WELCOME TO TECHNICAL TALK WITH RF

June 10, 2024

Technical Talk with RF

TECHNICAL TALK WITH RF

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TECHNICAL TALK WITH RF

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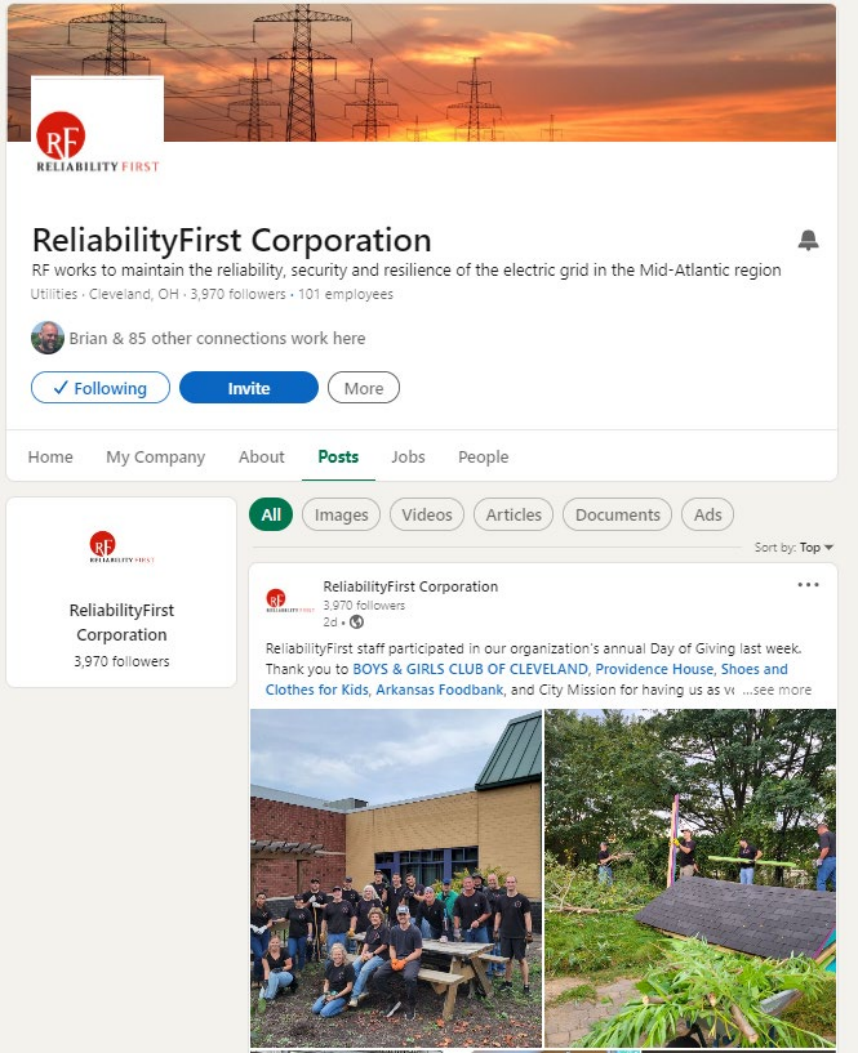


TECH TALK REMINDERS

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 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 V8.1 was released and is on NERC's website

WELCOME TO TECHNICAL TALK WITH RF

June 10, 2024

Technical Talk with RF

TECH TALK ANNOUNCEMENT

Register Now

RELIABILITY FIRST

FALL RELIABILITY & SECURITY SUMMIT

SEPT. 16-18, 2024

INDIANAPOLIS

Featuring an energy policy legislator panel with:

Brian Feldman
Maryland State Senator

Stephanie Hansen
Delaware State Senator

Eric Koch
Indiana State Senator

Dick Stein
Ohio State Representative

TECH TALK ANNOUNCEMENT

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Level 2 NERC Alert Posted

Click here for Alerts
June 4th

NERC issued a Level 2 Alert Recommendation to Industry
Inverter-Based Resource Model Quality Deficiencies to Generator Owners (GO), Transmission Planners (TP), and Planning Coordinators (PC). The alert includes numerous recommendations for modeling best practices and a series of questions, that are intended to gather dynamic modeling information from BES-connected IBR GOs, TPs, and PCs to understand the extent of condition of dynamic modeling for IBR, which will inform what additional actions are necessary to mitigate observed deficiencies.

NERC registered entities should note that only entities registered as the above-mentioned will be able to view and respond to the alert in the NERC Alert System. However, the alert is public and may be viewed at the link above. The alert has a response due date of September 2, 2024.

TECH TALK ANNOUNCEMENT

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

NERC Statement on FERC May Open Meeting

Click here for Announcement
May 23

At its monthly open meeting, the Federal Energy Regulatory Commission (FERC) issued an order approving Reliability Standard CIP-012-2 – Communications between Control Centers. NERC filed a petition for approval of CIP-012-2, which requires utilities to protect the confidentiality, integrity, and availability of real-time assessment and real-time monitoring data transmitted between control centers with FERC on January 31. In addition, FERC approved a compliance filing on NERC's plan for collecting and reporting cold weather data. This filing satisfies FERC's February 16, 2023, order approving EOP-011-3 and EOP-012-1.

