



**TEXAS RE**

# **Extreme Weather Response Risk Element**

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**July 22, 2025**

# Antitrust Admonition

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**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 Texas RE Events



**talk** with  
**TEXAS RE**

July 30, 2025

Modeling and  
Model Verification



**talk** with  
**TEXAS RE**

August 5, 2025

Cybersecurity  
Threats



**talk** with  
**TEXAS RE**

August 19, 2025

CIP-003-8



# Upcoming Texas RE Events



September 17, 2025

Q3 MRC and Board  
Meetings



October 1, 2025

Winter  
Weatherization  
Workshop



November 5, 2025

Fall Standards,  
Security, &  
Reliability  
Workshop



# Upcoming ERO Enterprise Events

**NERC**

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION



**Date**

**Event**

**August 6**

**Protection System Workshop (RF)**

**August 7**

**Human Performance Workshop (RF)**

**August 12-14**

**Power System and Security Conference (WECC)**

**August 13**

**Inverter-Based Resource Webinar (MRO)**





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# Agenda

## I. Understanding the Risk

- I. Impacts on grid reliability and operations
- II. Trends in extreme weather events

## II. Entity Risk Identification

- I. How the Texas RE Risk department assesses vulnerabilities
- II. Indicators of increased exposure and impact

## III. Best Practices for Readiness

- I. Key strategies under EOP-011-4 (Emergency Operations)
- II. Enhancing resilience with EOP-012-2 (Extreme Cold Weather Preparedness)



## Slido Question



**What is the biggest challenge your entity faces in preparing for extreme weather events?**

- A. Inadequate modeling or forecasting tools
- B. Limited staffing or training during emergencies
- C. Infrastructure not designed for new climate realities
- D. Communication breakdowns between functions





# Extreme Weather Response Risk

The increased frequency of extreme weather events poses significant reliability risks that can cause major Bulk Power System (BPS) impacts.



## Recent Storms

- Uri (2021)
- Elliot (2022)
- Geomagnetic Storm (2024)
- Hurricane Beryl (2024)



