New York ISO
Independent System Operator

Operating Reserves Performance

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MIWG/ICAPWG

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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

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Agenda

- Project Background
- Review of Operating Reserves Providers
- 2025 Project Plan
- Next Steps

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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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Review of Operating Reserves Providers

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Review of Operating Reserves Providers

- **The NYISO is proposing to enhance the process for reviewing Operating Reserves Suppliers who consistently underperform**
  - When the Resource is identified for review, there will be a rebuttable presumption that the Resource's ability to provide Operating Reserves will be removed
    - Removing a Resource's qualification to provide Operating Reserves should incentivize performance due to loss of Operating Reserves revenues during the period of removal
      - Removal for a period of months may be effective to incentivize improved performance, and the NYISO is exploring the appropriate timeline
    - The NYISO will assess requirements for the Resource to perform a qualification test

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Review of Operating Reserves Providers

- The proposal presented at the December BIC includes three different metrics for assessment, aimed at capturing a variety of behaviors
- The thresholds will need to balance the identification and removal of poor performers with otherwise good performers facing unexpected grid conditions
- This process and specific thresholds will be outlined in the ISO Procedures
  - The thresholds provided are illustrative and for the purpose of discussion. The NYISO is actively working to collect and analyze data on the metrics below

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Review of Operating Reserves Providers

- **Metric 1**
  - Aimed at addressing Resource response during emergency grid conditions
  - Reserve Pick-up and Audit Performance
    - The Resource will be reviewed if it fails to perform in an RPU event and/or audit
    - E.g., any Resource that falls below 85% of average expected basepoint during an annual review of RPUs will also be reviewed
  - The NYISO is reviewing RPU and audit data consistent with the methodology outlined in Technical Bulletin 142 for Resources from 2017-2024
- **What feedback do stakeholders have on this metric?**

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Review of Operating Reserves Providers

- **Metric 2**
  - Aimed at addressing Resources that are frequently subject to the Operating Reserves performance charge
  - Performance Index = [(Hours in which the Resource is Scheduled Day-Ahead to provide Operating Reserves) – (Hours in which the Operating Reserves Penalty is Assessed)] / (Hours in which the Resource is Scheduled Day-Ahead to provide Operating Reserves)
- **However, because the proposed Operating Reserves performance charge will not be implemented, this metric is no longer applicable**
- **What feedback do stakeholders have on this metric?**

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Review of Operating Reserves Providers

- **Metric 3**
  - Aimed at addressing Resources that are infrequently dispatched and do not adequately perform when dispatched
  - Performance = (Real-Time Energy Provided) / (Real-Time Energy Requested)
    - The performance will be assessed during periods in which the Resource has a Day-Ahead schedule to provide Operating Reserves
    - E.g., the Resource will be reviewed if the average performance is below 50% over one month
  - The NYISO is currently reviewing the Real-Time Energy performance consistent with the equation above during intervals in which Resources have a Day-Ahead schedule to provide Operating Reserves for 2024
- **What feedback do stakeholders have on this metric?**

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2025 Project Plan

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2025 Project Plan

- **Perform data analyses to determine appropriate thresholds that will effectively identify Operating Reserves providers that are poor performers**
  - The analysis and proposed thresholds will be presented at an upcoming MIWG
- **Make associated updates to ISO Procedures, which may include the Ancillary Services Manual and Technical Bulletin 142**
  - The revisions to the ISO Procedures will be presented for review at MIWG and vote at BIC

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Topics under Evaluation

- Define thresholds that will effectively identify poor performers that are qualified to provide Operating Reserves
- Assess potential modifications to the audit and qualification processes
  - What feedback do stakeholders have on the current audit process?
- Consider the duration of removal from providing Operating Reserves

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Next Steps

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Next Steps

- Return to upcoming MIWGs to discuss metric thresholds and review associated revisions to ISO Procedures

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Appendix

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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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