REAL-TIME MONITORING DATA SPECIFICATION

Version 4

September 12, 2025

Revision History

Version	Date	Reviewer	Revisions
1	11/1/16	Mansion Hudson	Initial document
2	3/18/24	Tang Dobard	Update Contacts
3	7/1/25	Tang Dobard	Updated to meet TOP-003.6.1 and IRO-010-5 requirements by creating new sections 15 thru 20; renumber Appendix A from 15 to 21; updated Table of Contents
4	9/12/25	Dobard	Updated “Applicable Entity” definition, updated sections 6.2 and 6.3, updated telemetry requirements in sections 8 and 14.4, updated section 15, 16, 17.2, 17.3, and 18, deleted references to Load-Serving Entities (section 10), renumbered sections 10 thru 21.

Contents

1. Document Review

- This document shall be reviewed periodically for its completeness.
- Reviews shall be coordinated by the Director, System Operations and shall include all relevant personnel.
- Revisions to this plan will be tracked using MS Word track changes feature and noted as applicable in the revision history table on page 1. If no changes are made, the periodic review shall be reflected in the Revision History and the document will be re-executed by the Director, System Operations.
- This document shall be approved by the Director, System Operations by signing and dating below.
- A DocMinder notification shall be used as an internal control to ensure timely reviews are conducted of this document.

	September 12, 2025	September 12, 2025
Director, System Operations	**Approval Date**	**Implementation Date**

2. Definitions

Applicable Entity – Any entity, excluding ERCOT, that owns or operates Transmission equipment either within or interconnected with TNMP's Transmission Operator Area and is a NERC-registered Transmission Owner, Transmission Operator, Generator Owner, Generator Operator, and/or Distribution Provider.

Balancing Authority – The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.

Balancing Authority Area – See the *Glossary of Terms Used in NERC Reliability Standards*.

Control Center – A facility hosting operating personnel that monitor and control the Transmission system.

Distribution Provider – Provides and operates the "wires" between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the distribution function at any voltage.

Facility – See the *Glossary of Terms Used in NERC Reliability Standards*.

Generation Operator – The entity that operates generating Facility(ies) and performs the functions of supplying energy and Interconnected Operations Services.

Generation Owner – Entity that owns and maintains generating Facility(ies).

Interconnected Operations Services – See the *Glossary of Terms Used in NERC Reliability Standards*.

Interconnection – See the *Glossary of Terms Used in NERC Reliability Standards*.

Point of Interconnection – Includes the following: (1) Transmission equipment that interconnects Transmission facilities owned/operated by other Transmission Owners and Transmission Operators with TNMP's Transmission Operator Area, (2) Transmission equipment that interconnects generating Facilities with TNMP's Transmission Operator Area, (3) Transmission equipment used to interconnect radial Transmission facilities and associated radial distribution facilities owned by Distribution Providers within TNMP's Transmission Operator Area, and (4) Distribution equipment that is used to serve radial distribution facilities owned by other Distribution Providers from radial distribution facilities owned by TNMP.

Protection System – See the *Glossary of Terms Used in NERC Reliability Standards*.

System Operator – An individual at a Control Center who operates or directs the operation of the Transmission system in Real-time.

Telemetry – Measurable electrical quantities that are transmitted from substations and generating stations to a Control Center.

Transmission – An interconnected group of lines and associated equipment for the movement or transfer of electric energy between points of supply and points at which it is transformed for delivery to customers or is delivered to other electric systems.

Transmission Operator – The entity responsible for the reliability of its "local" transmission system, and that operates or directs the operations of the transmission Facilities.

Transmission Operator Area – The collection of Transmission assets over which the Transmission Operator is responsible for operating.

Transmission Owner – The entity that owns and maintains transmission Facilities.

Transmission Service – See the *Glossary of Terms Used in NERC Reliability Standards*.

3. Acronyms

BA	Balancing Authority
DP	Distribution Provider
ERCOT	Electric Reliability Council of Texas
GO	Generation Owner
GOP	Generation Operator
ICCP	Inter-Control Center Communications Protocol
KV	Kilovolt
MVA	Megavolt Ampere
MVAR	Mega Volt-Amperes reactive
MW	Megawatt
RTU	Remote Terminal Unit
SCADA	Supervisory Control and Data Acquisition
SOC	System Operations Center
TCP/IP	Transmission Control Protocol/Internet Protocol

TNMP	Texas-New Mexico Power Company
TO	Transmission Owner
TOP	Transmission Operator
WAN	Wide Area Network

4. Intent

The intent of this document is to outline data required from Applicable Entities for TNMP to perform Real-time monitoring of its Transmission Operator Area.

