System Operations Report

Hong Chen
Principal Engineer, Markets Coordination
MC Webinar
September 19th, 2022
Average Load Forecast Error

August 2022
Hourly Error: 1.26%
Peak Error: 1.53%

July 2022
Hourly Error: 1.87%
Peak Error: 2.39%
Daily Peak Forecast Error (July)

- **Error at Peak Hour**
- **Weekend / Holiday**

- **Over-forecasting**
- **Under-forecasting**

Chart showing daily peak forecast error for July, with days labeled from 1 to 31 on the x-axis and error percentages ranging from -8% to 8% on the y-axis.
Daily Peak Forecast Error (August)

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

- 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.
• One spinning event
• Five reserve sharing events with the Northeast Power Coordinating Council (NPCC)
• The following Emergency Procedures occurred:
  – 20 Post-Contingency Local Load Relief Warnings (PCLLRW)
  – 10 Hot Weather Alerts
• 1 Shortage Case Approved

• The approved Shortage Case occurred on:
  – 07/28/22:
    – 1 Shortage Case for 16:10 interval
    – Load coming in higher than expected
• Four reserve sharing event with the Northeast Power Coordinating Council (NPCC)

• The following Emergency Procedures occurred:
  – 7 Hot Weather Alerts
  – 1 Geomagnetic Disturbance Warning
  – 34 Post-Contingency Local Load Relief Warnings (PCLLRW)
• No Shortage Cases were approved in August 2022
The 13-month average forced outage rate is 4.74% or 9,496 MW.
The 13-month average total outage rate is 16.16% or 32,464 MW.
2021-2022 Planned Emergency, Unplanned, and Total Outages by Ticket

Note: “Unplanned Outages” include tripped facilities. One tripping event may involve multiple facilities.
### Spin Response

**Tier 2 Response is equal to Tier 2 Assigned for events with duration less than ten minutes**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Start Time</th>
<th>End Time</th>
<th>Duration</th>
<th>Region</th>
<th>Tier 1 Estimate (MW)</th>
<th>Tier 1 Response (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>07/07/22</td>
<td>17:21:41</td>
<td>17:29:33</td>
<td>00:07:52</td>
<td>RTO</td>
<td>805.8</td>
<td>522.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Start Time</th>
<th>End Time</th>
<th>Duration</th>
<th>Region</th>
<th>Tier 2 Assigned (MW)</th>
<th>Tier 2 Response (MW)</th>
<th>Tier 2 Penalty (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>07/07/22</td>
<td>17:21:41</td>
<td>17:29:33</td>
<td>00:07:52</td>
<td>RTO</td>
<td>952.2</td>
<td>952.2</td>
<td>0.0</td>
</tr>
</tbody>
</table>
• No Spin Events occurred in August 2022

*Tier 2 Response is equal to Tier 2 Assigned for events with duration less than ten minutes
Presenter:
Hong Chen,
Hong.Chen@pjm.com

SME:
Ross Kelly,
Ross.Kelly@pjm.com

System Operations Report
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 4.74% or 9,496 MW.
The 13-month average total outage rate is 16.16% or 32,464 MW.
PROTECT THE POWER GRID
THINK BEFORE YOU CLICK!

Be alert to malicious phishing emails.

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