WELCOME TO TECHNICAL TALK WITH RF

December 16, 2024

TECHNICAL TALK WITH RF

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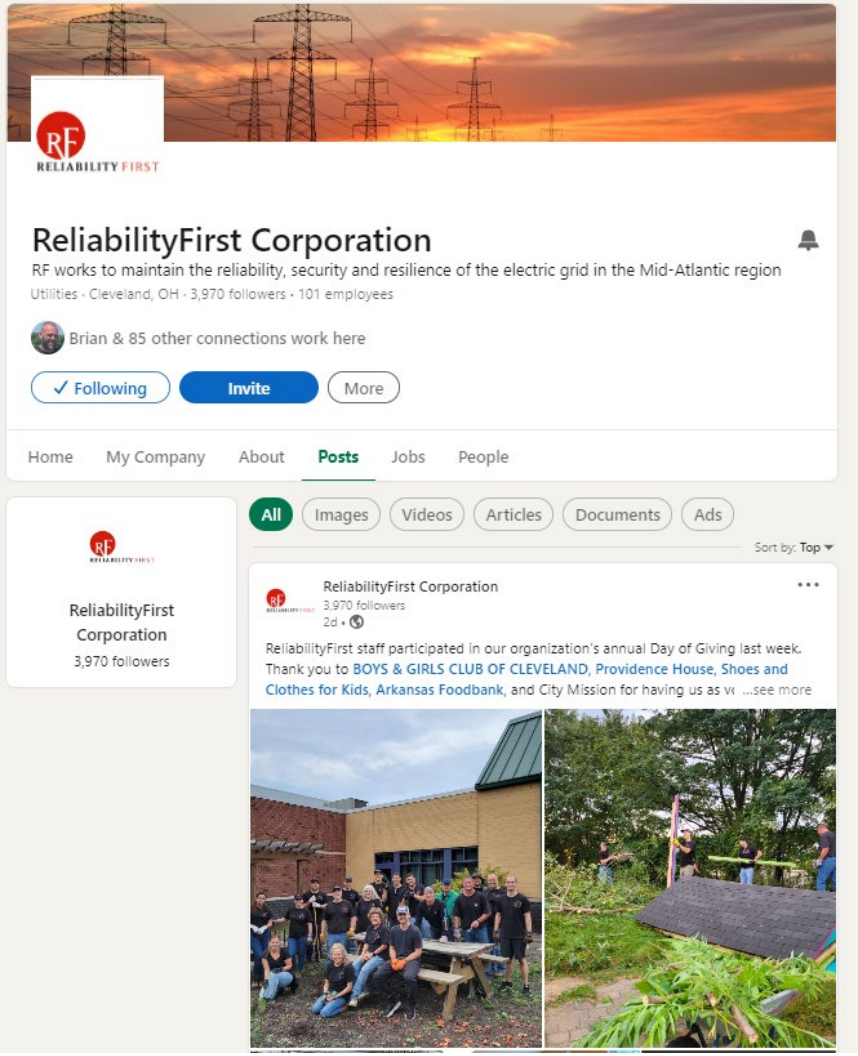


TECH TALK REMINDERS

Please keep your information up-to-date
- CORES and Generation Verification Forms

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 newsletter:
- 2024 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

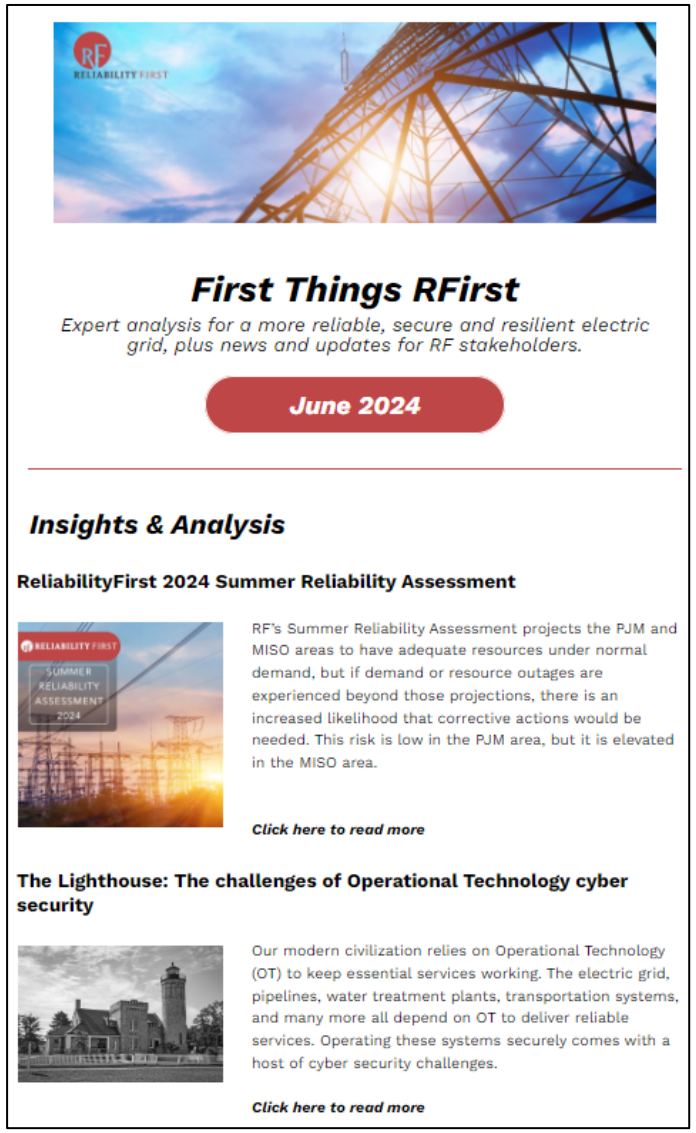
CIP Evidence Request Tool V8.1 was released and is on NERC's website

TECH TALK REMINDER

Are you getting our newsletter ***First Things RFirst?***

- Sign up today **here**

Also, make sure to check out our **2023 Impact Report**



RELIABILITY FIRST

First Things RFirst

Expert analysis for a more reliable, secure and resilient electric grid, plus news and updates for RF stakeholders.

June 2024

Insights & Analysis

ReliabilityFirst 2024 Summer Reliability Assessment

RF's Summer Reliability Assessment projects the PJM and MISO areas to have adequate resources under normal demand, but if demand or resource outages are experienced beyond those projections, there is an increased likelihood that corrective actions would be needed. This risk is low in the PJM area, but it is elevated in the MISO area.

Click here to read more

The Lighthouse: The challenges of Operational Technology cyber security

Our modern civilization relies on Operational Technology (OT) to keep essential services working. The electric grid, pipelines, water treatment plants, transportation systems, and many more all depend on OT to deliver reliable services. Operating these systems securely comes with a host of cyber security challenges.

Click here to read more

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TECH TALK ANNOUNCEMENT

2024-2025 Winter Reliability Assessment

Read here: Link

NERC has released the 2024-2025 Winter Reliability Assessment (WRA), which identifies, assesses, and reports on areas of concern regarding the reliability of the North American BPS for the upcoming winter season (December – February).

The WRA presents peak electricity demand and supply changes and highlights any unique regional challenges or expected conditions that might affect the reliability of the BPS.

This reliability assessment process is a coordinated evaluation between the Reliability Assessment Subcommittee, the Regional Entities, and NERC staff with demand and resource projections obtained from the assessment areas.

This report is intended to inform industry leaders, planners, operators, and regulatory bodies so that they are better prepared to take necessary actions to ensure BPS reliability.

TECH TALK ANNOUNCEMENT

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Save the Date: Industry Engagement Workshop

Reliable IBR Integration and Milestone 3 of FERC Order No.901

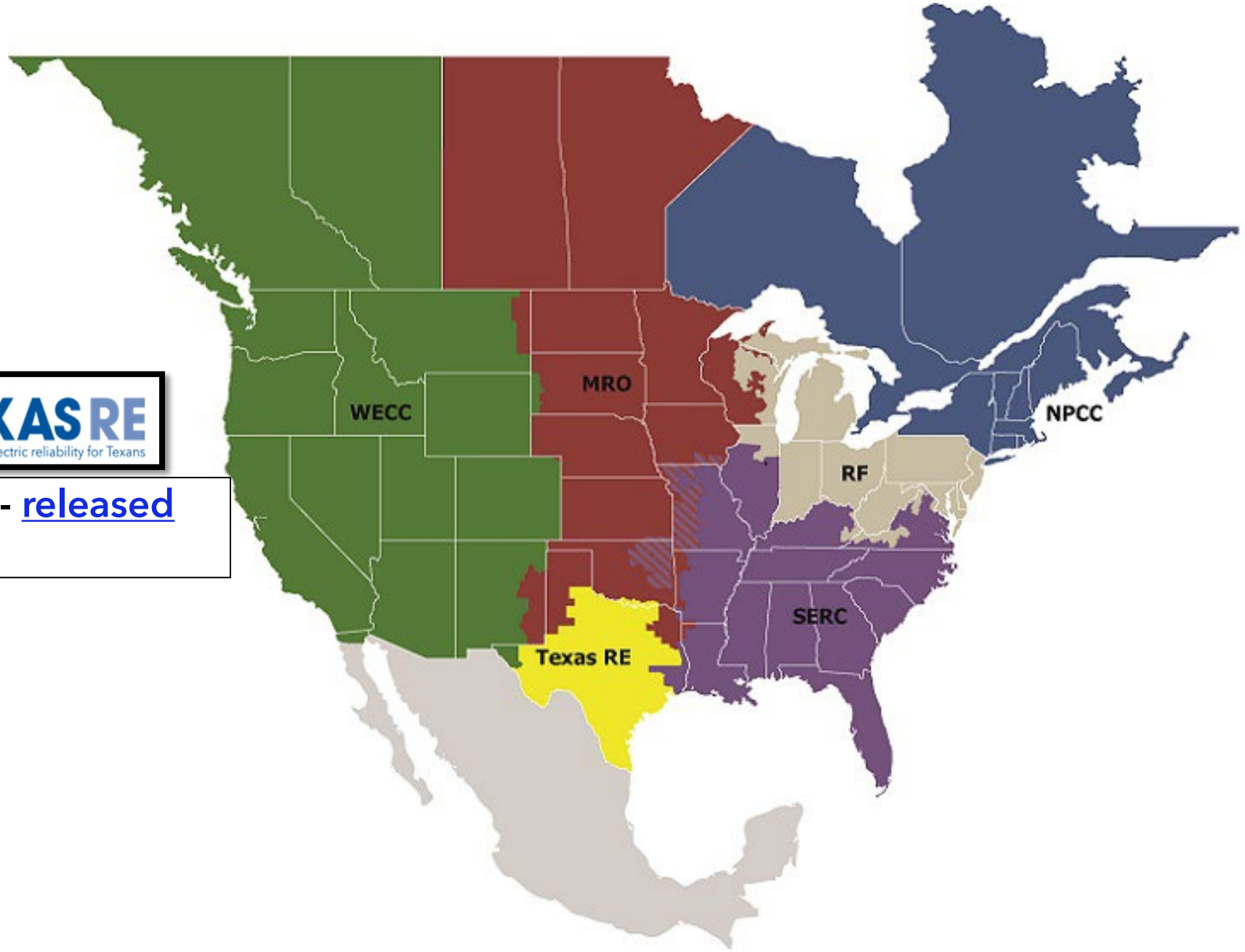
January 15-16, 2025 8:30 – 4:30 MT | Virtual & In-Person Phoenix, AZ

NERC's Engineering and Standards Development teams will host a technical workshop focused on the reliable integration of Inverter-Based Resources (IBR) and FERC Order No. 901 **Milestone 3.**

On January 15, NERC's Engineering staff and industry experts will discuss the changing characteristics of the grid due to shifts in the resource mix. Key topics will include system strength, data validation for models, and performance issues related to inverter-based resources (IBRs).