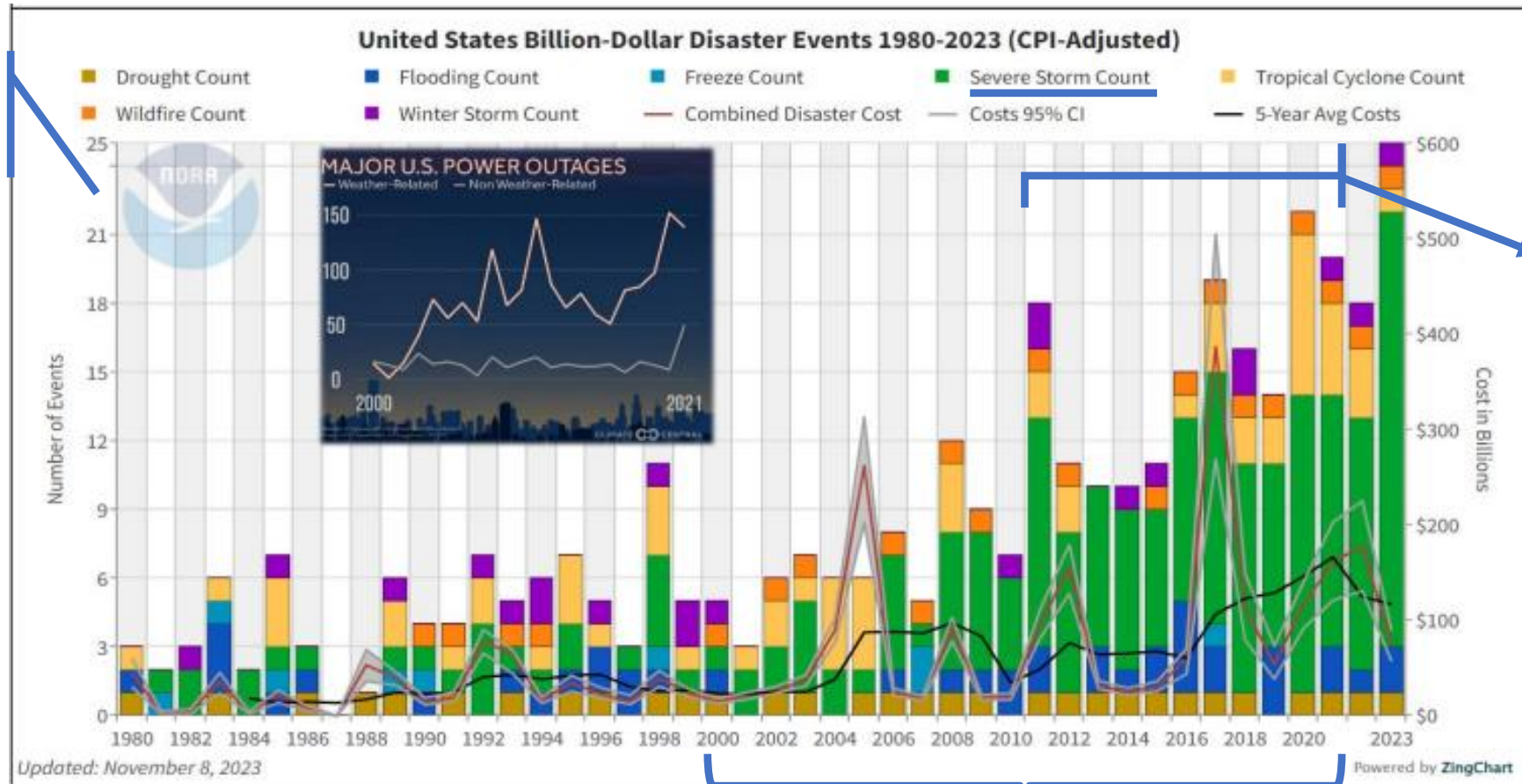
## Challenges Identified

- Exposed vulnerabilities
- Freezing infrastructure
- Poor coordination in planning or operations



# Extreme Weather Response Risk

More extreme weather events are predicted in the future



The average number of annual weather-related power outages increased by roughly **78%** during 2011-2021, compared to 2000-2010

<sup>1</sup>NERC Quarterly Technical Sessions: CISA Extreme Weather Outreach

Between 2000 and 2021, about **83%** of reported major outages in the U.S. were attributed to weather-related events



## Slido Question



**In what ways has your registered entity been impacted by extreme weather events in recent years? (Open Response)**



# How Texas RE is Identifying Risk

**Inherent Risk:** The natural risk level an entity has before considering any internal controls or mitigation factors.



## Geographic Location

Prone to cold winters  
Prone to strong winds  
Large quantity of vegetation



## System Restoration

Black start resources  
Battery energy storage systems (BESS)



## Registration

GO  
GOP  
TO  
TOP



# How Texas RE is Identifying Risk

**Performance Considerations:** Data and evidence that the Texas RE Risk department considers to understand an entity's performance to address entity-specific risks.



## Compliance History

Self-Reports  
Engagement findings



## Misoperations:

Weather-related



## Event Analysis: (EOP-004/OE 417)

Weather-related  
direct cause





# How Texas RE is Identifying Risk



## CMEP IP

The Electric Reliability Organization (ERO) Enterprise Compliance Monitoring and Enforcement Program (CMEP) Implementation Plan (IP) reflects ERO and Regional Entity-specific risk elements that compliance enforcement authorities (CEAs) should **prioritize** for oversight of registered entities



## Slido Question



**What do you think is the most important factor for a successful extreme weather response?**

- A. Resources**
- B. Coordination**
- C. Awareness**
- D. Training**



# Applicable Standards

Registered entities with applicable BES Cyber Systems (BCSs) should expect to see the following Standards in their 2025-2026 engagement scopes (if those Standards are applicable and have not been included in a recent engagement).

