

WELCOME TO TECHNICAL TALK WITH RF

December 18, 2023





TECHNICAL TALK WITH RF

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#TechTalkRF

TECHNICAL TALK WITH RF

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[LinkedIn.com/company/reliabilityfirst-corporation](https://www.linkedin.com/company/reliabilityfirst-corporation)

A screenshot of the ReliabilityFirst Corporation LinkedIn profile. The header features a banner image of power lines against a sunset sky. The profile name is "ReliabilityFirst Corporation" with a notification bell icon. Below the name is the description: "RF works to maintain the reliability, security and resilience of the electric grid in the Mid-Atlantic region" and "Utilities · Cleveland, OH · 3,970 followers · 101 employees". A section indicates "Brian & 85 other connections work here" with buttons for "Following", "Invite", and "More". Navigation tabs include "Home", "My Company", "About", "Posts", "Jobs", and "People". The "Posts" tab is active, showing a post from "ReliabilityFirst Corporation" with 3,970 followers, dated "2d". The post text reads: "ReliabilityFirst staff participated in our organization's annual Day of Giving last week. Thank you to [BOYS & GIRLS CLUB OF CLEVELAND](#), [Providence House](#), [Shoes and Clothes for Kids](#), [Arkansas Foodbank](#), and [City Mission](#) for having us as w...see more". Below the text are two images: one of a group of people posing in front of a brick building, and another of people working on a roof.

TECH TALK REMINDERS

Please keep your information up-to-date

- CORES, Generation Verification Forms, Entity Profile Questionnaires (quarterly)

Following an event, send EOP-004 or OE-417 forms to disturbance@rfirst.org

CIP-008-6 incident reports are sent to the [E-ISAC](#) and the [DHS CISA](#)

Check our [monthly CMEP update](#) and [quarterly newsletter](#):

- [2023 ERO Periodic Data Submittal schedule](#)
- Timing of Standard effectiveness

BES Cyber System Categorization (CIP-002-5.1a)

- Assess categorization (low, medium, or high) regularly and notify us of changes

CIP Evidence Request Tool V7.0 is online, see [website](#)



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TECH TALK ANNOUNCEMENT



NERC Releases Findings and Critical Recommendations from IBR Level 2 Alert

Click here to read: [Announcement](#)

NERC has analyzed multiple largescale disturbances involving widespread loss of IBRs that have resulted in abnormal performance across several Bulk Electric System solar photovoltaic generating resources. These systemic performance issues could lead to potential widespread outages if they persist, NERC has warned. To help mitigate this risk, NERC issued a Level 2 alert in March that provided strong recommendations for Generator Owners of all bulk power system-connected IBR facilities.



TECH TALK ANNOUNCEMENT



2023-2024 Winter Reliability Assessment

NERC's [2023–2024 Winter Reliability Assessment](#) finds that much of North America is again at an elevated risk of having insufficient energy supplies to meet demand in extreme operating conditions. The areas identified as being at elevated risk extend over much of the eastern two-thirds of the continent. In these areas, although resources are adequate for normal winter peak demand, any prolonged, wide-area cold snaps will be challenging due to generator outages and fuel vulnerability, extreme levels of electricity demand, difficulties in accurate forecasting and the risk of firm electricity transfer curtailments.

2023–2024 Winter Reliability Assessment

November 2023

[WRA Infographic](#) | [WRA Video](#)



TECH TALK ANNOUNCEMENT



NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

FERC, NERC Final Report on Lessons from Winter Storm Elliott

FERC and the North American Electric Reliability Corporation (NERC) today released the [final report on Winter Storm Elliott](#), the Christmas 2022 storm that contributed to power outages for millions of electricity customers in the Eastern half of the country. The 167-page report recommends completion of needed cold weather reliability standard revisions initially identified after 2021's Winter Storm Uri, and improvements to reliability for U.S. natural gas infrastructure.



TECH TALK ANNOUNCEMENT



2023 Long Term Reliability Assessment

Full Report: [2023 Long-Term Reliability Assessment](#)

[Infographic](#)

[Video](#)

2023 Long-Term Reliability Assessment

December 2023

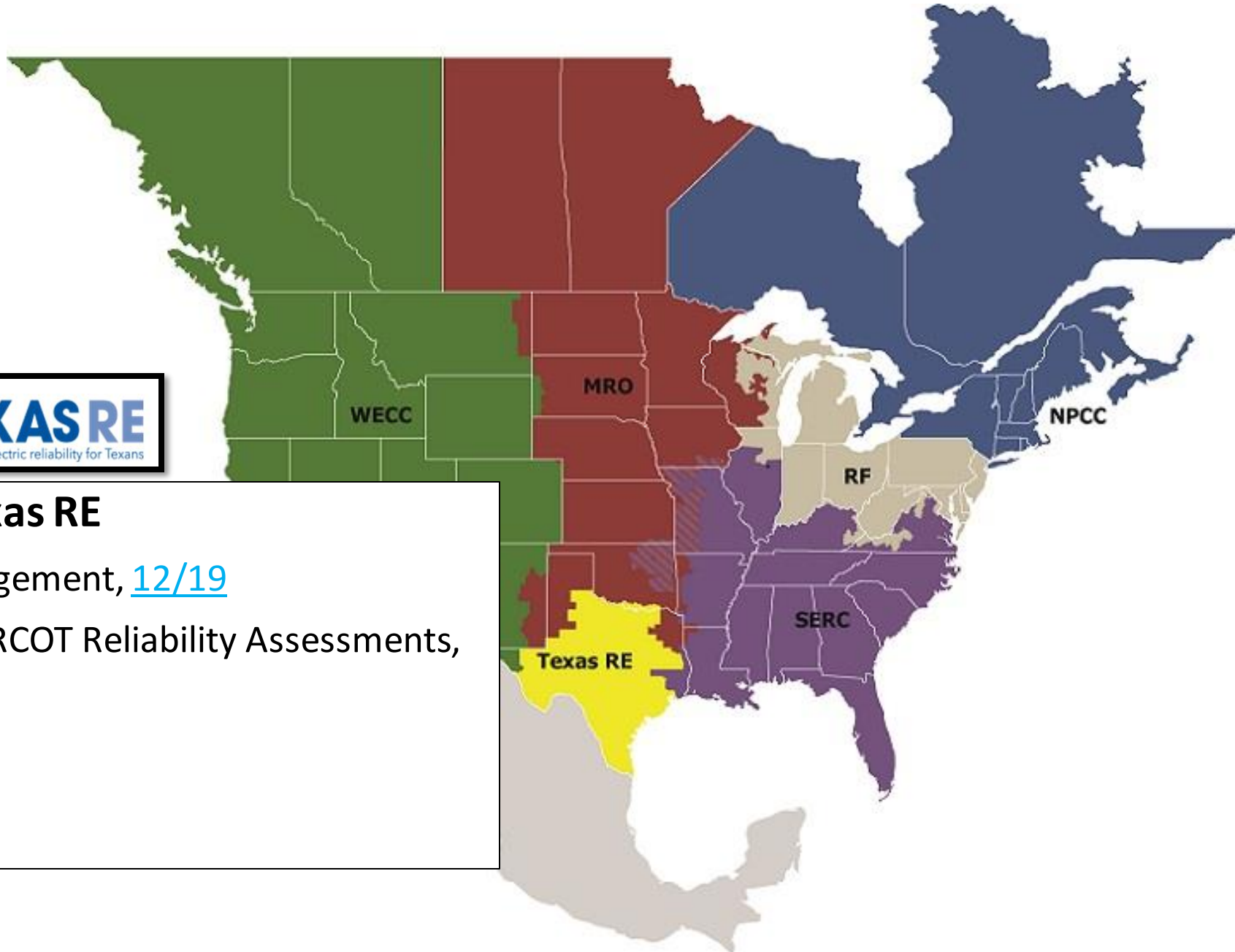


This 2023 LTRA is the ERO's independent assessment and comprehensive report on the adequacy of planned BPS resources to reliably meet the electricity demand across North America over the next ten year; it also identifies reliability trends, emerging issues, and potential risks that could impact the long-term reliability, resilience, and security of the BPS.



