

More Granular Operating Reserves

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ICAP Working Group/Market Issues Working Group

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Agenda

- Introduction
- Load Pocket Reserves
- Reserve Provider Performance

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Introduction

Previous Presentations

Date	Working Group	Discussion points and links to materials
01-08-19	ICAPWG/MIWG	Proposed schedule for accelerating implementation of Zone J operating reserves
01-15-19	ICAPWG/MIWG	Establishing a new Zone J reserve region with a 500 MW 10-minute and 1,000 MW 30-minute reserve requirement
01-24-19	ICAPWG/MIWG	Proposed operating reserve demand curve prices for the Zone J reserve products and the proposed tariff revisions for this initiative Operating Reserve Background
03-04-19	ICAPWG/MIWG	Analysis of potential impact
03-13-19	BIC	Stakeholder vote: Establishing Zone J Operating Reserves
03-27-19	MC	Stakeholder vote: Establishing Zone J Operating Reserves

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Background

- **NYISO staff has agreed to consider the following design elements as part of the More Granular Operating Reserves project:**
 - ✓ Establishing a reserve region in Zone J (completed).
 - Evaluating load pocket reserves in New York City (NYC).
 - Reviewing performance of resources scheduled to provide reserves.
 - Evaluating the NYCA 30-minute reserve demand curve structure that applies during certain activations of Special Case Resources (SCRs) and Emergency Demand Response Program (EDRP) resources.
 - NYISO is including this topic based on feedback from stakeholders including feedback provided during the implementation of the revised scarcity pricing rules in 2016.
 - Specifically, certain stakeholders raised concerns regarding the allocation of reserve MW quantities to the \$500 per MWh and \$750 per MWh pricing steps of the NYCA 30-minute reserve demand curve during SCR/EDRP activations in only part of the state.
 - Reviewing the Zone J reserve demand curve pricing and applicable reserve requirements during Thunderstorm Alerts (TSA).
- **The purpose of today's presentation is to discuss load pocket reserves and performance of reserve providers.**

Zone J Operating Reserves Timeline

- Stakeholders recently approved the implementation of a Zone J reserve region and associated requirements for June 2019.
 - ✓ January and February 2019 (MIWG/ICAPWG)
 - ✓ Present/discuss market design, associated tariff revisions, and market impacts.
 - ✓ March 2019
 - ✓ Seek stakeholder approval at BIC.
 - ✓ Seek stakeholder approval at MC.
 - ✓ April 2019
 - ✓ Seek Board of Directors approval.
 - ✓ File tariff revisions with FERC seeking approval to implement in June 2019.

Load Pocket Reserves

State of the Market Recommendation

- In its 2017 SOM report, the Market Monitoring Unit (MMU) recommended that the NYISO consider implementing local reserve requirements in the New York City load pockets.
 - Further, the MMU recommended that the NYISO model these requirements based on the N-1-1 reliability criteria.

See Recommendation 2017-1 in the 2017 State of the Market Report, located at the following link:
<https://www.nyiso.com/documents/20142/2223763/2017-State-Of-The-Market-Report.pdf/cd4ee8a0-1989-dfa0-b53e-2d642c65e46d>



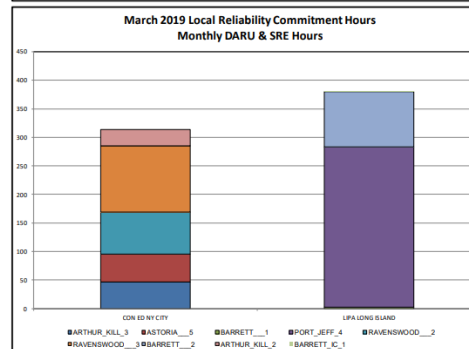
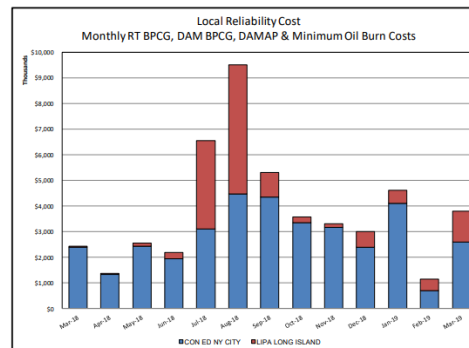
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Local Reliability Requirements (LRR)

- **There are a variety of reliability rules set by NYSRC for load pockets in NYC which correspond to certain operating conditions.**
 - These rules are outlined in the Applications of Reliability Rules.
 - Transmission owners are required to maintain procedures to comply with these reliability rules.
- **These can be fulfilled through resource commitments, dispatch reductions, or adjustments to transfer limitations, many of which are out-of-market actions.**
 - Currently, the LRRs are evaluated during the first pass of SCUC.
 - If the LRRs have not been met, LRRs may be fulfilled through out-of-market actions, which can result in uplift costs.

