System Operations Report

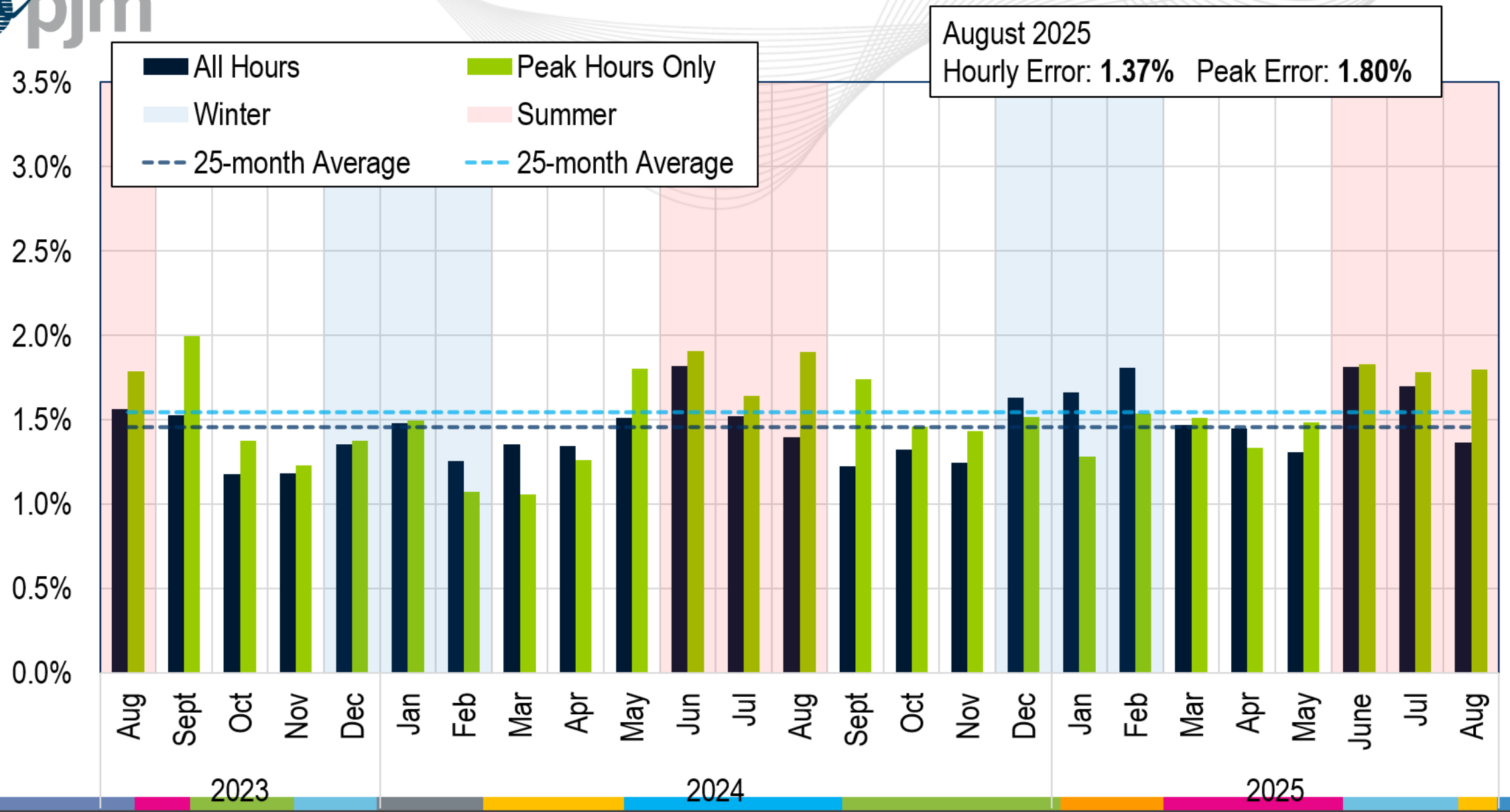
Marcus Smith, Lead Engineer – Markets Coordination

