



Item 7.2: System Operations Update

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Reliability and Markets Committee

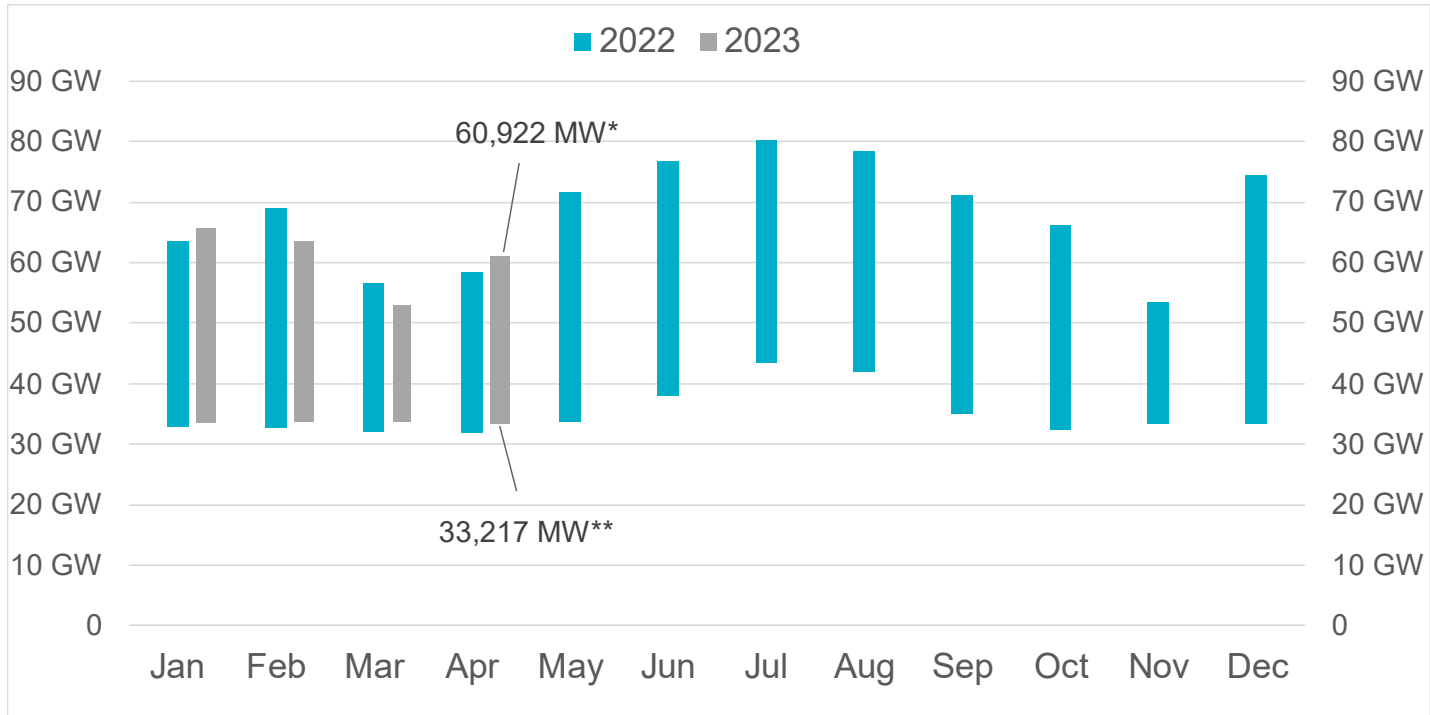
ERCOT Public

June 19, 2023

Overview

- **Purpose**
 - Provide an update on key operational metrics to the R&M Committee
 - Provide information on recent Ancillary Services performance
 - Provide information on recent hot topics
- **Voting Items / Requests**
 - No action is requested of the R&M Committee or Board; for discussion only
- **Key Takeaways**
 - All key operational metrics are trending well
 - All Ancillary Services are performing well

Demand



*Based on the maximum net system hourly value from April release of Demand and Energy 2023 report.