On January 16, discussions will cover the directives of Order No. 901 Milestone 3 and NERC's Standards Development team's strategies for meeting these requirements. The Milestone 3 drafting teams will provide updates on their respective projects and outline their approach.

In-person registration will be available in the coming weeks.

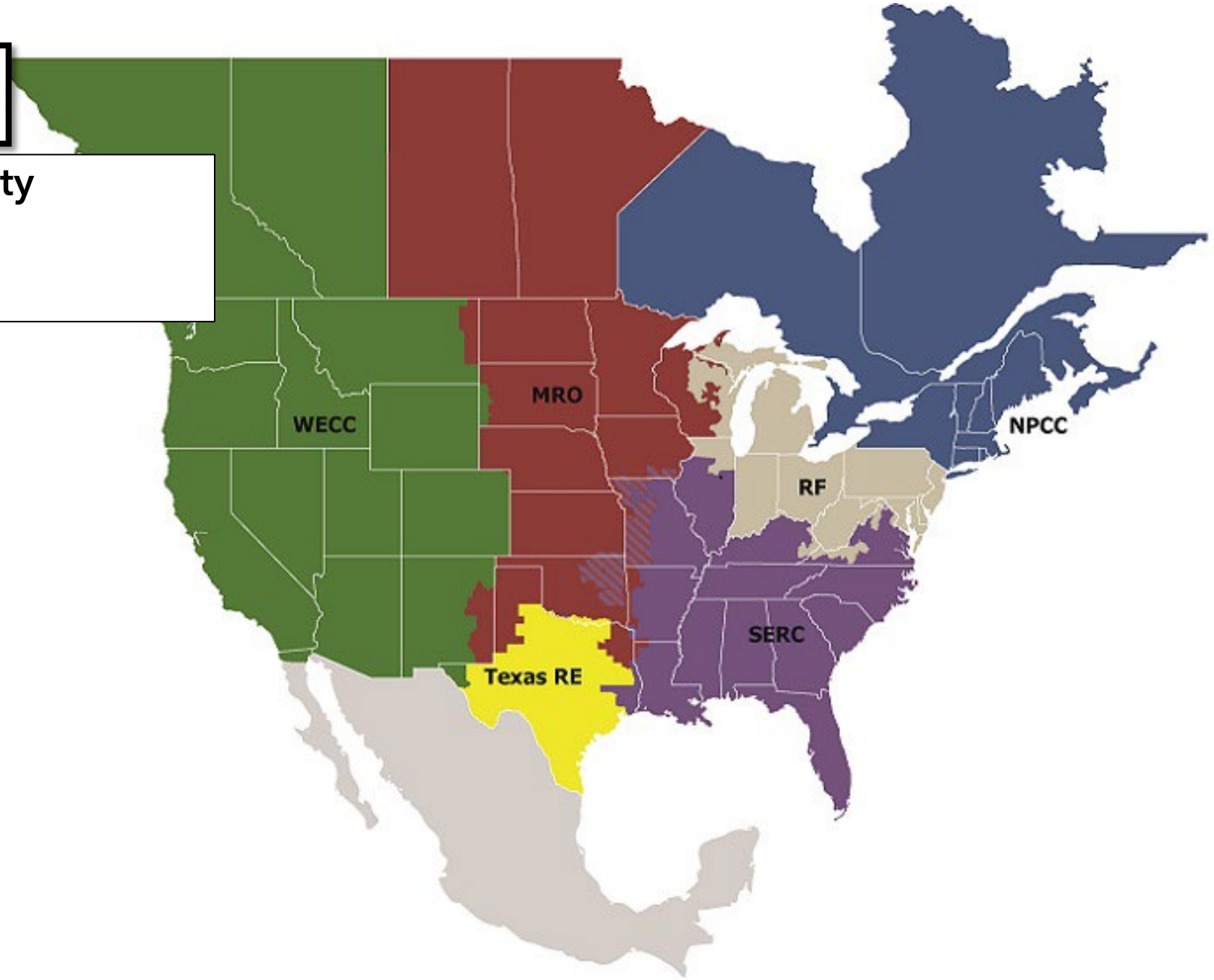


TEXAS RE
Ensuring electric reliability for Texans