David Kimmel, Sr. Engineer II – Performance Compliance

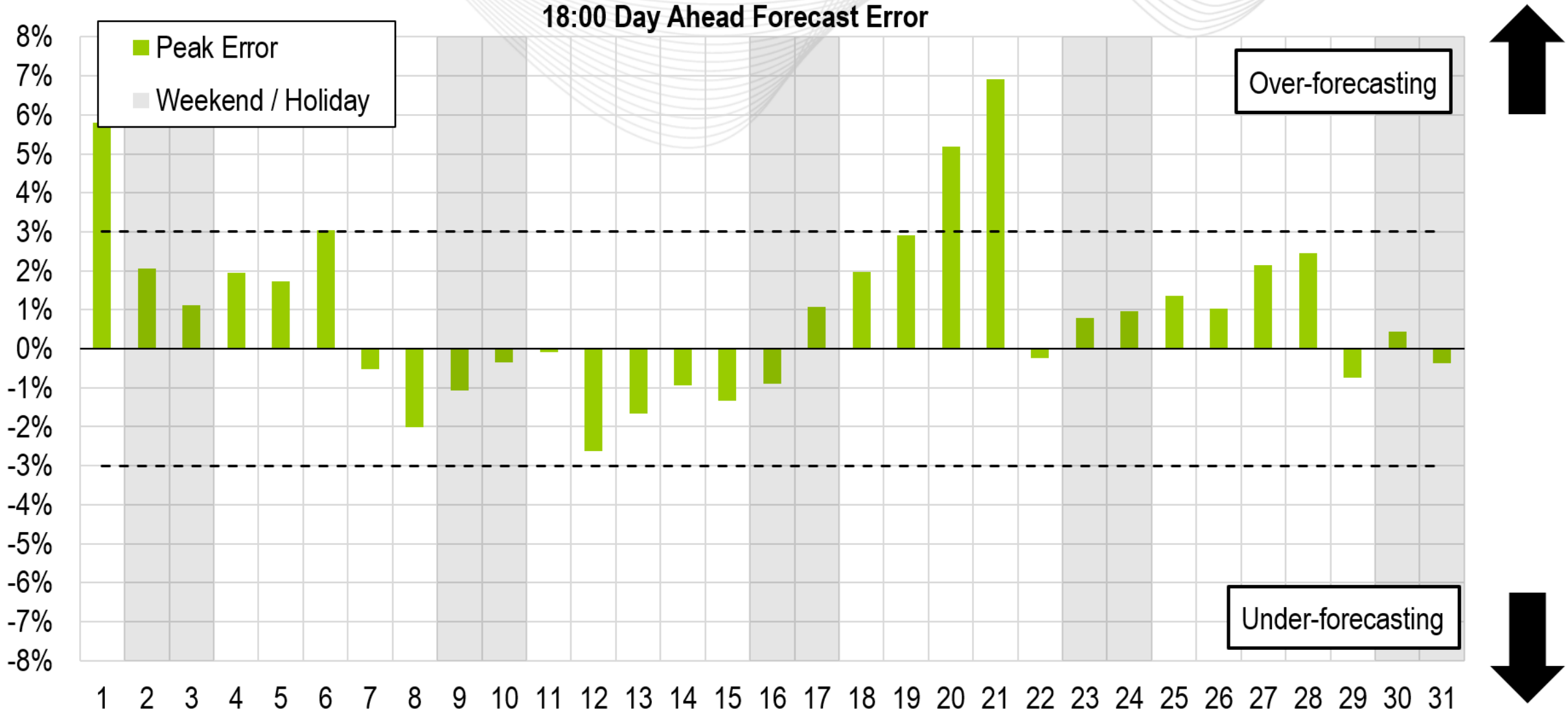
Operating Committee

September 11th, 2025

Average Load Forecast Error



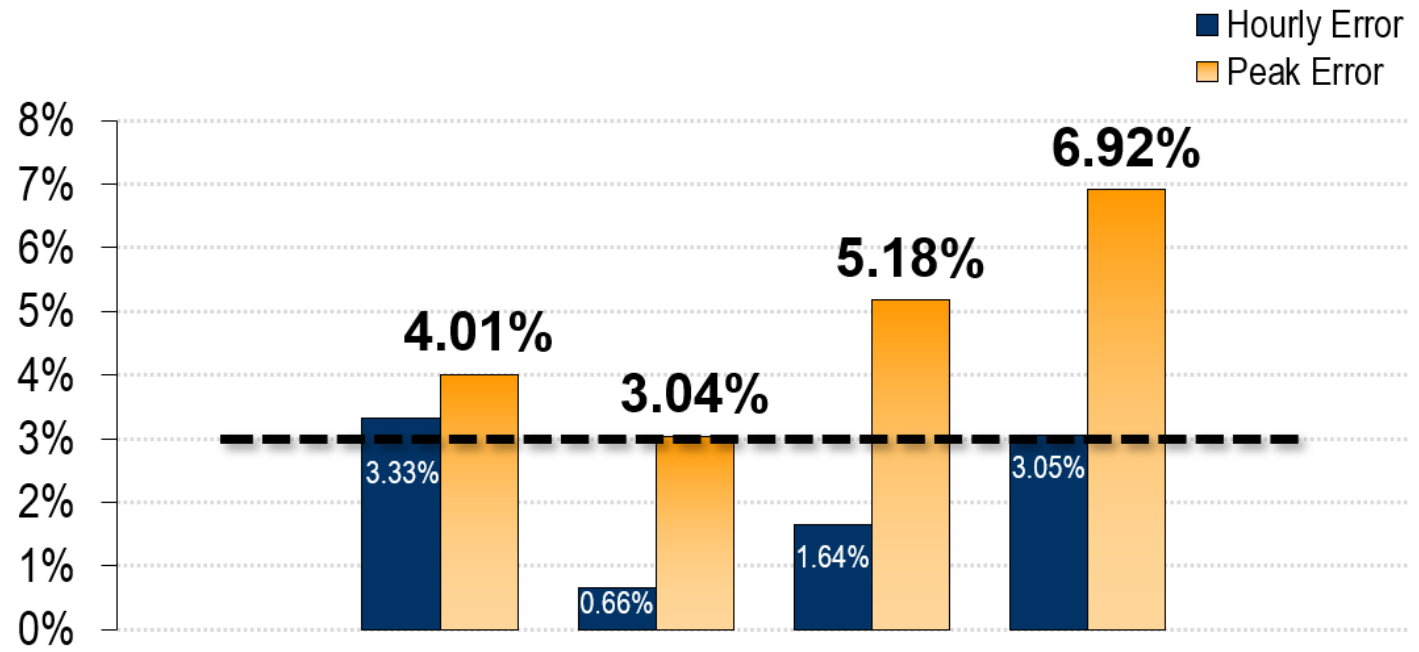
Daily Peak Forecast Error (August)