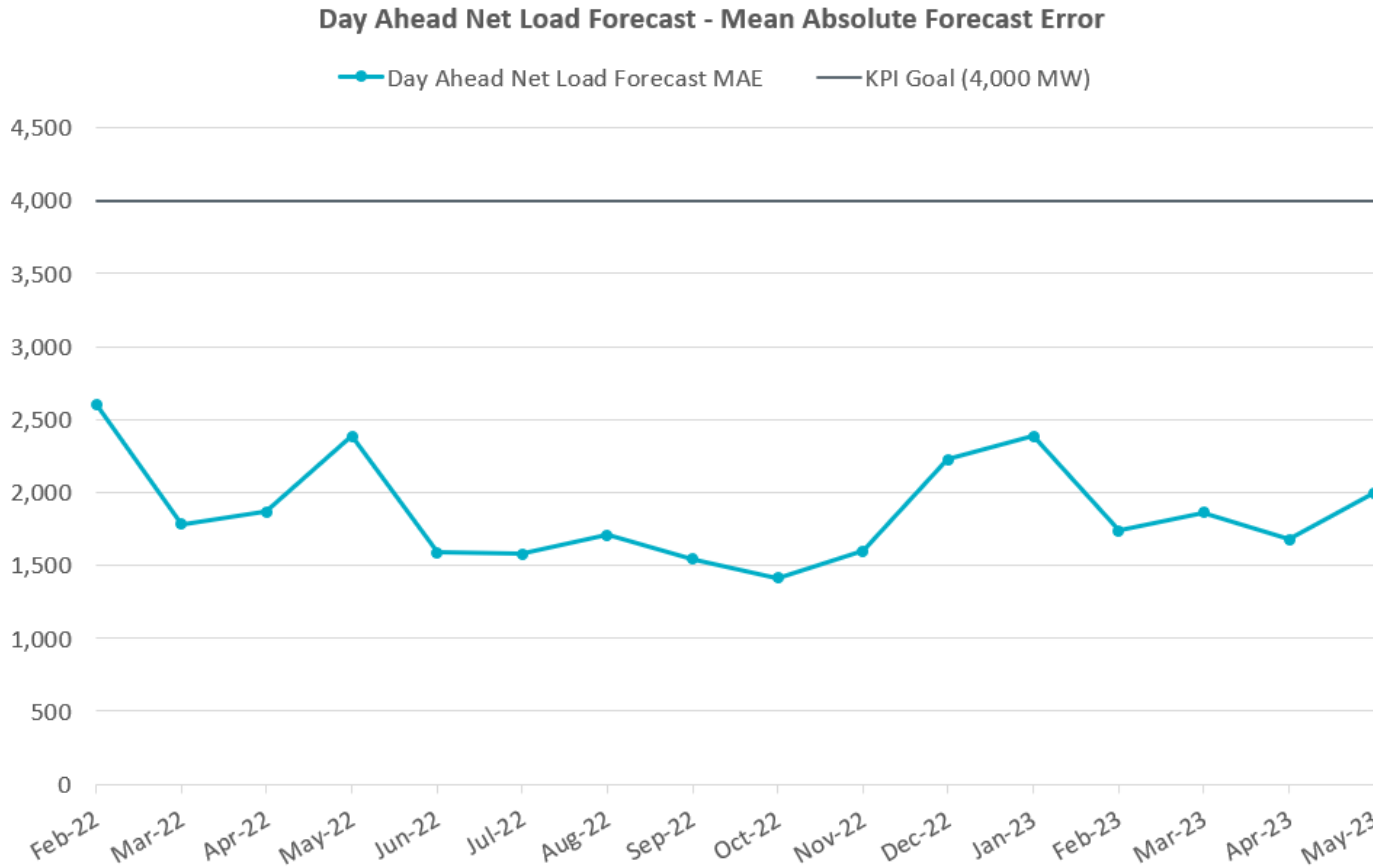
**Based on the minimum net system 15-minute interval value from April release of Demand and Energy 2023 report.

Data for latest two months are based on preliminary settlements.

Key Takeaway: ERCOT’s maximum peak demand for the month of April was 60,922 MW*; this was 2,503 MW more than the record of 58,419 MW set on 04/05/2022.



