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NYISO Consumer Interest Liaison Weekly Summary

April 4 – April 8, 2016

Notices:

- *The NYISO is pleased to announce that the Training Team will be offering the, in-class, MT-201 New York Market Overview Course (NYMOC) June 28-July 1, 2016. The MT-201 NYMOC provides attendees the fundamental concepts of the NYISO markets and major programs.*

Meeting Summaries:

Monday, April 4, 2016

Electric Gas Coordination Working Group

2016 Long Term Forecast

Arthur Maniaci of the NYISO presented the 2016 Long Term Forecast that looked at energy load expectations over the next 10 years, through 2026. Mr. Maniaci began his presentation by noting that the growth rate of load continues to decline throughout the period compared to the 2014 and the 2015 forecasts. The principal factors affecting the 2016 forecast were:

- Slower peak growth downstate in 2016 compared to 2015
- Slower economic growth after 2020, based on Moody's current outlook
- Higher impacts of Clean Energy Fund and the New York Sun Initiative after 2020, based on the most recent information available for each program

Mr. Maniaci explained that the impact of state (New York State) energy programs (Energy Efficiency Program, NY Sun, etc.) on the energy load forecast has steadily increased as these programs are implemented. Several charts were presented on the factors that contribute to the development of the load forecast. Mr. Maniaci detailed the load forecasts for the four NYISO Capacity Areas and provided tables depicting the forecast of the annual energy in GWh and Summer Peak Demand in MW by zone through 2026. To see Mr. Maniaci's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_espwg/meeting_materials/2016-04-04/2016%20Long%20Term%20Forecast.pdf

Tuesday, April 5, 2016



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System Operations Advisory Sub-Committee

NYISO Operations Report – February 2016

Peak Load

The peak load for the month was 21,234 MW which occurred on Thursday, March 3, 2016, HB18. Reserve requirements were as follows:

| | | | |
|-------------|---------|----------|--------|
| Reserve | 10 Sync | Non-Sync | 30 Min |
| Requirement | 655 | 1,310 | 1,965 |
| For Hour | 1,185 | 2,486 | 4,455 |
| DSASP Cont. | 51 | 0 | 51 |

Major Emergencies -- 3

On March 2, 2016 a Major Emergency was declared at 02:55 when generation was lost in ISO-NE causing Central East VC to exceed 105%. The Major Emergency was terminated at 02:59.

On March 2, 2016 a Major Emergency was declared at 08:54 when the Gilboa-Fraser GF5-35 tripped causing Central East VC to exceed 105%. The Major Emergency was terminated at 08:54.

Alert States -- Alert State was declared on 21 occasions:

- 2 – System Frequency – 1 Low/1 High
- 1 – Shortage of 10 Min Synchronized Reserves
- 1 – Exceeding Central East Voltage Contingency Limit
- 17 – Emergency Transfer Declared

Alert state was declared 28 times during March of 2015

Thunder Storm Alerts

1 TSA was declared in March 2016 for a total of 3 hours

Reserve Activations – 7

Emergency Actions – 3

- Special Case Resources: 3/3/2016 HB16:00 SCR Test Zones A, B
- 3/3/2016 HB17:00 SCR Test Zones C, D, E, F, G, H, I
- 3/3/2016 HB18:00 SCR Test Zones J, K

TLR3 Declared – 0 for a total of 0 hours

Tuesday, April 5, 2016

Market Issues Working Group

RTC-RTD Forward Horizon Coordination

Cristy Sanada of the NYISO presented an introduction to the RTC-RTD Forward Horizon Coordination Improvement project. The 2016 RTC-RTD Forward Horizon Coordination project aims to improve modeling consistency between RTC and RTD and evaluate improvements to the RTC and RTD look-ahead evaluations. The NYISO is investigating potential RTC and/or RTD enhancements to ultimately improve RTC-RTD scheduling and price convergence. Ms. Sanada provided data on historical RTC-RTD average price spreads at three localities within the NYCA; the NYISO Reference Bus, Zone J (NYC) and Zone A (West), to indicate where these spreads

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have fallen. Stakeholders suggested that the information might be more meaningful if it were presented as a percentage of variance rather than a numerical value. The NYISO accepted the input and noted it was planning to return to a future MIWG with additional data and more detailed analyses. Ms. Sanada emphasized that the NYISO has implemented other market design enhancements over time that have helped to improve RTC-RTD convergence, such as:

- *Graduated Transmission Curve*
- *15-Minute Interchange*
- *Improved modeling of external control areas into the network model*

However, there is room for further improvement in RTC-RTD modeling, which this project seeks to address. The NYISO is also assessing other enhancements that will potentially further enhance RTC-RTD convergence:

- *Reducing unnecessary ramp constraints through RTC and RTD adjustments*
- *Adding RTD functionality to alleviate transient volatility*
- *Improved timing or added look-ahead evaluation in RTC and/or RTD to better account for more timely system events*

Questions and comments should be sent to csanada@nyiso.com. The NYISO is anticipating a BIC vote on a market design in the last quarter of 2016. To see Ms. Sanada's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-04-05/RTC-RTD%20Forward%20Horizon%20Coordination%20Improvements%204-5-16%20final.pdf