Rationale	Standard	Req	Entities for Attention
Ensure each Transmission Operator and Balancing Authority has developed plan(s) to mitigate operating Emergencies	EOP-011-4	R1, R2, R3, R6	Balancing Authority Reliability Coordinator Transmission Operator Distribution Provider* UFLS-Only Distribution Provider* Transmission Owner*  *Identified in the Transmission Operator's Operating Plan(s) to mitigate operating Emergencies in its Transmission Operator Area
Ensure each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather	EOP-012-2	R1, R2, R3, R4, R5, R6, R7	Generator Owner Generator Operator

<sup>1</sup>NERC 2025 ERO Enterprise CMEP Implementation Plan | October 2024



# EOP-011-4 Best Practices and Lessons Learned



## **Comprehensive Cold Weather Emergency Operating Plan**

Ensure that the Emergency Operating Plan (EOP) has specific language for provisions to determine the reliability impacts of cold weather (1.2.6.1), not only extreme weather



## **Proper Documentation Retention**

EOP-011-4 compliance is monitored through documentation and proactive measures enacted based on the methodology. Improper document management can lead to miscommunication and poor coordination between responsible personnel



## **Easily Accessible Emergency Operating Plan**

Ensure that System Operators are trained and can access the applicable information rapidly and with ease when responding to an Emergency



## **Change Management Internal Controls**

Proper internal controls designed to prompt the communication and review of any changes made to the EOP. This will ensure that responsible personnel can rapidly and easily access the most up to date information to mitigate operating emergencies



# EOP-012-2 Best Practices and Lessons Learned



## Comprehensive Cold Weather Preparedness Plan

Not fully developing or maintaining unit-specific cold weather preparedness plans could result in responsible personnel not knowing how to correctly respond to a Generator Cold Weather Reliability Event



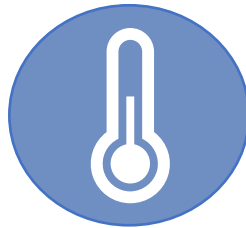
## Proper Documentation Retention

EOP-012-2 compliance is monitored through documentation and proactive measures enacted based on the methodology. Improper program documentation management can lead to unit-specific issues not being addressed that may affect readiness during cold weather



## Robust Freeze Protection Measures

The use and maintenance of heat tracing, insulation, and other protective measures improve facility readiness, which reduces equipment failure during a cold weather event



## Periodic ECWT Calculation Reviews

Periodic documented reviews of Extreme Cold Weather Temperatures (ECWT) using historic data and engineering analysis to ensure preparedness

The [Engagement Common Questions](#) document on Texas RE's website provides insights on areas Texas RE auditors could focus on during an engagement.





# Cold Weather Preparedness SGAS: EOP-012-2

The ERO Enterprise hosted Cold Weather Preparedness Small Group Advisory Sessions (SGAS) in May 2024 in preparation for EOP-012-2. NERC posted a [Frequently Asked Questions \(FAQ\) document](#). The FAQ includes stated definitions and responses to a total of 108 questions providing clarification across many new elements introduced in the EOP-012-2 standard.

A few highlights from the FAQ document include the following:

- *For larger entities, it's permissible to have an overarching winterization plan, but for any fleet with multiple locations, this means each specific plant needs its own, site-specific plan for cold weather preparedness.*
- *In addition to identifying critical components, entities must document the necessary freeze protection measures implemented or identified in Corrective Action Plans. Annual freeze protection measures are also required to be both inspected and maintained on an annual basis. All efforts around inspection, maintenance and Corrective Action Plan review/implementation should be well-documented and easy to understand under a third-party review.*