Forecast Performance



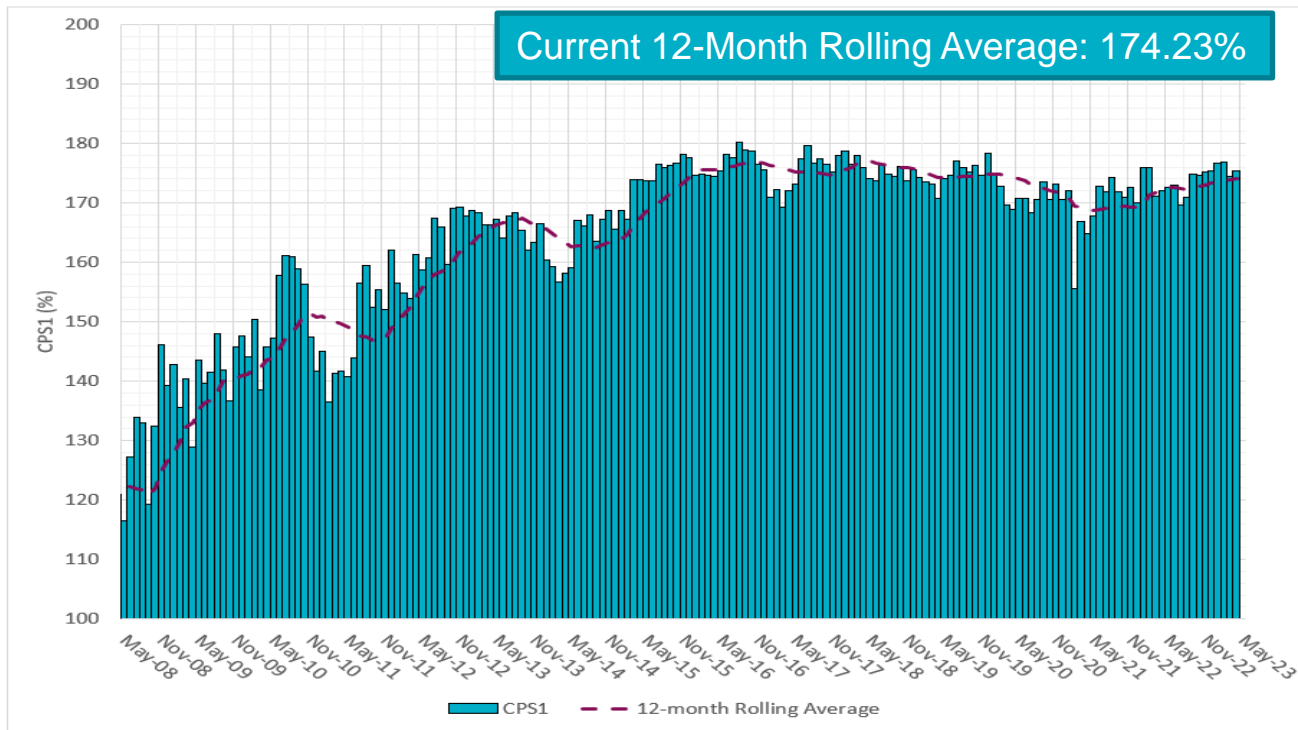
Key Takeaway: Day Ahead Net Load Forecast Mean Absolute Forecast Error is a new Key Performance Indicator for 2023. This metric has met the target and has been trending well.



Frequency Control

- Control Performance Standard 1 (CPS-1) is a measure of the frequency control on a power system, pursuant to NERC Standard BAL-001. The 12-month rolling-average of this measure is required to stay above 100%.