Talk with Texas RE

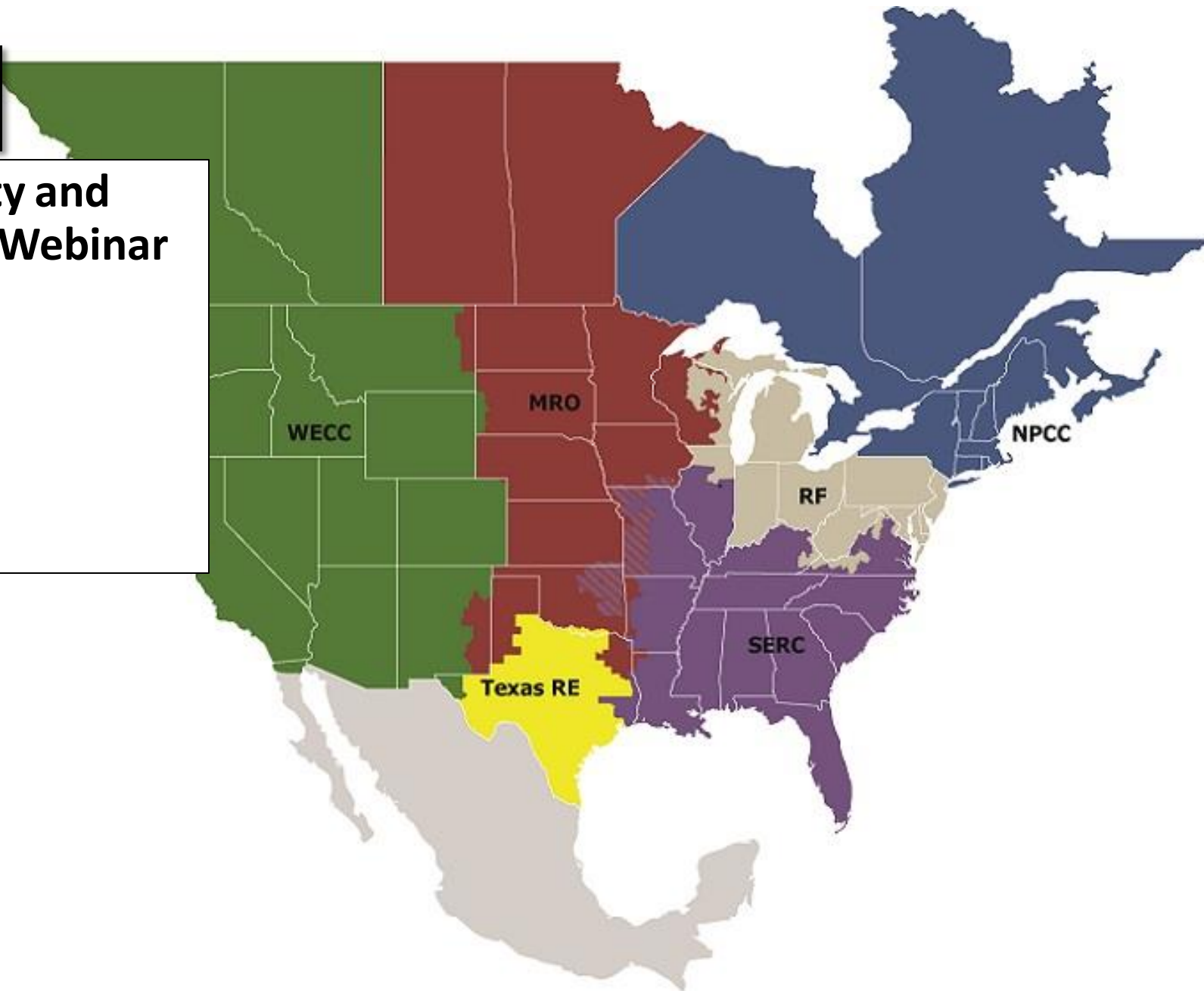
- Asset Management, [12/19](#)
- NERC and ERCOT Reliability Assessments, [1/11](#)





Monthly Reliability and Security Monthly Webinar

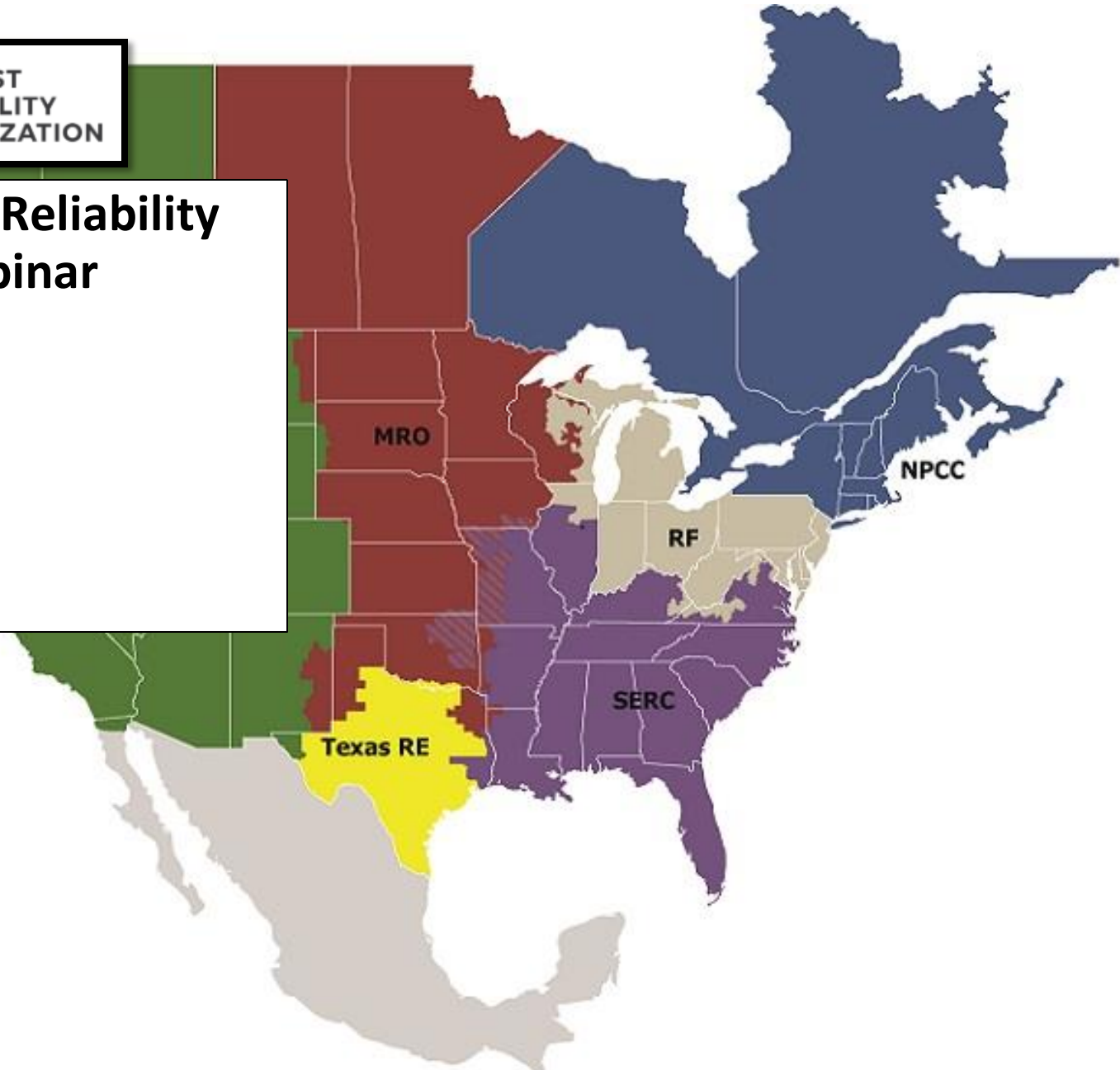
- [December 21st](#)
- [January 18th](#)