Texas Review - released

Reliability & Security Oversight Update

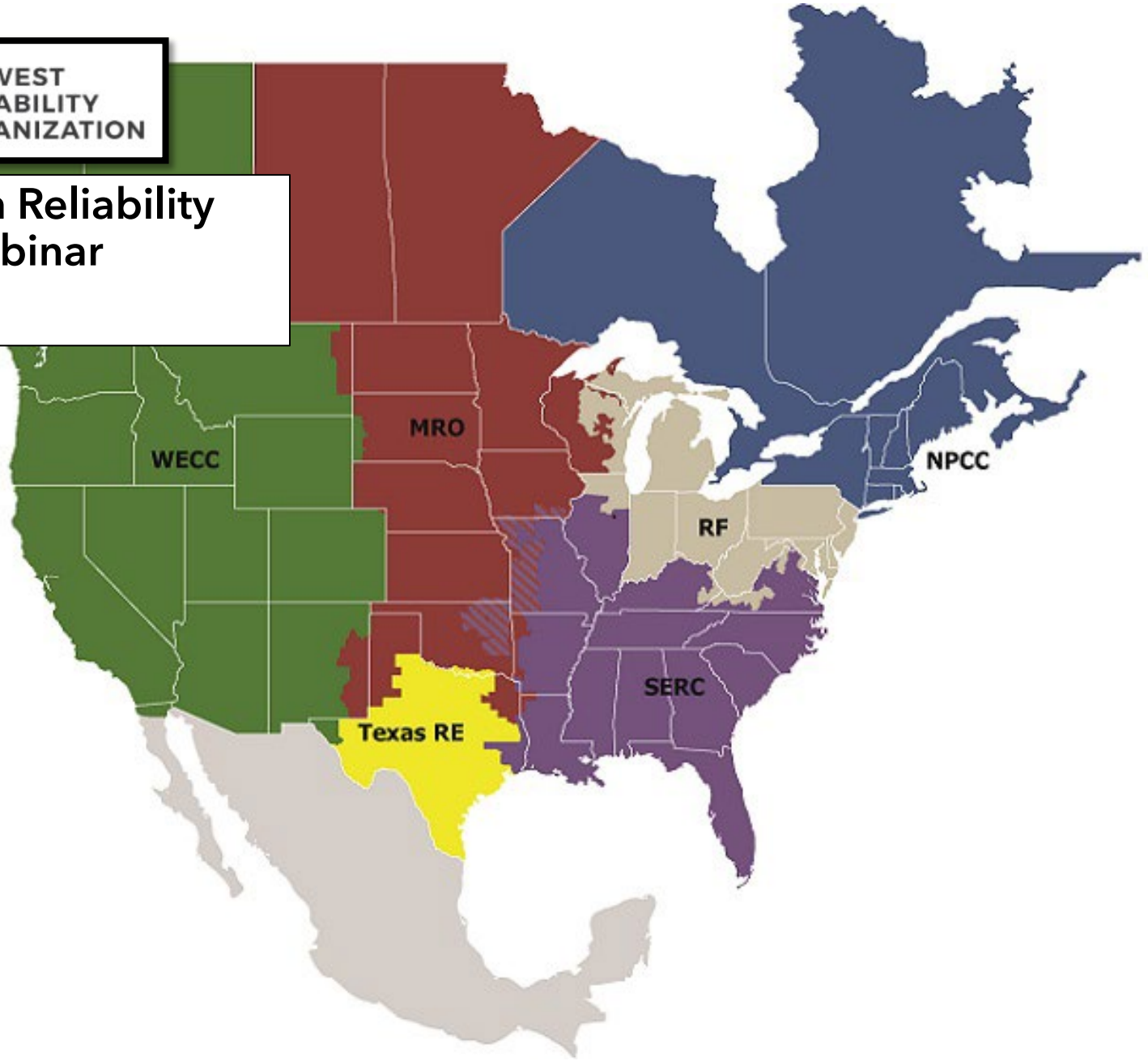
- December 19

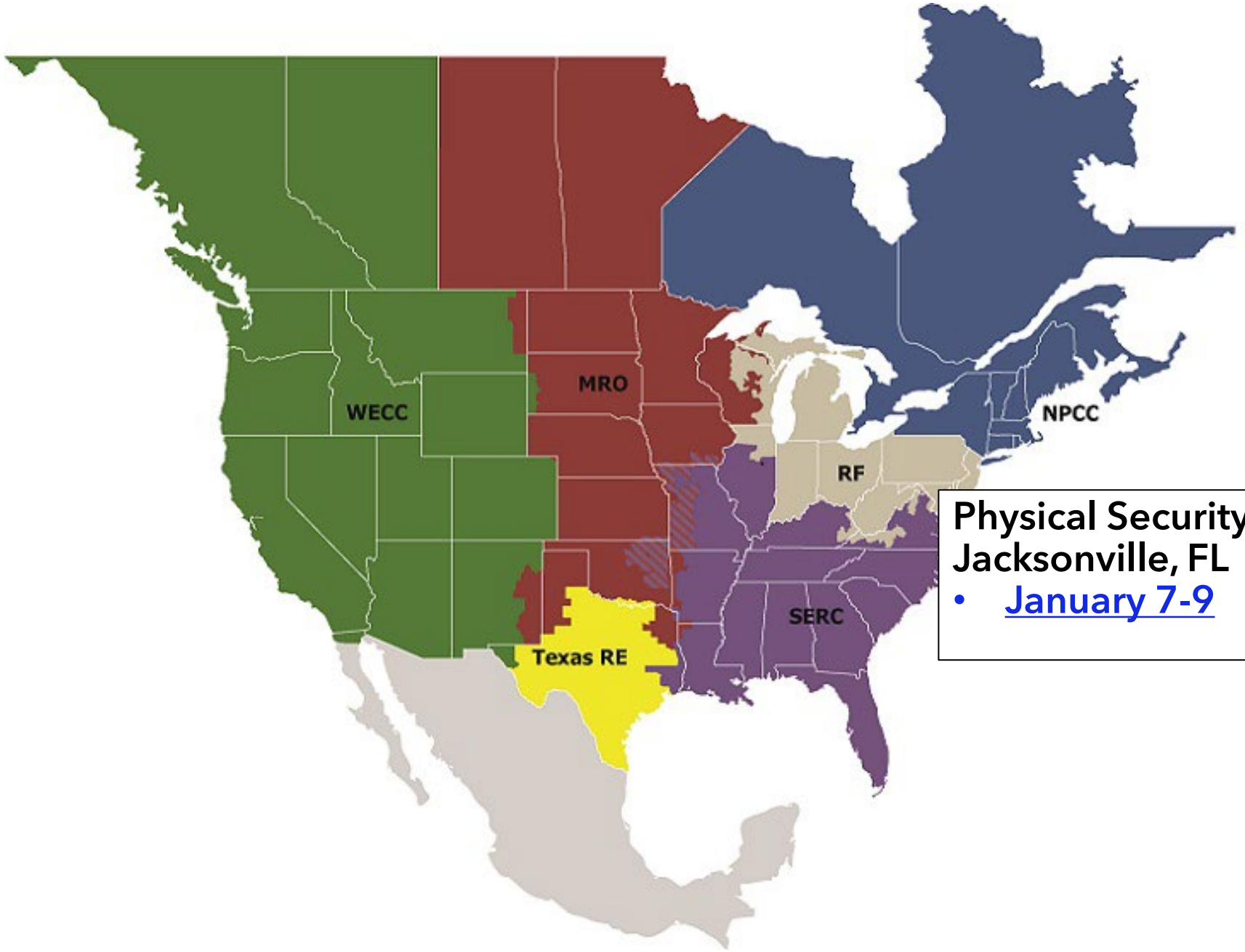


MIDWEST RELIABILITY ORGANIZATION

2024 Long-Term Reliability Assessment Webinar

- January 23

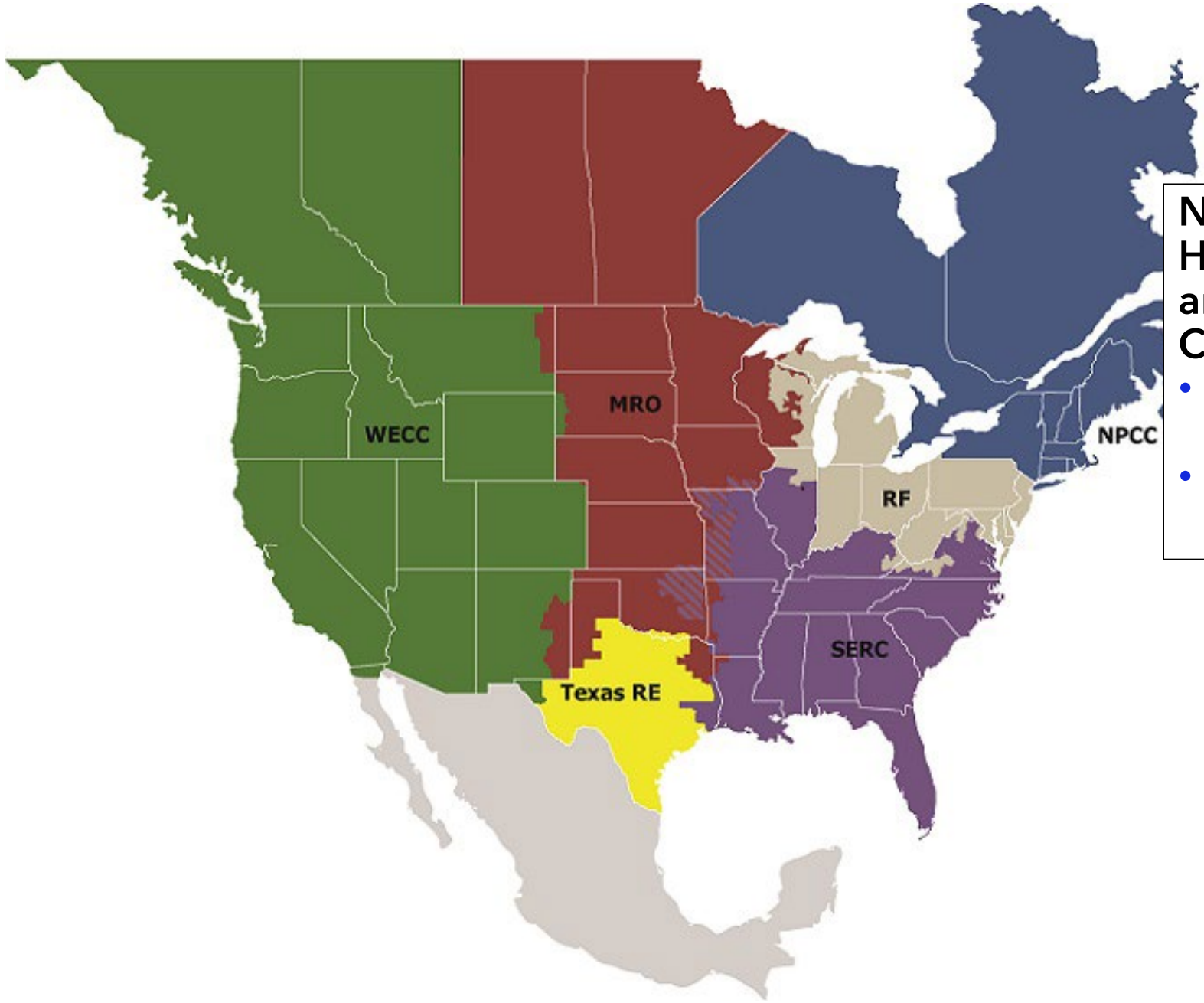




SERC Reliability Corporation

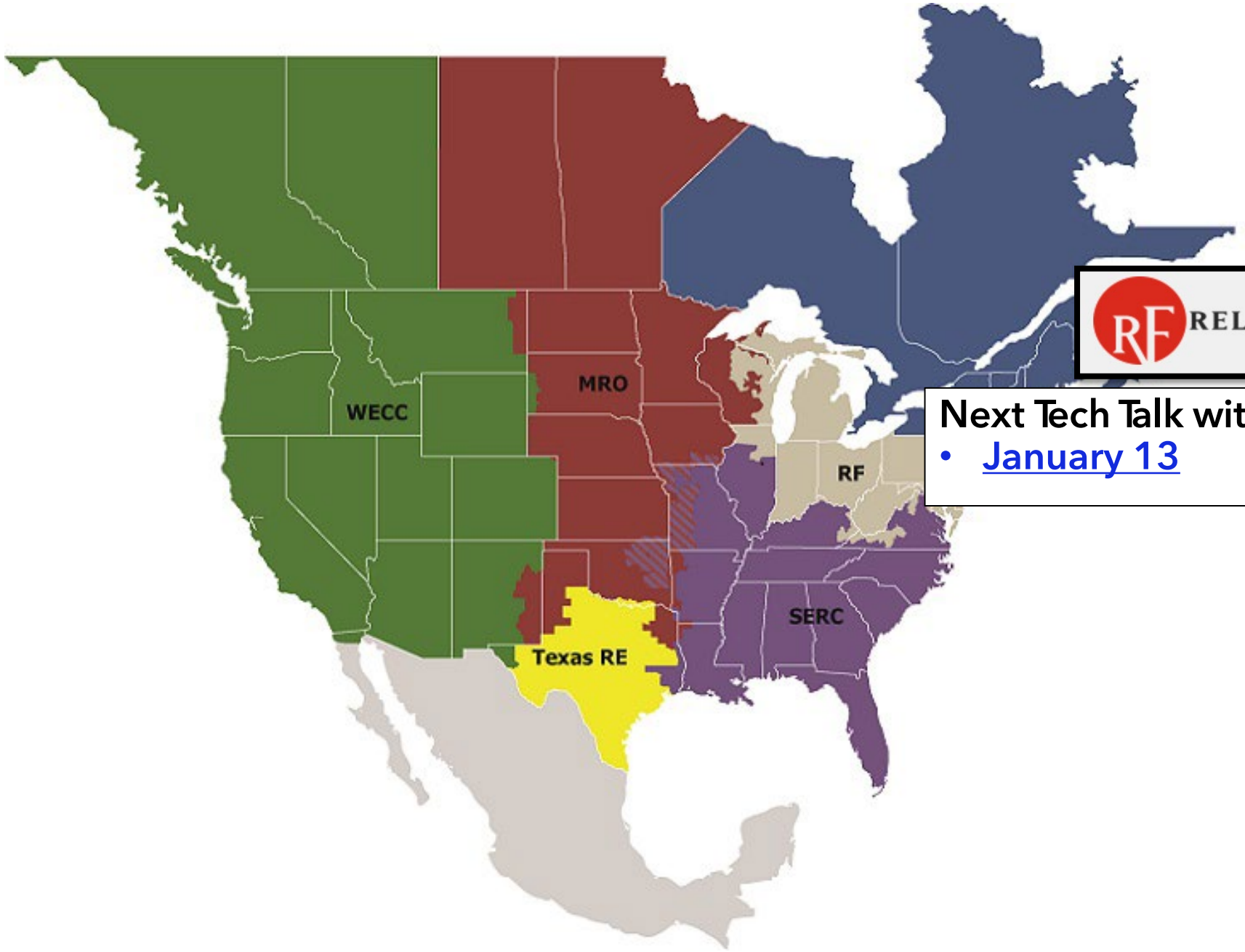
Physical Security Workshop, Jacksonville, FL

