



NERC Data Collection, Events Analysis, and Guidelines

Shirley Mathew
Reliability Engineer, Sr.

Antitrust Admonition

Texas Reliability Entity, Inc. (Texas RE) strictly prohibits persons participating in Texas RE activities from using their participation as a forum for engaging in practices or communications that violate antitrust laws. Texas RE has approved antitrust guidelines available on its website. If you believe that antitrust laws have been violated at a Texas RE meeting, or if you have any questions about the antitrust guidelines, please contact the Texas RE General Counsel.

Notice of this meeting was posted on the Texas RE website and this meeting is being held in public. Participants should keep in mind that the listening audience may include members of the press, representatives from various governmental authorities, and industry stakeholders.



Upcoming Sessions

June 3 – History and Introduction to Texas RE

June 4 – Registration & Certification

June 5 – Intro to Align

June 6 – Risk-Based Approach to Reliability

June 10 – Foundations of CIP Programs

June 11 – Foundations of O&P Programs

June 12 – Navigating Noncompliance Resolutions

June 13 – NERC Data Collection, Events Analysis, and Guidelines

June 17 – Reliability 201: CIP















June 18 – Reliability 201: O&P

June 24 – Reliability 201: CMEP Feedback Loop

June 25 – Reliability 201: Compliance in Align Walkthrough

June 25 – Reliability 201: Reliability Services

JUNE 2024

SUN	MON	TUE	WED	THU	FRI	SAT
						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						

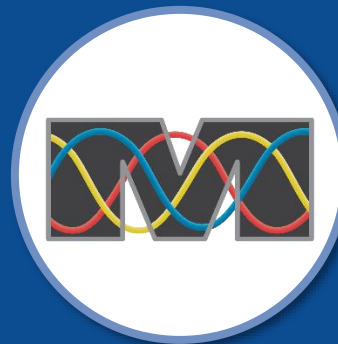


Upcoming ERO Enterprise Events



May - July, 2024

GADS Wind & Solar Template
and Application Training



June 27, 2024

Regional Summer Assessment
Webinar



July 15, 2024

Technical Talk with RF



slido

Product

Solutions

Pricing

Resources

Enterprise

Log In

Sign Up

Joining as a participant?

Enter event code

Join an existing event

#TXRE

The ultimate Q&A and polling platform

Give a voice to your audience, wherever they are.

Create your own Slido event

[Watch a video](#) or [Schedule a demo](#)



Regional Coordination for:

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

Guidelines, References, and Whitepapers

Data Collection



NERC Data Collection – Systems

Reporting is temporarily suspended
effective October 1, 2023

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



NERC Data Collection – Rules of Procedure

Section 800, Reliability Assessment and Performance Analysis:

- Seasonal Assessments
- Major Event Analysis
- NERC Alerts

Section 1600 Data Requests

- Generator Availability System (GADS)



Collects BES Transmission Outage Data

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

Applies to Transmission Owners & Generation Owners with Transmission

Submitting Data – OATI: WebTADS Portal

Entities Provide Data Quarterly

- Due 45 days after the end of each calendar quarter

Texas RE Reps: Bob Collins



GADS – Conventional (Thermal, Nuclear, Hydro)

Collects Generation Outage and Availability Data

- Generators >20 MW nameplate mandatory, others optional

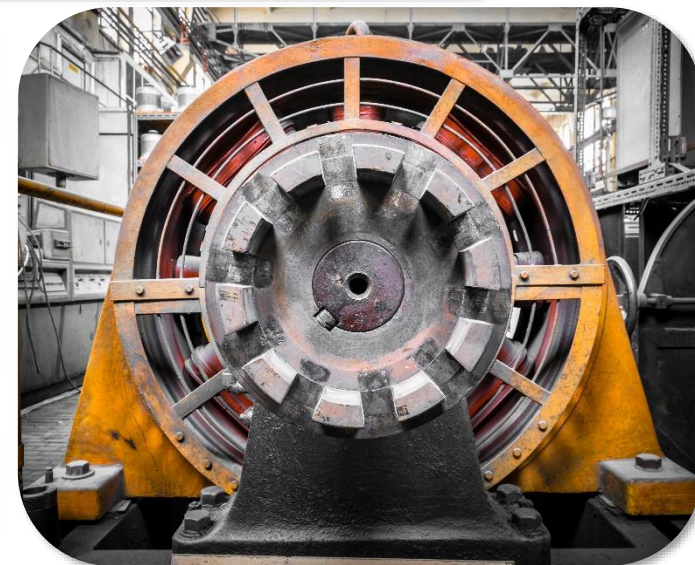
Applies to Generation Owners with Gas, Coal, Nuclear, and Hydro

Entities Provide Data Quarterly

- Due 45 days after the end of every calendar quarter

Submitting Data – OATI Portal using WebE-GADS

Texas RE Reps: Jagan Mandavilli and Bob Collins



GADS – Wind

Collects Generation Outage and Availability Data

- All facilities ≥ 75 MW nameplate submit data with a commissioning date of 1/1/2005 or later for any portion of the plant
- 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 *GADS-W* Wind Reporting Application

- Entities upload spreadsheets (Excel – format XML)

Texas RE Reps: Jagan Mandavilli and Bob Collins



GADS – Solar

Solar Generation

- All facilities ≥ 20 MW Installed capacity submit data with commercial operation date of 1/1/2010 or later
- Phased-in implementation:
 - ❖ 2024 - Plants with a Total Installed Capacity of 100 MW or more
 - ❖ 2025 - Plants with a Total Installed Capacity of 20 MW or more