5. Overview

Real-time monitoring is critical in maintaining situational awareness for System Operators so that they can respond appropriately to system events by rapidly assessing the state of TNMP's Transmission Operator Area. Monitoring refers to System Operators viewing Telemetry in a manner that allows them to determine the state of TNMP's Transmission Operator Area in Real-time and to take corrective and preventative actions as necessary. The general types of data that constitute Telemetry and which are referred to within this requirement document are:

1. Real-time analog values that are scanned from field devices
2. Real-time analog values that are calculated from scanned values
3. Real-time status values that are scanned from field devices

Additionally, acquisition of Telemetry status and analog measurements of the Transmission system together with accurate topology of the Transmission system are required for TNMP to meet its obligation for providing ERCOT the data it needs to perform its operational planning analyses, Real-time monitoring, and Real-time assessments.

6. General Requirements

6.1. Data communications shall be established between each Point of Interconnection and TNMP's Control Centers in accordance with the *TNMP Facility Interconnection Requirements*, Section C.2.4 "*Metering and Telecommunications*". An RTU assignment shall be compiled by TNMP.

6.2. The ICCP linkage from ERCOT to TNMP may be accepted as an alternative to the data communications requirements outlined in Section 6.1, provided that all necessary data is available for import from the ERCOT Operations Model. ERCOT has established a TCP/IP-based wide area network (WAN) to facilitate ICCP data transfers between ERCOT and its market participants. However, ERCOT serves solely as a data conduit in this process. It does not originate, validate, or assume responsibility for the accuracy, completeness, or reliability of any data or information transmitted via ICCP.

6.3. Data transmission using the ICCP link must be formatted and coordinated according to the *ERCOT NODAL ICCP Communication Handbook* and shall satisfy the requirements of the *ERCOT Nodal Protocols* and Nodal Operating Guides, Section 7.

6.4. A project specific RTU points list or ICCP points list will be developed by TNMP consisting of the Telemetry quantities set forth in Sections 7, 8, 9, 10, and 11.

6.5. Prior to placing a new Transmission or distribution facility in service, including a new Point of Interconnection, the required Telemetry data points shall be fully operational and verified in accordance with TNMP's *Network Model and SCADA Maintenance Process*, Section 9 "*SCADA Checkout Process*".

7. Data Requirements Applicable to TNMP as a Transmission Owner

TNMP Transmission Operator Area[1] Telemetry shall include the following quantities:

7.1. Status of all breakers

7.2. Instantaneous three-phase voltage magnitudes from a minimum of one measurement point on the station bus for each operating voltage of each station.

7.3. For transmission transformers

7.3.1. Instantaneous MW at each terminal

7.3.2. Instantaneous MVAR at each terminal

7.3.3. Instantaneous MVA at each terminal – can be calculated using corresponding MW and MVAR Telemetry

7.3.4. Load tap changer position

7.4. For non-radial lines

7.4.1. Instantaneous MW at each line terminal

7.4.2. Instantaneous MVAR at each line terminal

7.4.3. Instantaneous MVA at each line terminal – can be calculated using corresponding MW and MVAR Telemetry

7.5. For radial lines

7.5.1. Instantaneous MW at the source terminal

7.5.2. Instantaneous MVAR at the source terminal

7.5.3. Instantaneous MVA at the source terminal – can be calculated using corresponding MW and MVAR Telemetry

7.6. For Protection Systems

7.6.1. Status of line protection primary and backup relays

[1] Includes all BES Facilities and new installations of Non-BES Transmission facilities.

7.6.2. Status of line protection communication as applicable

7.6.3. Status of transformer protection primary and backup relays

7.6.4. Status of bus protection primary and backup relays

7.7. For Special Protection Systems – In accordance the ERCOT document *PROCEDURE FOR APPROVAL AND DISTRIBUTION OF REMEDIAL ACTION PLANS (RAP), MITIGATION PLANS (MP), AND SPECIAL PROTECTION SYSTEMS (SPS)*, the following quantities shall be provided for each Special Protection System:

7.7.1. Arm status

7.7.2. Operation status

8. Data Requirements Applicable to Other Transmission Owners and Transmission Operators

Telemetry shall be provided by the Applicable Entity and include the following quantities for each Transmission to Transmission Point of Interconnection[2]:

8.1. Status of all Interconnecting Entity-owned breakers adjacent to the Point of Interconnection

8.2. Instantaneous MW through the Point of Interconnection

8.3. Instantaneous MVAR through the Point of Interconnection

8.4. Instantaneous MVA through the Point of Interconnection - can be calculated using corresponding MW and MVAR Telemetry

9. Data Requirements Applicable to Generator Owners and Generator Operators

Telemetry shall include the following quantities for each Transmission to generation facility Point of Interconnection:

9.1. Status of all Generator Owner/Generator Operator breakers adjacent to the Point of Interconnection

9.2. Instantaneous MW through the Point of Interconnection

9.3. Instantaneous MVAR through the Point of Interconnection

9.4. Instantaneous MVA through the Point of Interconnection - can be calculated using corresponding MW and MVAR Telemetry

9.5. Instantaneous three phase voltage magnitudes on the Generator Owner/Generator Operator side of the Point of Interconnection

Telemetry shall also include the following quantities for each conventional (synchronous) generation plant interconnected with the TNMP Transmission Operator Area:

[2] Includes all BES Facilities and Non-BES Transmission facilities

9.6. Status of all generator breakers

9.7. Status of all generator step-up and auxiliary transformer high side breakers

9.8. Status of all generator step-up and auxiliary transformer switches

9.9. Status of all circuit switchers and line switches

9.10. Status of all bus tie breakers

9.11. Instantaneous MW for each generation unit.

9.12. Instantaneous MVAR for each generation unit.

9.13. Generator station use MW for each auxiliary transformer.

9.14. Generator station use MVAR for each auxiliary transformer.

9.15. Station Frequency

10. Data Requirements Applicable to Distribution Providers[4]

Telemetry shall include the following quantities for each Point of Interconnection serving distribution facilities:

10.1. Status of all Transmission breakers adjacent to the point of interconnection

10.2. Instantaneous MW through the Point of Interconnection

10.3. Instantaneous MVAR through the Point of Interconnection

10.4. Instantaneous MVA through the Point of Interconnection - can be calculated using corresponding MW and MVAR Telemetry

[3] As deemed necessary by TNMP.

[4] Includes TNMP as a Distribution Provider

10.5. Instantaneous three phase voltage magnitudes on the Distribution Provider side of the Point of Interconnection[5]

11. Data Provision Periodicity

TNMP's SCADA sampling rates are one sample every four seconds for status points and one sample every ten seconds for analog points.

12. Data Provision Requirements

12.1. A list of project specific telemetered data points and all technical modeling information from an Applicable Entity for facility addition, revision, or deletion to be included in any ERCOT Network Operations Model update must be submitted to TNMP SOC in accordance with the NOMCR process defined in the ERCOT Protocols, Section 3.3, a minimum of 100 days prior to establishing an interconnection.

12.2. A list of project specific telemetered data points to be delivered via ICCP must be defined by the Applicable Entity in accordance with the *ERCOT Nodal ICCP Communication Handbook*, Sections 5 and 6, and submitted to TNMP SOC a minimum of 100 days prior to establishing interconnection.

12.3. Changes to existing ICCP data import names must be communicated to TNMP SOC 10 days prior to scheduled ERCOT Model loads to prevent data loss.

13. Metered and ICCP Telemetry Performance Criteria

13.1. The Applicable Entity is responsible for providing required telemetered or ICCP data to TNMP in accordance with the standards for continuous and reliable telemetry as defined in the ERCOT *Telemetry Standards*.

13.2. For loss of telemetry, ICCP data, or connectivity the Applicable Entity shall notify TNMP SOC within 15 minutes of detection of the failure[6]. Contact information for TNMP SOC is provided in Appendix A.

13.3. Lost data or signals, whether failed or in error, must be restored promptly by the provider of the telemetered data. TNMP SOC will inform the Applicable Entity if a data item is essential and needs to be repaired as quickly as possible.

13.4. When TNMP SOC notifies an Applicable Entity of Telemetry that is inconsistent with surrounding measurements, the provider shall, within 30 days, either a) calibrate/repair the suspect equipment, b) coordinate a telemetry outage to schedule calibration/repair of the suspect equipment, or c) provide

[5] As deemed necessary by TNMP. Generally, does not apply to distribution-to-distribution Points of Interconnection.

[6] Pursuant to NERC Reliability Standard TOP-001-6, TNMP as a registered Transmission Operator is required to notify ERCOT as its registered Reliability Coordinator and known impacted interconnected entities of unplanned outages of 30 minutes or more for telemetering and control equipment, monitoring capabilities, and associated communications channels.

TNMP SOC with engineering analysis proving the data element is providing accuracy within its specifications.

