

Synchronized Reserve Performance Inquiry Results

Operating Committee
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Reserve Performance Inquiry on Shortfall – Jul 22, 2025

- The IMM contacted resources regarding their underperformance during the July 22, 2025, synchronized reserve event.
- The July 22, 2025, event had an 80% response (2,610 MW responded of 3,246 MW deployed, 636 MW did not perform).
- Performance including over response was 100% (3,284 MW).
- Results:
 - 58 resources of interest contacted (83% of total shortfall).
 - So far, 53 resources categorized by primary cause of shortfall, representing approximately 523 MW (82% of the total 636 MW of shortfall initially of interest).

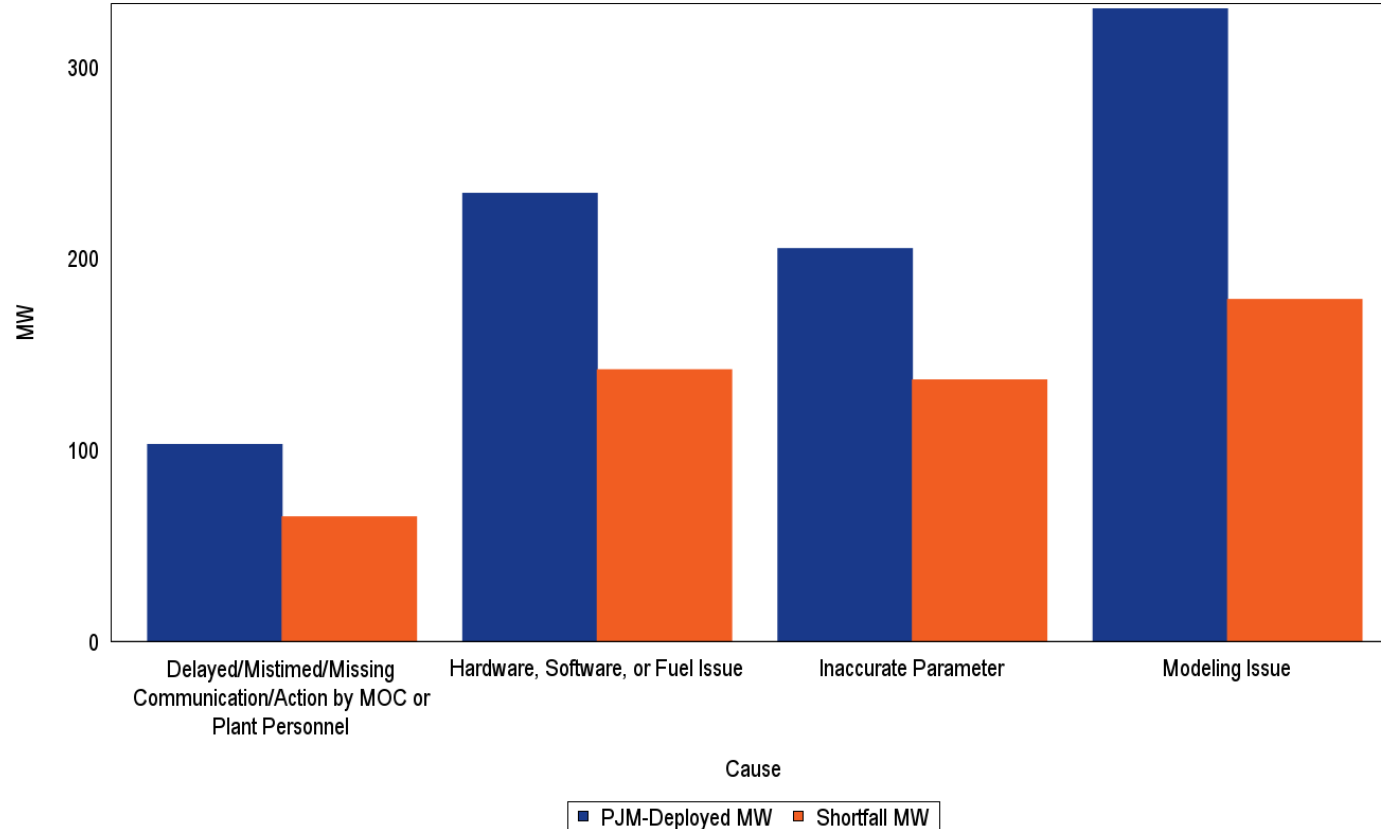
Note: Values can change as communications continue. Numbers may differ from PJM presentations.

