**ERCOT Nodal Operating Guides**

**Section 9: Monitoring Programs**

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# 9 Monitoring Programs

9.1 QSE and Resource Monitoring Program

(1) This Section sets forth formats and data needed for reporting to comply with Protocol Section 8, Performance Monitoring. These performance monitoring and compliance requirements apply as set forth below to Qualified Scheduling Entities (QSEs), Resources, Transmission Service Providers (TSPs) and ERCOT. Reports defined in this Section will be posted on the Market Information System (MIS) Secure Area unless otherwise stated.

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| ***[NOGRR177: Replace paragraph (1) above with the following upon system implementation of NPRR857:]***  (1) This Section sets forth formats and data needed for reporting to comply with Protocol Section 8, Performance Monitoring. These performance monitoring and compliance requirements apply as set forth below to Qualified Scheduling Entities (QSEs), Resources, Transmission Service Providers (TSPs), Direct Current Tie Operators (DCTOs), and ERCOT. Reports defined in this Section will be posted on the Market Information System (MIS) Secure Area unless otherwise stated. |

9.1.1 Real-Time Data

(1) ERCOT shall produce reports describing Real-Time data performance of QSEs in the following areas. ERCOT shall post the summary report on the MIS Secure Area.

(a) Telemetry performance:

(i) ERCOT shall produce quarterly reports describing telemetry performance as defined in the Protocols.

9.1.2 Compliance with Valid Dispatch Instructions

(1) ERCOT shall produce monthly reports detailing Resource-specific Regulation Service and energy deployment performance, including Load Resources, based on the criteria described in Protocol Section 8.1.1.4.1, Regulation Service and Generation Resource/Controllable Load Resource/Energy Storage Resource Energy Deployment Performance, and Ancillary Service Capacity Performance Metrics.

(2) ERCOT shall produce a report for any system-wide deployment of Load Resources on an event basis, within 90 days after the event occurs and shall post it to the MIS Secure Area.

9.1.3 Resource Outage Reporting

(1) This Section describes the reporting of data for Resource Outage scheduling by individual Resource for informational purposes. There are no performance metrics for this data.

(2) ERCOT shall post to the MIS Certified Area, a confidential report of total number of Outages reported including Monthly Resource Outage reporting by Resource:

(a) Number of Outage requests submitted in the ERCOT Outage Scheduler greater than 335 days (11 months) in advance;

(b) Number of Outage requests submitted in the ERCOT Outage Scheduler between 90 and 334 days in advance of the desired Outage date;

(c) Number of Outage requests submitted in the ERCOT Outage Scheduler between 45 and 89 days in advance of the desired Outage date;

(d) Number of Outage requests submitted in the ERCOT Outage Scheduler between three and 44 days in advance of the desired Outage date;

(e) Number of Outage requests submitted less than three days in advance;

(f) Number of Outages by Outage type; and

(g) Total number of Outages that were requested, accepted, approved, cancelled, and withdrawn.

9.2 TSP Monitoring Program

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| ***[NOGRR177: Replace Section 9.2 above with the following upon system implementation of NPRR857:]***  9.2 TSP and DCTO Monitoring Program |

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9.2.2 Real-Time Data Monitor

(1) ERCOT shall produce reports describing Real-Time data performance of Transmission Service Providers (TSPs) in the following areas. ERCOT shall post the summary report on the Market Information System (MIS) Secure Area.

(a) Telemetry performance:

(i) ERCOT shall produce quarterly reports describing telemetry performance as defined in the Protocols.

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| [NOGRR177: Replace Section 9.2.2 above with the following upon system implementation of NPRR857:]  9.2.2 Real-Time Data Monitor  (1) ERCOT shall produce reports describing Real-Time data performance of Transmission Service Providers (TSPs) and Direct Current Tie Operators (DCTOs) in the following areas. ERCOT shall post the summary report on the Market Information System (MIS) Secure Area.  (a) Telemetry performance:  (i) ERCOT shall produce quarterly reports describing telemetry performance as defined in the Protocols. |

9.2.3 Transmission Outage Reporting

(1) This Section describes the reporting data for the transmission Outage scheduling and is provided for informational purposes. There are no performance metrics for this data.

(2) ERCOT shall post a monthly report of Outages considered on the MIS Secure Area including:

(a) Number of Outage requests submitted in the ERCOT Outage Scheduler greater than 335 days (11 months) in advance;

(b) Number of Outage requests submitted in the ERCOT Outage Scheduler between 90 and 334 days in advance of the desired Outage date;

(c) Number of Outage requests submitted in the ERCOT Outage Scheduler between eight and 89 days in advance of the desired Outage date;

(d) Number of Outage requests submitted in the ERCOT Outage Scheduler between three and seven days in advance of the desired Outage date;

(e) Number of Outage requests submitted less than three days in advance;

(f) Number of Outages by Outage type; and

(g) Total Number of Outages that were requested, accepted, approved, cancelled, and withdrawn.

(3) ERCOT shall post reports for each transmission owner showing the percentage of the total number of Outages, by type, described in paragraph (2) above.

