Market Structure Working Group
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External Proxy Bus for Northport/Norwalk Cable

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Context

- The issue of when it is appropriate to have multiple external nodes and when it is appropriate to have a single external node between two ISOs was discussed at the last meeting.
- The potential for negative impacts of having multiple external nodes on an interface comprised of free-floating interties was distinguished from the positive potential impacts of having multiple external nodes on an interface with controllable lines if the system operators maintain a separate tie line schedule on the controllable line.
- This presentation looks at the treatment of the PAR-controlled Northport/Norwalk Tie (1385) in this context, and reflects a similar presentation made to the New England markets committee last month.

Introduction

- Historically, the Northport-Norwalk cable (1385 Tie) had been operated as a separate tie supporting economic and reliability transactions.

- With implementation of NE-SMD, NYISO and ISO-NE: (1) model the 1385 Tie as part of a single external NY/NE interface node and (2) set flows over the 1385 Tie to zero, not allowing any economic interchange of energy over the 1385 Tie.

- Proposal:
  - Establish a separate external node for the 1385 Tie
  - Develop operational rules that remove the "zero flow" limitation.

Present Treatment of 1385 Tie

- 1385 Tie is modeled as part of total NY/NE interface node.
- ISO-NE does not post a separate ATC for the 1385 Tie and does not list 1385 Tie as a separate point of delivery.
- Flows over 1385 Tie set to zero based on contingency analysis rule.
  - ISOs maintains that energy flows over the 1385 Tie can severely constrain the capability of the entire NY/NE AC interface when the flow on the 1385 Tie is in the same direction as the flow on the entire NY/NE AC interface, reducing it by a factor of about three to 1.
- ISOs only allows schedules over the 1385 Tie under emergency circumstances

NEPOOL Standard for Designation of Nodes

- Section 2.7(e) to Market Rule 1 provides that:

  "[a]s appropriate and after consulting with Participants, the ISO will establish and re-configure External Nodes taking into consideration appropriate factors which may include: tie line operational matters, FTR modeling and auction assumptions, market power issues associated with external contractual arrangements, impacts on Locational Marginal Prices and inter-regional trading impacts."

- Table 2.2 note (c) of the NEPOOL Market Operations Manual states that Phase Angle Regulation of intertie capability:

  "…shall be operated by NYISO and ISO-NE to provide local area reliability and to maximize inter-ISO transfers as appropriate."

Concerns with Present Treatment

- Setting 1385 Tie flow to zero does not maximize the volume or value of inter-ISO transfers when flows over the 1385 Tie do not constrain economic interchange upstate.
  - And maximizing the total inter-control area energy flows may not maximize the value of those transfers.

- Contrary to the ISOs contingency concern, the vast majority of the time, 1385 Tie flow (even if scheduled at the maximum capability of the cable) do not limit economic interchange upstate.

Impacts of 1385 Tie Capability on Economic Transactions To or From Upstate New York

Long Island Power Authority

- During most hours even full flow on 1385 Tie does not limit volume of economic upstate transactions.
- Requiring a zero schedule on 1385 flow in these hours reduces total economic transfers between ISO-NE and NYISO.
- During the June 2002 through February 2003 period full flow on 1385 would have limited the amount of economic upstate transactions that were scheduled, ***less than 6.3 percent of the time.***
- During most hours where a full flow on 1385 would limit the amount of economic transactions scheduled upstate, a less than 200 MW schedule on 1385 would not limit these transaction.

Questions About 1385 Tie As a Separate External Node

- Won't PJM-type phantom arbitrage opportunities arise with more than one external node between NY and NE?
  - The PJM "Phantom Arbitrage" occurred where the NYISO modeled PJM as a single external proxy bus and PJM modeled two external proxy busses in NY.
  - Under certain conditions, market participants were able to submit a balanced schedule in PJM, pay no congestion in New York and collect congestion in PJM, creating a risk-less arbitrage.
  - Other opportunities could have occurred if the location of marginal generation did not match the external proxy bus on interfaces with multiple free-floating lines.
- Common external node for 1385 Tie between ISO-NE and NYISO (i.e. both ISO-NE and NYISO establish a separate external node/proxy bus for the 1385 Tie) will eliminate phantom arbitrage potential.
  - Having a separate proxy bus and maintaining a tie line schedule on 1385 would help the ISO correctly reflect the relative flows over 1385 and rest of interface, eliminating gaming potential for those submitting balanced schedules on 1385 and upstate interfaces.

Questions About 1385 Tie As a Separate External Node

- Won't inadvertent flows on the 1385 Tie increase if a non-zero schedule is used?
  - Historically, inadvertent flow occurred mainly when PAR control angle limits were reached. LIPA $6 Million investment in new PAR increases control angle to +-50 degrees, reduces inadvertent flow.
  - The PAR 'deadband' of +-15MW applies to any setting including 0 MW.
  - ISO has existing procedures for inadvertent flows, as well as procedures for DAM and real time energy deviations, which can be applied to separate external node for the 1385 Tie.

Questions About 1385 Tie As a Separate External Node

- Doesn't the NYISO OATT prohibit transactions over the 1385 Tie by anybody other than LIPA?
  - Third parties can and have used the 1385 Tie for transactions.
  - 1385 Tie is subject to the NEPOOL and NYISO open access tariffs.
    - NYISO OATT provides that third party use of transmission facilities subject to clearance under IRS private use rules.
  - Procedures for scheduling service over 1385 Tie, consistent with NYISO OATT Section 5.2D, are posted on the NYISO OASIS.

Proposed Treatment – Separate Proxy Bus at 1385 Tie and Posting and Release of Unused Capability

- Create a separate proxy bus in both NYISO and ISO-NE representations at center of 1385 Tie with ISO-NE and NYISO to post ATC of 1385 Tie.
  - Define rules for when ATC would be greater than zero (When TTC less scheduled transactions was positive).

- Improve operating definition of when 1385 Tie flows would bind (or perhaps increase) economic transactions upstate.

- Optimal solution would be to select schedules considering economics of transactions within both ISOs.

Next Steps

- 1385 Tie owners meeting with ISO-NE and NYISO to discuss present treatment of the 1385 Tie in ISO-NE and NYISO.

- LIPA will discuss and propose options for interim and long-term treatment in subsequent MSWG meetings early this summer.