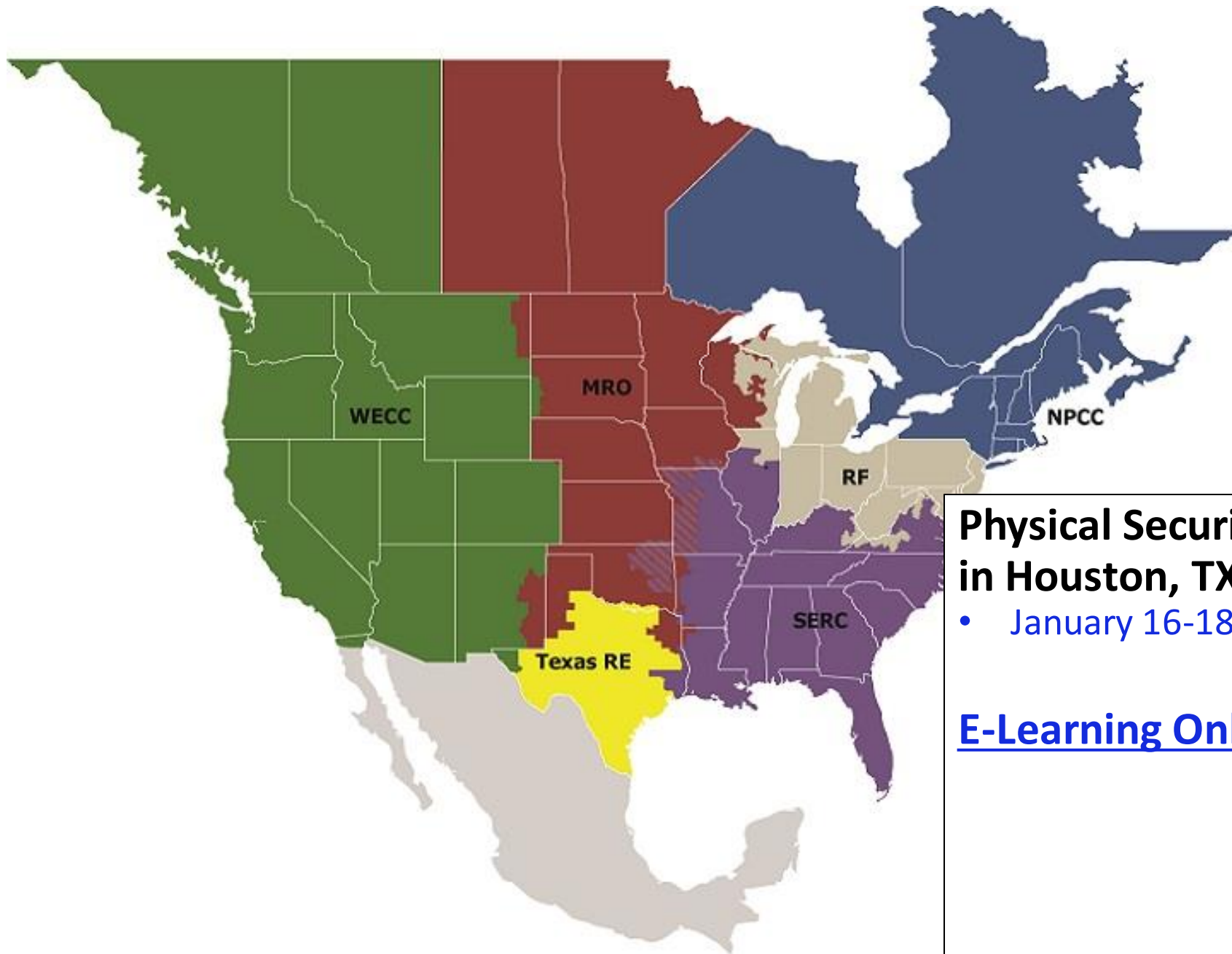




2023 Long-Term Reliability Assessment Webinar

- [January 25th](#)

