



NERC Data Collection, Events Analysis, and Guidelines

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June - July 13, 2023

Inverter-Based
Resource Webinar
Series



June 29, 2023

Regional Summer
Assessment Webinar



July 17, 2023

Technical Talk
with RF



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Regional Coordination for:

- Reliability Assessments
- Performance Analysis
- Event Analysis
- Situational Awareness

Guidelines, References, and Whitepapers

Data Collection



TADS – Transmission Availability Data System

GADS – Generator Availability Data System

DADS – Demand Response Availability Data System

MIDAS – Misoperations Information Data Analysis System

- Each system has an affiliated NERC Technical Working Group
- Members: registered entities, Regional Entities, and NERC staff



Section 800, Reliability Assessment and Performance Analysis:

- Seasonal Assessments
- Major Event Analysis
- NERC Alerts
- Generator Availability Data System (GADS)

Section 1600 Data Requests



Collects Demand Response (DR) Deployment Data

- In service for 12 months or more
- 10 MW or more
- Does not include economic DR

Applies to Balancing Authorities and some Distribution Providers

Submitting Data – OATI portal

Entities Provide Data Twice a Year: June and December

Texas RE Rep: Bob Collins



Collects BES Transmission Outage Data

- AC Circuits
- Transformers (low side $\geq 100\text{kV}$)
- Reactive devices
- AC/DC Back-to-Back Converters

Applies to Transmission Owners & Generation Owners with Transmission

Submitting Data – OATI Portal

Entities Provide Data Quarterly

- Due 45 days after the end of a quarter

Texas RE Reps: Bob Collins



Collects Generation Outage and Availability Data

- Generators >20 MW nameplate mandatory, others optional

Applies to Generation Owners with Gas, Coal, Nuclear, and Hydro

Entities Provide Data Quarterly

- Due 45 days after the end of a quarter

Submitting Data – OATI Portal

Texas RE Reps: Jagan Mandavilli and Bob Collins



Collects Generation Outage and Availability Data

- All facilities >75 MW nameplate submit data in 2020
- Smaller facilities may voluntarily participate and share benefits

Applies to Generation Owners with Wind Turbine Facilities

Entities Provide Data Quarterly

- Due 45 days after the end of a quarter

Submitting Data – NERC Portal (xRM)

- Entities upload spreadsheets

Texas RE Reps: Jagan Mandavilli and Bob Collins



Solar Generation

- Phased in implementation expected to begin in 2024
- Other units may voluntarily participate and share benefits

Applies to Generator Owners with Solar Facilities

Entities Provide Data Quarterly

- Training dates not yet set but training will be provided at least 60 days prior to the required reporting date

Submitting Data – NERC Portal

Texas RE Rep: Jagan Mandavilli



Collects Protection Systems Misoperations Data for BES Facilities

Entities Provide Data Quarterly

- Due 60 days after end of quarter
- Separate submittal to ERCOT ISO required per Operating Guide

Submitting Data – NERC Portal (xRM)

- Data Submission Form Site: <https://misops.nerc.net/>
- MIDAS User Site: <https://xrm.nerc.net/>
- Bulk upload using an .xlsx file or item-by-item entry through portal
- Two responses required – operations and misoperations, either data or opt-out waiver for each.

Applies to Generation Owners, Transmission Owners, and Distribution Providers with BES Protection Systems

Texas RE Reps: Bob Collins & Mark Henry



Address Conditions with Potential to Cause Major Events

Instructions and Schedule are Included with NERC Alert Notices

- Some require no action
- Some require acknowledgement and authorized approval
- Some require the above and data or survey responses

Submitting Data – Dedicated NERC Alert Portal

- Separate acknowledgements and approvals through the NERC Alert portal
- Data or survey requests will be detailed in NERC Alert instructions

Applies to all Entity Types (Potentially)

Texas RE Reps: Bob Collins and Mark Henry



NERC Alerts Are Divided into Three Distinct Levels:

Industry Advisory

Recommendation
to Industry

Essential Action



Industry Advisory

- Purely informational
- Intended to alert registered entities to issues or potential problems
- A response to NERC is not necessary
- Example: Cold Weather Standards (Feb. 13, 2023)



Recommends specific action(s) to be taken by registered entities

A response from recipients, as defined in the alert, is required

Example: Inverter-Based Resource Performance Issue (Mar 14, 2023)

Entities must:

- Acknowledge alert (normally within 5 to 8 days)
- Submit response (normally within 60 to 90 days)
- Approve response (after the submission of the response)



Identifies actions deemed to be essential to bulk power system reliability

Requires NERC BoT approval prior to issuance

Like recommendations, essential actions also require recipients to respond as defined in the alert

Example: Cold Weather Preparation for Extreme Weather Events III (May 5, 2023)

Entities must:

- Acknowledge alert (normally within 5 to 8 days) May 22, 2023
- Submit response (normally within 60 to 90 days) October 6, 2023
- Approve response (after the submission of the response) October 6, 2023



NERC Alerts – Common Items



List of Functional Entities the alert was distributed to

Reporting requirements and details

A set of “primary interest groups”

Background information for the genesis of the alert

Specific, actionable observations, recommendations or essential actions

Contact information

Label indicating sensitivity

- **Green:** Public, No Restrictions
- **Yellow:** Private, Restrict to Internal Use and Necessary Consultants
- **Red:** Sensitive, Internal Use Only (Do Not Distribute Outside the Company)
- **Black:** Confidential, Limited Internal Distribution, Decided Upon by an Officer of the Company

Alert - E-2023-05-15-1 Distribution Date: 05/15/2023 11:52 AM CST

Summary

NERC is issuing this Level 3 Alert: Essential Actions for Cold Weather Preparations for Extreme Weather Events to increase the Reliability Coordinators' (RC), Balancing Authorities' (BA), Transmission Operators' (TOP), and Generator Owners' (GO) readiness and enhance plans for, and progress toward, mitigating risk for the upcoming winter and beyond.