- January 7-9



NPCC Fall 2024 Hybrid Compliance and Reliability Conference

- November 6 Slides
- November 7 slides



RELIABILITYFIRST

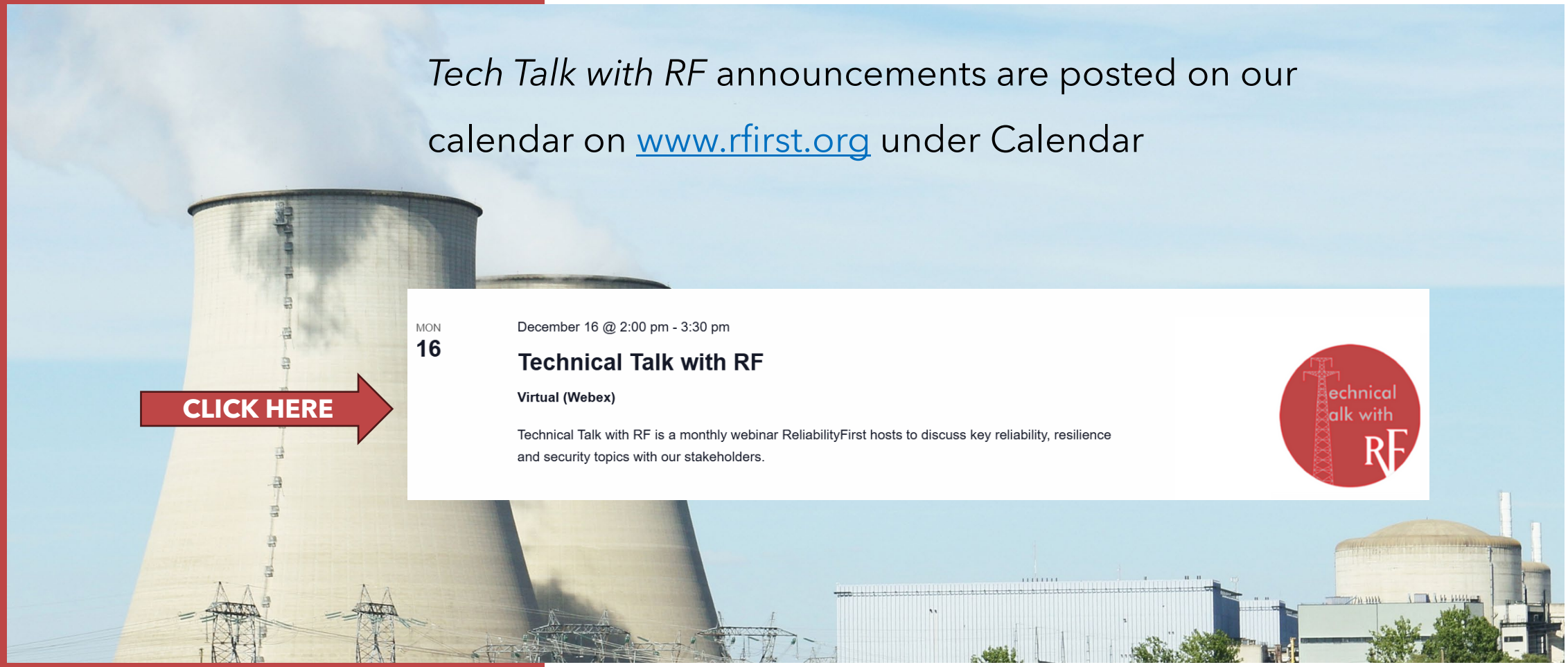
Next Tech Talk with RF

- January 13

TECH TALK REMINDER

FORWARD TOGETHER RELIABILITYFIRST

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



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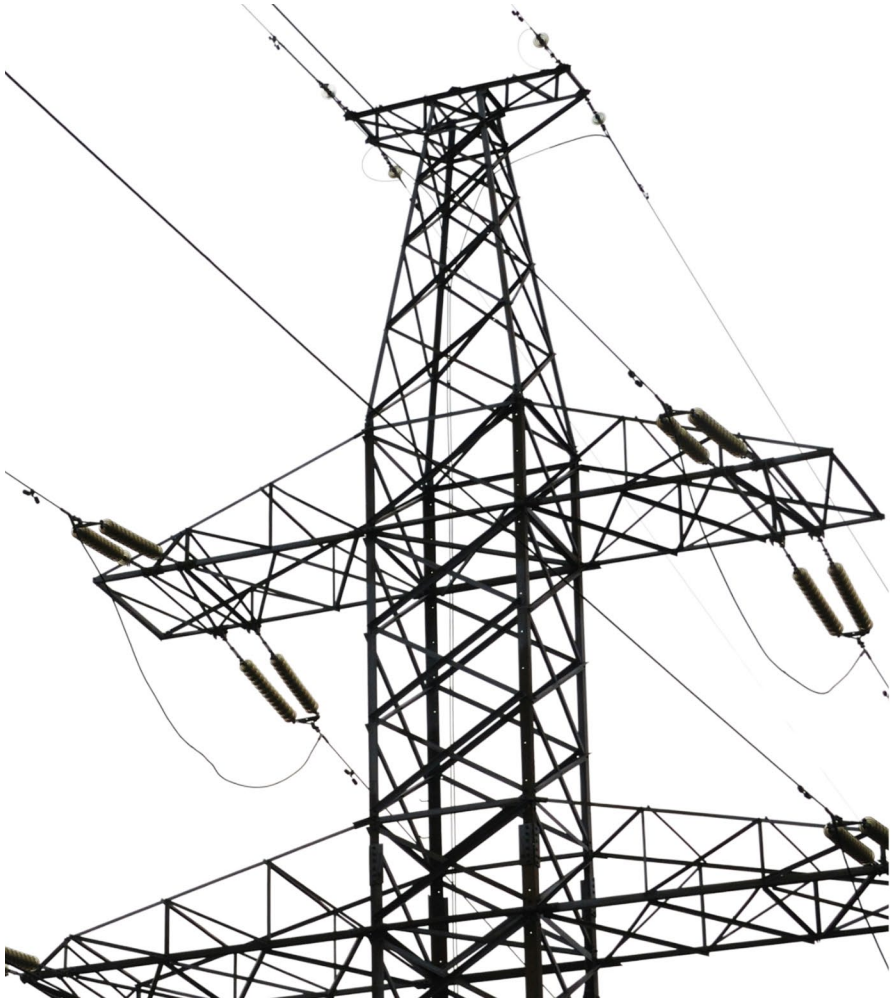
Anti-Trust Statement

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

WINTER RELIABILITY ASSESSMENT

- **TIM FRYFOGLE**, PRINCIPAL ENGINEER, ENGINEERING & SYSTEM PERFORMANCE, RELIABILITYFIRST

ENFORCEMENT 2024 YEAR IN REVIEW

- **ELIZABETH EMANUEL ARORA**, COUNSEL, LEGAL & ENFORCEMENT, RELIABILITYFIRST

NERC/RELIABILITYFIRST 2024-25 WINTER RESOURCE RISK ASSESSMENT

Tim Fryfogle, Principal Engineer – Resources, Engineering and System Performance

Dec. 16, 2024 | Tech Talk with RF

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AGENDA

NERC WRA RISK SUMMARY

NERC WATERFALL CHARTS

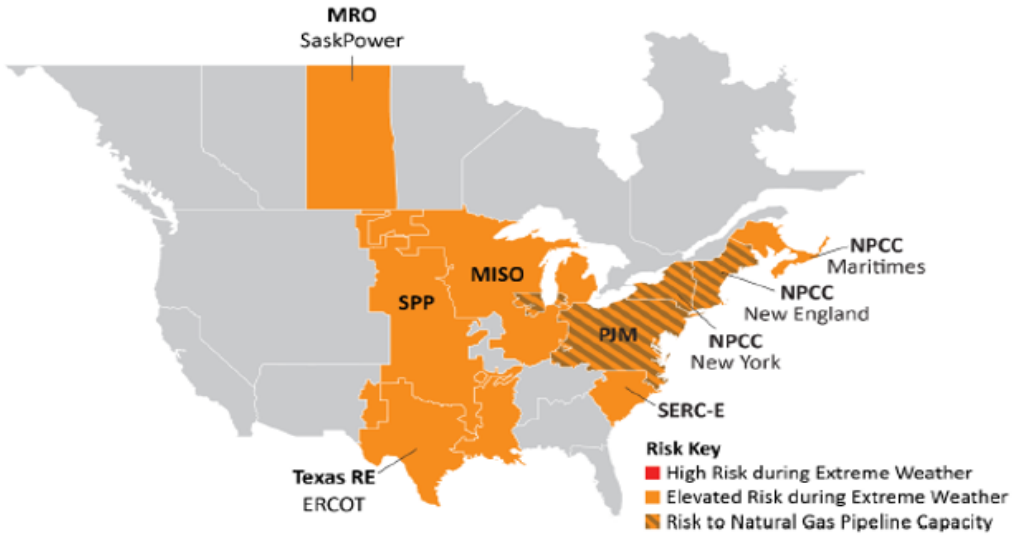
RF RESOURCE ADEQUACY ANALYSIS

RF RANDOM GENERATOR OUTAGE RISK ANALYSIS

NERC WRA: 2024-2025 WRA

Midcontinent ISO (MISO): Reduced coal and natural-gas-fired generation by over 5 GW since Winter 2023–2024 has contributed to a decline in available resources. Lower internal capacity is partially offset by a 2 GW increase in firm capacity imports into the area. Additionally, MISO's margin is being helped by a lower peak demand forecast, down over 4 GW since last winter.

PJM: Despite an increase in winter peak demand forecast of over 3.2 GW (2.5%), Planning Reserve Margins in PJM have risen slightly with increased firm imports and demand response.