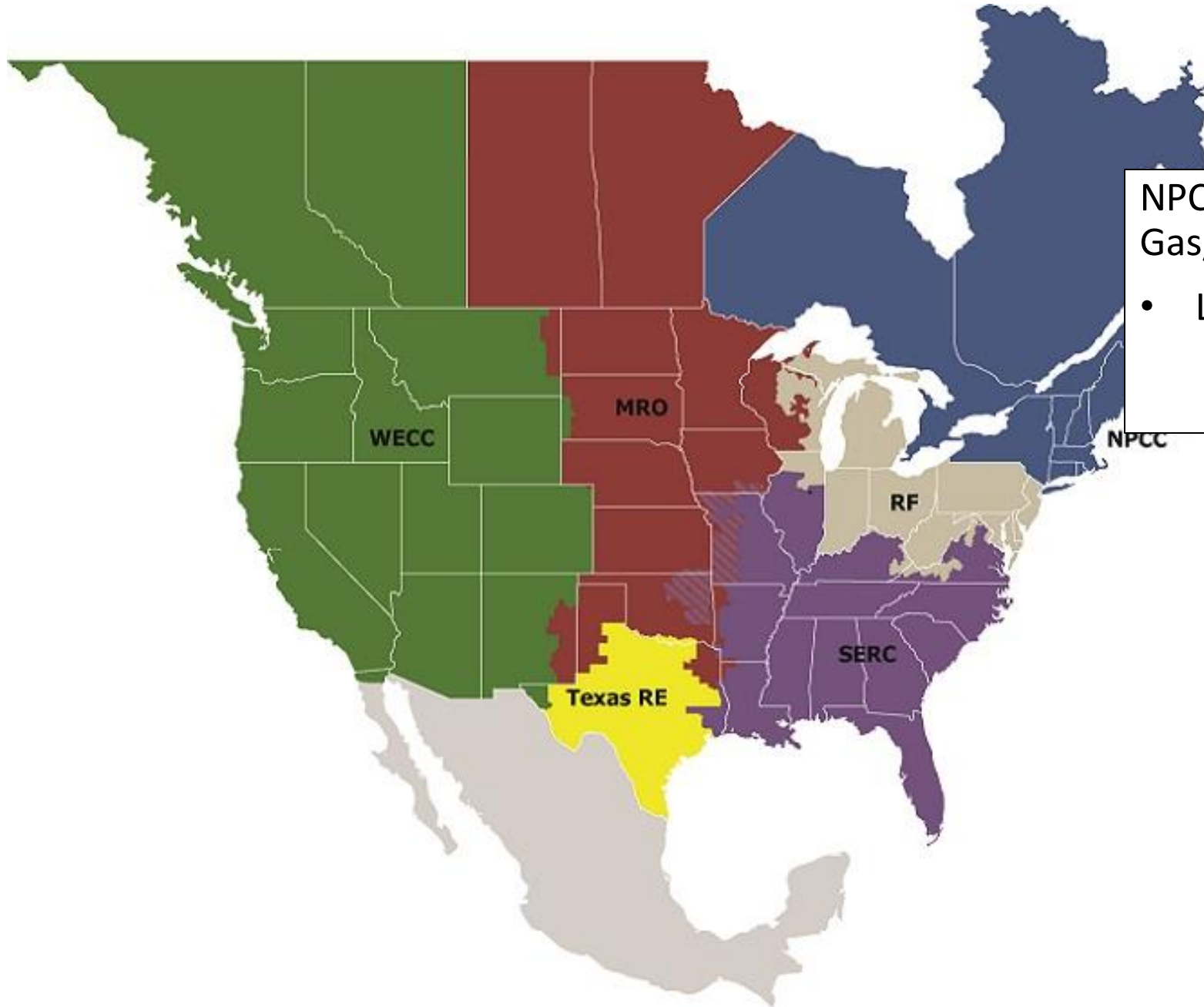




Physical Security Workshop in Houston, TX

- January 16-18

[E-Learning Online Courses](#)



NPCC Announces Northeast Gas/Electric System Study

- Link to [Study](#)



Next *Tech Talk with RF*

- [January 22](#), 2:00 – 3:30 PM

RF Services

- Cyber Resilience Tool
- Insider Threat Assessment
- Incident Response Tabletops
- Assist Visits and Appraisals
- Winterization On-Site Visits
- Committees (CIPC, Reliability Committee, and subcommittees)
- [4th Quarter Newsletter](#)



TECHNICAL TALK WITH RF

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TECH TALK REMINDER

Tech Talk with RF announcements are posted on our calendar on www.rfirst.org under Calendar

January 2024

MON
22

January 22, 2024 @ 2:00 pm - 3:30 pm

Technical Talk with RF

Virtual (Webex)

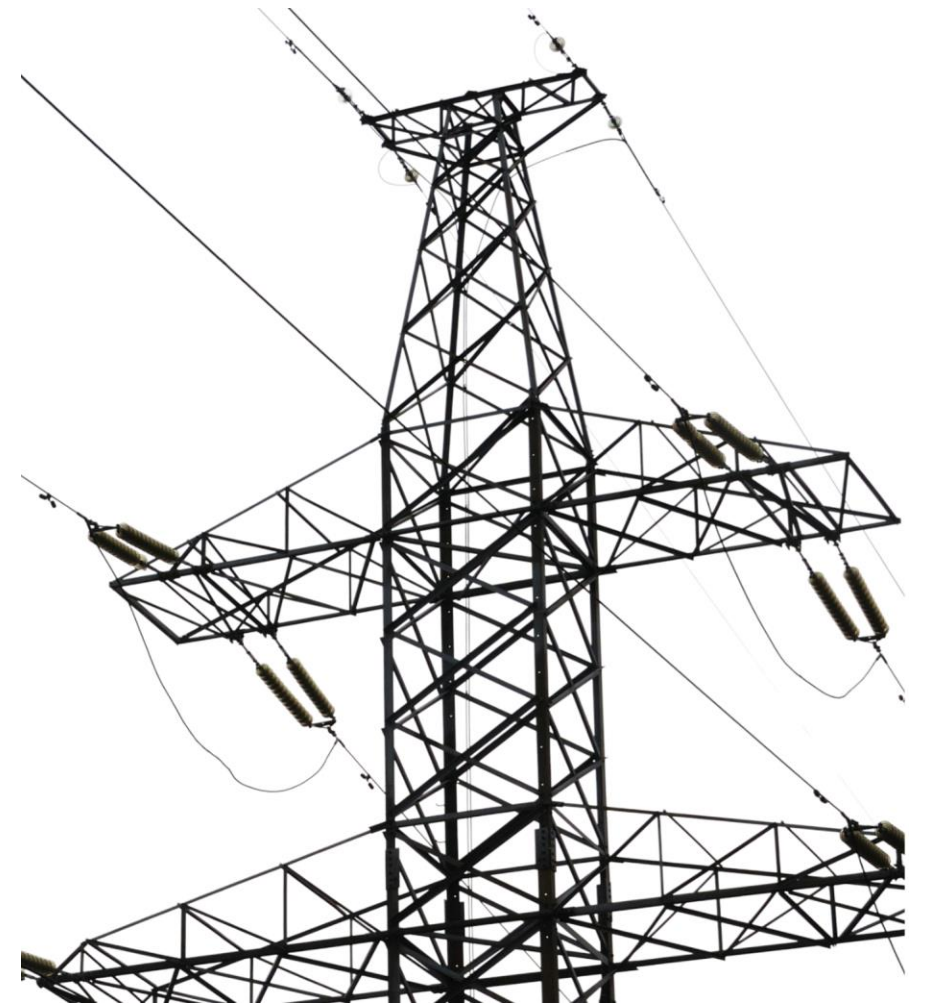
CLICK HERE



Anti-Trust Statement

It is ReliabilityFirst's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct which violates, or which might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every ReliabilityFirst participant and employee who may in any way affect ReliabilityFirst's compliance with the antitrust laws to carry out this policy.



AGENDA

EMERGENCY PREPAREDNESS AND OPERATIONS WALKDOWNS

- BETH RETTIG - SENIOR TECHNICAL AUDITOR, RELIABILITYFIRST
- SPRINGDALE ENERGY
- LS POWER

2024 ERO ENTERPRISE CMEP

IMPLEMENTATION PLAN

- RASHIDA CARAWAY - MANAGER, RISK ASSESSMENT, TEXAS RE

RF EOP-011 AND FUTURE EOP-012 ON-SITE WALKDOWNS

Beth Rettig- ReliabilityFirst

James Baird- Springdale Power, LLC

Colleen Campbell- LS Power

Sandra Kennedy- LS Power

Dec. 18, 2023, Technical Talk with RF



RELIABILITY FIRST

AGENDA

RELIABILITYFIRST- BETH RETTIG

- EOP-011-2
 - Recent walkdowns conducted
- 2024 and beyond
 - EOP-012

SPRINGDALE ENERGY- JAMES BAIRD

- Springdale Energy facility introduction
- Winterization plan in place
- RF/Springdale walkdown perspective

LS POWER- COLLEEN CAMPBELL & SANDRA KENNEDY

- LS Power introduction
- RF/Springdale walkdown perspective
- Best practice sharing across fleet

COLD WEATHER PREPAREDNESS EOP-011-2

- Effective 4/1/2023
- RF Tech Talk in July 2023
 - Winterization Assist Visit Program vs. Compliance Engagements
- On-site Spot Check Winterization Walkdowns in November 2023
 - EOP-011 R7, R8



