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On November 3, 2022, the Public Utility Commission of Texas (PUC/Commission) issued an order directing Electric Reliability Council of Texas, Inc. (ERCOT) to assume the duties and responsibilities of the reliability monitor for the ERCOT power region, known as the ERCOT Reliability Monitor (ERM). Among other things, the PUC order directs ERCOT to file a report summarizing its ERM activities the previous quarter at least once every three months. The ERM hereby provides the following information for the Second Quarter of 2023.

I. Executive Summary

In the second quarter of 2023, the ERM hired an attorney to assist with its growing workload. The ERCOT Legal Department hired one additional attorney who will spend part time supporting ERM activities. The ERM is also in the process of hiring two additional compliance analysts.

As of the end of the quarter, the ERM’s cumulative performance metrics are as follows:

<table>
<thead>
<tr>
<th>Priority</th>
<th>No. of Cases</th>
<th>Change</th>
<th>Average Days Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>2</td>
<td>-</td>
<td>202</td>
</tr>
<tr>
<td>High</td>
<td>39</td>
<td>+24</td>
<td>83</td>
</tr>
<tr>
<td>Medium</td>
<td>53</td>
<td>+17</td>
<td>68</td>
</tr>
<tr>
<td>Low</td>
<td>29</td>
<td>+20</td>
<td>113</td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>+61</td>
<td>81</td>
</tr>
</tbody>
</table>

1 To prioritize investigations, ERM staff assess an event’s impact on ERCOT System reliability and categorize significant events (such as those involving the loss of generation, frequency, or voltage excursions, etc.) as “Critical.” The ERM categorizes other events as “High,” “Medium,” or “Low” depending on such factors as: number and size of the facility(ies) involved, if the event is local versus widespread, whether an issue relates to only an administrative matter, etc.
Significantly, the ERM opened sixty-one new Incident Reviews during the second quarter of 2023 (twenty per month). Since November 2022 when ERCOT assumed the ERM role, it has opened an average of 15.4 Incident Reviews per month.

<table>
<thead>
<tr>
<th>Status</th>
<th>No. of Cases</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred to PUC Enforcement</td>
<td>15</td>
<td>12.2%</td>
</tr>
<tr>
<td>Report Drafted</td>
<td>16</td>
<td>13%</td>
</tr>
<tr>
<td>Management Review</td>
<td>2</td>
<td>1.6%</td>
</tr>
<tr>
<td>Investigation Started</td>
<td>71</td>
<td>57.7%</td>
</tr>
<tr>
<td>Closed</td>
<td>7</td>
<td>5.7%</td>
</tr>
<tr>
<td>Hold</td>
<td>12</td>
<td>9.8%</td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>100%</td>
</tr>
</tbody>
</table>

The bulk of Incident Reviews involve:

- Failure to Update Outage Scheduler (Winter Storm Elliott) (32 Incident Reviews or 26%)
- Event Performance Criteria for Emergency Response Service (ERS) (19 Incident Reviews or 15.4%)
- Weatherization requirements (19 Incident Reviews or 15.4%)
- Ancillary Service (A/S) and Energy Deployment (18 Incident Reviews or 14.6%)
- Compliance with Dispatch Instructions (13 Incident Reviews or 10.6%)

The most significant events on which the ERM is focused involve the accuracy of telemetry data, voltage ride-through issues, high speed data requirements, and voltage support.

II. Changes to Reliability Requirements to Promote Improved Reliability

The ERM is tracking the following revision requests that could impact system reliability:

**NPRR1143** Allows ERCOT to decide when Energy Storage Resources (ESRs) may charge during an Energy Emergency Alert Level (EEA). 3.

**NPRR1161** Clarifies that Intermittent Renewable Resources that remain synchronized to the ERCOT System but cannot provide reactive power when not providing real power do not have to notify ERCOT other than in the Real-Time telemetered status.

**NPRR1169** Expands the qualifications by which a Generation Resource may provide Firm Fuel Supply Service (FFSS). This is phase 2 of the PUCT's directives in FFSS development.
NPRR1170 Requires QSEs to provide information related to the delivery of natural gas to Generation Resources.

NPRR1171 Clarifies various reliability requirements for Distribution Generation Resources and Distribution ESRs seeking qualification to provide Ancillary Services or participate in Security-Constrained Economic Dispatch.

NPRR1176 Revises Energy EEA procedures to require a declaration of EEA Level 3 when ERCOT cannot maintain Physical Responsive Capability above 1,500 MW and will require ERCOT to shed firm Load to recover 1,500 MW of reserves within thirty minutes; also modifies trigger levels for EEA Levels 1 and 2, changes the trigger for ERCOT to consider alternative transmission ratings or configurations from Advisory to Watch when PRC goes below 3,000 MW, and restores a frequency trigger for declaring EEA Level 3 if steady-state frequency drops below 59.8 Hz.