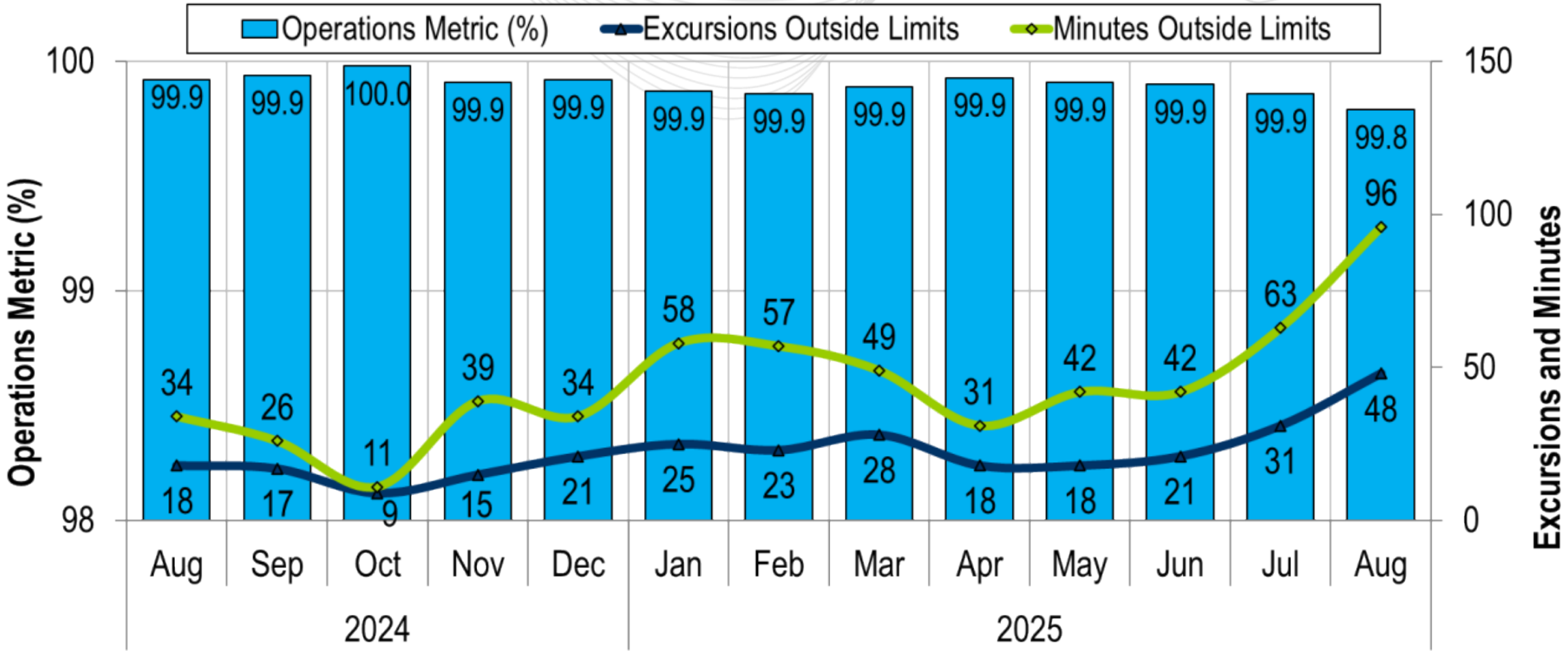
Days Exceeding 3% Forecast Error at Peak Hour

Over-forecasting

August 1	August 6	August 20	August 21
Several zones came in with cooler ambient temperature than forecast, leading to much lower loads	Temperature came in lower than forecast in the east, leading to lower loads and over forecasting	A few zones came in lower in temperature than expected, leading to lower loads and over	Several zones had excessive temperature error, coming in much cooler than expected, resulting in lower loads and over forecasting



Monthly BAAL Performance Score



PJM's BAAL performance has exceeded the goal of 99% for each month in 2024 and 2025.