EOP-011 ON-SITE WALKDOWN- SPRINGDALE ENERGY, LLC



- RF team reviewed compliance evidence submitted
- Prepared questions for onsite demonstrations
 - Cold weather preparation
 - Open task management
 - Facility walk-through
 - Recent upgrades or plans looking ahead to EOP-012 and increased reliability

RECENT PUBLICATIONS AND EVENTS

Nov. 7 ● FERC/NERC issued final report on December 2022's Winter Storm Elliott [Winter Storm Elliott Report: Inquiry into Bulk-Power System Operations During December 2022 | Federal Energy Regulatory Commission \(ferc.gov\)](#)

Nov. 8 ● NERC released its 2023 Winter Reliability Assessment [NERC_WRA_2022.pdf](#)

Oct. 1, 2024 ● EOP-012-1 goes into affect



Springdale Energy EOP -11 Overview

Presented by: James Baird



Springdale Energy LLC

-
- Plant Overview
 - Program Action Levels /ECWT
 - Plant Program Improvements
 - Lessons Learned
 - RF Walkdown Experience Plant Perspective



Plant Overview

Springdale Combined Cycle

Plant view



Operating Statistics				
	2020	2021	2022	2023 Q3
Net Capacity Factor	89.3%	73.1%	90.6%	91.3%
Net Generation MWh	4,338,676	3,569,743	4,405,161	3,421,613
Avg. Net Heat Rate	6,925	7,037	6,959.798	6,844
Annual Service Hours	8,251	6,763.00	8,239	6,180
EFORD	0.61	0.08	0.7	1.53

Fact Sheet

COD	Aug 2003
Capacity	537 MW (Summer Corrected 88F) 585 MW (Winter Corrected 16.5F)
Location	Springdale, PA
Baseload Heat Rate	7,110 mmbTU/kW
Equipment	2 501FD(2)3 Combustion Turbines 1 HE Steam Turbine 2 NEM HRSGs
Fuel Type	Natural Gas
NERC Region	Reliability First
Electric Interconnection	West Penn Power (138 kV)
Gas Interconnection	Dominion
Water Supply	Springdale Municipality
Employees	22
Air Permit	2.5 ppm NO _x 3hr rolling 10 ppm CO hourly average NH ₃ Slip < 10 ppm annual stack test

- Springdale 3,4,5 operated as a peaking plant until February 2012
- Operates in 2x1 or 1x1 operation
- Unit was updated from an FD2 to an FD3 engine in 2015. Nominal increase of 26 MW on the power block

SITE SPECIFIC WINTER READINESS

- Event Types – Winter Warning Levels

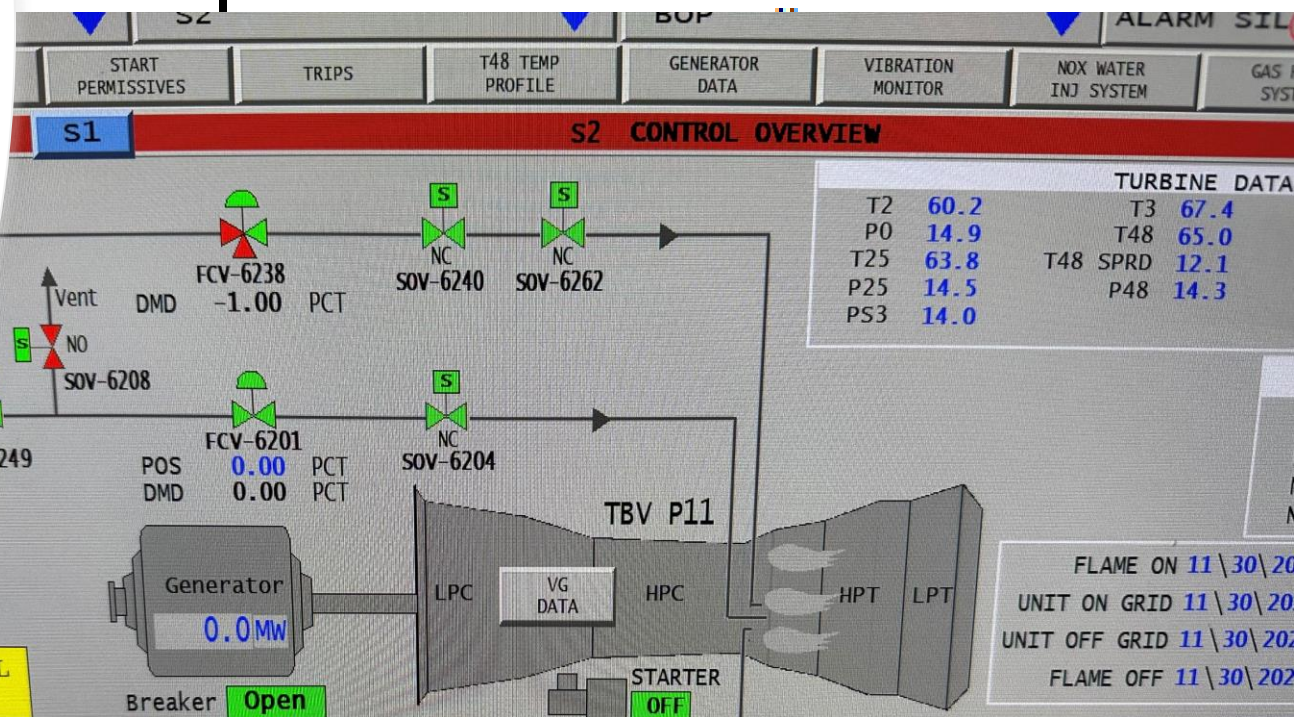
- LEVEL I** – Issued at the beginning of September and carry anytime **ambient temperatures are 40°F or below.**
 - LEVEL II** – Medium risk. Issued when ambient temp. drop **below 29°F.**
 - LEVEL III** – Highest risk. Issued any time ambient temperatures **drop below 20°F** or issued severe winter storm warning.

Springdale Energy Turnover Sheet

Date:	12/2/2023	Time:
--------------	-----------	--------------

Cloudy, with a low around 46. Light northeast wind. Chance of a tenth and quarter of an inch possible.

deg. F		12/4/2023	33
deg. F	Level 1	12/5/2023	33



PERCENTAGE COMPLETION TO REPORT ON MORNING CALL

%

Note: This is a live document that will be updated and changed at any time

Plant Program Improvements

- Insulated and heat trace around Clarifier Tanks.
- Upgraded I/A Dryer Skid.
- Built Permanent Enclosures.
- Upgrade heat trace panels to alarm into DCS.
- Installed alarms in the DCS system.
- Localized storage of winter readiness supplies.
- Pre and Routine checks of winter equipment.
- Transition to Electric Heaters instead of Kerosene.
- Install more outlet around plant in problem area to prevent the use of extension cords.
- New PM'S for compartment heater and building damper maintenance.
- Installed windows on heater control boxes to detected faults.
- Developed new rounds on critical instrumentation, compartment temperatures, and heat trace panels.
- Heat trace and insulated hose for DI trailer.

