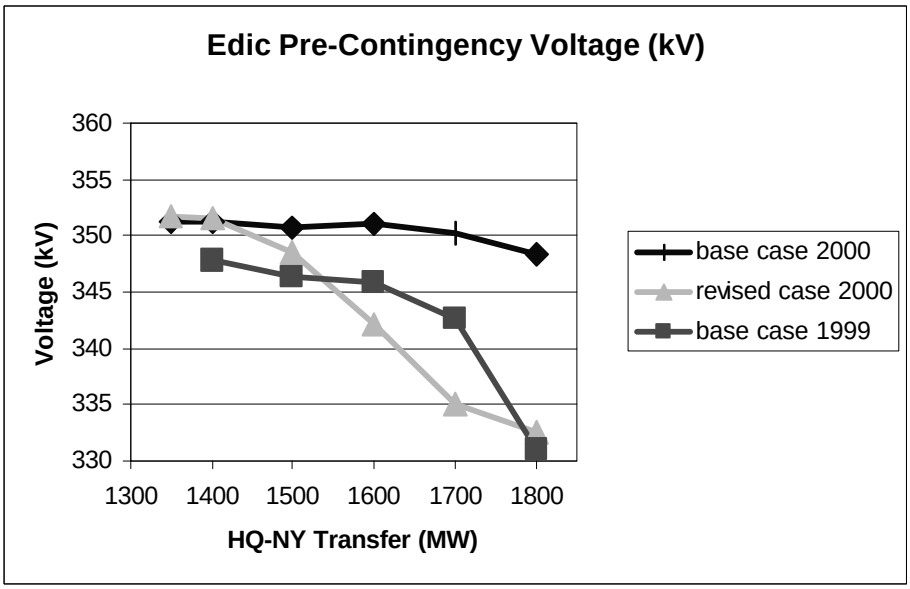
- **Scheduling limit raised to 1800MW on 6/00**
  - ***Allow HQ-US to sell energy through NYCA to external parties***
- **Problems experienced in real-time:**
  - ***Voltage problems in central-NY in real-time***
  - ***Unable to meet the day-ahead schedules***
- **Limit reduced to 1500MW on 8/13/00**

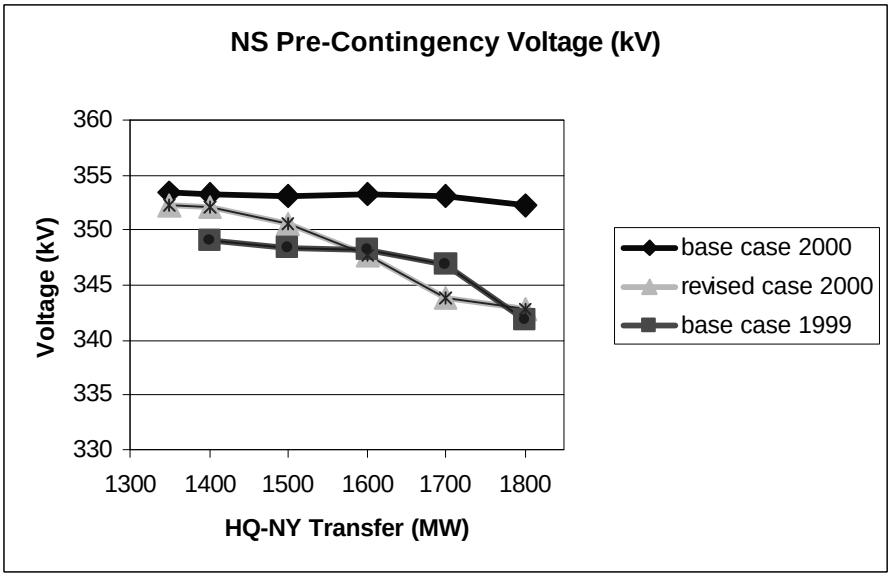
NYISO Staff Analysis

- **Compare results using three cases:**
  - ***Summer 1999 – July 6, 1999 review***
  - ***Summer 2000 operating study case***
  - ***Summer 2000 modified***
- **Analyses with all cases assumes peak load and constant value of Central East flow**

Results of previous analyses…

- **Voltage vs. MSC-7040 flow**
  - ***Edic 345kV pre-contingency voltage below limit (347kV) when transfers increase above 1500MW***
  - ***New Scotland voltage below limit (348kV) when transfers increase above 1500MW***


Edic Pre-Contingency Voltage (kV)
Voltage (kV)
360
355
350
345
340
335
330
1300
1400
1500
1600
1700
1800
HQ-NY Transfer (MW)
base case 2000
revised case 2000
base case 1999


NS Pre-Contingency Voltage (kV)
Voltage (kV)
360
355
350
345
340
335
330
1300
1400
1500
1600
1700
1800
HQ-NY Transfer (MW)
base case 2000
revised case 2000
base case 1999

Conclusions…

1. ***Quebec delivery above 1200MW at constant Central East the greater voltage impact is at Edic, limiting transfers to 1500MW.***
2. ***The reactive load (power factor) is critical to the accurate representation and solution of the transmission system voltages.***
3. ***The analysis underscores the importance of accurate generator representations and capabilities.***

Summer 2001 Analysis

- **Operating Committee requested detailed analysis of HQ transfers for Summer 2001**
- **Study based on the Marcy FACTS Phase I (STATCOM) analysis completed 4/2001**
- **Evaluated sensitivity of the Central East Voltage Collapse transfer limits for higher transfer levels on MSC-7040**

Results…

- **Impact on Central East MTLs**
  - ***Increasing HQ-MSC7040 flow from 1500MW to 1800MW reduces the MTLs approximately 75MW***
    - Impact on internal NYISO transfers would be a reduction of up to 150MW (Total East) based on the MTL reduction
  - ***Resulting analysis assumes Central East flow is constant for increasing MSC7040 flow***
    - Results are (therefore) optimistic

Recommendations…

- **Maintaining or maximizing Central East transfer capability in real-time is best for all market participants**
- **NYISO continues to allow scheduling up to 1500MW on MSC7040 in day-ahead.**
- **Scheduling above 1500MW in HAM may be possible if adequate reactive and flow margins exist in central NY voltages and Central East transfers**