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| ***[NOGRR267: Replace paragraph (3) above with the following upon system implementation of NPRR1240:]***  (3) ERCOT shall post on the ERCOT website reports for each transmission owner showing the percentage of the total number of Outages, by type, described in paragraph (2) above. |

9.3 ERCOT Monitoring Program

9.3.1 Transmission Control

(1) ERCOT shall report State Estimator performance in accordance with the Protocols and post such report on the Market Information System (MIS) Secure Area.

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| ***[NOGRR267: Replace paragraph (1) above with the following upon system implementation of NPRR1240:]***  (1) ERCOT shall report State Estimator performance in accordance with the Protocols and post such report on the Market Information System (MIS) Secure Area, except where otherwise stated in this paragraph (1) of Section 9.3.1. |

(a) ERCOT shall produce monthly reports describing State Estimator convergence and valid State Estimator solution rates as described in Protocol Section 3.10.9.6, Telemetry and State Estimator Performance Monitoring.

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| ***[NOGRR267: Replace paragraph (a) above with the following upon system implementation of NPRR1240:]***  (a) ERCOT shall post on the ERCOT website monthly reports describing State Estimator convergence and valid State Estimator solution rates as described in Protocol Section 3.10.9.6, Telemetry and State Estimator Performance Monitoring. |

(b) ERCOT shall produce monthly reports describing the MW differences between State Estimator results and power flow results for identified congested Transmission Elements as approved by the Technical Advisory Committee (TAC).

(c) ERCOT shall produce monthly reports describing the MW differences between the State Estimator results and telemetry for identified congested Transmission Elements as approved by TAC.

(d) ERCOT shall produce monthly reports describing the voltage differences between the State Estimator results and telemetry for the most important voltage busses identified in accordance with the Protocols.

(e) ERCOT shall produce monthly reports describing the MW differences as defined in the Protocols.

(f) ERCOT shall produce monthly reports identifying the sum of MW flows around telemetered State Estimator Busses as described in paragraph (5) of Protocol Section 3.10.7.5.2, Continuous Telemetry of the Real-Time Measurements of Bus Load, Voltages, Tap Position, and Flows.

9.3.2 System and Resource Control

(1) The following reports shall be posted on the MIS Secure Area:

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| ***[NOGRR266: Replace paragraph (1) above with the following upon system implementation of NPRR1239:]***  (1) The following reports shall be posted on the ERCOT website: |

(a) Resource control metrics:

(i) Total Regulation Up Service (Reg-Up) and Regulation Down Service (Reg-Down) per interval - ERCOT shall develop a monthly report detailing the total amount of Reg-Up energy deployed in the Settlement Interval and by hour and the total amount of Reg-Down energy deployed for each Settlement Interval and by hour of the Operating Day.

(b) Reliability Unit Commitments (RUCs) and deployments:

(i) For each month, ERCOT shall report, Generation Resources committed in each RUC process, the reason for the commitment, Resource name and intervals deployed, and the hours committed for Voltage Support Service (VSS).

(c) Reversal of Base Point instructions to Generation Resources and Energy Storage Resources (ESRs) from interval to interval:

(i) ERCOT shall record and report, on a monthly basis, instances of Dispatch Instructions to Resources not providing Regulation Service in which there is a directional change in Base Point instructions for four consecutive Security-Constrained Economic Dispatch (SCED) intervals for validation and review.

9.3.3 Computer and Communication Systems Real-Time Availability and Systems Security

(1) ERCOT shall report each month the number of times a SCED run was requested but failed to provide a valid result in less time than normal SCED interval.

9.4 Ancillary Services Monitoring Program

(1) ERCOT shall monitor Ancillary Service energy deployment according to the criteria outlined in Protocol Section 8, Performance Monitoring. Reports required by Protocol Section 8.1.1.4, Ancillary Service and Energy Deployment Compliance Criteria, will be posted on the Market Information System (MIS) Certified Area.

9.4.1 Hydro Responsive Testing

(1) ERCOT shall produce quarterly reports of hydro responsive tests and verify results submitted.

9.4.2 Resource-Specific Responsive Reserve Performance

(1) ERCOT shall develop monthly reports detailing Resource-specific Responsive Reserve (RRS) performance during deployments, including Load Resources, based on criteria described in Protocol Section 8.1.1.4.2, Responsive Reserve Service Energy Deployment Criteria.

(2) ERCOT shall publish a daily report by 0930 or as soon as practicable on the ERCOT website for the sudden loss of generation greater than 450MW and shall include:

(a) ERCOT Load at the time of each event;

(b) Time of each event;

(c) Amount of generation and Load lost contributing to the event;

(d) Approximate lowest frequency; and

(e) If there is no loss of generation, the report shall state “No Loss of generation greater than 450MW or greater.”

9.4.3 Resource-Specific Non-Spinning Reserve

(1) ERCOT shall develop monthly reports detailing Resource-specific Non-Spinning Reserve (Non-Spin) performance during deployments, including Load Resources, based on the criteria described in Protocol Section 8.1.1.4.3, Non-Spinning Reserve Service Energy Deployment Criteria.

9.4.4 Resource-Specific ERCOT Contingency Reserve Service

(1) ERCOT shall develop monthly reports detailing Resource-specific ERCOT Contingency Reserve Service (ECRS) performance during deployments, including Load Resources, based on the criteria described in Protocol Section 8.1.1.4.4, ERCOT Contingency Reserve Service Energy Deployment Criteria.