	Date Activity Scheduled to Start	Date Activity to be Completed	Date Activity Completed	Percent Complete	% Weight on Category	Notes
& PM Program						
Review of winterization procedure for the 5 year cold weather average equipment/areas that had freezing at year.						
Minimal equipment operating in winter.						
Review how to Perform Area Walk-downs and requests for Following Conditions.						
Identify Heater & Heat Trace Deficiencies needed						
Install Electric Heaters, Temporary Heat Trace.						



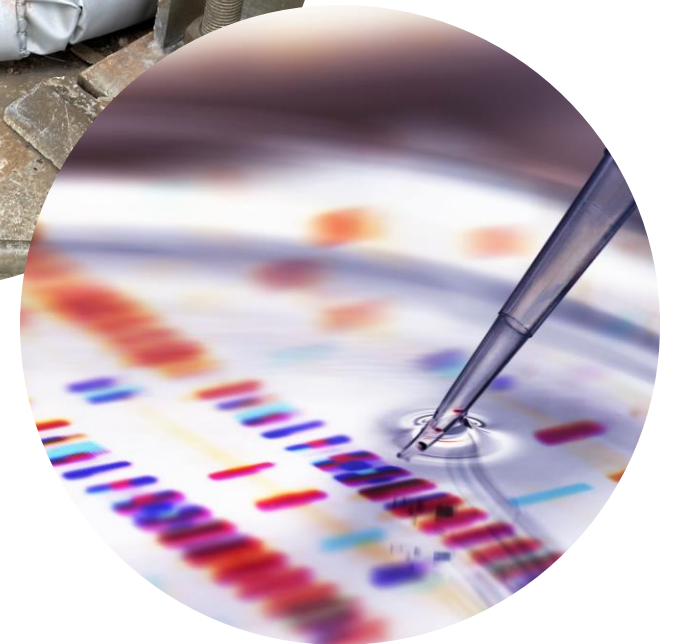
Lessons Learned

APPENDIX G: LESSONS LEARNED, PROBLEM AREAS

UNIT	EVENT	REPAIR PLAN – ACTIONS TAKEN
UNIT 3	"A"& "B" LP DRUM TRANSMITTER FROZE, DUE TO DAMPER STUCK OPEN IN DOG HOUSE (12/2022) <i>*CAUSED UNIT 3 TRIP AND PLANT DERATE*</i>	REPLACED DAMAGED ACTUATOR (COMPLETE 12/24/22); INSTALL TEMPORARY INSULATION PRIOR TO START OF WINTER SEASON; LONG-TERM - INSTALL COMPARTMENT TEMPERATURE TO ALARM IN DCS)
UNIT 3	GAS CURTAILMENT <i>*50 MW DERATE TO PREVENT OVER BURN*</i>	
UNIT 3	"C" IP LEVEL TRANSMITTER FROZE DUE TO DAMAGED INSULATION	INSULATION WAS REPAIRED
BOP	ECA PRESSURE AND FLOW TRANSMITTERS FROZE	OBRIAN BOX HEATER WAS REPAIRED
BOP	DISCHARGE LINE FROM FILTRATE SUMP TO REACTOR TANK FROZE	DAMAGED WINTER HUT, ELECTRIC HEATER OUTLETS; HUT INSPECTION SHEETS NOW PERFORMED
UNIT 3	SCR NH3 FLOW TRANSMITTER STARTED TO FREEZE (HIGH WINDS DAMAGED CURTAINS)	REPLACE DAMAGE CURTAIN STRAPS; INSTALL TEMP HEAT SOURCE DURING WINTER OPERATION.
UNIT 4	SCR NH3 FLOW TRANSMITTER STARTED TO FREEZE (HIGH WINDS DAMAGED CURTAINS)	REPLACE DAMAGE CURTAIN STRAPS; INSTALL TEMP HEAT SOURCE DURING WINTER OPERATION
BOP	UNIT 3/4 HRSG BLOWDOWN TANK COOLING WATER LINE STARTED TO FREEZE	STAGE TEMPORARY HEATER WHEN TEMPERATURES ARE EXPECTED TO DROP BELOW ECWT

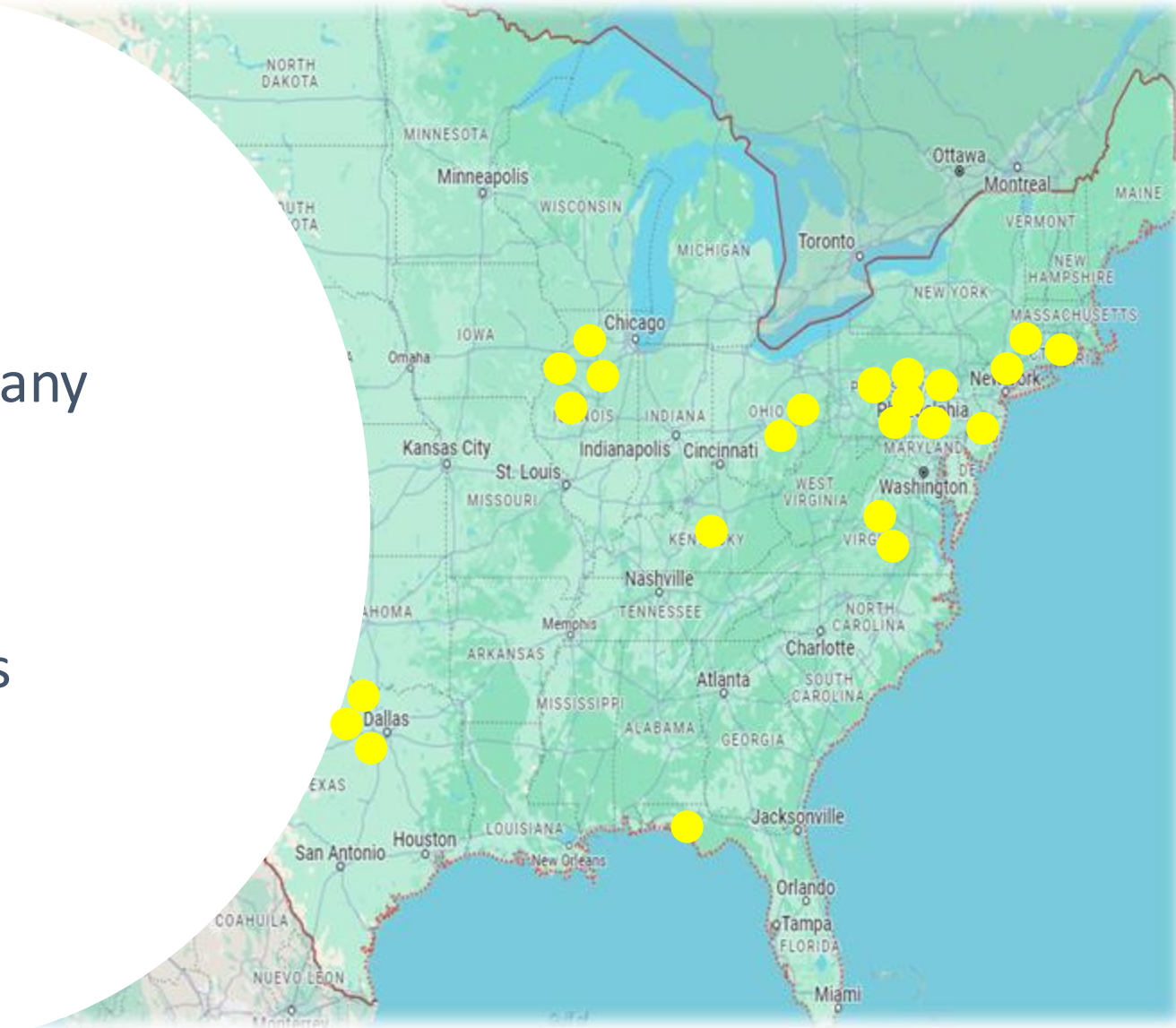


RF Walkdown



LS Power Overview

- Industry Focus
 - Power Generation
 - Electric Transmission
 - Energy Infrastructure
- Parent-Holding Company
 - 23 NERC-Registered Power Plants
 - RF, NPCC, SERC, TRE
- Compliance Functions
 - Oversight
 - Monitoring
 - Support



