System Operations Report

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Average Load Forecast Error

August 2023
Hourly Error: 1.56%  Peak Error: 1.79%

July 2023
Hourly Error: 1.99%  Peak Error: 2.32%
Daily Peak Forecast Error (July)

18:00 Day Ahead Forecast Error

- Error at Peak Hour
- Weekend / Holiday

Over-forecasting
Under-forecasting
Daily Peak Forecast Error (August)

18:00 Day Ahead Forecast Error

-7% -6% -5% -4% -3% -2% -1% 0% 1% 2% 3% 4% 5% 6% 7% 8% 9%

Error at Peak Hour
Weekend / Holiday

Over-forecasting
Under-forecasting
PJM's BAAL performance has exceeded the goal of 99% for each month in 2022 and 2023.
• 8 Shared Reserve events

• The following Emergency Procedures occurred:
  – 2 Maximum Generation Emergency Alerts
  – 1 Unit Startup Notification Alert
  – 10 Hot Weather Alert
  – 21 Post Contingency Local Load Relief Warnings
• 2 Shortage Cases Approved

• The approved Shortage Cases occurred on:
  – 07/21/2023:
    – 2 Shortage Cases for intervals 16:50 - 16:59
    – Factors: Load came in higher than forecast and CTs called not online yet
• 7 Shared Reserve events

• 1 Spinning Event

• The following Emergency Procedures occurred:
  – 1 Geomagnetic Disturbance Warning
  – 7 Hot Weather Alert
  – 11 Post Contingency Local Load Relief Warnings
There have been no shortage cases approved for the month of August 2023
The 13-month average forced outage rate is 4.50% or 8,989 MW.
The 13-month average total outage rate is 15.44% or 31,037 MW.
2022-2023 Planned Emergency, Unplanned, and Total Outages by Ticket

Note: “Unplanned Outages" include tripped facilities. One tripping event may involve multiple facilities.
PCLLRW Count Vs. Peak Load – Daily Values For 3 Months

MW (Thousands)

RTO Peak Load
PCLLRW Count

06/01/23 07/01/23 08/01/23
Spin Response

• There were no spin events in July 2023

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Start Time</th>
<th>End Time</th>
<th>Duration</th>
<th>Region</th>
<th>Assigned (MW)</th>
<th>Response (MW)</th>
<th>Penalty (MW)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>08/10/23</td>
<td>00:41:38</td>
<td>00:49:11</td>
<td>00:07:33</td>
<td>RTO</td>
<td>2315.0</td>
<td>2315.0</td>
<td>0.0</td>
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Appendix
Goal Measurement: Balancing Authority ACE Limit (BAAL)

- The purpose of the new BAAL standard is to maintain interconnection frequency within a predefined frequency profile under all conditions (normal and abnormal), to prevent frequency-related instability, unplanned tripping of load or generation, or uncontrolled separation or cascading outages that adversely impact the reliability of the interconnection. NERC requires each balancing authority demonstrate real-time monitoring of ACE and interconnection frequency against associated limits and shall balance its resources and demands in real time so that its Reporting ACE does not exceed the BAAL (BAAL_{LOW} or BAAL_{HIGH}) for a continuous time period greater than 30 minutes for each event.

- PJM directly measures the total number of BAAL excursions in minutes compared to the total number of minutes within a month. PJM has set a target value for this performance goal at 99% on a daily and monthly basis. In addition, current NERC rules limit the recovery period to no more than 30 minutes for a single event.
The 13-month average forced outage rate is 4.50% or 8,989 MW.
The 13-month average total outage rate is 15.44% or 31,037 MW.
PCLLRW Count Vs. Peak Load – Daily Values For 13 Months

- RTO Peak Load
- PCLLRW Count

MW (Thousands)

08/01/22 10/01/22 12/01/22 02/01/23 04/01/23 06/01/23 08/01/23

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36

PCLLRW Count
PROTECT THE POWER GRID
THINK BEFORE YOU CLICK!

Be alert to malicious phishing emails.

Report suspicious email activity to PJM.
(610) 666-2244 / it_opsCtr_shift@pjm.com