13.5. It is the responsibility of the Applicable Entity to ensure that calibration, testing and other routine maintenance of equipment is done on a timely basis. Coordination of telemetry outages required for these activities is also the responsibility of the Applicable Entity. If the Applicable Entity's data repeatedly fails, TNMP SOC may require additional measures be taken to either supplement or replace the required data.

13.6. Telemetered data received from an Applicable Entity must be current and free from ambiguous data values and changes in state. Guidelines for reliable data and telemetry standards are outlined in the *ERCOT Nodal Protocols*, *Telemetry Standards*, and *ERCOT Nodal ICCP Communication Handbook*.

14. Entities Responsible for Responding to the Specification

All data required by TNMP in its role as a Transmission Operator is made available via ERCOT, which serves solely as a data intermediary. The data originates from Applicable Entities and is relayed through ERCOT using ICCP. ERCOT does not originate, validate, or assume responsibility for the accuracy or completeness of the data transmitted.

15. Data Format

15.1. Inter Control Center Protocol Data (ICCP): The Applicable Entity must include data quality along with the data. This data quality shall follow the ICCP Data Quality Standards as described in the IEC ICCP User's Guide (870-6-505).

16. Performance criteria for the availability and accuracy of data and information

16.1. ICCP: Achieve a monthly availability of 98%, excluding approved Planned Outages. Availability shall be measured based on end-to-end connectivity of the communications path and the passing of configured data at the scheduled periodicity.

16.2. Real-Time data: For reliability purposes, an Applicable Entity's data and information must be accurate to within three percent. This telemetry may be provided from relaying accuracy instrumentation transformers.

16.3. Telemetry Criteria

- An Applicable Entity must maintain the sum of flows into any telemetered bus it owns or is responsible for less than the greater of five MW or 5% of the largest normal line rating at each bus.
- 92% of all telemetry provided to ERCOT, by an Applicable Entity, must achieve a quarterly availability of 80%. Availability shall be measured based on end-to-end connectivity of the communications path and the passing of Real-Time data with a Valid, Manual, or Calculated quality code at the scheduled periodicity.

17. Provisions for Applicable Entities to update or correct data and information

17.1. Outage Scheduler: Continually update Outage plan, submit the actual start and end date and time for Planned Outages of Transmission Facilities in the Outage Scheduler by hour ending 0800 of the

current Operating Day for all scheduled work completed prior to hour ending 0600 of the current Operating Day.

17.2. Real-time Telemetry

- Telemetered data shall be provided continuously. Real-Time data restoration shall comply with Nodal Operating Guide Sections 7.3.3, Data from WAN Participants to ERCOT, and 7.3.4, Resolving Real-Time Data Issues that affect ERCOT Network Security Analysis.
- Follow ERCOTs suggested actions to correct the telemetry error of (a) 5% of the largest line Normal Rating at the State Estimator Bus; or (b) Five MW, whichever is greater.
- Update the status of any breaker or switch through manual entries, if necessary, to communicate the actual current state of the device to ERCOT, except if the change in state is expected to return to the prior state within one minute.

18. Process for Resolving Conflicts

Responsible entities with a disagreement or conflict regarding data or information required by TNMP's Real-time Data Specification, may contact TNMP using contact information in Appendix A below, or email TNMP System Operations at "socoperators@pnmresources.com".

19. Securely Transferring Data and Information

Data transfer will comply with the Security Protocol identified in ERCOT's IRO-010 and TOP-003 mapping document.

20. Appendix A

TNMP System Operations Contacts

Name	Title	Office Phone	Mobile Phone
SOC	Transmission System Operator	281-581-4705	346-456-1513 (Cell) 480-263-5349 (Sat)
SOC	Distribution System Operator NTX/CTX	281-581-4751	281-607-6026
SOC	Distribution System Operator GC/WTX	281-581-4752	346-528-7616
BSOC/CSOC	Transmission System Operator	469-702-4805	480-675-6218 (Sat)
BSOC/CSOC	Distribution System Operator NTX/CTX	469-702-4851	
BSOC/CSOC	Distribution System Operator GC/WTX	469-702-4852	
Chris Dobard	Director, System Operations	281-581-4719	281-380-6304
Dave Blackshear	Manager, Transmission System Operations	281 581-4701	713-703-9557
Lana Bigford	Manager, Distribution System Operations	281-581-4702	346-456-2641
Trevor Tidwell	Manager, IT Operations	281-581-4708	832-425-1174
Hans Tang	Engineering Supervisor	281-581-4739	281-804-3135

21. Signed Document Review Page