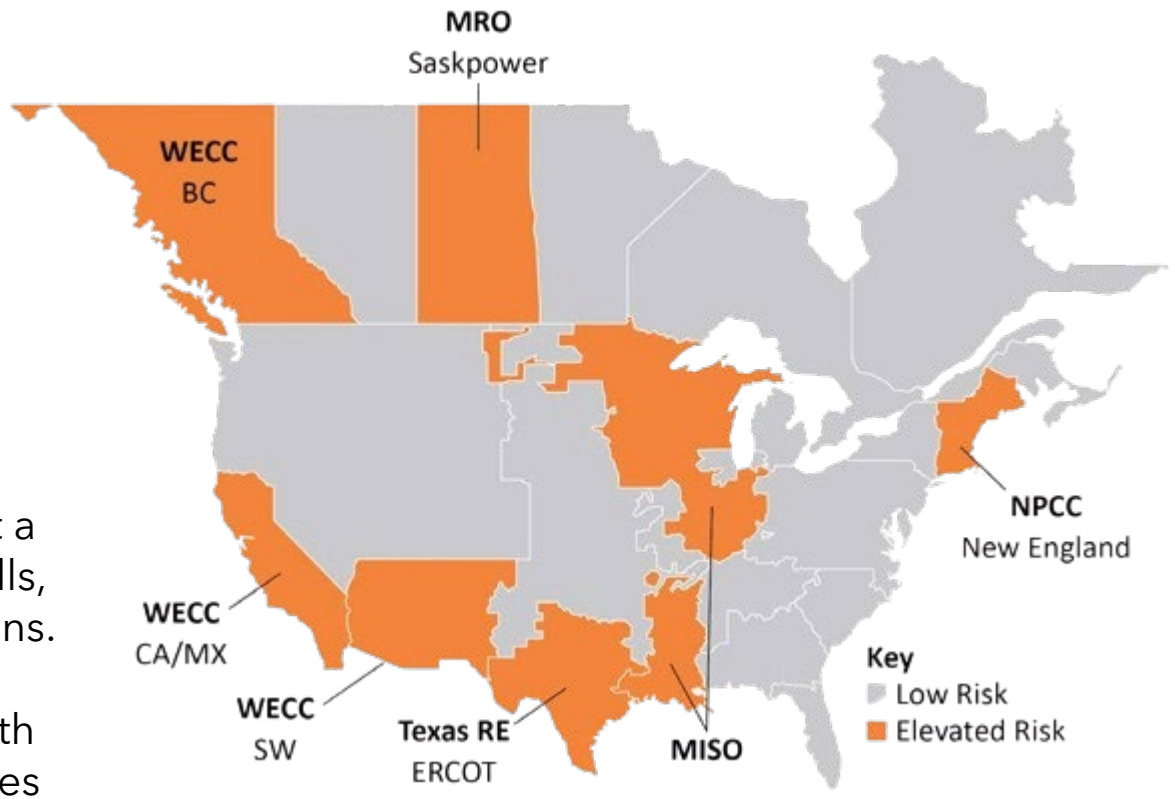
TECH TALK ANNOUNCEMENT

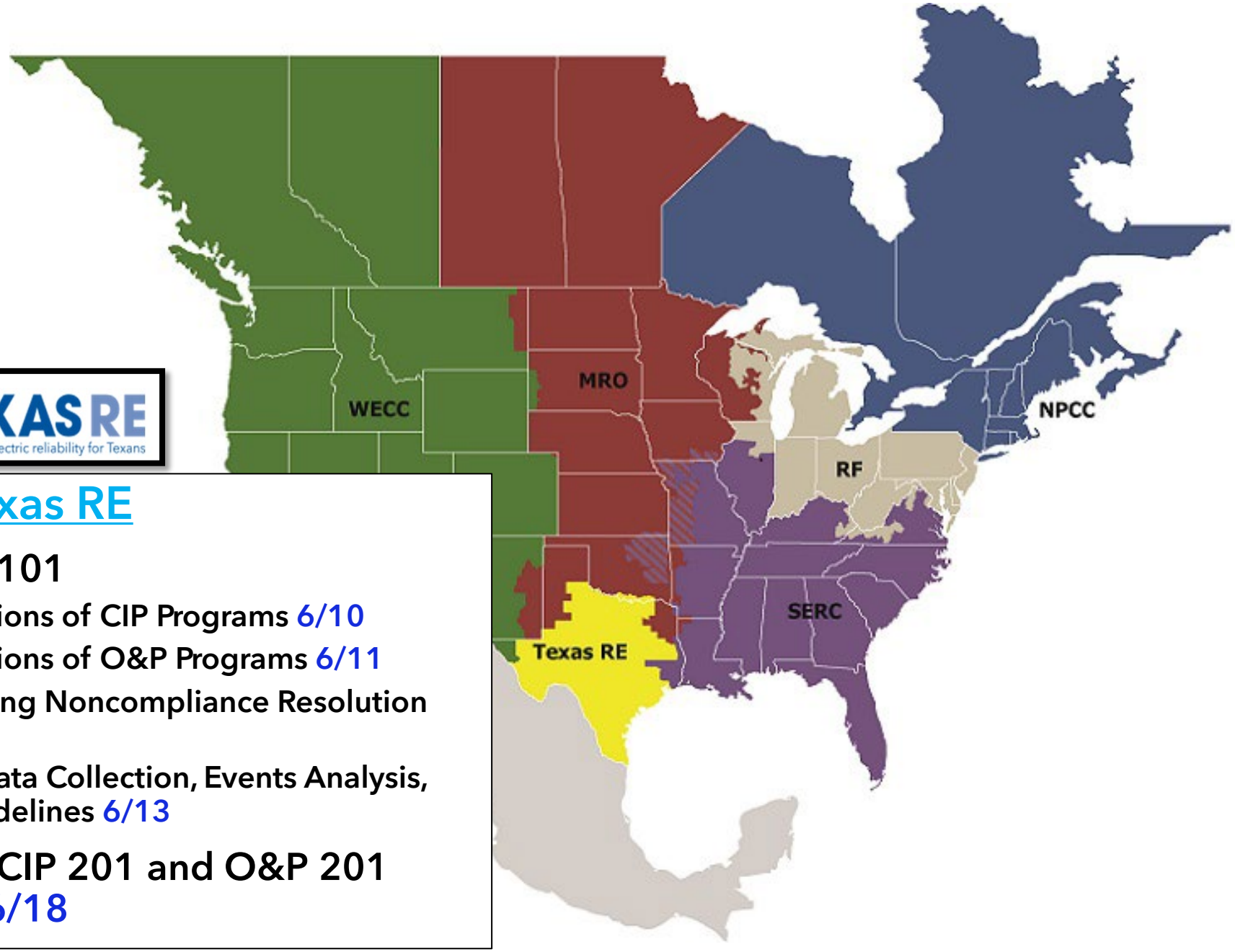
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

NERC Releases 2024 Summer Reliability Assessment

Read Full Report

NERC's *2024 Summer Reliability Assessment (SRA)* finds that a large part of North America remains at risk of supply shortfalls, while other areas show reduced risk due to resource additions. Expected wide-area heat events that affect generation, wind output, or transmission systems coupled with demand growth in some areas are contributing to adequacy risks for resources and transmission. All areas are assessed to have adequate supply for normal peak load due, in large part, to a record 25 GW of additional solar capacity added since last year. However, energy risks are growing in several areas when solar, wind, and hydro output are low.





