

Transmission & Dispatching Operations Manual Revisions

Ethan D. Avallone

SENIOR MARKET DESIGN SPECIALIST – ENERGY MARKET DESIGN, NYISO

Market Issues Working Group

July 18, 2018 Rensselaer, NY

Agenda

Agenda

- **Manual Revisions related to Securing 100+kV Transmission Facilities in the Market Model – Add/ Remove Facilities Procedure**
- **Manual Revisions to incorporate Technical Bulletins into the Transmission & Dispatching Operations (T&D) Manual:**
 - Technical Bulletin 155
 - Technical Bulletin 234
 - Technical Bulletin 235
- **Other T&D Manual Revisions**
- **Next Steps**

DRAFT – FOR DISCUSSION PURPOSES ONLY

Agenda

- **Please note that the NYISO Technical Bulletins (TB's) being incorporated within the Transmission and Dispatching Operations (T&D) Manual as described within this presentation are not directly related to the Securing 100+kV Transmission Facilities in the Market Model project.**
 - The content of each Technical Bulletin is being included within the Transmission & Dispatching Operations manual consistent with the original content of each Technical Bulletin.
- **There are also other T&D Manual revisions within this presentation that are not directly related to the Securing 100+kV Transmission Facilities in the Market Model project.**

DRAFT – FOR DISCUSSION PURPOSES ONLY

©COPYRIGHT NYISO 2018. ALL RIGHTS RESERVED

Securing 100+kV Transmission Facilities in the Market Model – Add/ Remove Facilities Procedure

T&D Manual, Section 5: Process for Determining Facilities Secured in the Market Models.

- The NYISO proposes to add a new Section (Section 5) within the T&D Manual: “Process for Determining Facilities Secured in the Market Models”.
 - This process was discussed with stakeholders at the January 10, 2018 MIWG meeting.¹
 - The NYISO Process for Determining Facilities Secured in the Market Models was posted with the February 21, 2018 MIWG meeting materials.²
- The following slides describe the Process for Determining Facilities Secured in the Market Models.

¹Link to the January 10, 2018 MIWG meeting presentation: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2018-01-10/100+kV%20Jan%20MIWG%20FINAL.pdf

²Link to the posted NYISO Process for Determining Secured Facilities in the Market Models: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2018-02-21/NYISO%20Process%20for%20Determining%20Secured%20Facilities%20in%20the%20Market%20Models.pdf

DRAFT – FOR DISCUSSION PURPOSES ONLY

5.0 Introduction

- **Consistent with the NYISO's responsibility to ensure reliable operation and efficient market outcomes, the following process is utilized to identify and evaluate facilities that should be secured in the Business Management System (BMS) Day-Ahead and real time market models.**
 - The NYISO is the Transmission Operator (TOP) responsible for operating and securing the transmission system 230kV and above, which is typically done in the market models.
 - The NYISO has worked with Con Ed and LIPA to include their respective 138 kV facilities in the BMS market models to facilitate congestion management improvements in those franchise areas.
- **The NYISO expects there may be additional congestion management opportunities to modeling other 100+ kV facilities throughout the state for those facilities that often require manual action to secure.**

DRAFT – FOR DISCUSSION PURPOSES ONLY



5. 1 Identify candidate facilities to be secured, including expected contingencies

- The NYISO shall evaluate all transmission facility thermal constraints that require out of market actions to operate reliably including, but not limited to, DARU/SRE/Out of Merit operation of a NYCA generating resource, Applications of Reliability Rules (ARRs), modification of external TTC limits, Phase Angle Regulator (PAR) adjustments, or interchange transaction contract curtailments.
- The NYISO shall review with the local Transmission Operator (TOP) the facility constraints to be secured in the BMS market models. The NYISO and local TOP will determine whether additional operating actions are used to secure the facility (e.g. load switching, station bus sectionalizing, phase angle regulator action, etc.).
 - If the actions that the local TOP will take to secure the facility cannot be adequately represented in the BMS market models, then the facility under consideration shall not be secured in the BMS market models until such actions can be adequately represented