12 Month Rolling Average CPS1 KPI
Target > 140 % | Stretch > 150%



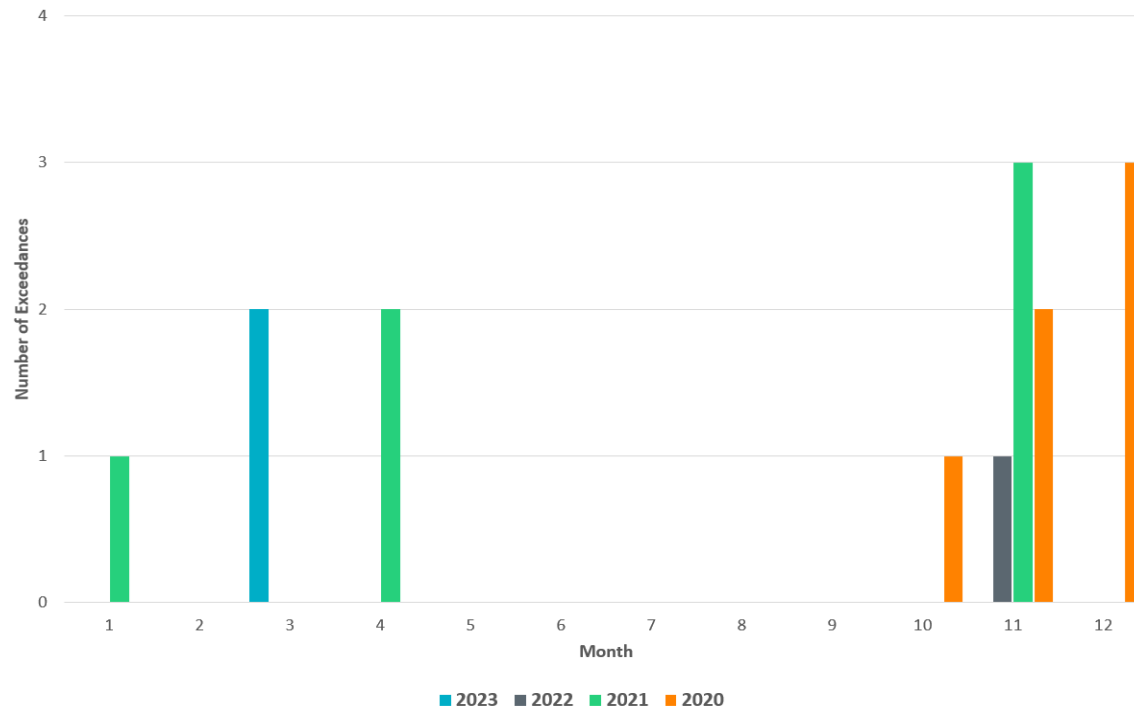
Key Takeaway: Frequency control has been performing extremely well.

Transmission Limit Control

- The most-recent Interconnection Reliability Operating Limit (IROL) exceedance occurred in March 2023.

Monthly IROL Exceedances (Jan 2020 to May 2023)

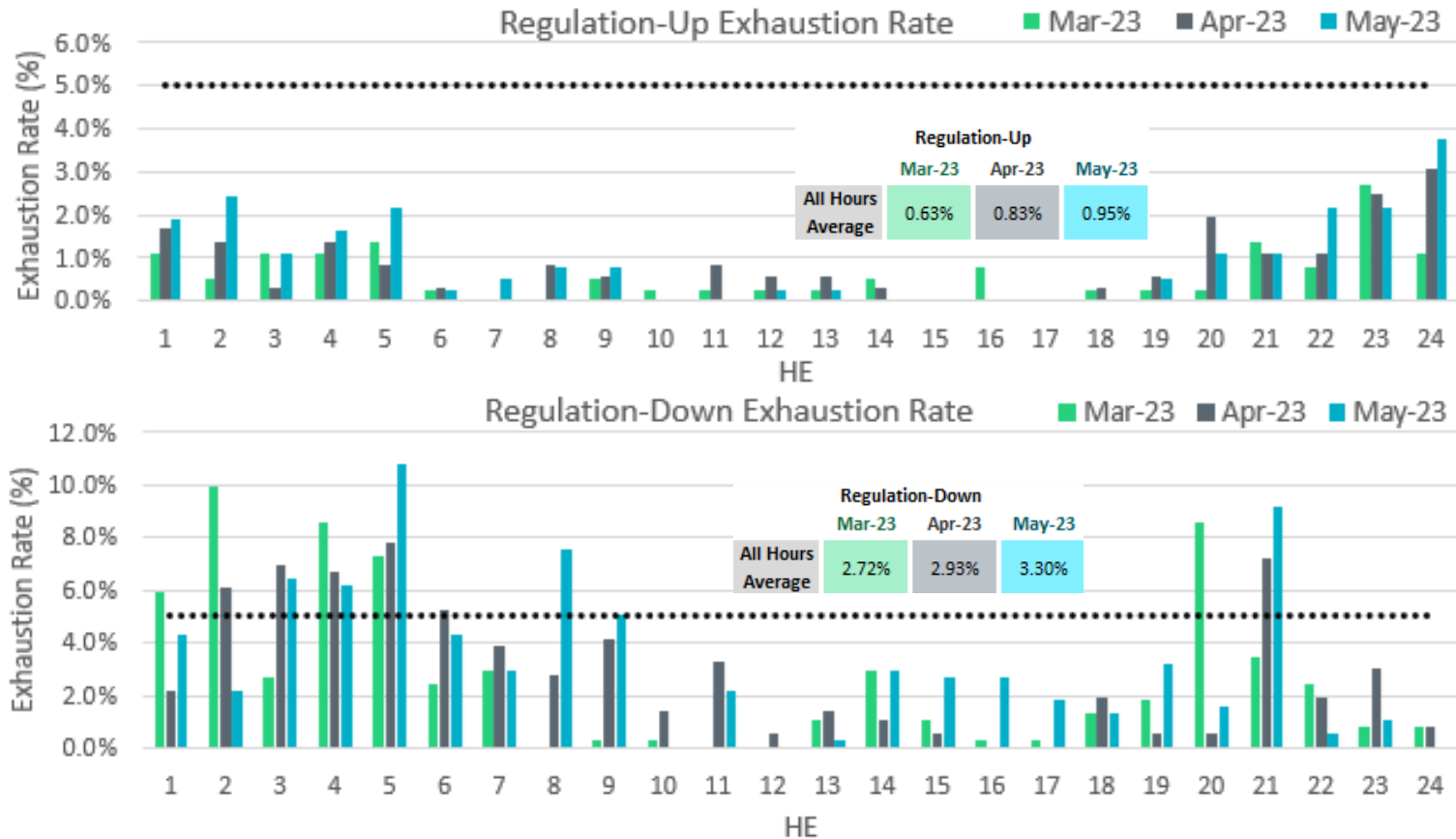
All exceedances had the duration between 10 second and 10 minutes.
There was no exceedance which lasted for more than 10 minutes.