TEXAS RE
Ensuring electric reliability for Texans

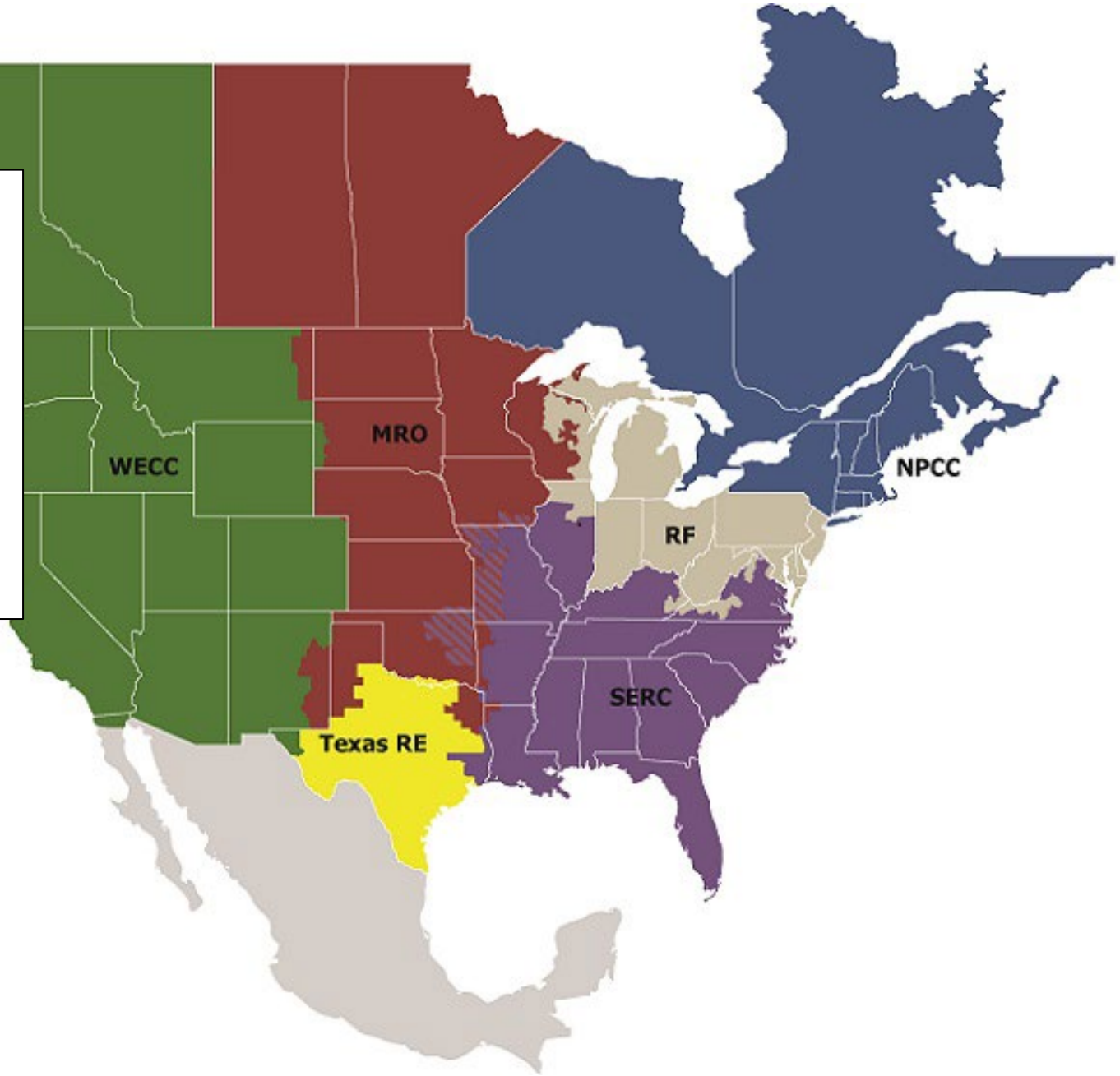
Talk with Texas RE

- Reliability 101
  - Foundations of CIP Programs 6/10
  - Foundations of O&P Programs 6/11
  - Navigating Noncompliance Resolution 6/12
  - NERC Data Collection, Events Analysis, and Guidelines 6/13
- Reliability CIP 201 and O&P 201 6/17 and 6/18