Category Definitions

Issue Category	Definition
Communication	Delayed action, mistimed action, failure to act, delayed communication, or failure to communicate by MOC operator or plant personnel after contact/notification
Hardware/Software	Mechanical problems that occur during response; misconfiguration or logic errors in software that deploys the response or manages/monitors the unit; or problems with fuel that limit response
Modeling	Transition time to put equipment into or out of service or time needed to change direction of unit
Parameter	Ramp rates, economic maximums, offer amounts, and other parameters overstated resource ability
Personnel	Incorrect action or lack of action taken by MOC operator or plant personnel after contact/notification. Contact/notification was made, but operator did not know what to do when spin event was called



MW Shortfall by Primary Cause



Historical Underperformance Causes

Day	Communication	Hardware/Software	Modeling	Parameter	Personnel	Total
8-Jul-2024	860.6	85.9	78.1	355.9	271.9	1,652.4
18-Aug-2024	56.3	271.5	49.7	183.2	36.2	596.8
10-Nov-2024	28.2	1.6	107.2	207.1	79.4	423.5
5-Feb-2025	0.0	113.6	54.9	83.1	240.5	492.1
2-Jul-2025	0.0	17.2	55.7	83.6	162.3	318.7
22-Jul-2025	35.5	142.1	178.8	136.8	29.8	523.0



Historical Results

- **Observations:**
 - **Communication issues have been reduced.**
 - **Personnel issues continue to persist. Generation owners / MOC should increase focus on operator training.**
 - Progress reports should be required for poor performers
 - **Parameter issues should be dealt with existing tools (e.g. spin max exceptions, updating ramp rates, ensuring eco max are updated).**
 - Progress reports should be required for poor performers

Reserve Performance Inquiry on Over Response

- **Over response on Jul 22, 2025.**
- **Resources whose response was greater than their assignment: 130 resources with a total over response of 674 MW.**
- **Results:**
 - **Contacted 33 resources so far, representing 313 MW of over response (45% of the total over response from such resources)**
 - **Categorized 23 resources so far, representing 229 MW of over response (34% of the total over response from such resources)**