NPRR1178 Clarifies expectations for Resource Status for Load Resources (other than Controllable Load Resources) when the Resource provides ERCOT Contingency Reserve Service simultaneously with Responsive Reserve Service (aligns with NPRR892 and places an offer floor on capacity for Resources providing ECRS concurrently with On-Line Non-Spinning Reserve (Non-Spin) and updates the ECRS deployment obligation requirements for Load Resources other than CLRs).

NPRR1180 Incorporates the P.U.C. Subst. R. 25.101(b)(3)(A)(ii)(II) requirement for reliability-driven transmission project review conducted to incorporate historical Load, forecasted Load growth, and additional Load seeking interconnection.

NPRR1181 Creates a new requirement for QSEs representing coal or lignite Generation Resources to submit a seasonal declaration of coal and lignite inventory level and adds requirements for QSEs to notify ERCOT when coal or lignite inventory drops below target and critical levels.

NPRR1186 Improves awareness, accounting and monitoring of the State of Charge (SOC) for an ESR and includes how a QSE is expected to manage the SOC of an ESR to ensure it has sufficient energy to meet its Ancillary Service responsibilities.
NOGRR245 Replaces current voltage ride-through requirements for Intermittent Renewable Resources with voltage ride-through requirements for Inverter-Based Resources (IBRs) and provides new frequency ride-through requirements for IBRs consistent with or beyond the requirements in the new Institute of Electrical and Electronics Engineers 2800-2022 Standard for Interconnection and Interoperability of IBRs Interconnecting with Associated Transmission Electric Power Systems.

NOGRR246 Clarifies that Intermittent Renewable Resources that remain synchronized to the ERCOT System but cannot provide reactive power when not providing real power do not have to notify ERCOT other than in the Real-Time telemetered status.

NOGRR247 Modifies the automatic Under-Frequency Load Shed program by increasing the number of Load shed stages from three to five and changing the Transmission Operator load relief amounts to increment by 5% for each stage. It also adds a UFLS minimum time delay of six cycles (0.1 seconds) and revises the Section 2.6.1 language from NOGRR226 to provide the TO load value to determine the TO load at each frequency threshold will be the value of TO load at the time frequency reaches 59.5 Hz, rather than the TO load at the time of reaching each successive frequency threshold.

NOGRR249 Specifies the methods for Transmission Operators to receive electronic communication of system operating limit exceedances from ERCOT.

NOGRR250 Removes language prohibiting Distribution Service Providers from connecting Distribution Generation Resources and Distribution ESR to circuits included in an Under-Frequency Load Shed scheme (to align with NPRR1171).

NOGRR251 Adds cold weather conditions to ERCOT Transmission Operators template for Emergency Operations Plan.

NOGRR252 Related to NPRR1176 – update to EEA Trigger Levels.

NOGRR253 Related to NPRR1178 – ECRS and Non-Spin revisions.

NOGRR255 Addresses current operational issues with generation ride-through, model quality, and high-resolution data for model validation and event analysis.
PGRR103 Proposes to limit the time between Initial Synchronization and commercial operation by requiring Generation Resources and ESRs to complete all conditions for commissioning and submit Part 3 of the ERCOT New Generator Commissioning Checklist within 180 days of receiving ERCOT’s approval for Initial Synchronization.

PGRR107 Related to NPRR1180 – include forecasted load in planning analyses.

In addition to the foregoing, the ERM is working with Subject Matter Experts (SMEs) on the following issues to improve ERCOT System reliability:

- Telemetry accuracy;
- Model data accuracy and timeliness; and
- Voltage support.

III. Overall State of ERCOT System Reliability

The overall state of ERCOT System reliability is good. The ERM has, however, identified the following areas of concern based on discussions with ERCOT SMEs:

- Voltage control
- Telemetry quality
- Frequency ride-through
- Voltage ride-through
- Fault recording and sequence of events recording data requirements
- Installation of phasor measurement recording equipment
- Data recording, redundancy, retention, and reporting requirements
- Updates to the resource dynamic planning models
- Dynamics data for Generation Resources and Settlement Only Generators
- Dynamic data for equipment owned by Resource Entities
IV. Areas for Future Audit

In the first quarter ERM Quarterly Report, ERM staff anticipated conducting at least one audit this year. The ERM is currently auditing Market Participant compliance with the reactive testing requirements in ERCOT Protocols § 8.1.1.2.1.4, *Voltage Support Service Qualification* and ERCOT Operating Guides § 3.3.2.2, *Reactive Testing Requirements*. The ERM anticipates completing and submitting the audit to the Commission by the end of the third quarter of 2023.

The ERM stands ready to provide any additional information requested by the Commission.

Dated: July 14, 2023

Respectfully submitted,

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