WECC

Monthly Reliability and Security Monthly Webinar

- June 20



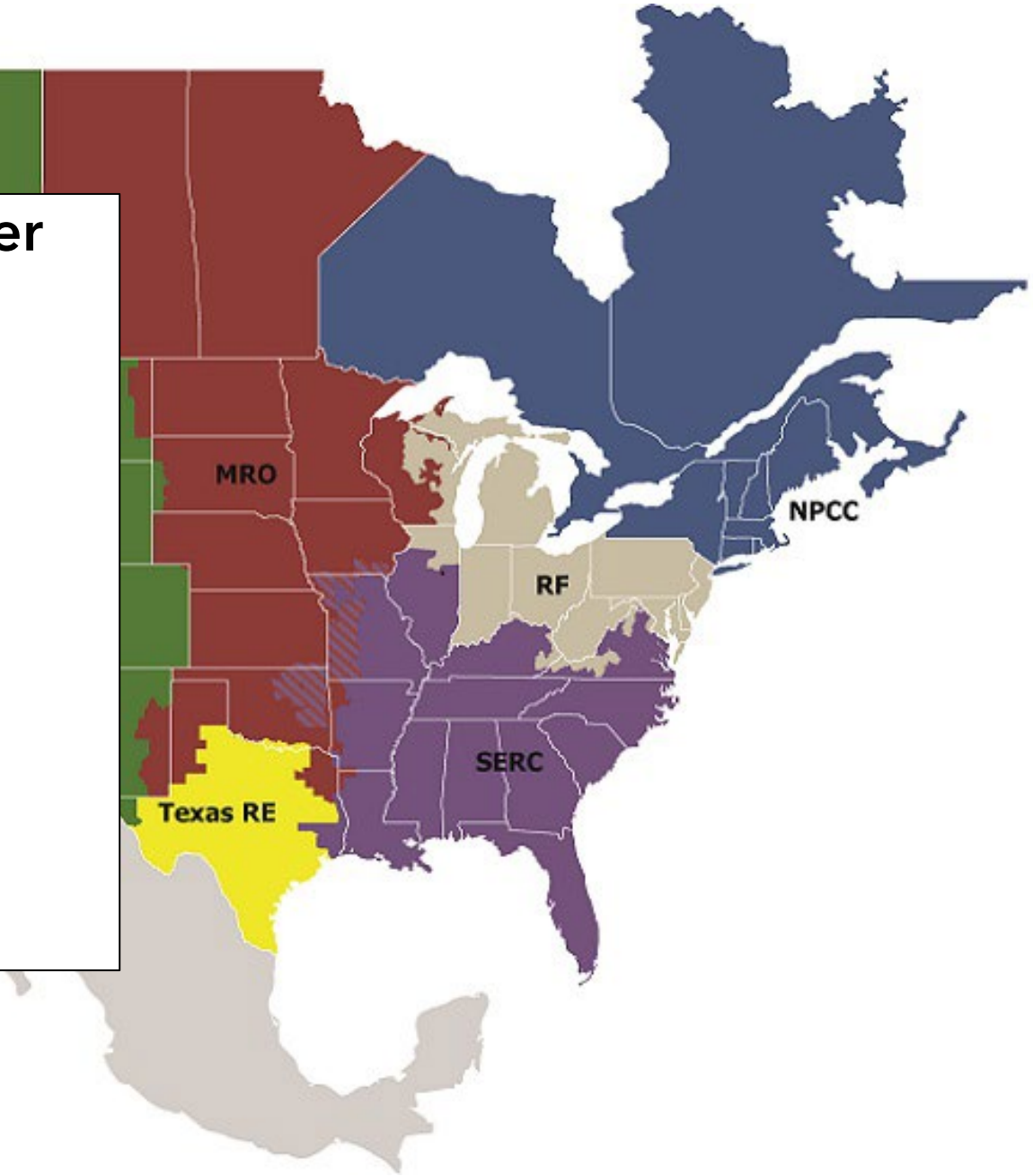
MIDWEST RELIABILITY ORGANIZATION

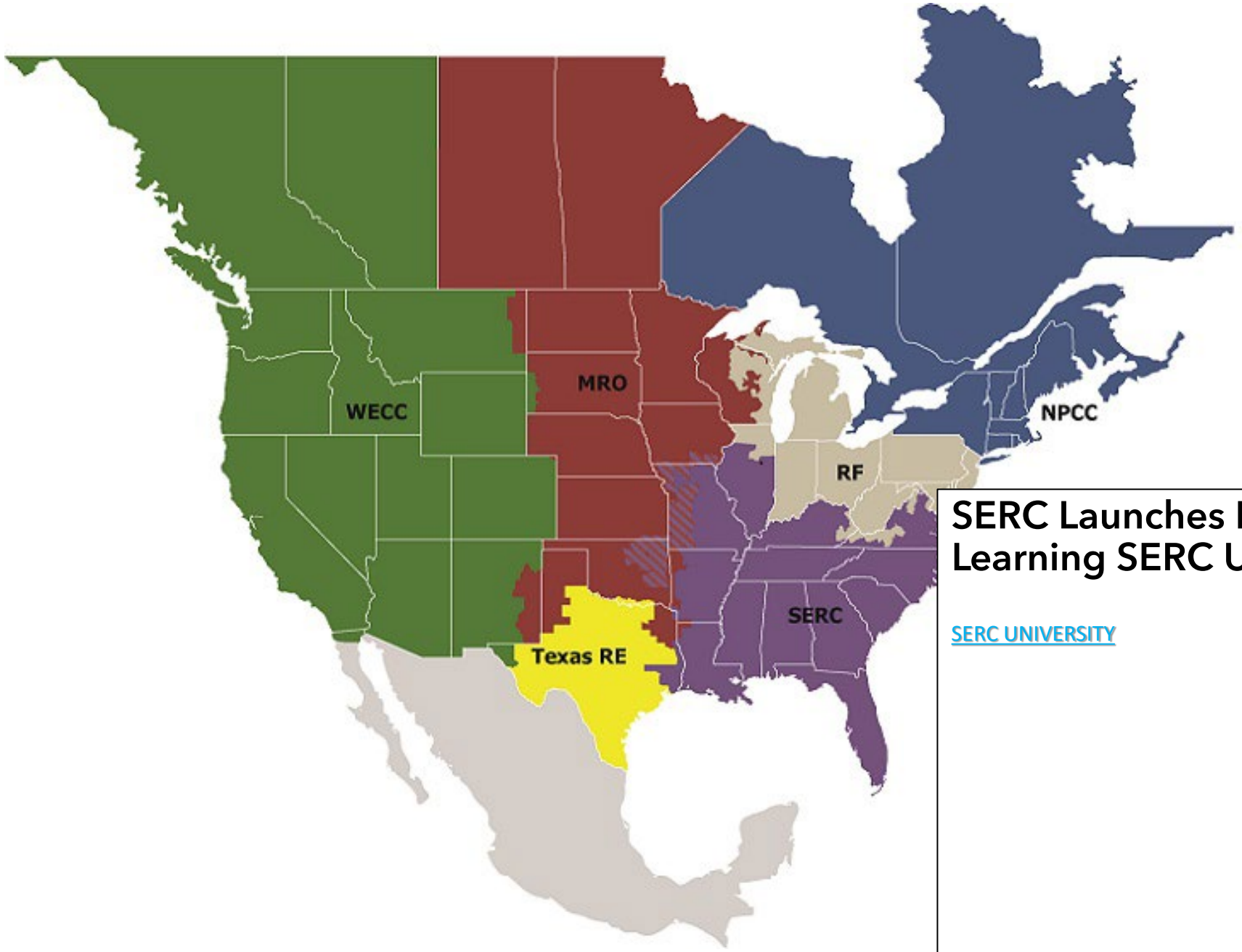
2024 Regional Summer Assessment Webinar

- June 27

2024 CMEP Conference

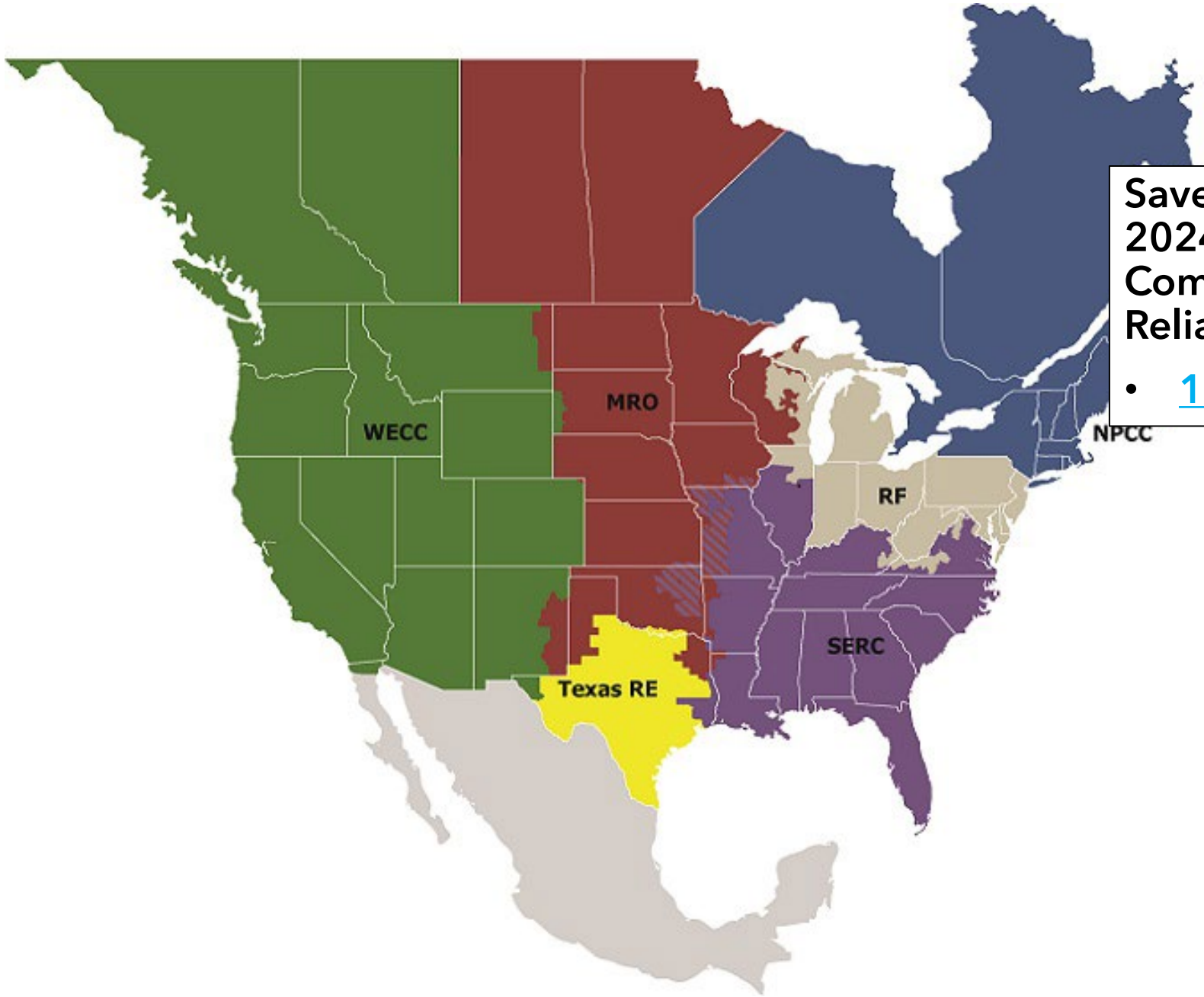
- July 24





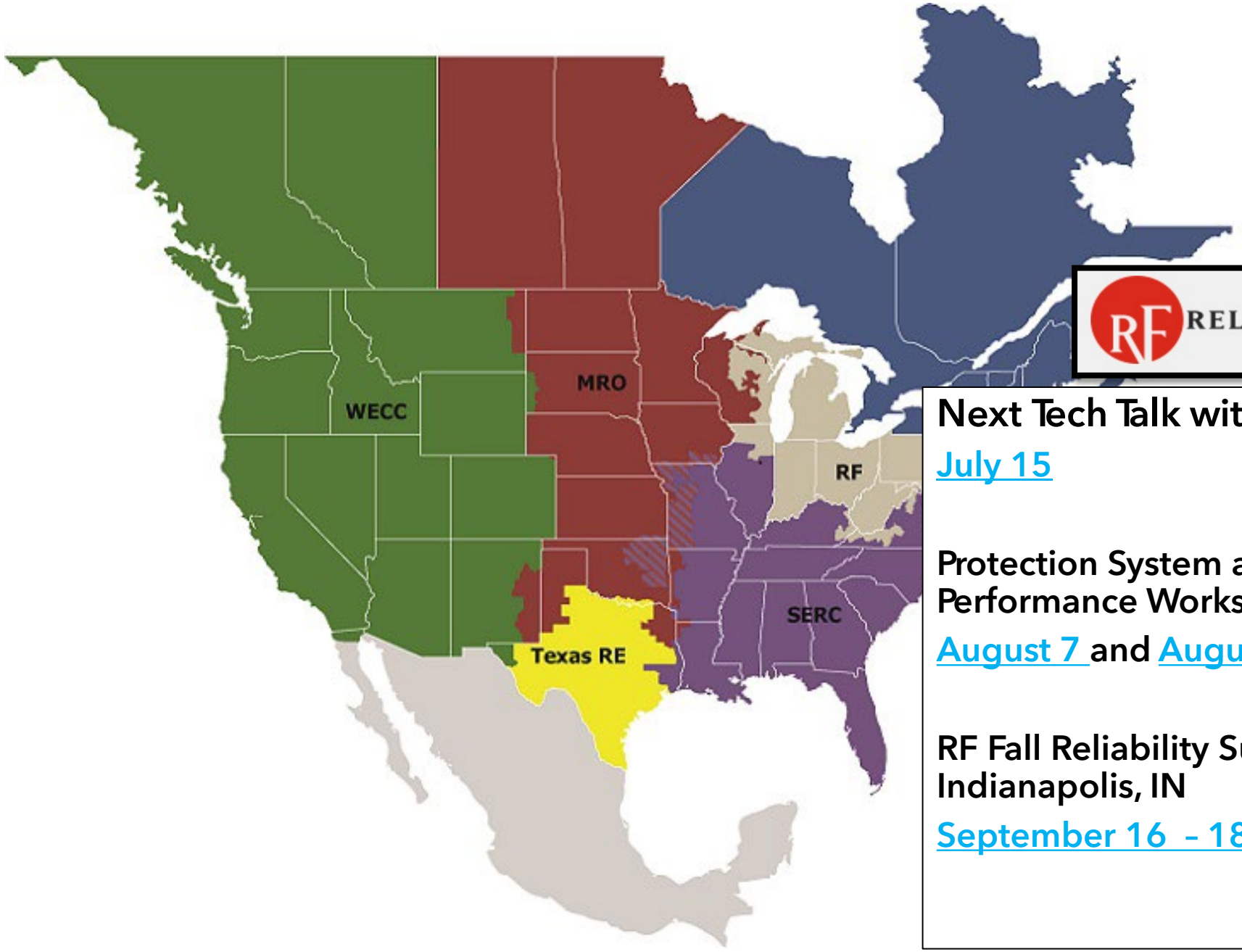
SERC Launches NEW E-Learning SERC University

SERC UNIVERSITY



Save the date: NPCC Fall 2024 Hybrid Compliance and Reliability Conference

- 11/6 – 11/7



RELIABILITYFIRST

Next Tech Talk with RF

July 15

Protection System and Human Performance Workshop Webinar

August 7 and August 8

RF Fall Reliability Summit, Indianapolis, IN

September 16 - 18

TECH TALK REMINDER

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

CLICK HERE

MON
10

June 10 @ 2:00 pm - 3:30 pm

Technical Talk with RF

Virtual (Webex)

Technical Talk with RF is a monthly webinar ReliabilityFirst hosts to discuss key reliability, resilience and security topics with our stakeholders.