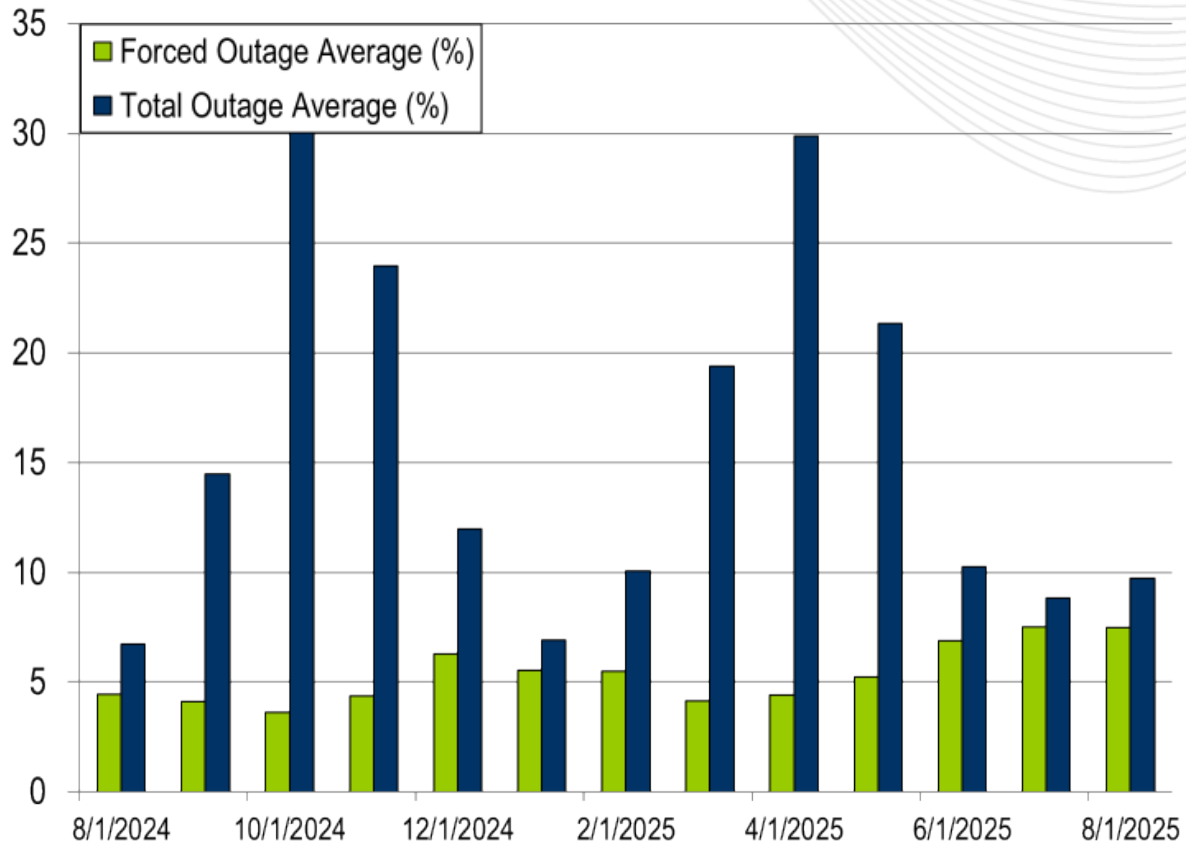
Operational Summary

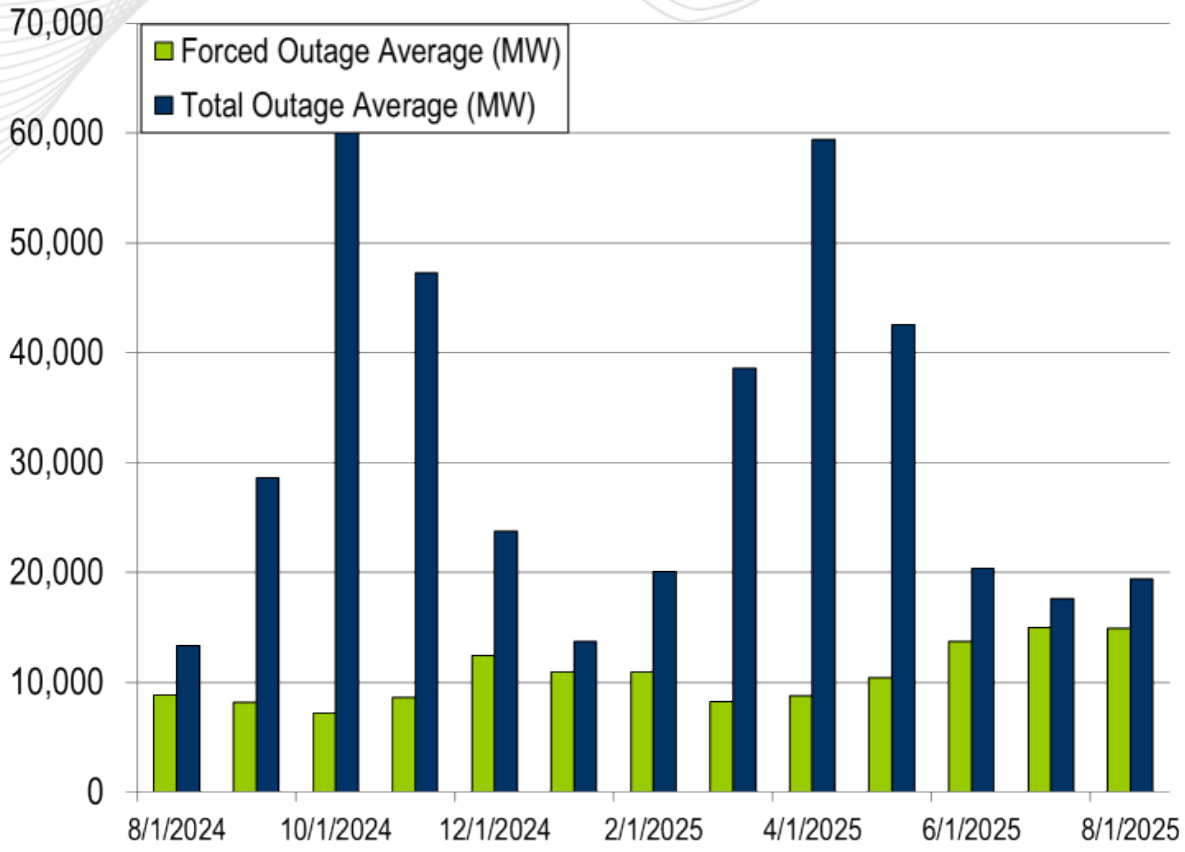
- The following Emergency Procedures occurred:
  - 3 Spin Event
  - 1 Shared Reserve event
  - 1 NERC EEA Level 2
  - 3 Pre-Emergency Load Management Reduction Actions
  - 1 Emergency Load Management Reduction Actions
  - 2 High System Voltage Action
  - 2 Hot Weather Alerts
  - 25 Post Contingency Local Load Relief Warnings

Shortage Case Approvals

- 5 Shortage Cases Approved
- The approved Shortage Cases occurred on:
  - 08/14/2025:
    - 3 shortage cases approved for 17:35, 17:40, and 17:50 intervals
      - Factors: Large interchange ramps, solar dropping out faster than load, CTs scheduled had not come in yet
  - 08/15/2025:
    - 2 shortage cases approved for 17:59 and 18:05 intervals
    - Factors: Large interchange ramps, solar dropping out faster than load, CTs scheduled had not come in yet