As the November 2021 FERC/NERC Joint Inquiry Report into the Causes of the February 2021 Cold Weather Event (Winter Storm Uri) found, the bulk power system (BPS) cannot operate reliably unless generators and System Operators are prepared for cold weather. When cold weather events such as Winter Storm Uri occur, System Operators may need to shed firm customer load to prevent uncontrolled load shedding and cascading outages which may not only result in major disruption but also have very real human consequences.

	Industry Advisory	Mitsubishi Transformer Test Data Falsification
	Recommendation To Industry	Preparation for Potential Russian Cyber Activity against Industry from Russia-linked Actors – Level II
	Industry Advisory	Apache Software Foundation Log4j, aka Log4Shell Vulnerability



Obtain Access to These Systems by Request to NERC

Maintain List of Contacts and User Administration

Submit Data:

- On time
- Thorough and accurate
- Per data reporting or other instructions
- Provide acknowledgements, approvals, or opt-out waivers
- Verify assets and contact information

Respond to Follow-Up Inquiries from Texas RE

Contact Texas RE with Your Questions and Problems

Train Staff



**NERC State of
Reliability Report**

**Texas RE
Assessment of
Reliability
Performance**

**Quarterly Metrics
to Texas RE
Member
Representatives
Committee**

**Entity Internal
Studies**

Other Studies:

- Future probabilistic assessments
- Winter outage reviews and turbine outage reports
- Fuel availability assessment
- Human error analytics



Promotes a Structured and Consistent Approach to Performing Event Analyses

- Events that meet EOP-004-4 and/or DOE-OE-417 criteria

Applies to: Reliability Coordinators, Balancing Authorities, Transmission Owners, Transmission Operators, Generator Owners, Generation Operators, and Distribution Providers

Entity Reporting

- Assess the event and determine the event category
- Fill out EOP-004 and/or OE-417 report(s) as initial notice within 24 hours and send to:
 - DOE: doehqeoc@hq.doe.gov (only if OE-417 event)
 - NERC: systemawareness@nerc.net
 - Texas RE: RAPA@texasre.org
 - ERCOT: shiftsupervisors@ercot.com



For Category 1 Events and Above

- Submit an initial Brief report within 5 business days
- Submit Final Brief report within 20 business days
- Provide data as requested
- Participate in cause coding external calls
- Periodic cause coding training from NERC



Texas RE Actions

- Contact the reporting entity
- Request for data
 - Data designated as confidential by entity will be treated as confidential
- Coordinate with ERCOT
- Cause coding analysis
- Prepare reports
- Lessons learned document
- Entities are encouraged to prepare their own event assessments

Texas RE Reps: Bob Collins, David Penney, and Jagan Mandavilli



Best Practices, Recommendations, or Performance Observations

- Developed by NERC stakeholder technical groups (industry volunteers sought)
- Address current topics, often where no Reliability Standards exist

Not Mandatory - Facts and Circumstances Dependent

- **Do not directly address compliance (guideline vs. guidance documents)**
- Texas RE will follow-up on applicability and usefulness

Regional Entities and Registered Entities Can Comment

- Publicly posted
- Registered entity staff often help with drafting



- **NERC Webpages by Program Areas**
 - [Reliability Assessment](#) for long-term and short-term reports
 - [Performance Analysis](#) for State of Reliability Report
 - [Event Analysis](#) for events analysis and lessons learned
- **NERC-Led Hands-On Training**
- **Mailing List for NERC Working Groups**
- **Texas RE Webpage Under [Reliability Services](#)**
 - “Performance Analysis” for data collection
 - “Events Analysis” for itself
 - “Situational Awareness” for NERC Alerts
- **Texas RE Contact Points – Call us Anytime!**



Data Reporting Systems



Application	Reporting platform	Web Address	Applicable to	TEXAS RE Rep
GADS	OATI Portal	https://www.nerc.oati.com/	Generation Owners (conventional units)	Jagan Mandavilli
TADS	OATI Portal	https://www.nerc.oati.com/	Generation Owners, Transmission Owners with Transmission	Bob Collins
DADS	OATI Portal	https://www.nerc.oati.com/	Balancing Authorities and some Distribution Providers	Bob Collins
MIDAS	NERC Portal		Generation Owners, Transmission Owners, and Distribution Providers with BES Protection System	Bob Collins
GADS Wind	NERC Portal	https://gadswind.nerc.net/	Generation Owners (Wind facilities >20MW)	Jagan Mandavilli
GADS Solar	NERC Portal		Generation Owners (Solar facilities >20MW)	Jagan Mandavilli
NERC Alerts	NERC Portal		All entities	





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Upcoming Sessions



June 5—Intro to Align

June 6—Standards Development

June 8—Compliance Monitoring

June 13—CIP 201

June 14—Foundations of O&P

June 15—O&P 201

June 20—Risk-Based Approach to Reliability

June 21—Improving Self-Reporting 201

June 22—NERC Data Submission, Events Analysis, and Guidelines

June 27 – Initial Engagement Submissions

June 29 – Reliability Services

JUNE 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1



The background of the slide features a blurred Texas state flag on the left and a target with several darts on the right. The darts are clustered in the center of the target, suggesting a focus or a goal.

Questions?



TEXAS RE

Ensuring electric reliability for Texans