TECHNICAL TALK WITH RF

Join the conversation at

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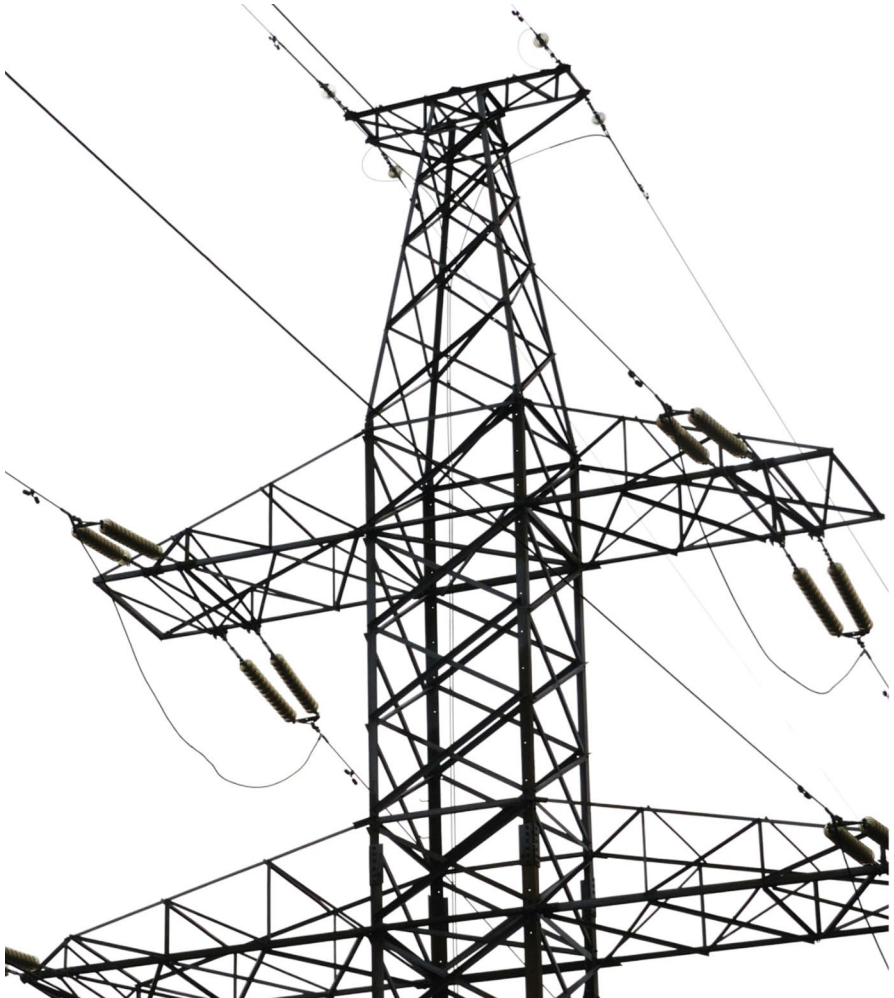
FORWARD TOGETHER RELIABILITYFIRST

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

PREVIEW OF THE 2024 CIP THEMES REPORT

- TOM SCANLON – RELIABILITYFIRST MANAGING ENFORCEMENT COUNCIL
- JOSEPH TROMBA – SERC LEGAL COUNCIL

RF & NERC 2024 SUMMER RELIABILITY ASSESSMENTS

- TIM FRYFOGLE – RELIABILITYFIRST PRINCIPAL ENGINEER

PREVIEW OF THE 2024 CIP THEMES REPORT

Tom Scanlon, Managing Enforcement Counsel, ReliabilityFirst
Joseph Tromba, Legal Counsel, SERC

June 10, 2024

2024 CIP THEMES REPORT

Purpose

- Highlight themes and areas for improvement
- Suggest potential resolutions

Sharing and Collaboration

- Industry-wide data
- Multi-regional participation, analyses, and drafting

Third Edition

- Second edition in 2018

LATENT VULNERABILITIES

THE IMPORTANCE OF DETECTIVE CONTROLS

- Long-standing, higher risk issues that evade detection and persist within entities' environments
- Examples in physical security, electronic access, and patching

INSUFFICIENT COMMITMENT TO LOW IMPACT PROGRAMS

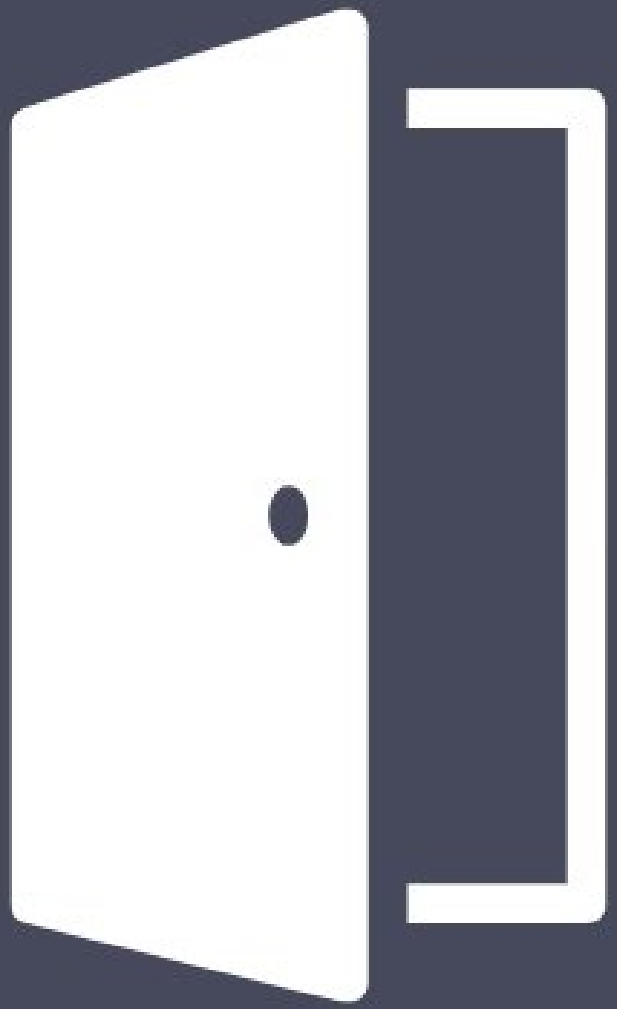
THE NEED TO REVISIT APPROACHES TO CIP-003 R2

- Misunderstanding CIP obligations and security objectives
- Insufficient understanding of cyber environments
- Struggling to effectively manage electronic access
- Struggling to implement effective TCA plans

SHORTAGES OF LABOR AND SKILLSETS

ISSUES HIRING, RETAINING, WORKFORCE PLANNING, AND SUCCESSION PLANNING

- Challenging threat landscape coupled with reported labor shortage
- Issues transitioning work or managing organizational complexities
- Key personnel



PERFORMANCE DRIFT

PHYSICAL SECURITY ISSUES AS MARKERS OF PERFORMANCE DRIFT AND APATHY

- Increased failure in physical security programs when disciplined execution becomes inconvenient or uncomfortable

- Bypassing security controls, relying on assumptions, propping doors, leaving doors and gates open, and sharing badges and PINs

NEXT STEPS

- Publish the report
- Webinars, conferences, workshops
- Private briefings
- Board meetings
- Supplemental outreach