Key Takeaway: ERCOT has not experienced significant reliability risks associated with exceeding IROLs.

Ancillary Services Performance

Regulation Service Deployments between Mar 2023 and May 2023



Exhaustion Rate = % of 5 min intervals when all available Reg is less than 5 MW

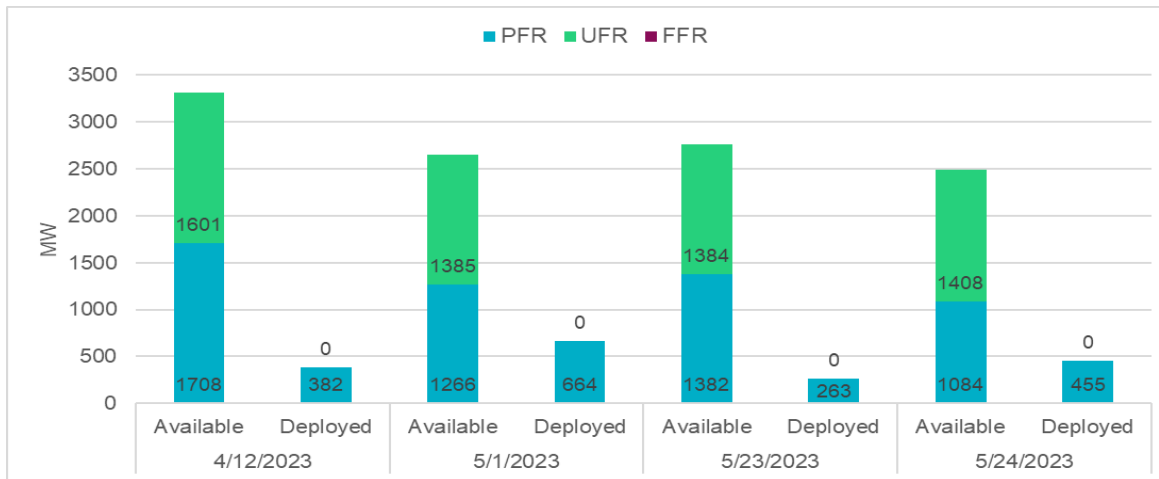
Key Takeaway: Average Regulation Up and Down exhaustion rates in Mar-May 2023 were under the target of 5%.



Responsive Reserve Service (RRS) Deployments between Mar 2023 and May 2023

- Between Mar 2023 and May 2023, there were 4 events that resulted in deployment of RRS. In all cases the ERCOT grid recovered from the event within the targets established by NERC BAL-002 standard.

| Date and Time Released to SCED | Date and Time Recalled | Duration of Event | Maximum MWs Released | Reason |
|--------------------------------|------------------------|-------------------|----------------------|---------------------|
| 4/12/2023 20:46 | 4/12/2023 20:49 | 02:28.0 | 382.11 | Unit Trip (~488 MW) |
| 5/1/2023 13:32 | 5/1/2023 13:35 | 03:00.0 | 664.09 | Unit Trip (~852 MW) |
| 5/23/2023 11:21 | 5/23/2023 11:24 | 03:24.0 | 263.33 | Unit Trip (~651 MW) |
| 5/24/2023 20:39 | 5/24/2023 20:42 | 03:36.0 | 454.89 | Unit Trip (~610 MW) |



Types of RRS:
PFR = Primary Frequency Response;
UFR = Load Resources with Under-Frequency Relays;
FFR = Fast Frequency Response

Key Takeaway: RRS performed well in all four deployments between Mar 2023 and May 2023. No RRS Deployments in Mar 2023.