Over Response Causes

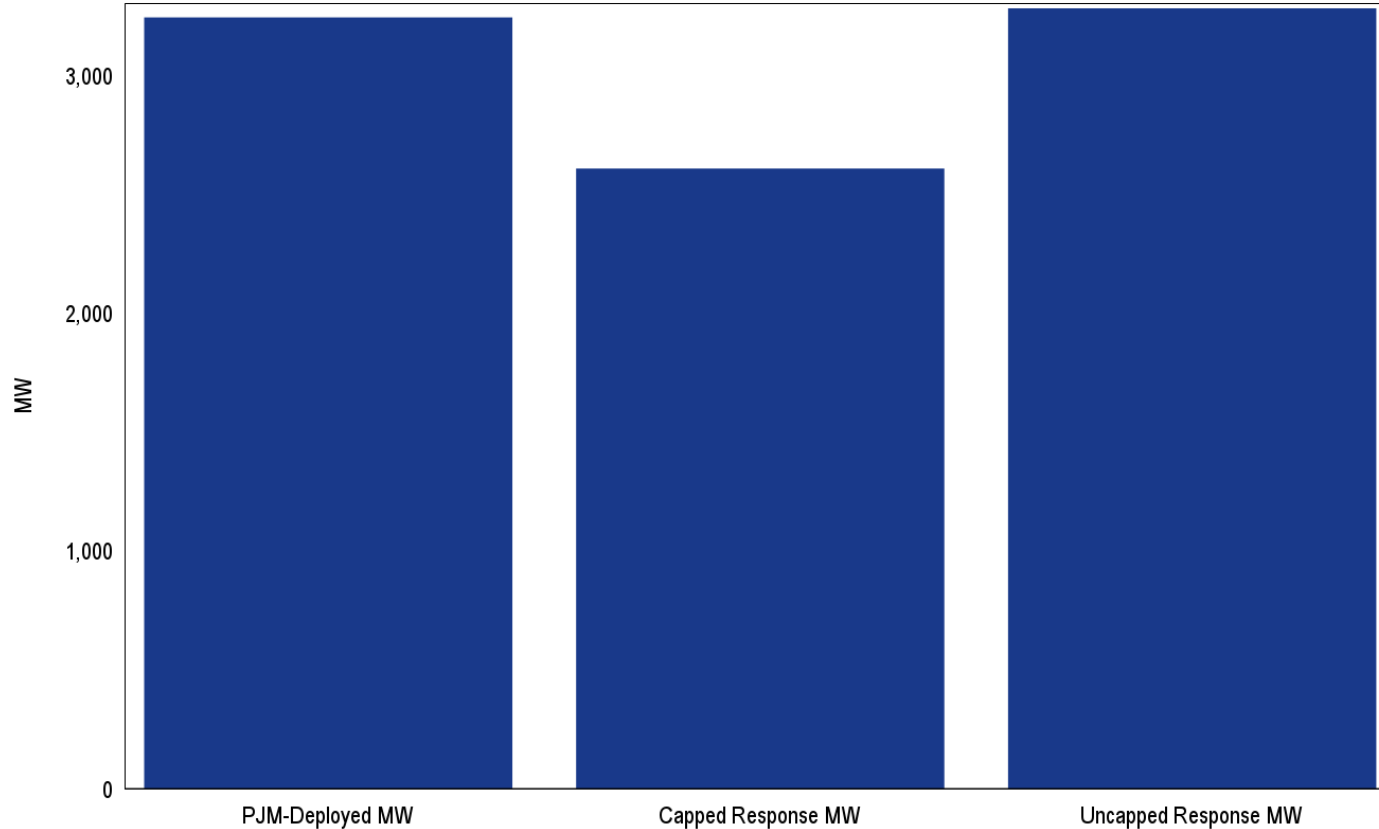
- **Due to data confidentiality rules, not enough responses to meaningfully separate categories yet.**
- **Common causes of over response so far are:**
 - **Ambient conditions leading to underestimates of parameters**
 - **Responding via peak firing while the assignment is based on a different part of the ramp rate curve**
 - **Being instructed to increase energy output during the event**
 - **Already having the equipment to ramp in service**

Over Response Observations

- The same reasons that lead to some resources under performing also lead to other resources over performing.
 - For example, some resources have argued that their slower response is attributable to worse than expected ambient conditions. Other resources have argued that their faster response is attributable to better than expected ambient conditions.



Over Response Observations – July 22 Event



Event Response Including Over Response

Day	Assigned MW	Capped	Reported Performance	Full	Full
		Response MW		Response MW	
08-Jul-2024	3,234	1,479	46%	1,621	50%
21-Jul-2024	2,379	1,766	74%	2,079	87%
18-Aug-2024	1,945	1,342	69%	1,672	86%
10-Nov-2024	1,919	1,483	77%	2,330	121%
05-Feb-2025	1,924	1,252	65%	1,623	84%
01-Jul-2025	2,942	2,337	79%	2,933	100%
22-Jul-2025	3,312	2,610	79%	3,304	100%
25-Sep-2025	3,343	2,566	77%	3,297	99%

IMM Recommendation

- **PJM's calculation metric for synchronized reserve performance artificially understates performance.**
- **The IMM recommends that PJM calculate the synchronized reserve performance metrics including the performance of all units assigned reserves.**
- **The IMM recommends that PJM calculate the synchronized reserve performance metrics without capping the performance of over performing units at the assigned reserve amount.**

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