QUESTIONS & ANSWERS

Tom Scanlon

tom.scanlon@rfirst.org

Joseph Tromba

jtromba@serc1.org

FORWARD TOGETHER RELIABILITYFIRST

RF/NERC 2024 SUMMER ASSESSMENT

Tim Fryfogle, Principal Engineer

RF Tech Talk June 10, 2024

RELIABILITY FIRST

FORWARD TOGETHER RF RELIABILITYFIRST

AGENDA

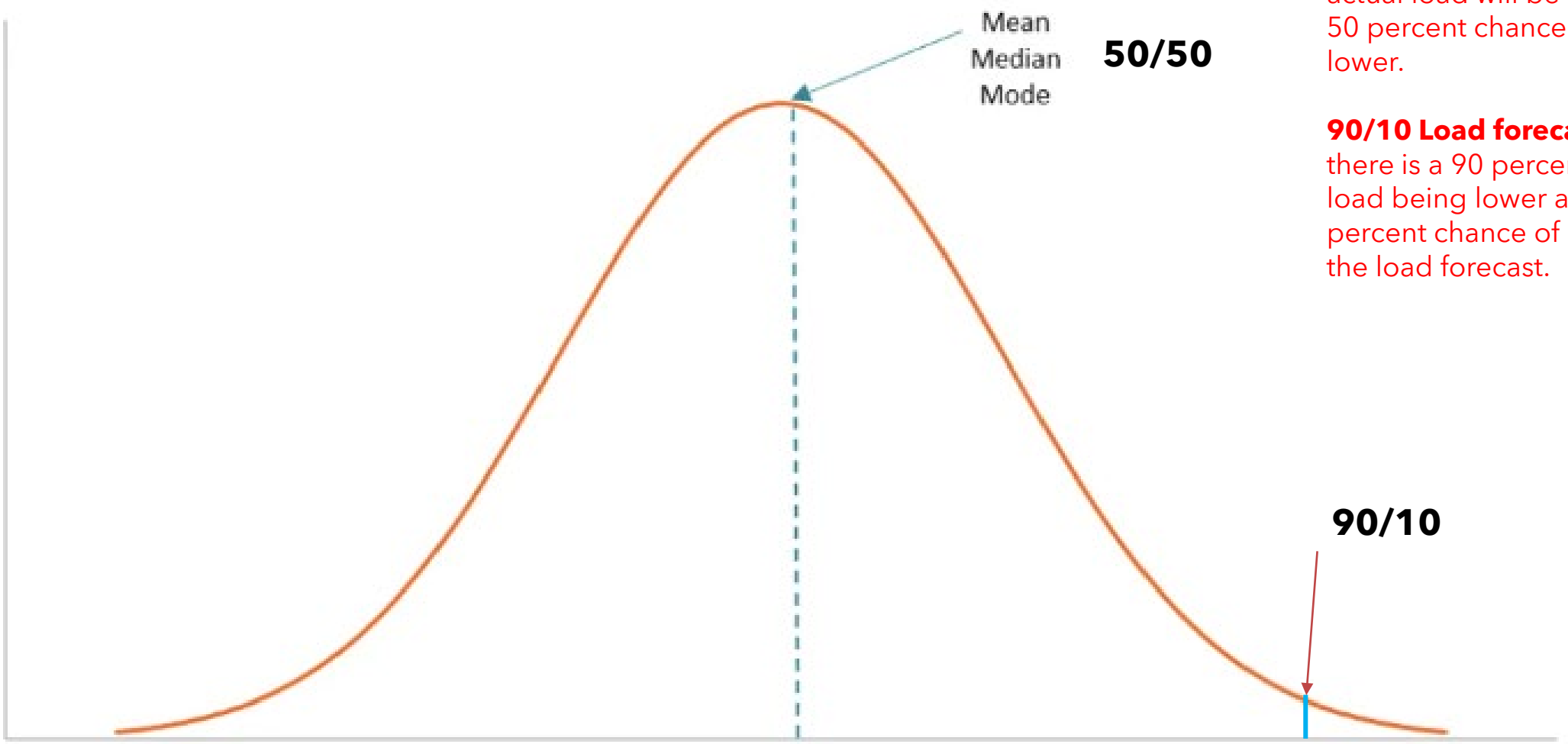
NERC 2024 SUMMER RELIABILITY ASSESSMENT

- ANTICIPATED SUMMER WEATHER
- ASSESSMENT RISK SUMMARY
- RESOURCE ADEQUACY ANALYSIS

RF 2024 SUMMER RELIABILITY ASSESSMENT

- COMPARISON TO NERC ASSESSMENT
- RESOURCE ADEQUACY ANALYSIS
- GENERATOR OUTAGE RISK ANALYSIS

BELL CURVE DISTRIBUTION



50/50 Load forecast means there is a 50 percent chance actual load will be higher, and a 50 percent chance load will be lower.

90/10 Load forecast means there is a 90 percent chance of load being lower and a 10 percent chance of exceeding the load forecast.