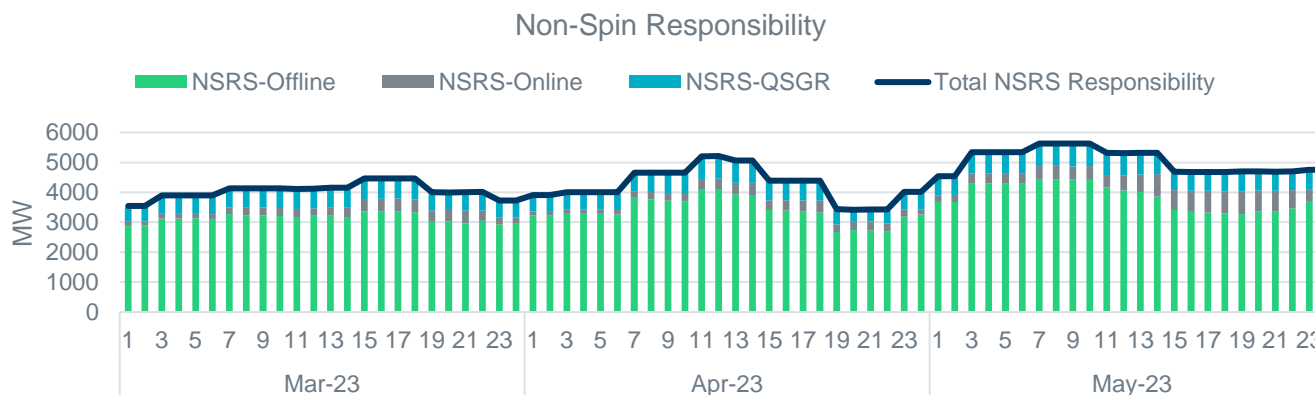


Non-Spinning Reserve Service (Non-Spin) Deployments between Mar 2023 and May 2023

| Deployment Start Time | Deployment End Time | Deployment Duration | Max Deployment (MW) | Reason |
|-----------------------|---------------------|---------------------|---------------------|--|
| 3/21/2023 19:01 | 3/21/2023 19:50 | 00:49:00 | 544.6 | Available Headroom not sufficient for projected 30-minutes net load ramp |
| 3/22/2023 19:01 | 3/22/2023 19:51 | 00:50:00 | 524.91 | |
| 3/24/2023 5:55 | 3/24/2023 7:19 | 01:24:00 | 1832 | |
| 3/24/2023 18:55 | 3/24/2023 19:33 | 00:38:00 | 976 | |
| 3/25/2023 18:44 | 3/25/2023 20:48 | 02:04:00 | 1828.7 | |
| 3/26/2023 18:35 | 3/26/2023 20:03 | 01:28:00 | 2241 | |
| 3/27/2023 18:32 | 3/27/2023 21:05 | 02:33:00 | 731 | |
| 4/14/2023 19:15 | 4/14/2023 20:14 | 00:59:00 | 622.2 | |
| 4/21/2023 18:54 | 4/21/2023 20:56 | 02:02:00 | 690.4 | |
| 4/29/2023 19:39 | 4/29/2023 21:11 | 01:32:00 | 1182.5 | |
| 5/4/2023 19:50 | 5/4/2023 20:25 | 00:35:00 | 447 | |
| 5/11/2023 19:18 | 5/11/2023 21:18 | 02:00:00 | 1048.7 | |

Between Mar 2023 and May 2023, there were 12 events that resulted in deployment of offline Non-Spin.

- Note that, between Mar 2023 and May 2023, an average ~21% of Non-Spin was provided using online capacity and by Quick Start Generation Resources. This type of Non-Spin is always available to SCED to dispatch (with an offer floor of \$75) and no operator action is needed to deploy this capacity.



Key Takeaway: All recent Non-Spin deployments have been to meet 30-minute ramping needs. Non-Spin performed well in all deployments.