# Cold Weather Preparedness SGAS: EOP-012-3



## August 18, 2025 General Session Live Webinar

Session held to discuss  
EOP-012-3



## August 19 - 22, 2025 SGAS One-on-One Sessions

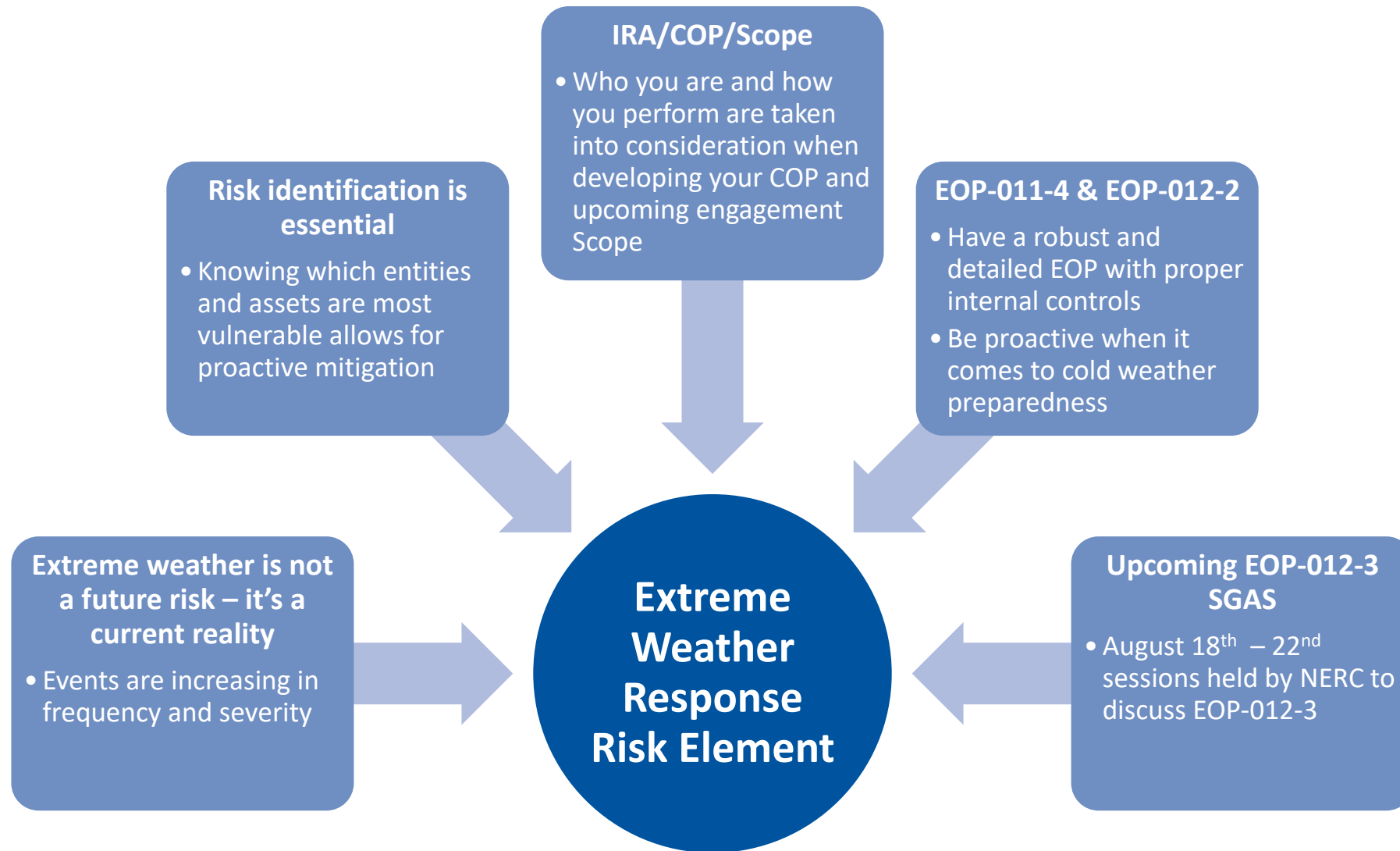
Closed discussions between a  
registered entity's subject  
matter experts (SMEs) and ERO  
staff for implementation of  
EOP-012-3

Send SGAS registration requests to [derek.kassimer@nerc.net](mailto:derek.kassimer@nerc.net) by **July 31, 2025**, with the following information:

- ☐ Requester name and contact information
- ☐ Entity name(s)
- ☐ NCR(s)
- ☐ Region(s) registered
- ☐ Contact information for each entity represented
- ☐ Preferred time(s) for appointment (morning/afternoon)



# Conclusion



# Resources

- ☐ [NERC One-Stop-Shop](#)
- ☐ [2024 Cold Weather Preparedness FAQ](#)
- ☐ [Engagement Common Questions](#)
- ☐ [NERC Report Template](#)
- ☐ [EOP-011-4](#)
- ☐ [EOP-012-2](#)



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 is centered over the image.

# Questions?



**TEXAS RE**

Ensuring electric reliability for Texans