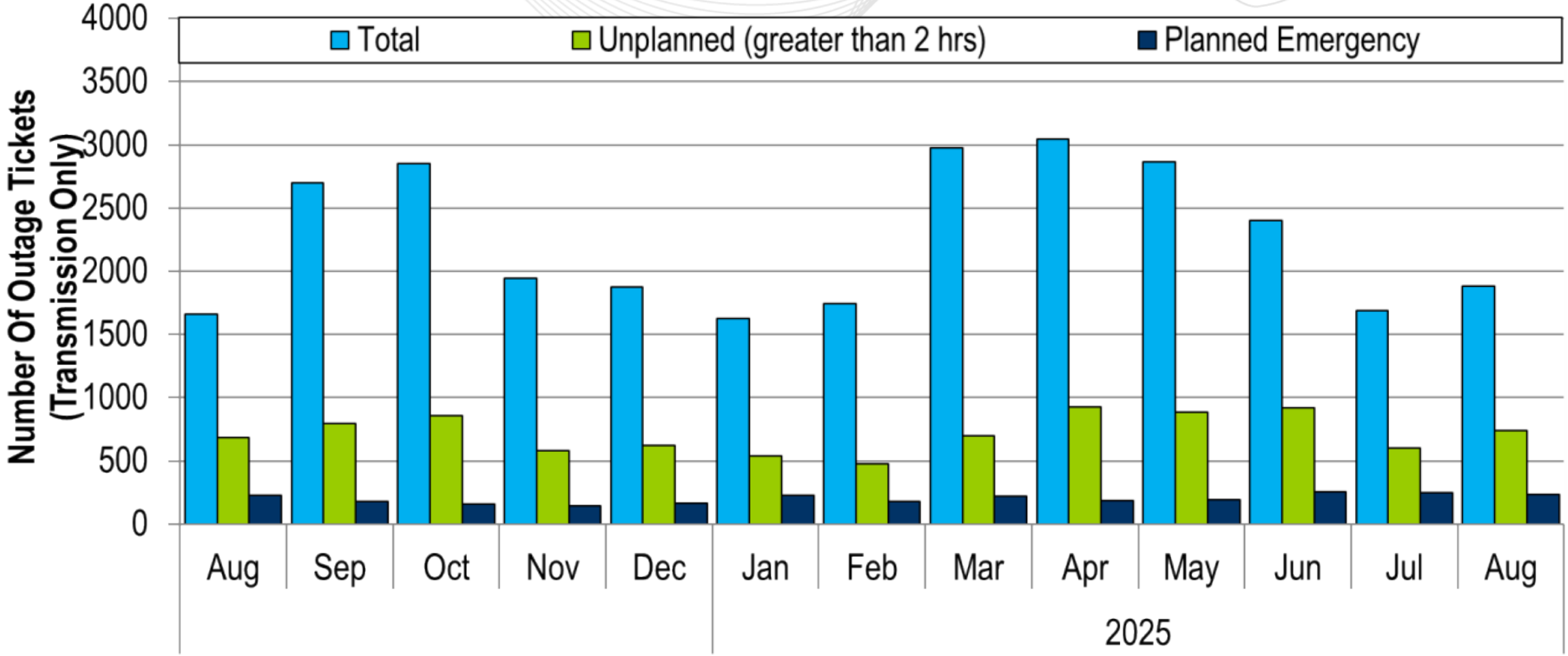
RTO Generation Outage Rate - Monthly





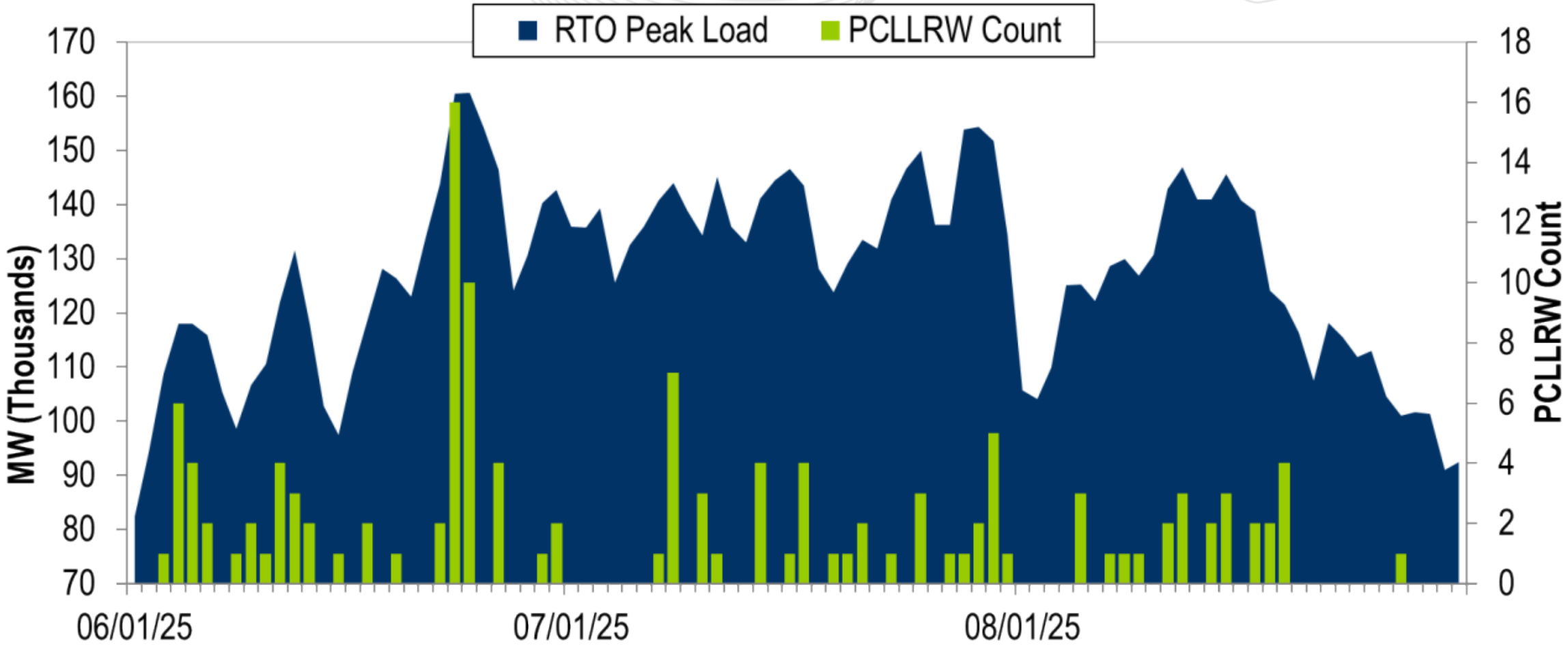
The 13-month average forced outage rate is 5.29% or 10,498 MW.
The 13-month average total outage rate is 14.61% or 28,965 MW.