Winter Reliability Risk Area Summary

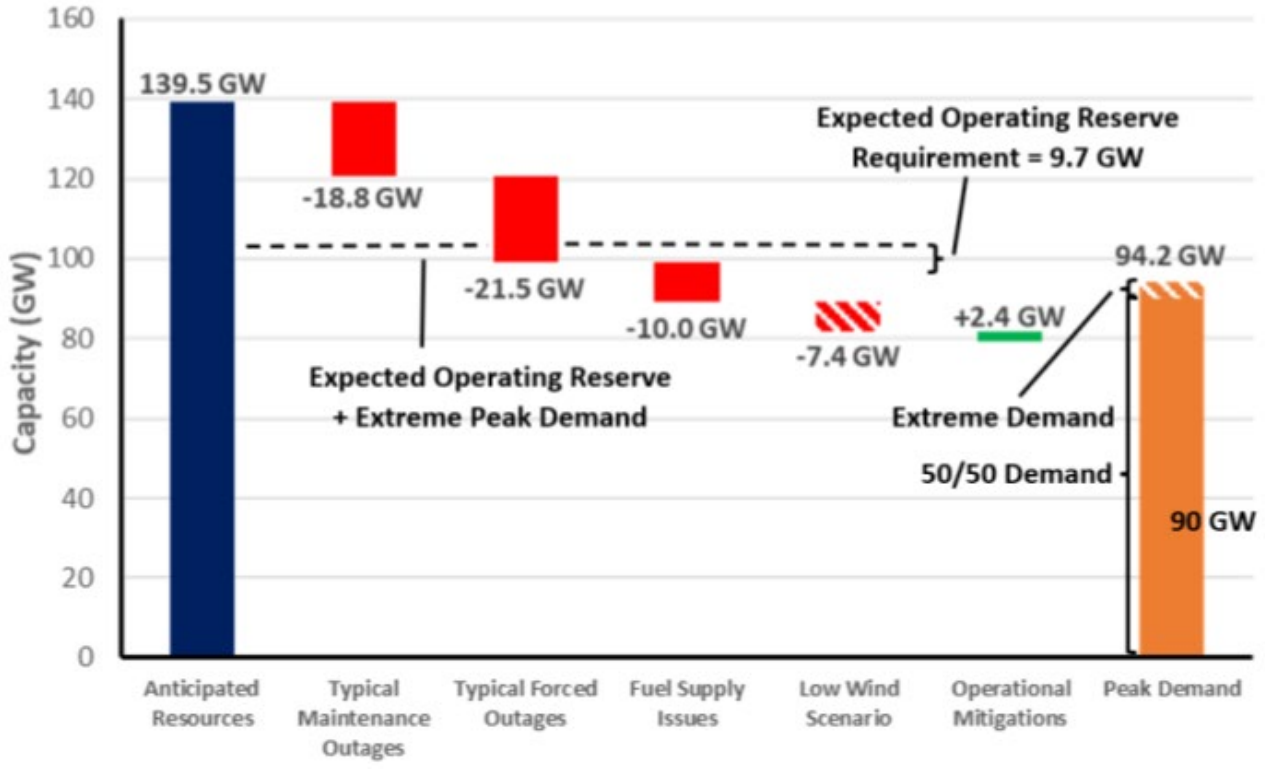
Seasonal Risk Assessment Summary	
High	Potential for insufficient operating reserves in normal peak conditions
Elevated	Potential for insufficient operating reserves in above-normal conditions
Normal	Sufficient operating reserves expected

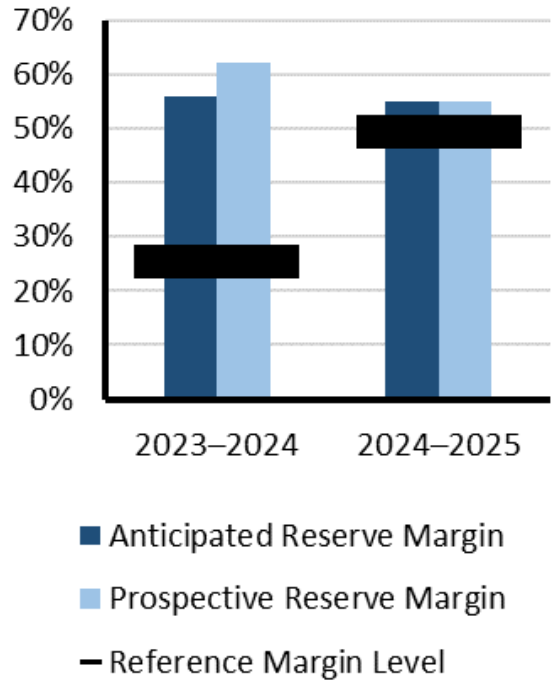
NERC WRA: MISO ASSESSMENT

ELEVATED RISK

Generating capacity is 10 GW lower (-6.8%) compared to the prior winter as generators have retired, withdrawn from MISO's capacity market, or received lower winter accredited capacity.

MISO continues to survey and coordinate with its members on winter preparedness and fuel sufficiency.

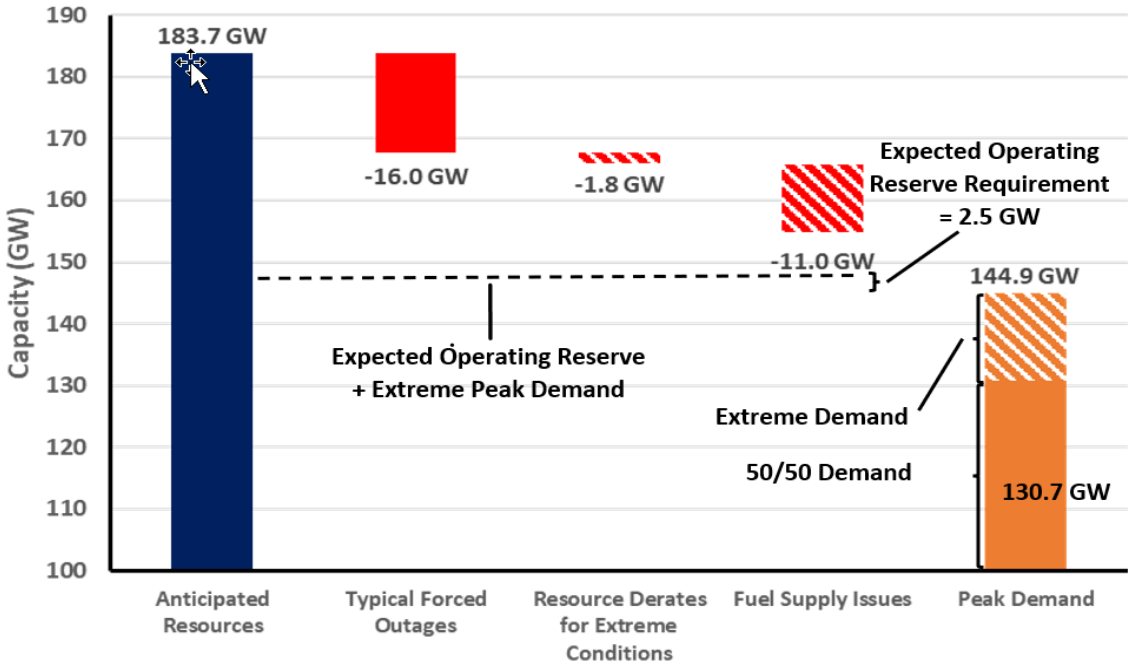




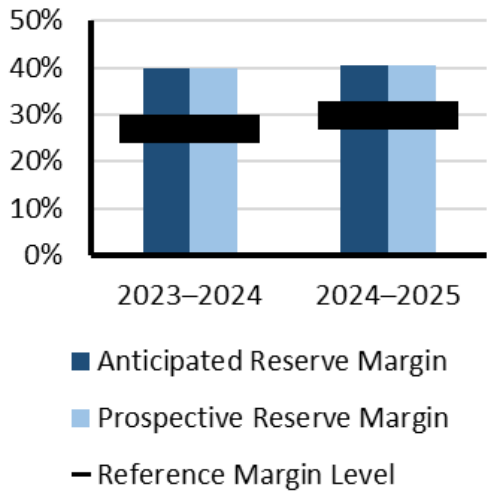
NERC WRA: PJM ASSESSMENT

RISK TO NATURAL GAS PIPELINE

PJM does not expect to encounter resource problems for anticipated conditions over the 2024–2025 winter peak season.



Since 44% of capacity associated with the Transco Regional Energy Access (REA) natural gas pipeline project is used by PJM natural-gas-fired generation, a potential shut-in of the new REA facilities presents a significant reliability risk going into the winter season. Nearly 20 GW of natural gas-fired generation in the far eastern Pennsylvania/New Jersey/Delaware area has either direct or indirect (via natural gas local distribution company) access to this new capacity.



RF WRA: RESOURCE ADEQUACY ANALYSIS

PJM Capacity and Reserves	
Net Capacity Resources	183,718 MW
Projected Peak Reserves	53,005 MW
Net Internal Demand (NID)	130,712 MW
Planning reserves margin	40.6%
Planning reserve requirement	30%

MISO Capacity and Reserves	
Net Capacity Resources	139,344 MW
Projected Peak Reserves	49,429 MW
Net Internal Demand (NID)	89,915 MW
Planning reserves margin	55.8%
Planning reserve requirement	49.4%

RF Footprint Resources	
Net Capacity Resources	197,014 MW
Projected Peak Reserves	60,762 MW
Net Internal Demand (NID)	136,252 MW
Total Internal Demand (TID)	143,949 MW

Since PJM and MISO are projected to have adequate resources to satisfy their respective forecasted reserve margin requirements, the RF region is projected to have sufficient resources for the 2024-25 winter period.

COMPARISON OF ASSESSMENTS

- RF analysis uses the same load and resources data gathered during the NERC Assessment and both are in alignment regarding conclusions.