DRAFT – FOR DISCUSSION PURPOSES ONLY



5.1 Identify candidate facilities to be secured, including expected contingencies

- Before considering a facility to be modeled as secured in the market models, the NYISO shall verify that facility constraint flow development in the BMS market models is consistent with expected EMS actual constraint power flows. This step shall ensure that the market models accurately reflect expected power flows over the transmission facilities to be secured (e.g. market model flows are expected to be within 5% of EMS flows).
 - If constraint flow development in the BMS market models is not consistent with EMS actual constraint power flows, then the facility under consideration shall not be secured in the BMS market models until such constraint flows can be adequately represented

5.2 Confirm Efficient Solution Options are Available

- The NYISO shall verify that NYCA resources are available with a greater than or equal to 5% generator shift factor on the constraint in either direction (*i.e.*, dispatch generation up or dispatch generation down), and that those resources are capable of establishing an appropriate shadow price in the SCUC/RTC/RTD market models.
 - A generation shift factor of 5% is consistent with the North American Electric Reliability Corporation (NERC) Transmission Loading Relief (TLR) procedure that is used for interchange transaction contract curtailments and is considered by the NYISO to provide effective relief of a constraint.
- The NYISO shall evaluate whether any NYCA resources necessary to solve the facility constraint could result in an exercise of market power if the facility is implemented in the BMS market models. If so, the NYISO shall determine if there are existing mitigation rules in place to effectively address the market power issues. If there are no effective mitigation rules in place, the facility will continue to be secured using local TOP operating actions and be subject to the NYISO's existing market power mitigation rules (e.g. Rest-of-State Reliability Mitigation Rules).
 - If existing mitigation rules are not in place to address such market power issues, then the facility under consideration shall not be secured in the BMS market models until further mitigation rules are developed.

DRAFT – FOR DISCUSSION PURPOSES ONLY



5.3 Identify System changes that could Trigger the Removal of a Facility Secured in the Market Models

- The NYISO shall consider topology changes that make it no longer necessary to secure a given facility within the market models. No longer securing a facility in the market models in these instances ensures that solve times are kept within acceptable limits while ensuring that the most important facilities are included.
 - For example, the frequent OOM actions that originally triggered securing of the facility in the market models could be resolved by transmission facility or generator upgrades.

5.4 Communicate Facility Status

- The NYISO shall include an additional column within Attachment A of the Outage Scheduling Manual to indicate that a given facility is secured within the market models
- Future TCC auctions shall normally represent the facility as ISO Secured after the facility is modeled as secured in the Day-Ahead Market.

Transmission & Dispatching Operations Manual Revisions to Incorporate NYISO Technical Bulletins

Technical Bulletin 155 – Special Settlement Rules for Generators Conducting Certain Scheduled Steady-State Tests

TB 155 – Special Settlement Rules for Generators

Conducting Certain Scheduled Steady-State Tests

- The NYISO proposes to incorporate TB 155 into a new Section of the T&D Manual (Section 6.7.6).
- TB 155 describes Rules for Generators Conducting Certain Scheduled Steady-State Tests.
 - T&D Manual Section 6.7.6 will describe:
 - Eligible units
 - Tests that are not Eligible Tests
 - Procedures and Rules Governing Eligible Tests
 - Test Notification
 - Day-Ahead Bidding
 - Test Day Procedures
 - Test Specific Criteria
 - Eligible Tests

DRAFT – FOR DISCUSSION PURPOSES ONLY

T&D Manual, Section 6.7.6: Eligibility

- **Eligible Units**

- Units are required to follow the bidding, scheduling, and test notification procedures defined in this section in order to qualify for the settlement treatment outlined in this section.
 - All units conducting ISO-required tests are eligible.

T&D Manual, Section 6.7.6: Eligibility

- **Tests that are not Eligible Tests**
 - Tests not listed in this section do not qualify for special settlement rules; the following four tests are not eligible:
 - Water outfall tests
 - Gas system interruption
 - Compliance assurance monitoring
 - Turbine overspeed test
- **Procedures Governing Eligible Tests**
 - Generating units conducting eligible tests must follow the bidding, scheduling, and test notification procedures outlined in this section.

T&D Manual, Section 6.7.6: Test Notification and Day-Ahead Bidding

- **Test Notification**

- Resources must contact the NYISO Scheduling Department to schedule a test period.