EOP-011 Walkdown Experience

- Discussion based
- Not the traditional 'audit' feel



Lessons Learned – Best Practices



Leveraging engagement outcomes



Preparing for EOP-012

QUESTIONS & ANSWERS

Beth Rettig:

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James Baird:

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Colleen Campbell:

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Sandra Kennedy:

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TEXAS RE

2023 ERO Implementation Plan

**Rashida Caraway
Manager, Risk Assessment
Texas Reliability Entity**

December 18, 2023

CMEP Implementation Plan (CMEP IP) Purpose

- ❑ Reflects ERO and Regional Entity-specific risk elements that regions prioritize for oversight of registered entities
- ❑ Developed by NERC and the Regional Entities
- ❑ Four risk priorities the CMEP IP manages
 1. Changing Resource Mix
 2. Cybersecurity Vulnerabilities
 3. Resource Adequacy and Performance
 4. Critical Infrastructure Interdependencies



Risk Elements

Risk Elements Developed Using:

- Compliance findings
- Recent event analysis
- Data analysis
- Committees
- Publications

Risk Elements are Considered When Regions:

- Complete an Inherent Risk Assessment
- Complete a Compliance Oversight Plan
- Scope an engagement
 - Engagement team may use to focus on sampling and internal controls



What's New with Risk Elements?

2023	2024
Remote Connectivity	Remote Connectivity
Supply Chain	Supply Chain
N/A	Physical Security
Incident Response	Incident Response
Stability Studies	Stability Studies
Inverter-Based Resources	Inverter-Based Resources
Facility Ratings	Facility Ratings
Cold Weather Response	Extreme Weather Response



Remote Connectivity

- Focuses on the human element of security
- How do entities manage the risk of remote connectivity and the complexity of the tasks the individuals perform?

Standard	Requirement
CIP-005-7	R2, R3
CIP-007-6	R3
CIP-012-1	R1



Supply Chain

- ❑ A growing risk and focal point
- ❑ Various publications that highlight vendors, services, and products widely used

Standard	Requirement
CIP-010-4	R1
CIP-013-2	R1, R2



Physical Security

- Incidents increasing
- Many of the attacks have been against substations or distribution infrastructure
- Potential use of drones for attacks

Standard	Requirement
CIP-014-3	R4, R5



Slido Question

Physical security is not related to cyber-security risks.

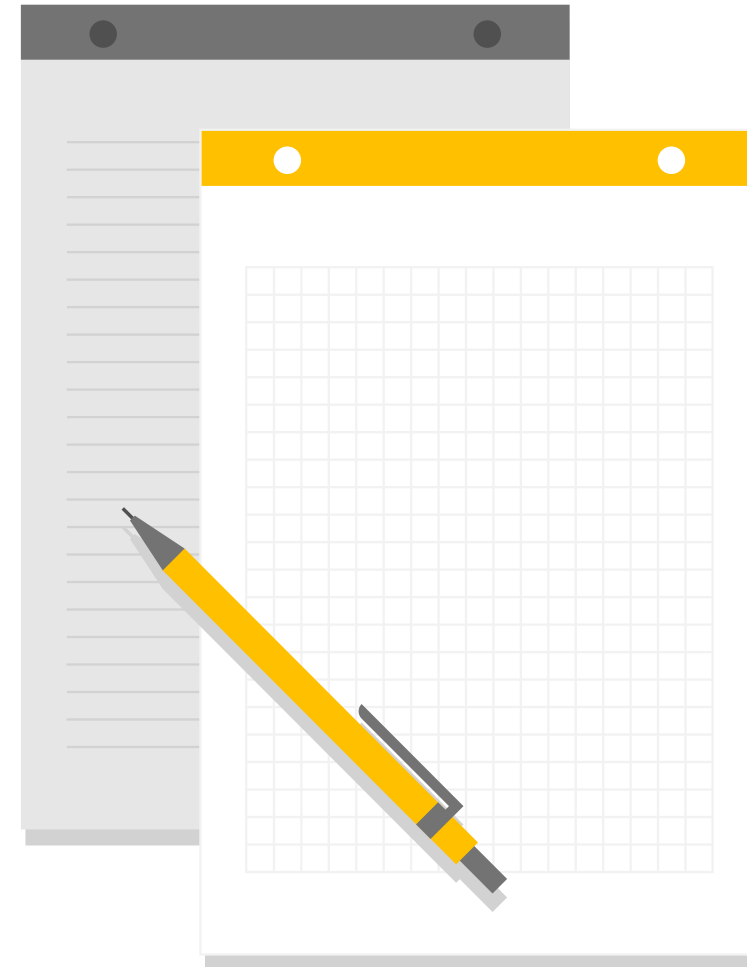
True or False?



Incident Response

- ❑ Efforts underway to develop cyber tools that should assist industry in enhancing preparation and reaction plans
- ❑ Having and implementing a Cyber Security Incident response plan is important

Standard	Requirement
CIP-008-6	R1, R2, R3



Stability Studies

- ❑ Focuses on how the changing resource mix impacts operational and transmission planning
- ❑ Reports have highlighted insufficient model quality checks

Standard	Requirement
CIP-014-3	R1
TPL-001-4 TPL-001-5.1	R4, R6



Inverter-Based Resources (IBR)

Recent events highlighted IBR risks

- Ride-through capability during normal fault events
- Need to accurately model IBR characteristics
- Recent related NERC Alert

Standard	Requirement
FAC-001-4	R1, R2
FAC-002-4	R1, R2
MOD-026-1	R2
PRC-024-3	R1, R2



Facility Ratings

- ERO has released a guide on related best practices
- ERO is understanding more about controls entities have in place

