New York ISO
Independent System Operator

Maintaining Operating Reserves during Load Shedding – *2024-2025 IRM*

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Agenda

- Background
- Methodology
- Results
- Recommendation
- Next Steps
- Appendix

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Background

- **Maintaining 350MW of Operating Reserves ("OR") during load shedding events was implemented for the 2023-2024 IRM Study after being adopted by the NYSRC**

  https://www.nysrc.org/PDF/MeetingMaterial/ICSMeetingMaterial/ICS%20Agenda%20260/Operating_Reserve_Recommendation_ICS05042022_V4_Updated[4867].pdf

  - The 350MW recommendation was based on the 10-minute net load variability during the summer Peak Load Window (PLW) using NYISO's Regulation Requirements dataset
  - The NYISO also recommended reviewing and updating the 350MW recommendation with new information, such as when the NYISO's Regulation Requirements are updated

- **NYISO's Regulation Requirements are currently in the process of being updated analyzing two scenarios**

  https://www.nyiso.com/documents/20142/37014190/Proposed%20Regulation%20Requirements_20230406_SOAS_v1.pdf/a2d7d51a-5511-37c6-ad04-a177d69f5424

  - Scenario 1: End of 2024 forecast for wind and solar (3,000MW Land Based Wind (LBW), 125MW Offshore Wind (OSW), 7,651MW Solar)
  - Scenario 2: End of 2026 forecast for wind and solar (3,700MW LBW, 125MW OSW, 9,768MW Solar)

- **The NYISO reviewed the two scenarios for a potential update to the 350MW assumption in the 2024-2025 IRM study**

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Methodology

- **Using the same approach that produced the 350MW recommendation in the 2023-2024 IRM Study, the 10-minute net load variability was calculated to 3σ (99.7% confidence level) for both scenarios**
  - Net Load = (Total Load) – (Solar Production) – (Wind Production)
- **Two Summer Windows were analyzed for the calculation to review the withholding OR assumption**
  1. 8 Hour Peak Load Window (PLW)
     - HB 12 – 19 from June – August
     - This is the PLW that was used to calculate the 350MW used in IRM23
  2. LOLE Window
     - HB 11 – 21 from June – August
       - Informational 2023 Hourly LOLE Distribution posted on NYISO's Capacity Accreditation page
         - https://www.nyiso.com/documents/20142/36848677/Peak-Load-Window-for-the-20232024-Capability-Year.pdf/4850e0ea-78ed-e3c2-98eb-fddd92446c31

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Results

10-Minute Net Load Variability – IRM23 Study			
8 Hour PLW	June	July	August
	307	346	315

10-Minute Net Load Variability – 8 Hour PLW			
Dataset	June	July	August
Scenario 1	254	328	298
Scenario 2	272	345	312

10-Minute Net Load Variability – LOLE Window			
Dataset	June	July	August
Scenario 1	316	396	382
Scenario 2	328	411	390

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Recommendation

- **The NYISO recommends no change to the 350MW being withheld during EOP step 8 in the 2023-2024 IRM Study**
  - The assumption for withholding 350 MW OR was implemented since last year
  - The updated datasets do not show a significant change in net load variability compared to last year's study
  - The distribution of the 10-Minute OR with the 350 MW withheld is detailed in the table below:

Total 10-Minute OR Distribution			Distribution of the Recommended **350 MW** OR at Load Shedding	Recommended Modeling of 10-Minute OR at EOP 8 - With maintaining 350 MW OR at Load Shedding
Zone		MW (%)		
Upstate	NY_F	518 (40%)	138	**380**
	NY_G	314 (24%)	84	**230**
Downstate	NY_J	358 (37%)	96	**262**
	NY_K	120 (9%)	32	**88**
TOTAL		**1310**	**350**	**960**

- **It is worth noting that the updated datasets show upward trending of the net load variability. Continued monitoring of the penetration of intermittent resources is also recommended**

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Next Steps

- If the recommendation is approved by the ICS, continue modeling the 350 MW OR withholding in the 2024-2025 IRM Study
- Continue to review the assumption of maintaining OR at the time of load shedding during each IRM study cycle

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Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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Questions?

Appendix

Proposed Regulation Requirements presented at April 17th ICAPWG

Proposed Regulation Requirements

	April-May		June-August		September-October		November-March	
HB	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 1 3,000MW LBW, 125MW OSW, 7,651MW Solar	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 1 3,000MW LBW, 125MW OSW, 7,651MW Solar	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 1 3,000MW LBW, 125MW OSW, 7,651MW Solar	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 1 3,000MW LBW, 125MW OSW, 7,651MW Solar
0	175	175	225	225	175	175	200	200
1	175	175	175	175	175	175	175	175
2	175	175	175	175	150	150	175	175
3	175	175	175	175	175	175	150	150
4	225	225	225	225	225	225	175	175
5	225	225	250	250	275	275	225	225
6	225	275	275	300	300	325	275	275
7	225	300	275	350	275	350	275	325
8	200	275	275	300	225	300	275	275
9	200	275	225	275	225	275	225	250
10	200	225	200	225	225	275	200	200
11	225	225	200	225	225	250	200	200
12	225	250	225	250	275	275	250	250
13	200	250	200	250	250	275	225	225
14	225	250	200	275	225	275	250	250
15	200	275	225	275	225	250	250	250
16	225	250	250	275	200	200	275	275
17	225	225	275	275	250	250	300	300
18	250	250	250	250	275	275	275	275
19	275	275	250	250	250	250	250	250
20	250	250	250	250	250	250	200	200
21	200	200	250	250	250	250	225	225
22	200	200	275	275	200	200	200	200
23	200	200	275	275	225	225	200	200

(Planned Updates – Scenario 1)

	April-May		June-August		September-October		November-March	
HB	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 2 3,700MW LBW, 125MW OSW, 9,768MW Solar	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 2 3,700MW LBW, 125MW OSW, 9,768MW Solar	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 2 3,700MW LBW, 125MW OSW, 9,768MW Solar	Current Requirement 3,500MW Wind 3,000MW Solar	Scenario 2 3,700MW LBW, 125MW OSW, 9,768MW Solar
0	175	175	225	225	175	175	200	200
1	175	175	175	175	175	175	175	175
2	175	175	175	175	150	175	175	175
3	175	175	175	175	175	175	150	175
4	225	225	225	225	225	225	175	175
5	225	275	250	275	275	275	225	225
6	225	325	275	325	300	325	275	275
7	225	375	275	375	275	400	275	325
8	200	375	275	400	225	450	275	375
9	200	325	225	350	225	400	225	325
10	200	275	200	300	225	350	200	275
11	225	250	200	275	225	300	200	250
12	225	300	225	300	275	300	250	250
13	200	300	200	300	250	300	225	250
14	225	325	200	325	225	350	250	275
15	200	350	225	350	225	325	250	300
16	225	300	250	350	200	300	275	275
17	225	250	275	300	250	250	300	300
18	250	250	250	250	275	275	275	275
19	275	275	250	250	250	250	250	250
20	250	250	250	250	250	250	200	200
21	200	200	250	250	250	250	225	225
22	200	200	275	275	200	200	200	200
23	200	200	275	275	225	225	200	200

(Planned Updates – Scenario 2)

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