- **Day-Ahead Bidding**

- Resources 100 MW and greater must bid into the DAM such that the generator is scheduled for the hours of the test.
 - If the resource is not scheduled, then it must contact the NYISO and the TO by hour 1400.
- For resources 25 MW to 99 MW, a Day-Ahead bid is not required.
 - If the resource will not be performing the test, then it must contact the NYISO and the TO by hour 1400.

T&D Manual, Section 6.7.6: Test Day Procedures & Test Specific Criteria

■ Test Day Procedures

- This section outlines:
 - Requesting permission to perform the test on the test day
 - The procedure to cancel the test on the test day.
 - Notification from the resource that the test has started
 - Notification from the resource that the test is complete

■ Test Specific Criteria

- This section outlines how long a given test should take to qualify for special settlement rules.

DRAFT – FOR DISCUSSION PURPOSES ONLY

T&D Manual, Section 6.7.6: Eligible Tests

- Eligible Tests

- The following eligible tests are outlined in this section:
 - DMNC Test
 - VAr Tests
 - RATA Testing
 - Mill fineness checks
 - Reheat intercept/ stop valve leakage tests
 - N2 Leakage Test
 - Boiler Efficiency Test
 - GT Monthly Operational Test
 - Particulate Testing
 - NOx Testing
 - Full Load Fuel Oil Test
 - Control System Performance Testing

DRAFT – FOR DISCUSSION PURPOSES ONLY

Technical Bulletin 234 – Process for Determining the Status of Series Reactors that are under ISO Operational Control

TB 234 – Process for Determining the Status of Series Reactors that are under ISO Operational Control

- The NYISO proposes to include TB 234 at T&D Manual, Section 4.2.4: Process for Determining the Status of Series Reactors that are under ISO Operational Control.
 - This new section specifies that the TO of the equipment that the series reactors protect will develop operational guidelines that will be included in the seasonal NYISO Fault Current Assessment report.
 - The NYISO will:
 - Follow the operational recommendations of the TOP.
 - Coordinate with the applicable TO regarding the switching of series reactors for managing power flow and/or voltage control.
 - Give due consideration to series reactor bypass requests from the TO, as a last resort to mitigate conditions that require emergency voltage support.

DRAFT – FOR DISCUSSION PURPOSES ONLY

Technical Bulletin 235 – NERC Distribution Provider (DP) Standards Compliance

TB 235 – NERC Distribution Provider (DP) Standards Compliance

- In section 2.2, include Distribution Providers in the list of entities with assigned responsibilities and authorities.
- In Section 2.2.1 Background Definitions, indicate that capitalized terms not defined herein or in the NYISO Tariffs may have the meaning specified in the NERC Glossary of Terms Used in Reliability Standards.
- The NYISO proposes to add a new T&D Manual Section 2.2.3., NERC Distribution Provider (DP) Standards Compliance.
 - This section describes that the NYISO is registered with NERC as the Transmission Operator for New York, as well as the Reliability Coordinator and Balancing Authority.
 - The New York Transmission Owners have also been registered as Transmission Operators.
 - This section also describes Operational Communications between the NYISO and each Distribution Provider through the interconnected Transmission Owner.

Other Transmission & Dispatching Operations Manual Revisions

Other Proposed T&D Manual Revisions

■ Section 3.1.3. Reserve Calculation

- Specifies that NYCA reserve is monitored through the use of the Reserve Monitor Program.

■ Section 4.2.11 Solar Magnetic Disturbances

- Specifies that, at the NYISO actions for Level K7 or above Warning or Alert, the Alert State is declared if significant Geomagnetically Induced Current (GIC) is observed or reported to the NYISO by the TO or NPCC area.

Next Steps

Next Steps

- **July 18, 2018 ICAPWG/ MIWG**
 - Review manual revisions
- **August 9, 2018 SOAS**
 - Review manual revisions
- **August 13, 2018 BIC**
 - Vote to approve manual revisions
- **August 17, 2018 OC**
 - Vote to approve manual revisions

DRAFT – FOR DISCUSSION PURPOSES ONLY

©COPYRIGHT NYISO 2018. ALL RIGHTS RESERVED

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system



www.nyiso.com

DRAFT – FOR DISCUSSION PURPOSES ONLY

©COPYRIGHT NYISO 2018. ALL RIGHTS RESERVED