

Securing 100+kV Transmission Facilities in the Market Model

Reposted – revisions in red font at slides 12 and 13

Ethan D. Avallone

SENIOR MARKET DESIGN SPECIALIST – ENERGY MARKET DESIGN, NYISO

Market Issues Working Group

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Agenda

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- This presentation offers stakeholders the opportunity to review the add/ remove facilities procedure and provide feedback
- We will discuss:
 - Add/Remove Document
 - Facilities List
 - Timeline

Add/Remove Facilities Procedure

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.**

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 such as 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

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

Confirm Efficient Solution Options Available

- **The NYISO shall verify that NYCA resources are available with a greater than or equal to 5% generator shift factor on the constraint, 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

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 OOMs that originally triggered securing of the facility in the market models could be resolved by transmission facility or generator upgrades.

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.

Facilities List

Facilities List

- **The list of the facilities on the next slide will be subject to the NYISO's developing process to add lower kV facilities as secured in the market model.**
 - Depending on the outcome of this process, these facilities will be:
 - Added before the EMS/BMS deployment
 - Added after the EMS/BMS deployment, or
 - Not added
- **Facilities on the next slide are consistent with Outage Scheduling Manual attachment A***
 - In some cases, there are multiple segments within each of these facilities.
 - If a particular facility is ultimately added to the market model, the NYISO intends to secure the most limiting of these segments in the energy market model and TCC market model.
 - The PTIDs on the next slide are associated with only one of the facility segments
 - One of the facility segments will be placed through the process to add new facilities; this segment may or may not correspond to a PTID on the next slide.

*Link to Outage Scheduling Manual Attachment A:

http://www.nyiso.com/public/webdocs/markets_operations/documents/Manuals_and_Guides/Manuals/Operations/Child_outage_sched_mnl/M-29_Outage%20Scheduling_Att%20A.pdf