2024-2025 Planned Emergency, Unplanned, and Total Outages by Ticket (Transmission Only)



Note: “Unplanned Outages" include tripped facilities. One tripping event may involve multiple facilities.

PCLLRW Count Vs. Peak Load – Daily Values For 3 Months



Spin Response

Event	1			2			3		
Date	08/06/25			08/14/25			08/15/25		
Start Time	18:49:11			17:40:51			15:33:03		
End Time	18:57:07			17:45:09			15:38:15		
Duration	00:07:56			00:04:18			00:05:12		
Region	MAD			RTO			RTO		
Resource Type	Gen	DR	Total	Gen	DR	Total	Gen	DR	Total
Assigned (MW)	1679	83	1762	2855	538	3392	3245	454	3699
Estimated Expected Response of Assigned Resources (MW)	1332	66	1398	1228	231	1459	1688	236	1924
Actual Response of Assigned Resources (MW)	1165	35	1200	1454	396	1851	2084	373	2458
Output Increase of Resources without Assignment (MW)	719	0	719	1857	0	1857	2155	0	2155
Percent Response To Assignment (%)	69%	42%	68%	51%	74%	55%	64%	82%	66%
Percent Response To Estimated Expected Response (%)	87%	53%	86%	118%	171%	127%	124%	158%	128%
Penalty (MW)	0	0	0	0	0	0	0	0	0

Event Counted Toward Qualifying Events	Qualifying Reason	Individual Percent Response To Assignment (%)	Average Percent Response To Assignment (%)
02/05/25 10:05:15	Duration ≥ 10 minutes	65.1%	
07/01/25 10:18:26	Duration ≥ 10 minutes	79.5%	74.4%
07/22/25 15:11:28	Duration ≥ 10 minutes	78.8%	

Contact

Load Forecast Report

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Appendix

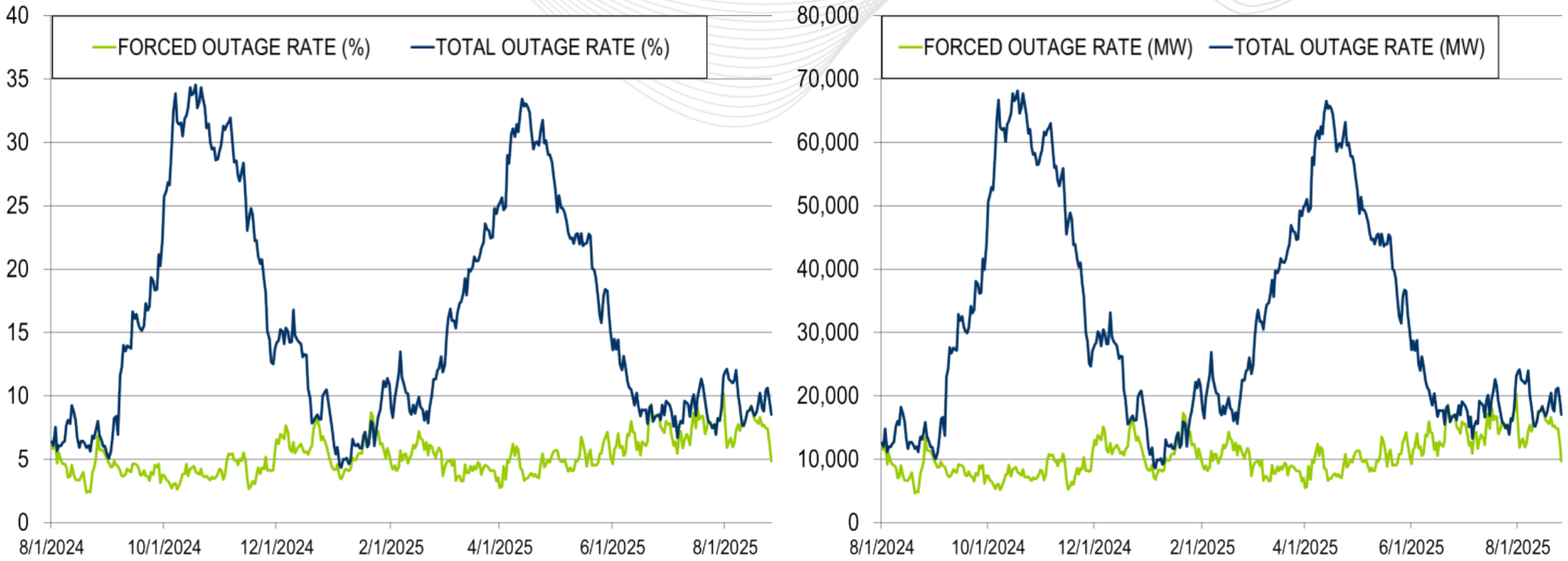
Balancing Authority ACE Limit - Performance Measure

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.