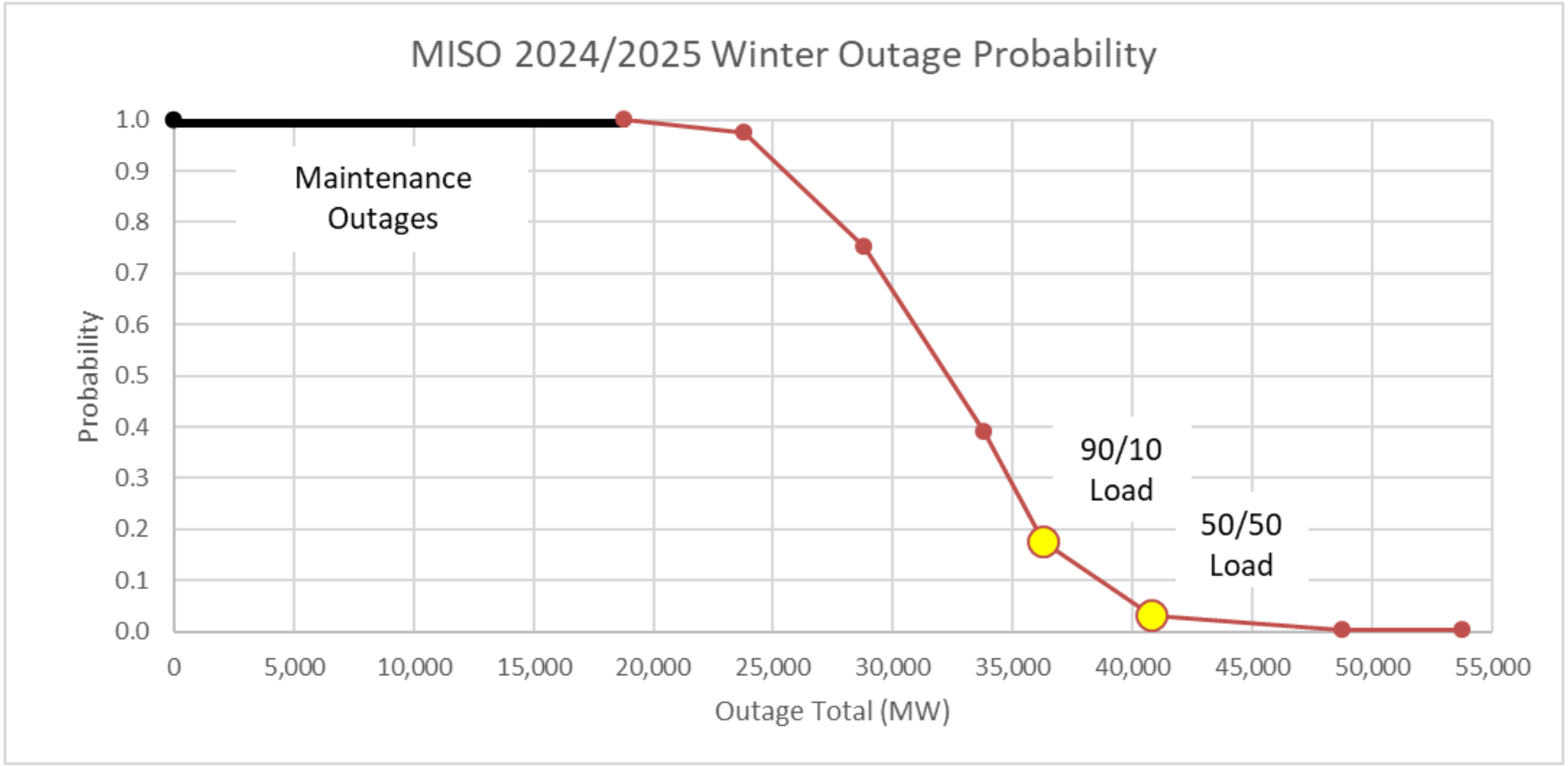
- RF publishes the results of the assessment in the RF monthly newsletter and posts it on our public website.

Differences in analysis:

- RF uses actual historical Generator Availability Data System (GADS) data from a rolling five-year period between November through February.

- NERC polls the assessment area (i.e., PJM and MISO) and requests the average forced outages for December through February weekdays, over the past three years.

RANDOM GENERATOR OUTAGE RISK ANALYSIS

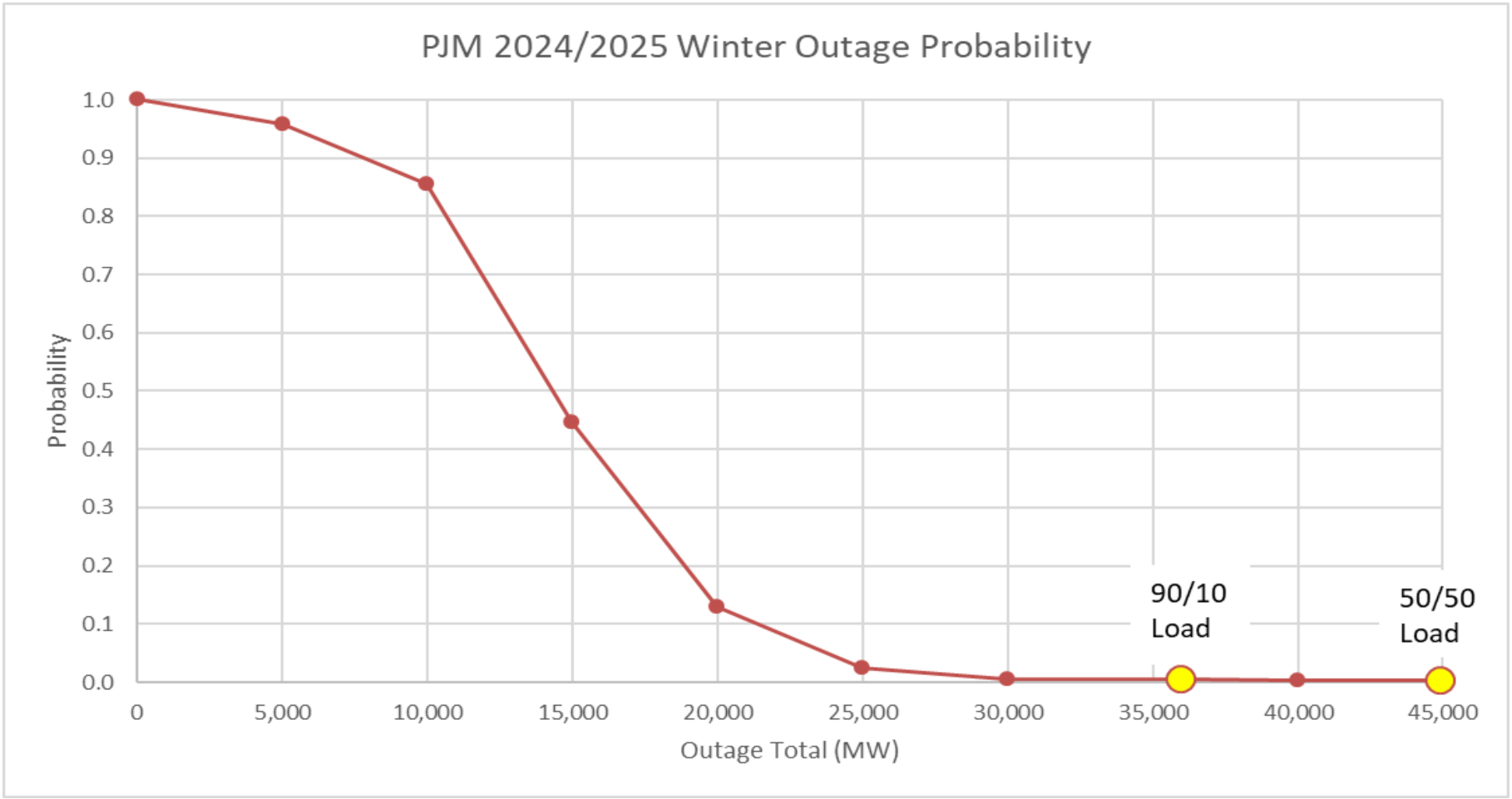


During normal operating conditions there will be minimal probability that there will be an amount of outages that will require Demand Response resources to be utilized.

The top of the 90/10 demand obligation with the operating reserves has an Elevated risk that Demand Response will be required during high demand and high outages.

RANDOM GENERATOR OUTAGE RISK ANALYSIS

PJM is projected to have adequate capacity to meet expected and 90/10 demand scenarios based on historical GADS outages.



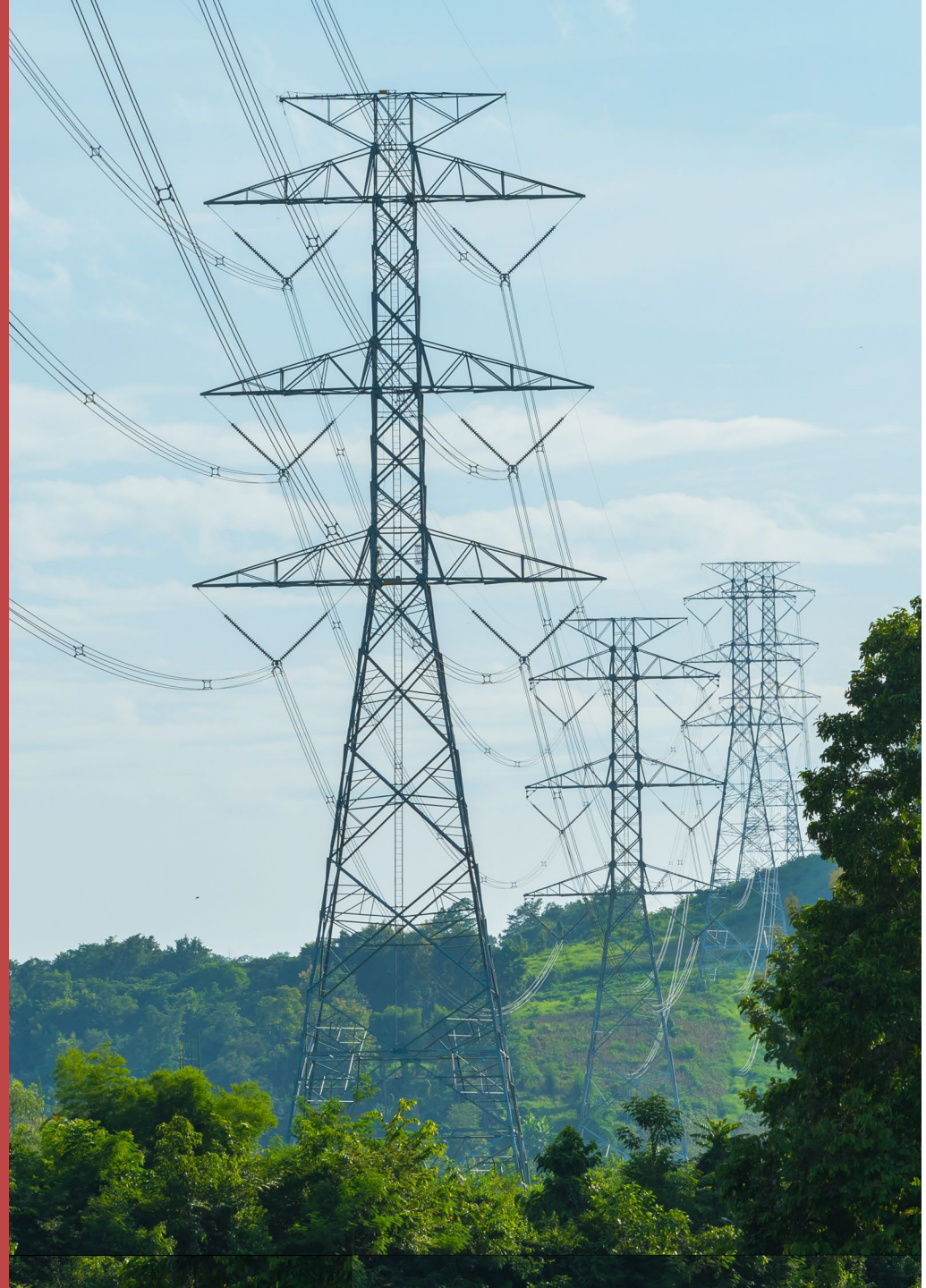
WINTER RESOURCE ADEQUACY – SUMMARY FOR NERC AND RF

MISO is projected to have adequate resources to satisfy their respective forecasted reserve margin requirement and has an **elevated** concern during an extreme demand (90/10) based on our random generator outage risk analysis.