Standard	Requirement
FAC-008-6	R6



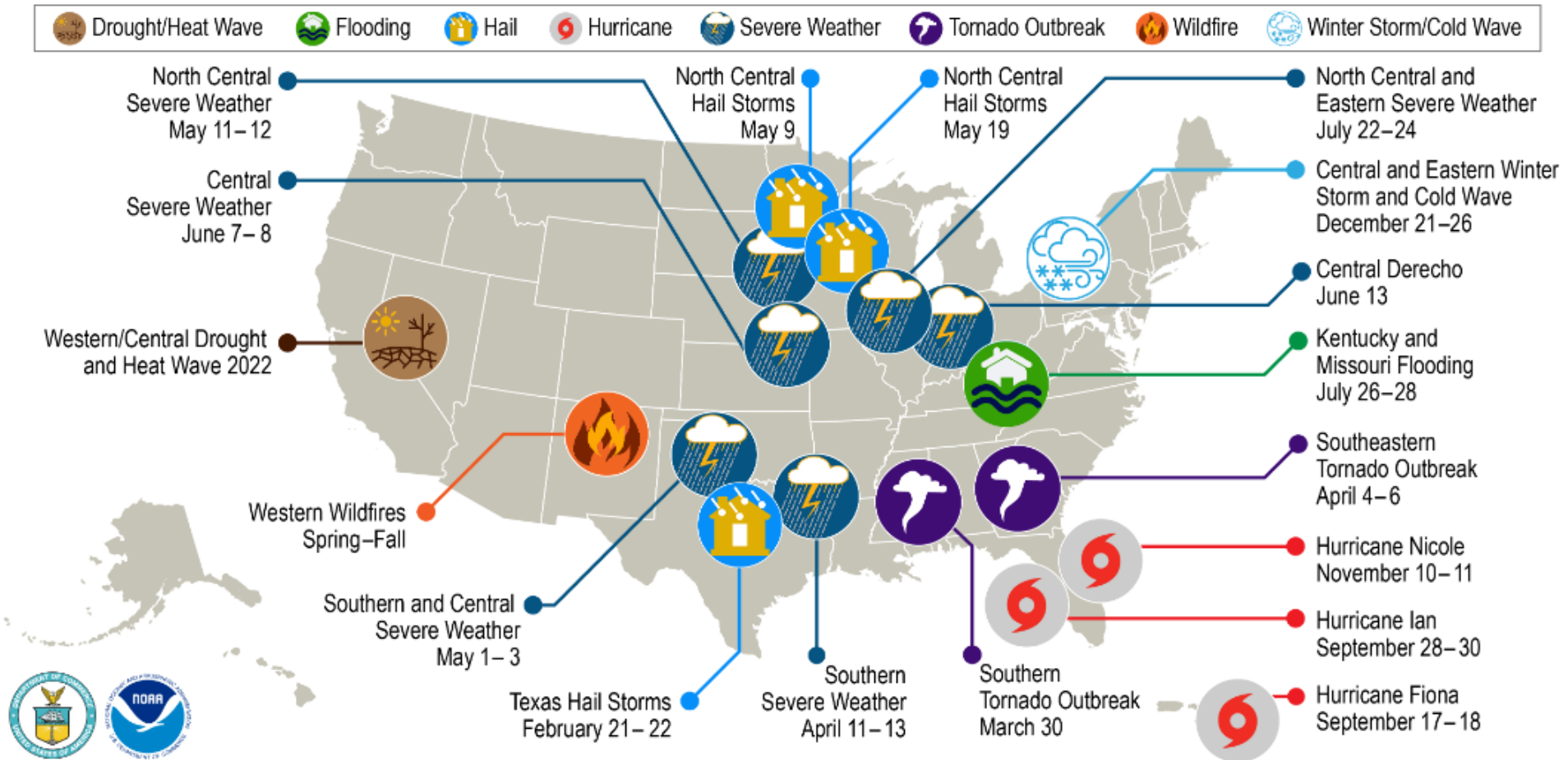
Extreme Weather Response

- Replaces Cold Weather Response Risk Element
- Extreme heat events have had impact on BPS

Standard	Requirement
EOP-011-2	R1, R2, R3, R6, R7, R8
EOP-012-1	R1, R2, R3, R4, R5, R6, R7
TPL-007-4	R1, R2, R4, R5, R7



Extreme Weather Response: 2022 U.S. Weather and Climate Disasters



This map denotes the approximate location for each of the 18 separate billion-dollar weather and climate disasters that impacted the United States in 2022.

Source: NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2023)
<https://www.ncei.noaa.gov/access/billions/>



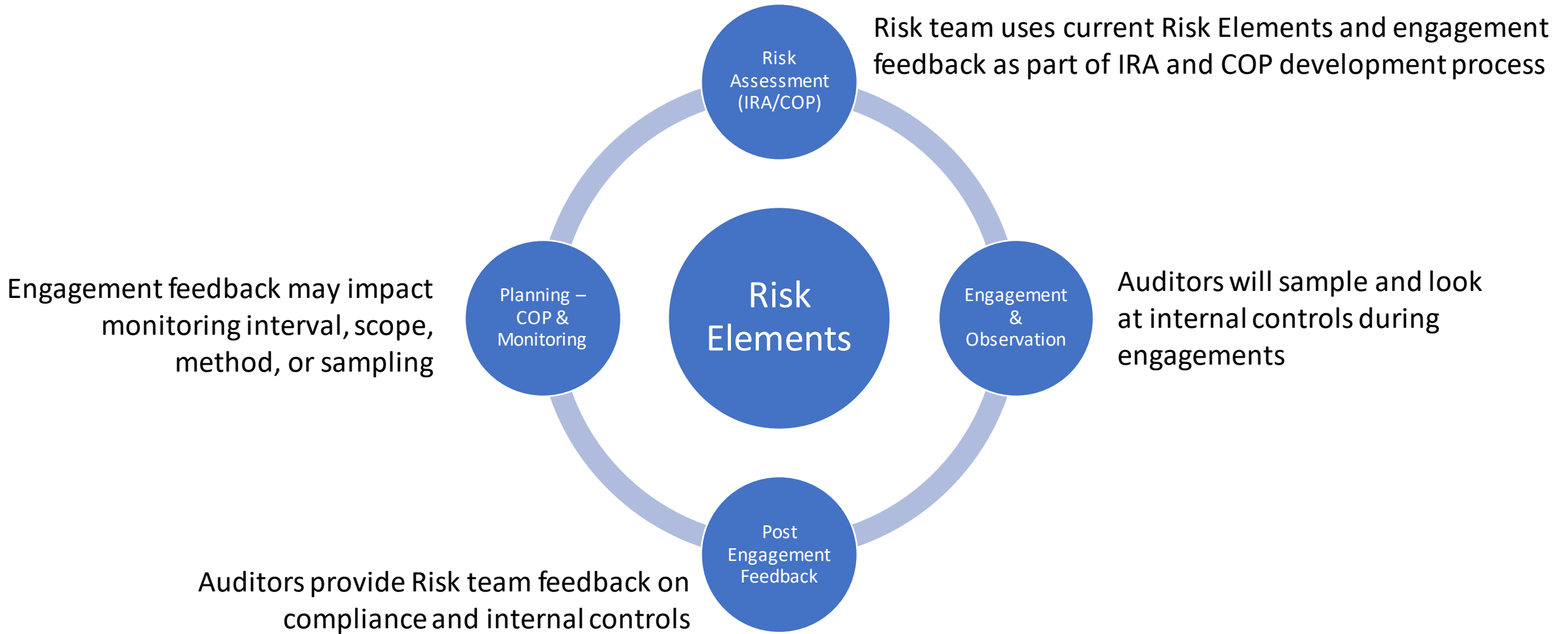
Slido Question

Which Risk Element do you think poses the most risk to your registered entity(ies)?

- Remote Connectivity*
- Supply Chain*
- Physical Security*
- Incident Response*
- Stability Studies*
- Inverter-Based Resources*
- Facility Ratings*
- Extreme Weather Response*



Tying it All Together



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 on a specific point.

Questions?



TEXAS RE

Ensuring electric reliability for Texans

THANK YOU

***Join us for our next Tech Talk -
January 22nd***

Kristen Senk, RF - Year in Review
with Enforcement

Tim Fryfogle, RF - NERC and RF
Long Term Reliability Assessments

[Webinar Link](#)