Fuel Constrained Bidding Project Timelines

Cristy Sanada of the NYISO presented timelines for the implementation of the two versions of the day-ahead inter-temporal fuel constrained bidding design. The Total Energy Curve day-ahead bidding design was approved at the November 2015 BIC meeting. Market Participants have since inquired about a more elaborate inter-temporal bidding design, the Fuel Cost and Efficiency Curve design. The NYISO is currently working with resource bidders and schedulers to gain insight into the value of the more complex design by holding NYISO/user informative discussions and circulating a follow-up survey. Stakeholders requested in March that the NYISO present timelines for implementation of each design for comparison. The Total Energy Curve design timeline was provided with the required steps resulting in an estimated implementation in Q4 2019 – Q1 2020. Ms. Sanada explained the various steps involved prior to implementation. The Fuel Cost and Efficiency Curve design was presented with an estimated implementation in Q1 or Q2 2021. Ms. Sanada explained the reasons for the additional time requirement, including:

- Extended time to develop market rules and functional requirements
- Extended use case drafting
- Extended development period
- Extended testing period



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Next, a timeline illustrating the steps and time required to implement both designs at the same time was presented, with an estimated implementation in Q4 2021. Ms. Sanada explained that the NYISO anticipates some overlap between the two designs with respect to market rules and some aspects of implementation. However, there are still anticipated differences and system changes between the two designs which account for an extended development and testing timeline if both designs are implemented concurrently or staggered. Stakeholders requested that the NYISO investigate a staggered approach which would allow development of the common elements of the two designs while not delaying the implementation of the less complex Total Energy Curve design. The NYISO will review the request internally while compiling results of the user survey and discussions and report back to Market Participants. Comments are requested and can be sent to csanada@nyiso.com. To see Ms. Sanada's complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-04-05/Fuel%20Constrained%20Bidding%20Project%20Timelines%204-5-16%20final.pdf

Niagara Generation Modeling Update

Dave Edelson of the NYISO presented an update on the modeling improvement to the Niagara Power Project in the Real-Time and Day-Ahead markets. Mr. Edelson referred stakeholders to the January 22, 2016 MIWG presentation describing the modeling changes and led a review of the current Niagara Power Project plant configuration with its three distinct points of injection and the inherent impacts on transmission constraints. Mr. Edelson explained the modeling improvement and described how the improvement allows the market software to recognize the current distribution¹ of the plant output for scheduling and pricing in the same manner in which it currently does for security analysis. An example was provided to illustrate how the weighted distribution of each injection point is evaluated to develop the overall Niagara Power Project schedule and price. The NYISO does not anticipate any changes to the TCC market as a result of this Energy Market change. The NYISO expects to activate this modeling improvement in the Scheduling and Pricing algorithms of SCUC, RTC, and RTD on Wednesday, May 4, 2016. To see Mr. Edelson's complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-04-05/Niagara_Modeling%20Improvements_MIWG_05APR2016.pdf

Initialization of Lake Success and Valley Stream PARs

Dave Edelson of the NYISO informed stakeholders of a change pertaining to the Lake Success and Valley Stream Phase Angle Regulators (PARs) in the Real-Time Energy markets. Historically, the Day-Ahead Market establishes a fixed schedule based on previous like day

¹

Plant distribution for the Real-Time Market is based on actual telemetered output from the individual units observed at the time each RTD/RTC execution initializes. Plant distribution for the Day-Ahead Market is generally a single static value applied to all hours based on the previous like day observations (e.g., weekday to previous weekday, weekend to previous weekend day).



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results, whereas the Real-time Markets (RTC/RTD) establish a fixed schedule based on the telemetered actual flow at the time of initialization of each RTC/RTD execution. The Real-Time Markets will be changed to use each PAR's telemetered control schedule, rather than the telemetered actual flow, at the time each RTC/RTD initializes. This change will go into effect in the Real-time Markets shortly following the April 20, 2016 scheduled software deployment. To see Mr. Edelson's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-04-05/901%20903%20PARs_MIWG_05APR2016.pdf

Wednesday, April 6, 2016

Installed Capacity Working Group

Renewable and Self-Supply Compliance Filing: Numerical Example of Net Short Threshold for Self Supply Exemption

Julia Popova of the NYISO presented an example of how the Net Short Threshold will be calculated and applied to determine a facility's eligibility for a Self Supply exemption from Buyer-Side Mitigation (BSM). The Federal Energy Regulatory Commission (FERC) directed the NYISO to revise the BSM Rules to exempt certain narrowly defined renewable and self-supply resources from Offer Floor mitigation. The NYISO has been working with its stakeholders to develop the compliance tariff revisions. Dr. Popova led a review of the Net Short Threshold concept that is in the current draft of the tariff compliance revisions, and explained how supply entry shifts and changes the slope of the Demand Curve. The inputs to the calculation were identified and discussed with stakeholders. Dr. Popova also presented and discussed with stakeholders a numerical example of the net short calculation. Stakeholders were encouraged to submit comments during and after the meeting. To see the complete NYISO presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-04-06/Self%20Supply%20Net%20Short%20Threshold%20Numerical%20Example%2003312016.pdf

Incremental Draft Tariff Revisions:

Following a review of the example, the revisions to the prior version of the draft tariff language were presented in a redline/highlighted format for discussion and review with stakeholders. Stakeholders were encouraged to submit comments during and after the meeting. To see the complete NYISO presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-04-06/Self%20Supply%20Net%20Short%20Threshold%20Numerical%20Example%2003312016.pdf

FERC Filings

April 4, 2016



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The ISO/RTO Council (IRC) filing of comments in response to the Commission NOPR issued on January 21, 2016, proposing to revise the Commission's regulations related to Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators.

April 4, 2016

NYISO filing of comments re: NOPR - Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators.

FERC Orders

April 5, 2016

Letter Order accepted an LGIA (SA 2260) between Niagara Mohawk and Indeck-Corinth subject to submission of a one-line diagram within 15 days

Link to FERC Filings and Orders:

http://www.nyiso.com/public/markets_operations/documents/tariffviewer/index.jsp