RTO Generation Outage Rate - Daily



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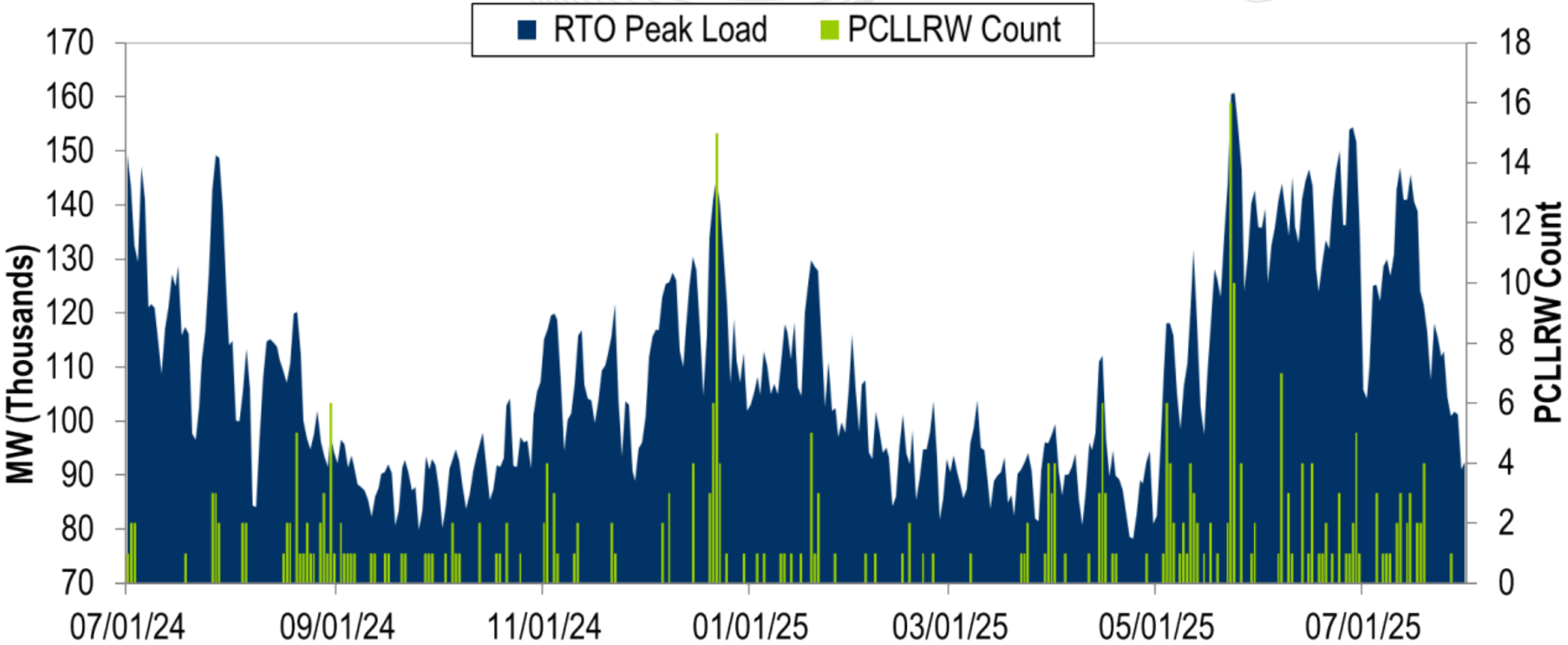
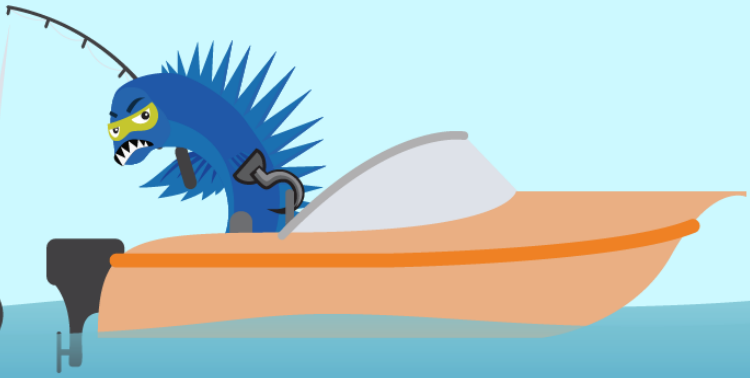
PCLLRW Count Vs. Peak Load – Daily Values For 13 Months



PROTECT THE POWER GRID

THINK BEFORE YOU CLICK!

pjm



BE ALERT TO MALICIOUS PHISHING EMAILS

Report suspicious email activity to PJM.

Call (610) 666-2244 or email it_ops_ctr_shift@pjm.com