New York ISO
Independent System Operator

Operating Reserves Performance – Enhanced Review of Operating Reserves Providers

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Previous Presentations

Date	Working Group	Topic/Links to Materials
August 7th, 2024	MIWG/ICAPWG	Operating Reserves Performance
October 22nd, 2024	MIWG/ICAPWG	Operating Reserves Performance Penalty Proposal
November 4th, 2024	MIWG/ICAPWG	Operating Reserves Performance Penalty Proposal
November 13th, 2024	MIWG/ICAPWG	Operating Reserves Performance Penalty Proposal and Tariff
November 21st, 2024	MIWG/ICAPWG	Operating Reserves Performance Penalty Proposal
December 11th, 2024	BIC	Operating Reserves Performance Charge Proposal
January 30th, 2025	MIWG/ICAPWG	Operating Reserves Performance
April 24th, 2025	MIWG/ICAPWG	Operating Reserves Performance – Enhanced Review of Operating Reserves Providers

Agenda

- Project Background
- Review of Operating Reserves Providers
- Next Steps
- Appendix
  - Performance Metrics
  - RPU Assessment Methodology

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Project Background

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Project Background

- **At the December 11, 2024, BIC, the NYISO proposed:**
  - A penalty structure for resources with a Day-Ahead schedule to provide Operating Reserves and who fail to adequately perform in Real-Time
  - A process to enhance the procedure to review Operating Reserves providers and remove the qualification to provide Operating Reserves for Resources that perform poorly
    - The vote at BIC advanced the enhanced review process, and the NYISO will present associated modifications to the ISO Procedures at a BIC in 2025
- **Design Principle:**
  - Recover costs to consumers for Operating Reserves that were paid for but not provided while incentivizing Reserves providers to provide the scheduled Reserves
- **2025 Deliverable: Software Design**

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Project Background

- This discussion builds on the presentation from April 24th to provide details on the analysis presented as well as provides additional clarification on the proposal

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Review of Operating Reserves Providers

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Enhanced Review Process

- **The NYISO has identified two performance metrics for the review of Operating Reserves providers:**
  - Reserve Pick-Up/Audit Performance Metric
  - Energy Performance Metric
- **At the beginning of each month, the NYISO will review the last three complete months of performance data for each of the two metrics**
  - i.e., after the end of June, the April, May, and June performance under each metric will be assessed for each Resource eligible to provide Operating Reserves

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Assessment by Product Type

	RPU/Audit Performance Metric		Energy Performance Metric
	RPU Intervals	Manual Audits	
10-minute Spinning Reserves	Yes	Yes	Yes
10-minute Non-synchronous Reserves	Yes	Yes	Yes
30-minute Spinning Reserves only	No*	Yes	Yes
30-minute Non-synchronous Reserves	No	Yes	Yes

*Note: there are only a handful of Resources that are eligible to provide 30-minute spinning Reserves that are not eligible to also provide 10-minute spinning Reserves

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RPU/Audit Performance Data

- **The NYISO assessed three-month RPU and audit performance data from 2023 and 2024:**
  - Resources provided at least 90% of the Expected Basepoint in 95% of monthly reviews performed
  - Approximately 10% of Resources assessed under the RPU/Audit Performance Metric fall below the 70% performance threshold at least once and would therefore be subject to a rebuttable presumption of removal
  - Removing “expected” audits does not significantly alter the Resources identified within the analysis
  - Removing overperformance from the analysis does not significantly alter the Resources identified within the analysis

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Energy Performance Data

- **The NYISO assessed three-month Energy performance data from 2023 and 2024:**
  - Resources provided at least 90% of the Energy Requested in 91% of monthly reviews performed
  - Approximately 9% of Resources assessed under the Energy Performance Metric fall below the 50% performance threshold at least once and would therefore be subject to a rebuttable presumption of removal

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Rebuttable Presumption of Removal

- **If a Resource falls below one or more thresholds established for the RPU/Audit Performance Metric or the Energy Performance Metric, the Resource will be subject to a rebuttable presumption of removal from the Operating Reserves market**
  - Resources removed from the Operating Reserves market pursuant to this design will be removed for a continuous 30-day period in the first instance and a 90-day period for any subsequent instances
    - Because the three-month assessment is consistent with the 90-day period of removal, the NYISO is not proposing to adjust the removal period or include a period that resets the assessment of a subsequent removal

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Proposal Clarification

- **Rebuttable Presumption of Removal**
  - If a Resource's qualification to provide Operating Reserves is removed due to its performance across a three-month review, the Resource's qualification will not be removed again for the same performance if no other performance has been assessed (i.e., a Resource will not be removed twice for the same intervals of assessment)
    - For example, consider the period of April-August in which a Resource receives one RPU dispatch in June. If the review of April-June performance results in the Resource's removal from providing Operating Reserves for 30 days beginning in July, the review of June-August performance would not result in a subsequent removal

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Next Steps

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Next Steps

- Present associated modifications to ISO procedures at an upcoming MIWG

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Appendix

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Performance Metrics

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RPU/Audit Performance Metric