Zone	PTID	Equipment Name	From Bus Name	To Bus Name	Limiting Facility - lower kV	Example(s) of Typical Contingency Event(s) that would cause a Limiting Facility to Bind
West	25267	101	NIAGARA	LOCKPORT	101 NIAGARA-LOCKPORT	NR2 Niagara-Rochester or SR1-39 Kintigh-Rochester
West	25103	102	NIAGARA	LOCKPORT	102 NIAGARA-LOCKPORT	NR2 Niagara-Rochester or SR1-39 Kintigh-Rochester
West	25104	180	NIAGARA	GARDENVILLE	180 NIAGARA-GARDENVILLE	TWR Packard 77/78 (Packard Sawyer)
West	25075	191	NIAGARA	PACKARD	191 NIAGARA-PACKARD	192 Niagara-Packard
West	25099	192	NIAGARA	PACKARD	192 NIAGARA-PACKARD	TWR Niagara 61 & 191
West	25100	193	NIAGARA	PACKARD	193 NIAGARA-PACKARD	SCB 1414 Niagara (BK T2 & 195)
West	25101	194	NIAGARA	PACKARD	194 NIAGARA-PACKARD	SCB 1414 Niagara (BK T2 & 195)
West	25102	195	NIAGARA	PACKARD	195 NIAGARA-PACKARD	193 Niagara-Packard or 194 Niagara-Packard
West	25409	AT1	NIAGARA	NIAGARA	AT1 NIAGARA-NIAGARA	TWR Packard 77/78 (Packard Sawyer)
West	25410	AT2	NIAGARA	NIAGARA	AT2 NIAGARA-NIAGARA	TWR Packard 77/78 (Packard Sawyer)
West	26059	130	PACKARD	HUNTLEY	130 PACKARD-HUNTLEY	base case
West	25906	129	PACKARD	WALCK RD	129 PACKARD-WALCK RD	base case
West	26055	181-922	PACKARD	ERIE ST.	181-922 PACKARD-ERIE ST.	TWR Packard 77/78 (Packard Sawyer)
West	26056	182	PACKARD	GARDENVILLE	182 PACKARD-GARDENVILLE	TWR Packard 77/78 (Packard Sawyer)
West	25414	BK 3	PACKARD	PACKARD	BK 3 PACKARD-PACKARD	NR2 Niagara-Rochester or SR1-39 Kintigh-Rochester
West	26153	133	WALCK RD	HUNTLEY	133 WALCK RD-HUNTLEY	TWR Packard 77/78 (Packard Sawyer)
West	26047	38	HUNTLEY	GARDENVILLE	38 HUNTLEY-GARDENVILLE	TWR Packard 77/78 (Packard Sawyer)
West	26044	39	HUNTLEY	GARDENVILLE	39 HUNTLEY-GARDENVILLE	TWR Packard 77/78 (Packard Sawyer)
West	26038	141	GARDENVILLE	DUNKIRK	141 GARDENVILLE-DUNKIRK	TWR 73 & 74 Dunkirk-Gardenville
West	26037	142	GARDENVILLE	DUNKIRK	142 GARDENVILLE-DUNKIRK	TWR 73 & 74 Dunkirk-Gardenville
Genesee	25096	24	MORTIMER	STA 122	24 MORTIMER-STA 122	RP1 Rochester-Pannell or RP2 Rochester-Pannell
Genesee	25095	25	MORTIMER	STA 122	25 MORTIMER-STA 122	RP1 Rochester-Pannell or RP2 Rochester-Pannell
Central	25080	4-977	STA 122	BORDER CITY	4-977 STA 122-BORDER CITY	1 Pannell-Clay or 2 Pannell-Clay
North	26076	3	BROWNS FALLS	TAYLORVILLE	3 BROWNS FALLS-TAYLORVILLE	7040 Chat-Massena & MSU1 Massena-Marcy or 4 Browns Falls-Taylorville or TWR Moses MA1/MA2
North	26077	4	BROWNS FALLS	TAYLORVILLE	4 BROWNS FALLS-TAYLORVILLE	7040 Chat-Massena & MSU1 Massena-Marcy or 3 Browns Falls-Taylorville or TWR Moses MA1/MA2
North	26075	5	TAYLORVILLE	BOONVILLE	5 TAYLORVILLE-BOONVILLE	6 Taylorville-Boonville
North	26070	6	TAYLORVILLE	BOONVILLE	6 TAYLORVILLE-BOONVILLE	5 Taylorville-Boonville
Capital	25860	1	ALBANY	GREENBUSH	1 ALBANY-GREENBUSH	2 Albany -Greenbush
Capital	25868	2	ALBANY	GREENBUSH	2 ALBANY-GREENBUSH	1 Albany -Greenbush
Capital	26122	15	MOHICAN	BATTENKILL	15 MOHICAN-BATTENKILL	1 Spier Falls-Rotterdam or 2 Spier Falls-Rotterdam

This slide has been reposted
DRAFT - FOR DISCUSSION PURPOSES ONLY

Timeline

Tentative Timeline

- **Q1 2018**
 - Publish procedure to add and/or remove lower kV facilities.
 - Identify initial set of facilities secured before EMS/BMS project deployment and after EMS/BMS project deployment
- **February/ March 2018**
 - Spring 2018 auction for:
 - Two Year TCCs effective from 5/1/2018 to 4/30/2020
 - One Year TCCs effective from 5/1/2018 to 4/30/2019
 - Six Month TCCs effective from 5/1/2018 to 10/31/2018
- **April 2018**
 - Present proposed mitigation measures to stakeholders
- **June 2018**
 - Present draft tariff language to stakeholders
- **Q2 2018**
 - Begin securing pre-2019 facilities.
 - Once a lower kV facility is secured in the Day-Ahead market model, subsequent TCC market auctions will also model that facility as secured.
- **Q3 2018**
 - Vote to approve the market design and tariff language for “Securing 100+kV Transmission Facilities in the Market Model” project.
- **2019**
 - Deploy EMS/BMS system upgrades.
- **After 2019 EMS/BMS Project Deployment**
 - Implement Constraint Specific Demand Curves.*
 - Secure remaining 100+kV Transmission Facilities in the Market Model.*

*Subject to Stakeholder, NYISO Board of Directors, and FERC approval

The Mission of the New York Independent System Operator is to:

- Serve the public interest and
- Provide benefit to stakeholders 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



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