Local Reliability Costs

- NYISO's monthly Operations Report provides information on local reliability costs and commitments for NYC.
 - The figure on the right is an example of the information provided in the monthly reports.
 - The monthly Operations Reports are available on the NYISO's website and reviewed at Operating Committee and Management Committee meetings.
- The 2017 SOM noted that the total value of Day-Ahead Bid Production Cost guarantee payments (BPCG) incurred in NYC during 2017 was \$20 million.



Local Reliability Requirements

- As part of this project, the NYISO is exploring the possibility of incorporating local reliability requirements within the market software through load pocket reserve requirements.
 - This effort represents an extension of the recently approved Zone J reserve region proposal to explore the potential further specification of the appropriate geographic dispersion of NYC reserves within Zone J.
- Implementing such requirements offers the potential to provide a targeted procurement of reserves in locations where it is most needed and targeted price signals for resources capable of providing such reserves.
- By modeling these LRRs within the market solution, the commitments would be satisfied through market-based mechanisms.

Load Pocket Reserves - Next Steps

- Determine the load pockets to target for potential reserve regions within NYC.
- Determine the appropriate quantity of reserves to be procured in each identified load pocket.
 - NYISO staff will analyze LRR commitments in each load pocket.
- Determine the appropriate reserve demand curve values for load pocket reserve requirements.

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Reserve Provider Performance

State of the Market Recommendation

- The 2017 SOM report provided an evaluation of gas turbine (GT) performance while responding to real-time start-up instructions.
- The MMU estimated that 10-minute GTs provided an average of 61 percent of the MW scheduled, and 30-minute GTs provided an average of 77 percent of the MW scheduled.
 - Performance was measured 10 or 30 minutes, respectively, after an economic start-up signal was received.
 - Based on this analysis, the MMU recommended that the NYISO consider restructuring reserve payments to align with generator performance.¹

1. See Recommendation 2016-2 in the 2017 State of the Market Report, located at the following link:
<https://www.nyiso.com/documents/20142/2223763/2017-State-Of-The-Market-Report.pdf/cd4ee8a0-1989-dfa0-b53e-2d642c65e46d>

Reserve Audit Process

- **The NYISO has the ability to audit reserve providers at any time and without prior notification.**
 - The audit evaluates the actual response rate of resources.
 - The NYISO may conduct audits outside of normal reserve activations, as if an actual emergency existed.
- **NYISO Operations staff randomly selects units to audit. No advance notice is provided.**
 - Three types of audit may be performed: 10-minute response rate test, 30-minute response rate test, and UOL_N test.
 - NYISO conducts approximately 25-30 audits during each Capability Period.
- **If a resource does not perform, or performs poorly, it will fail the audit.**
 - The NYISO may derate the response rate and/or UOL_N of a reserve supplier that fails audit.
 - The resource will have the opportunity to propose a correction process to the NYISO.
 - The resource will not be scheduled to supply reserves until it passes a subsequent audit.

1. For more information on Generator Performance Audits, see [Technical Bulletin 142](#).

Reserve Performance

- The NYISO evaluated its reserve performance audit data from reserve audits conducted during the last five years:
 - 10-minute resources have an average 85% pass rate.
 - 30-minute resources have an average 90% pass rate.
- Audits from the two most recent Capability Periods (one winter and one summer) resulted in the following pass rates:
 - 10-minute resources: 88%
 - 30-minute resources: 92%
- These results indicate that suppliers are able to provide reliable reserve capability when called upon by NYISO.

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Reserve Performance – Next Steps

- **Evaluate potential future deactivations.**
 - NYISO staff will compare the performance of reserve suppliers that may exit the market over the next several years to that of other reserve suppliers.
 - Understanding the changing supplier landscape will enable the NYISO and its stakeholders to ensure that the appropriate measures exist to incentivize future reserve providers to perform reliably.
- **Review details of the MMU's analysis.**
 - Potomac's analysis considered the performance of GTs offering either 10-minute or 30-minute non-synchronous reserves following an economic real-time commitment.
 - NYISO staff will evaluate the MMU's assumptions to ensure that they conform to the NYISO's understanding of reserve performance.
- **Continue to review results of reserve performance audits.**

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Feedback/Questions?

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- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
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