Applies to Generator Owners with Solar Facilities

Entities Provide Data Quarterly

- Due 45 days after the end of a quarter

Submitting Data – NERC *GADS-S* Solar Reporting Application

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 Template: [Protection System Misoperations \(nerc.com\)](https://www.nerc.com/pubs/ProtectionSystemMisoperationsFormTemplate.pdf)
- MIDAS User Guide: [MIDAS Portal User Guide \(nerc.com\)](https://www.nerc.com/pubs/MIDASPortalUserGuide.pdf)
- 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



NERC Alerts

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](#)



NERC Alert Levels

NERC Alerts Are Divided into Three Distinct Levels:

Industry Advisory

Recommendation
to Industry

Essential Action

NERC Alert – Industry Advisory

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)



NERC Alert – Recommendation to Industry

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

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

**Example: 6 GHZ Communication Penetration in the Electric Industry
(April 23, 2024)**

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)



NERC Alert – Essential Action

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 Preparations for Extreme Weather Events III (May 5, 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)



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
<p>Summary</p> <p>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.</p> <p>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.</p>		
Signifier	Handling Requirements	
	Public: No Restrictions. Will be posted to NERC's alert page.	
	Private: Restrict to Internal Use and Necessary Consultants/Third-Party Providers	
	 Industry Advisory	Mitsubishi Transformer Test Data Falsification
	 Recommendation To Industry	Preparation for Potential Russian Cyber Activity against Industry from Russia-linked Actors â€œ Level II
	 Industry Advisory	Apache Software Foundation Log4j, aka Log4Shell Vulnerability



Entity Tasks

**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



How is the Data Used?

**NERC State of
Reliability Report**

**Texas RE Reliability
Performance &
Regional Risk
Assessment**

**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



Event Analysis Process – Initial Notification

Promotes a Structured and Consistent Approach to Performing Event Analyses

- Events that meet EOP-004 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



Event Analysis Process – Entity Actions

For Category 1 Events and Above

- Submit an initial Brief report within 10 business days of the event
- Submit Final Brief report within 20 business days
- Provide data as requested
- Participate in cause coding external calls
- Periodic cause coding training from NERC



Event Analysis Process – Reporting (cont.)

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



Reliability and Security Guidelines

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



Reliability and Security Guidelines

NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

About NERC Career Opportunities Governance Committees Program Areas & Departments Standards Initiatives Reports Filings & Orders Newsroom

Compliance and Certification Committee (CCC)
Personnel Certification Governance Committee (PCGC)
Reliability Issues Steering Committee (RISC)
Reliability and Security Technical Committee (RSTC)
Standards Committee (SC)
Standing Committees Coordinating Group (SCCG)

Home > Committees > Reliability Guidelines, Security Guidelines, Technical Reference Documents, and White Papers

Reliability Guidelines, Security Guidelines, Technical Reference Documents, and White Papers

The NERC Reliability and Security Technical Committee (RSTC) subcommittees develop Reliability (Operating and Planning), Security Guidelines which include the collective experience, expertise, and judgment of the industry. The objective of the reliability guidelines is to distribute key issues critical to promote and maintain a highly reliable and secure bulk power system (BPS). Reliability guidelines are not binding norms or para-NERC's Reliability Standards is monitored or enforced. Rather, their incorporation into industry practices is strictly voluntary. Reviewing, revising, practices is highly encouraged. All current and draft guidelines can be found at the links below.

Reliability Guidelines			
Type	Category	Description	Approval Date
Approved Reliability Guidelines (19)			
Draft Reliability Guidelines (10)			
Retired Reliability Guidelines (9)			

Security Guidelines			
Type	Category	Description	Approval Date
Draft Security Guidelines (6)			
Approved Security Guidelines (15)			

Technical Reference Documents			
Type	Category	Description	Approval Date
Technical Reference Documents (2)			
Draft Technical Reference Documents (20)			
Approved Technical Reference Documents (30)			

White Papers			
Type	Category	Description	Approval Date

Reliability Guidelines are key practices and information on specific issues critical to promote and maintain the reliability of Bulk Power System

<https://www.nerc.com/comm/Pages/Reliability-and-Security-Guidelines.aspx>

Learn More

☐ NERC Web Pages by Program Area

- [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 Web Page 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
MIDAS	NERC Portal		Generation Owners, Transmission Owners, and Distribution Providers with BES Protection System	Bob Collins
GADS Wind	NERC Portal	https://www.nercsuite.oati.com/	Generation Owners (Wind facilities >20MW)	Jagan Mandavilli
GADS Solar	NERC Portal	https://www.nercsuite.oati.com/	Generation Owners (Solar facilities >20MW)	Jagan Mandavilli
NERC Alerts	NERC Portal		All entities	Bob Collins



Contacts



☐ Mark Henry

- Chief Engineer & Director, Reliability Outreach
- Mark.Henry@texasre.org
- 512-583-4988



☐ David Penney

- Director, Reliability Services
- David.Penney@texasre.org
- 512-583-4958



☐ Bob Collins

- Reliability Engineer, III
- Bob.Collins@texasre.org
- 512-583-4986



☐ Jagan Mandavilli

- Reliability Engineer, Sr.
- Jagan.Mandavilli@texasre.org
- 512-583-4942



The background of the slide features a blurred image of the Texas state flag on the left and a close-up of a wind turbine's hub and blades on the right. The blades are white with red tips. A dark blue rounded rectangle with a thin light blue border is centered over the image.

Questions?



TEXAS RE

Ensuring electric reliability for Texans