- **Reserve Pick-Up ("RPU")/Audit Performance Metric**
  - Aimed at addressing Resource response to grid conditions and audits
  - Performance = $\left[1 - \frac{\sum(Expected\ Basepoint - Energy\ Provided)}{\sum|Expected\ Basepoint|}\right] \times 100\%$ over the previous three months
    - The Energy Provided and Expected Basepoint will be calculated consistent with the process outlined in Technical Bulletin 142
    - Performance will be assessed:
      - Any time a Resource that is eligible to provide 10-minute Operating Reserves is dispatched during an RPU; and
      - During a manual audit for a Resource eligible to provide 10-minute or 30-minute Operating Reserves
    - The Resource will be subject to a rebuttable presumption of removal if the performance for the period's RPUs and audits is below 70%

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Energy Performance Metric

- **Energy Performance Metric**
  - Aimed at addressing Resources that are infrequently dispatched and do not adequately perform when dispatched
  - Performance = $\left[1 - \frac{\sum(Energy\ Requested - Energy\ Provided)}{\sum |\ Energy\ Requested|}\right] \times 100\%$ over the previous three months
    - The performance will be assessed any time a Resource that is qualified to provide 10-minute or 30-minute Operating Reserves is scheduled, regardless of whether the Resource has a Day-Ahead or Real-Time schedule to provide Operating Reserves
    - The performance will not be assessed when the Resource is providing Regulation
    - The Resource will be subject to a rebuttable presumption of removal if the performance is below 50% over the period

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Energy Performance Metric

- **Energy Performance Metric**
  - For a Generator comprised of a group of generating units at a single location, which grouped generating units are separately committed and dispatched by the ISO and for which Energy injections are measured at a single location, if one or more of the units falls below the Energy Performance Metric threshold, the performance of the group of generating units will be assessed
    - If the group of generating units does not fall below the threshold, the unit(s) will not be subject to a rebuttable presumption of removal
    - If the group of generating units does fall below the threshold, the individual unit(s) that fell below the threshold will be subject to a rebuttable presumption of removal

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Rebuttable Presumption of Removal

- **If a Resource falls below one or more thresholds established for the RPU/Audit Performance Metric or the Energy Performance Metric, the Resource will be subject to a rebuttable presumption of removal from the Operating Reserves market**
  - The presumption of poor performance as an Operating Reserves provider may be rebutted by demonstrating to the reasonable satisfaction of the ISO that:
    - The metering data is incorrect, and it is not due to the Resource's metering
    - The Resource was on outage for a significant portion of the last three-month period (*i.e.*, approximately 2/3 or more of the three-month period)
    - The Resource is Out-of-Merit for Reliability, and the Resource's basepoints are not consistent with expected output
    - The Resource is a synchronous Operating Reserves only provider that fails to start up
    - Force Majeure

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Rebuttable Presumption of Removal

- **If a Resource falls below one or more thresholds established for the RPU/Audit Performance Metric or the Energy Performance Metric, the Resource will be subject to a rebuttable presumption of removal from the Operating Reserves market**
  - Resources removed from the Operating Reserves market pursuant to this design will be removed for a continuous 30-day period in the first instance and a 90-day period for any subsequent instances
  - If the Resource that will be removed from the Operating Reserves market goes on outage after such determination, the days in which the Resource is on outage may be used in lieu of days in which the Resource's Operating Reserves qualification is removed
  - After the conclusion of the removal period, the Resource must retest to requalify to provide Operating Reserves

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RPU Assessment Methodology

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Methodology

- **Resources receive a basepoint at the start of the reserve pick-up ("RPU"), which denotes the output level the unit must achieve in 10 minutes**
  - It is expected that a resource of any type will reach its basepoint in 10 minutes
  - Depending on the resource's reserves capabilities (i.e., spin vs. non-sync reserves providers), resources are assessed using different methodologies if an RPU ends prior to 10 minutes
    - More details on the treatment and calculations may be found on the following slides

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Methodology, cont.

- **For resources capable of providing spin reserves, an expected basepoint is calculated using a linear rate between the resource's basepoint before the RPU and the new basepoint issued at the start of the RPU based on the length of the event. The actual output value used is the maximum output at any point between the start of the event and one minute after the end of the RPU**
  - For example, if a spin resource's basepoint before the RPU was 10 MW, and it receives a new basepoint of 20 MW at the start of the RPU, its expected basepoint for a 5-minute RPU event is 15 MW
  - The output assessed is the highest actual generation between the start of the RPU and one minute after the end of the event
- **Resources capable of providing non-sync reserves are assessed using the basepoint received at the start of the event. The actual output value used is maximum output between the start of the event and 11 minutes after the start of the RPU, regardless of the length of the RPU**
  - For example, if a non-sync resource's basepoint before the RPU was 0 MW, and it receives a new basepoint of 20 MW at the start of the RPU, its expected basepoint is 20 MW
  - The output assessed is the highest actual generation between the start of the RPU and 11 minutes after the start of the event

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Methodology, Cont.

- **A resource is considered to fail (in part or in whole) to respond to the RPU dispatch if its output is more than 1 MW below its expected basepoint (extrapolated based on the type of resource and length of the RPU) AND if its output is less than 98% of the expected basepoint**
  - This provides a margin of error for both large and small basepoints
    - If a resource is dispatched to 200 MW and its output is 198 MW, it is generating at 99% of its expected basepoint despite operating more than 1 MW below the basepoint
    - If a resource is dispatched to 5 MW and its output is 4.5 MW, it is generating within 1 MW of its expected basepoint despite operating at 90% of its basepoint
- **This method for determining the expected basepoint and actual output is consistent with the methodology and metrics used for resource audits**

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