

Reserve Response Update

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Action Required	Deadline	Who May Be Affected
<p>Review M-11, Section 4.3 & M-13, Section 2.2 language update: - as shown on slide 4 of this presentation</p>	<p>05/31/2023</p>	<p>All Stakeholders</p>

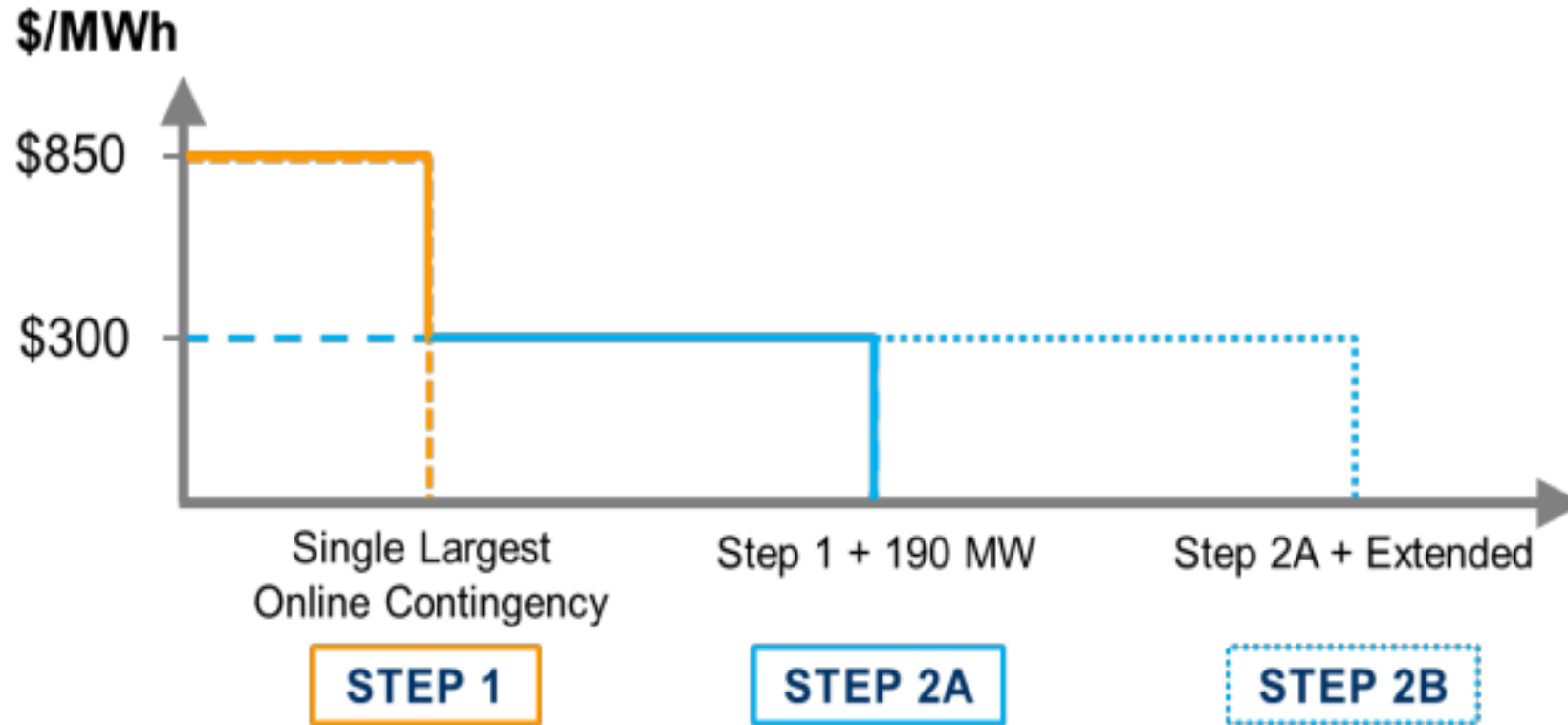


- Synchronous Reserve Event duration has increased since the implementation of Reserve Price Formation on October 1, 2022
- NERC Disturbance Control Standard requires Balancing Authorities to restore Area Control Error to pre-event value or above zero within 15-minutes
 - PJM tracks with the goal of recovering within 10-minutes
- Timely response necessary to restore Eastern Interconnection frequency and tie line flows as the source of the loss
- PJM M-13 Section 2.2 “Reserve Requirements” page 19:
 - “PJM schedules sufficient Contingency Reserves to satisfy the Reliability First (RF) Regional Criteria...”

- PJM proposes to update M-13, Section 2.2 and M-11, Section 4.3:
 - Clarifies the circumstance when PJM may add to the reserve requirements.
- M-13 / M-11 Language:
 - In order to meet Reliability First (RF) Regional Criteria, PJM may schedule additional Contingency Reserves on a temporary basis in order to meet the Largest Single Contingency, as necessary to account for resource performance. PJM shall post details regarding additional scheduling of reserves in Markets Gateway.

- PJM reserve requirement table can be found in M-11, Section 4.3 and M-13, Section 2.2

	Reserve Service		
	Synchronized Reserve (SR)	Primary Reserve (PR)	30-Minute Reserve (30-Min)
Reliability Requirement	Largest Single Contingency	150% of Synchronized Reserve Reliability Requirement	Greater of (Primary Reserve Reliability Requirement, 3000 MW, or largest active gas contingency)
Reserve Requirement	SR Reliability Requirement + Extended Reserve Requirement	PR Reliability Requirement + Extended Reserve Requirement	30-Min Reliability Requirement + Extended Reserve Requirement



- As noted on May 18, 2023, PJM will carry 130% of the largest contingency to address the following uncertainty:
 - 20% increase in non-performance since Reserve Price Formation implementation on October 1, 2022
 - An additional 10% added due to uncertainty of response from uncommitted resources
 - Effective for operating day of May 19, 2023
- The increased Synchronized Reserve requirement impacts Primary and 30-Minute requirements as well
- Additions apply to Step 1 of the ORDC

- Single Largest Online Contingency = 1,600 MW
- Synchronized Reserve Reliability Requirement = 2,080 MW
- Synchronized Reserve Requirement MW = **2,270**
- Primary Reserve Reliability Requirement = 3,120 MW
- Primary Reserve Requirement MW = **3,310**
- 30-Minute Reserve Reliability Requirement = 3,120 MW
- 30-Minute Reserve Requirement MW = **3,310**

- PJM clearing engines calculate ramp capability for Synchronized Reserve service
- Resource Owners have an obligation to submit accurate ramp capability
 - Accurate ramp parameters will result in achievable commitments
 - Segmented ramp rates are an option to accurately model ramping discontinuities
- Resource Owners are encouraged to review ramp capability and reserve assignments
 - make necessary adjustments to ramp rates and economic max or synchronized reserve max values

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Reserve Response Update



Member Hotline

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Appendix

- February MIC Presentation, Synchronized Reserve Performance: <https://www.pjm.com/-/media/committees-groups/committees/mic/2023/20230208/20230208-item-10---synchronized-reserve-performance.ashx>
- NERC BAL-002-3, Disturbance Control Standard: <https://www.nerc.com/pa/Stand/Reliability%20Standards/BAL-002-3.pdf>
- May 11 OC Presentation, Synchronized Reserve Requirement for Reliability: <https://www.pjm.com/-/media/committees-groups/committees/oc/2023/20230511/20230511-item-y---synchronized-reserve-requirement-for-reliability.ashx>

- Reserves Procedure Memo: <https://www.pjm.com/-/media/markets-ops/ancillary/reserves-procedure-memo.ashx>

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