- Generating capacity is 10 GW lower (-6.8%) compared to the prior winter as generators have retired, withdrawn from MISO's capacity market, or received lower winter accredited capacity.

PJM is projected to have adequate resources to satisfy their respective forecasted reserve margin requirement and has a **low** concern during extreme demand (90/10) based on our random generator outage risk analysis.

- Since 44% of capacity associated with the Transco Regional Energy Access (REA) natural gas pipeline project is used by PJM natural-gas-fired generation, a potential shut-in of the new REA facilities presents a significant reliability risk going into the winter season. Nearly 20 GW of natural gas-fired generation in the far eastern Pennsylvania/New Jersey/Delaware area has either direct or indirect (via natural gas local distribution company) access to this new capacity.



FORWARD TOGETHER RELIABILITYFIRST

QUESTIONS & ANSWERS

Tim Fryfogle, Principal Engineer – Resources, Engineering & System Performance

tim.fryfogle@rfirst.org

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2024 ENFORCEMENT RECAP

Elizabeth Emanuel Arora, Enforcement Counsel

December 16, 2024

RELIABILITY FIRST

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AGENDA

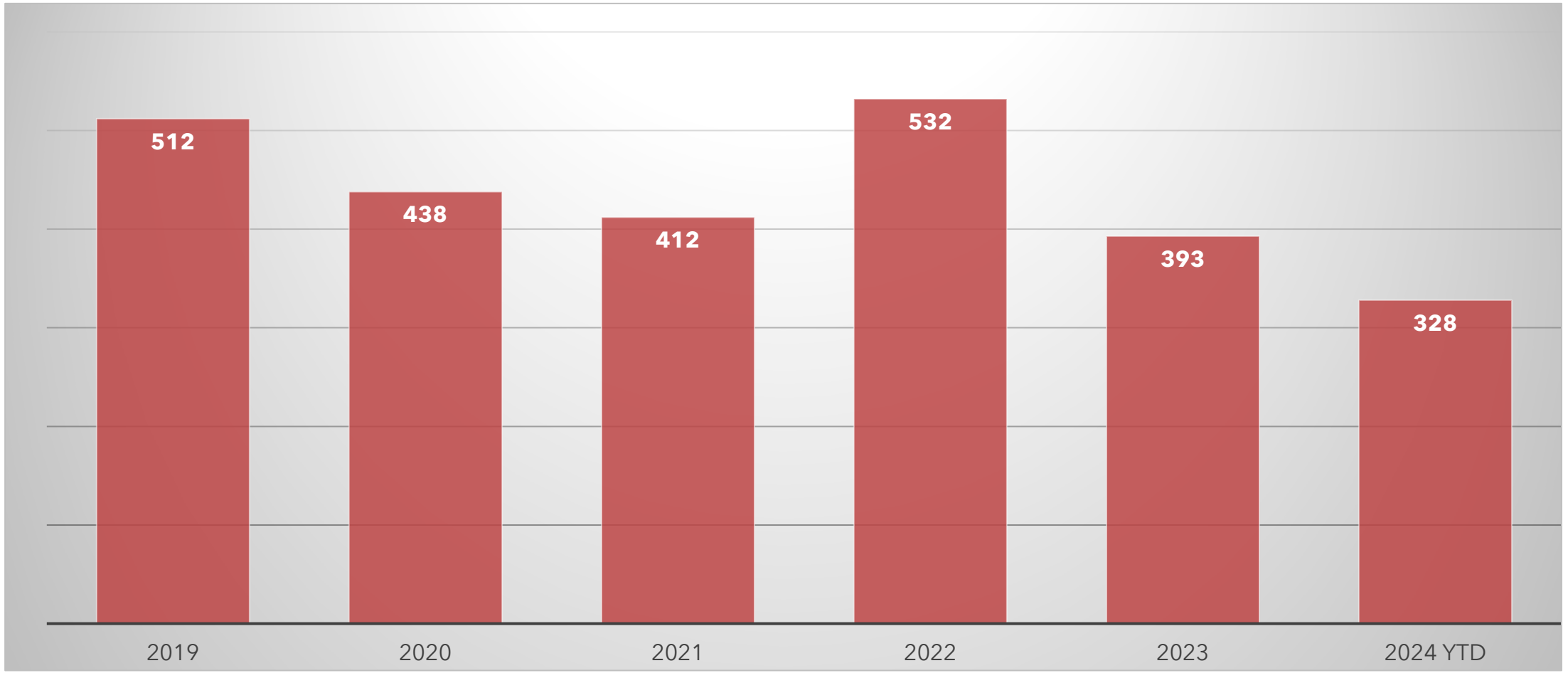
VIOLATION INTAKE

VIOLATION DISPOSITIONS PROCESSED

OPEN INVENTORY

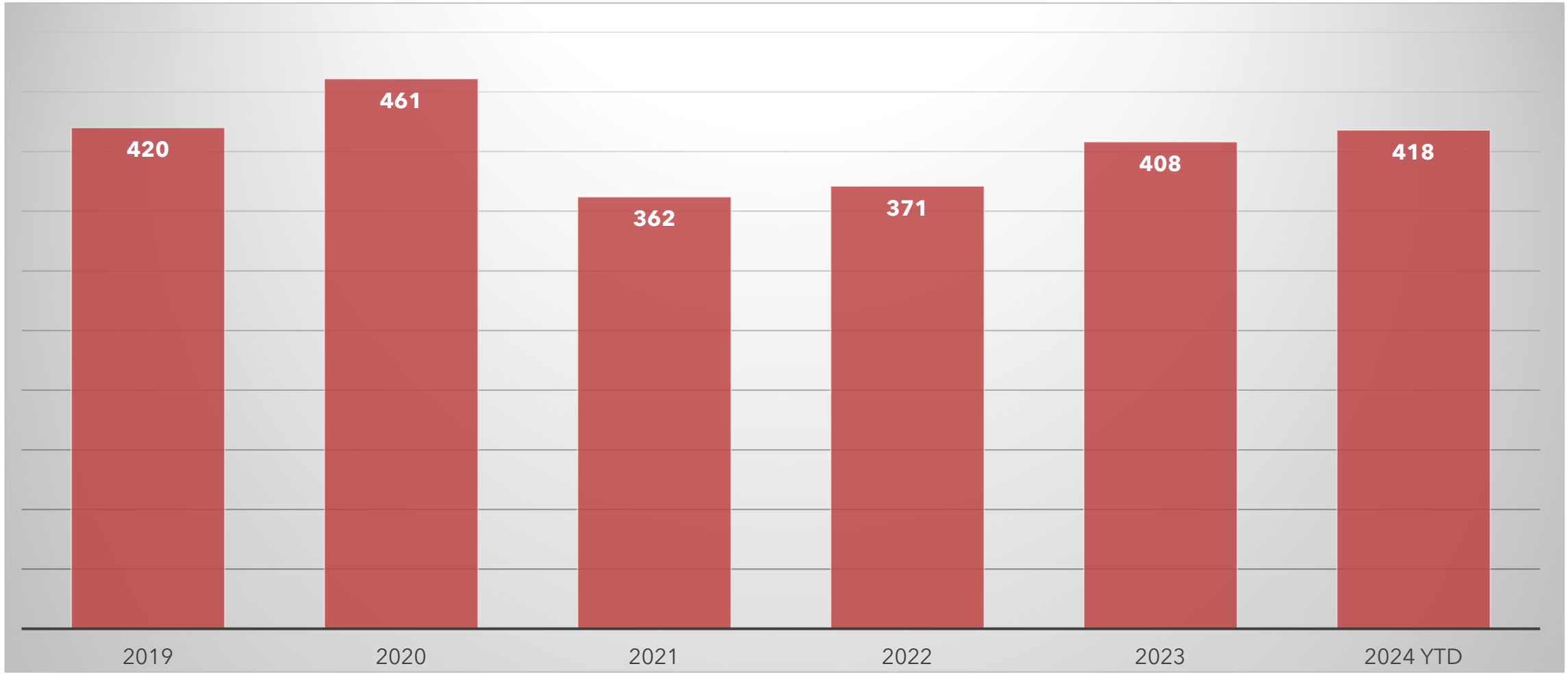
OUTREACH

RF ANNUAL VIOLATION INTAKE



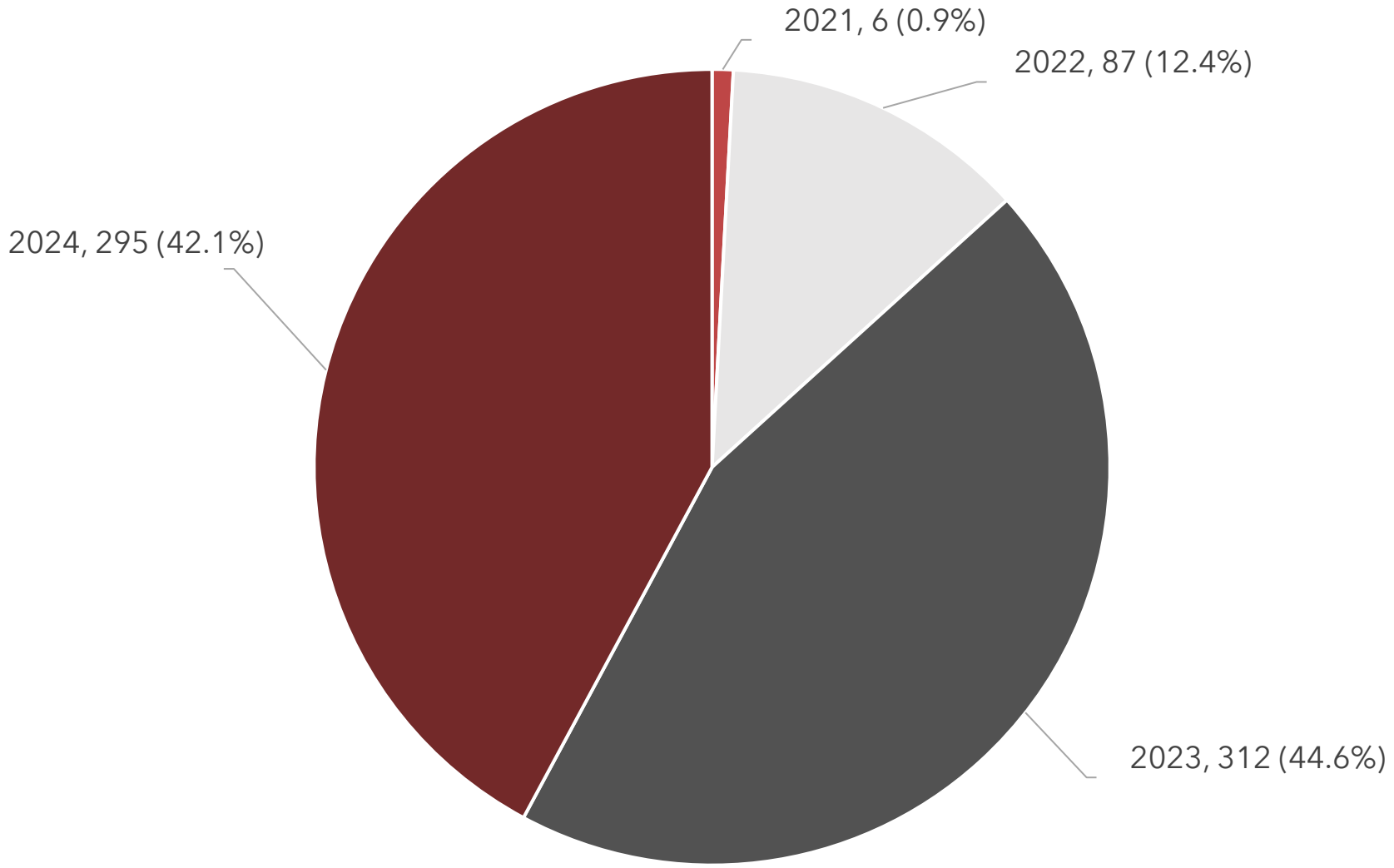
- Majority self-reported/self-logged
- Majority CIP

RF ANNUAL DISPOSITION PROCESSING



- Focused on aging inventory and higher risk issues

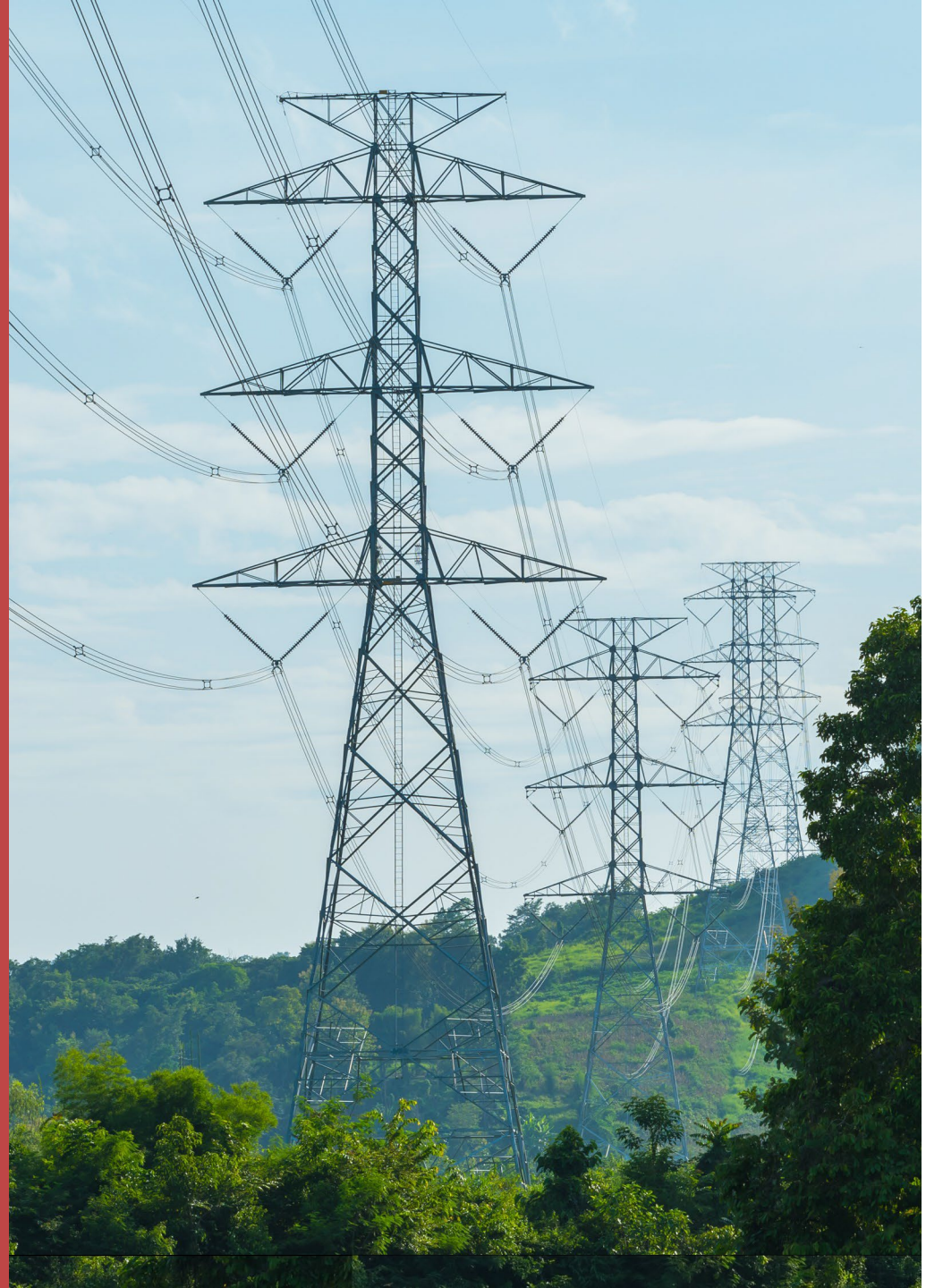
RF VIOLATION INVENTORY



Year	Intake	Open
2020	438	0
2021	412	6
2022	532	87
2023	393	312
2024 YTD	328	295

Outreach

- **Targeted outreach to entities**
- **EBA conference panel**
- **RF Workshop**
- **ERO webinars**
- **Recurring newsletter articles**



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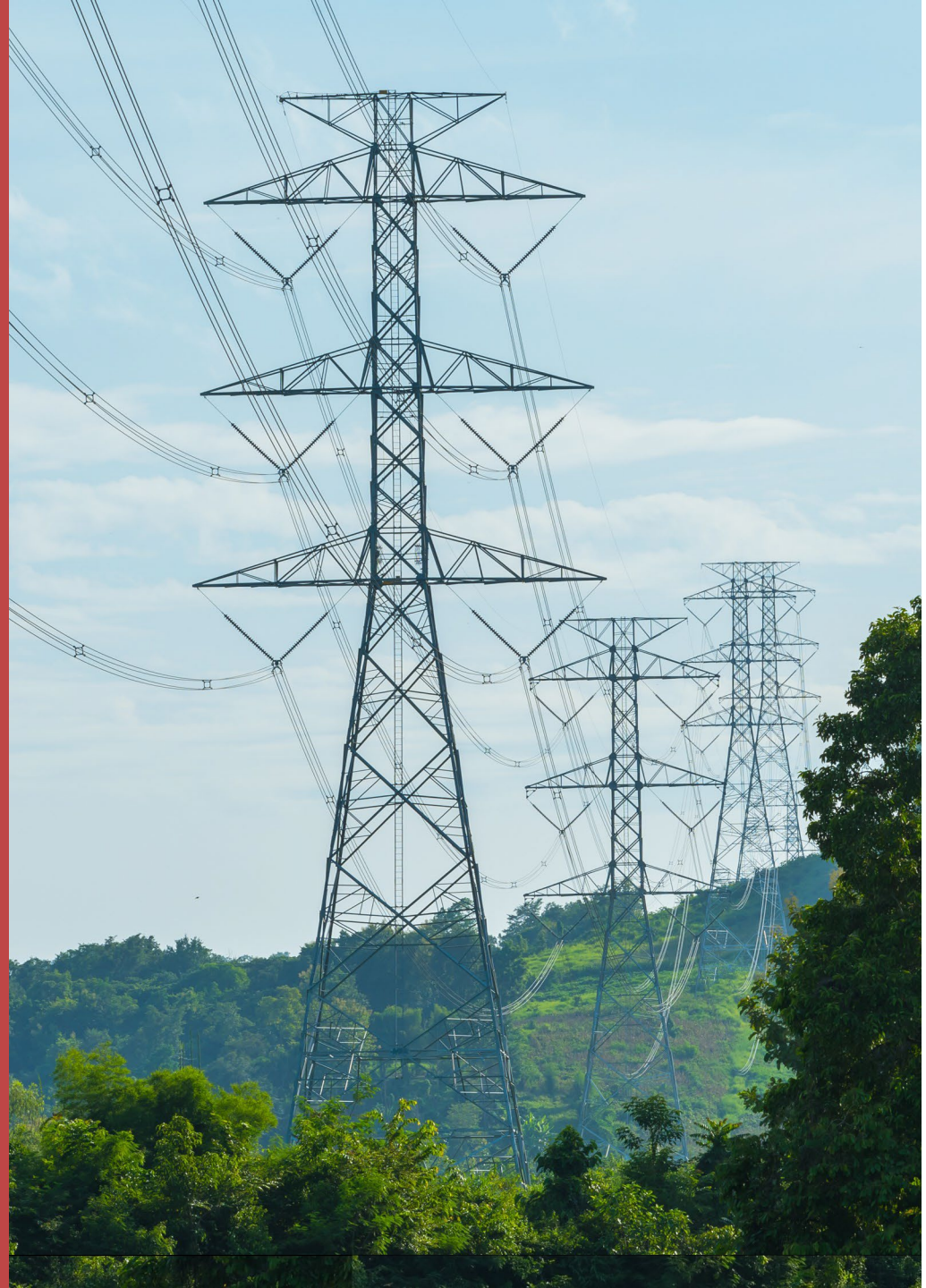

THANK YOU

Join us for our next Tech Talk – January 13th 2-3:30pm EST

Webinar Link