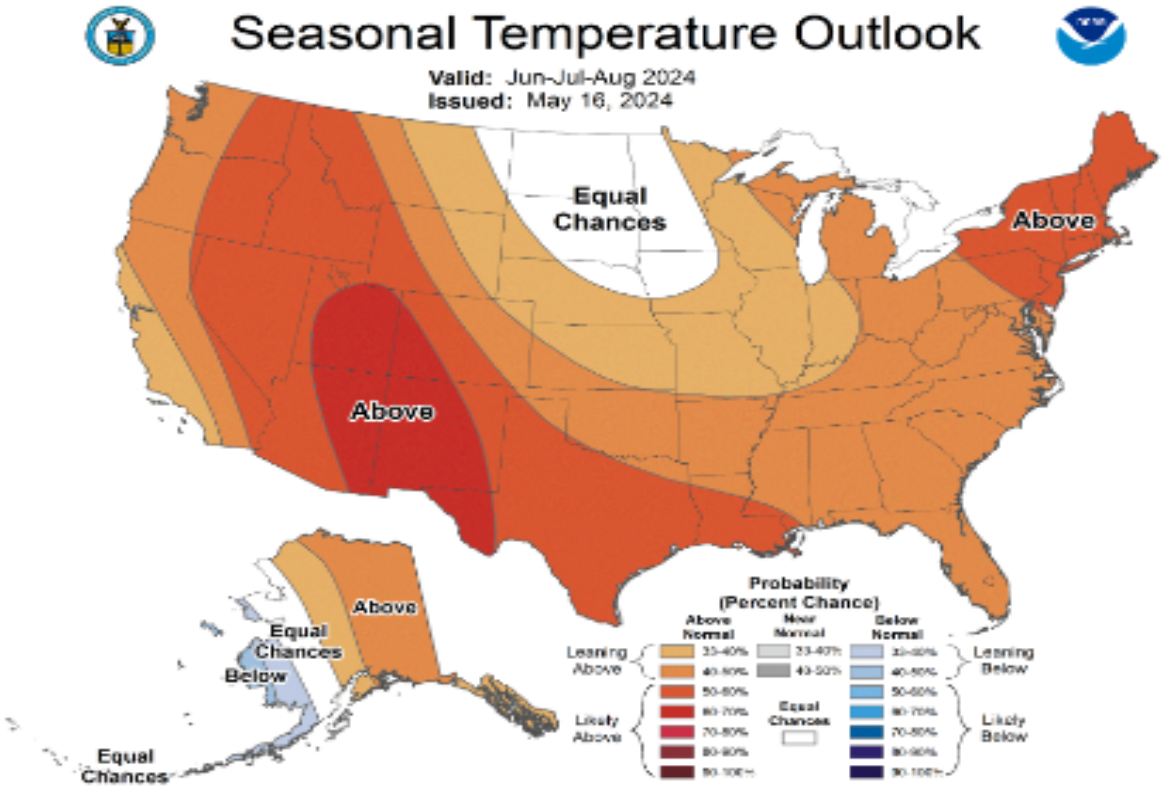
For illustrative purposes only

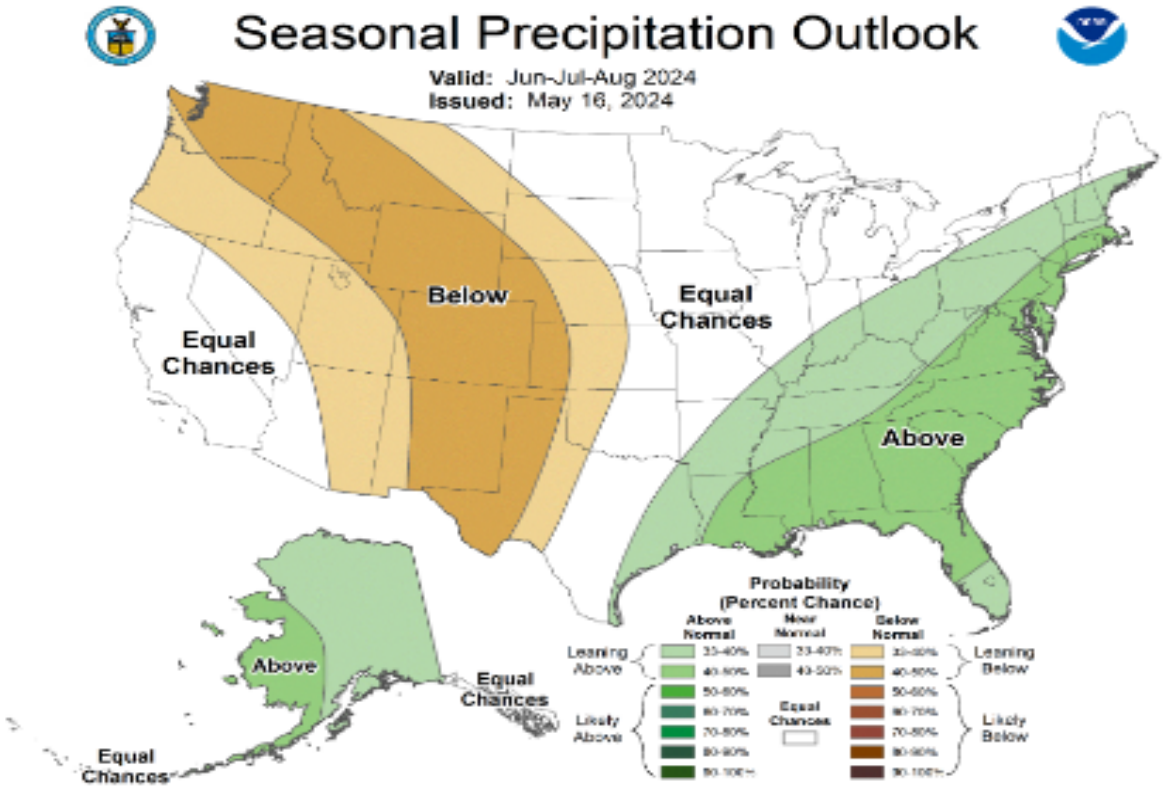
FORWARD TOGETHER RELIABILITYFIRST

NERC 2024 SUMMER RELIABILITY ASSESSMENT

SUMMER TEMPERATURE AND PRECIPITATION

- High temperatures are a key driver of peak electricity demand
- Weather services are expecting above-average summer temperatures across much of North America, potentially creating challenging summer grid conditions



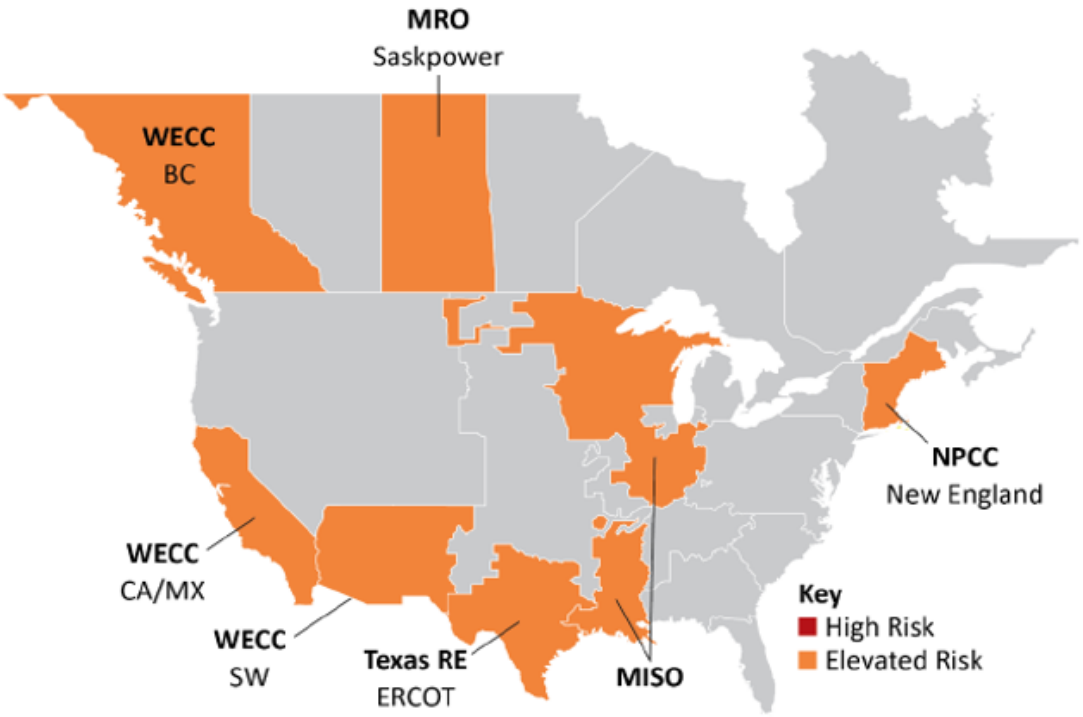


Source: https://www.cpc.ncep.noaa.gov/

SUMMER RISK ASSESSMENT

MISO footprint is considered as being at an elevated risk

PJM footprint is considered as being low risk



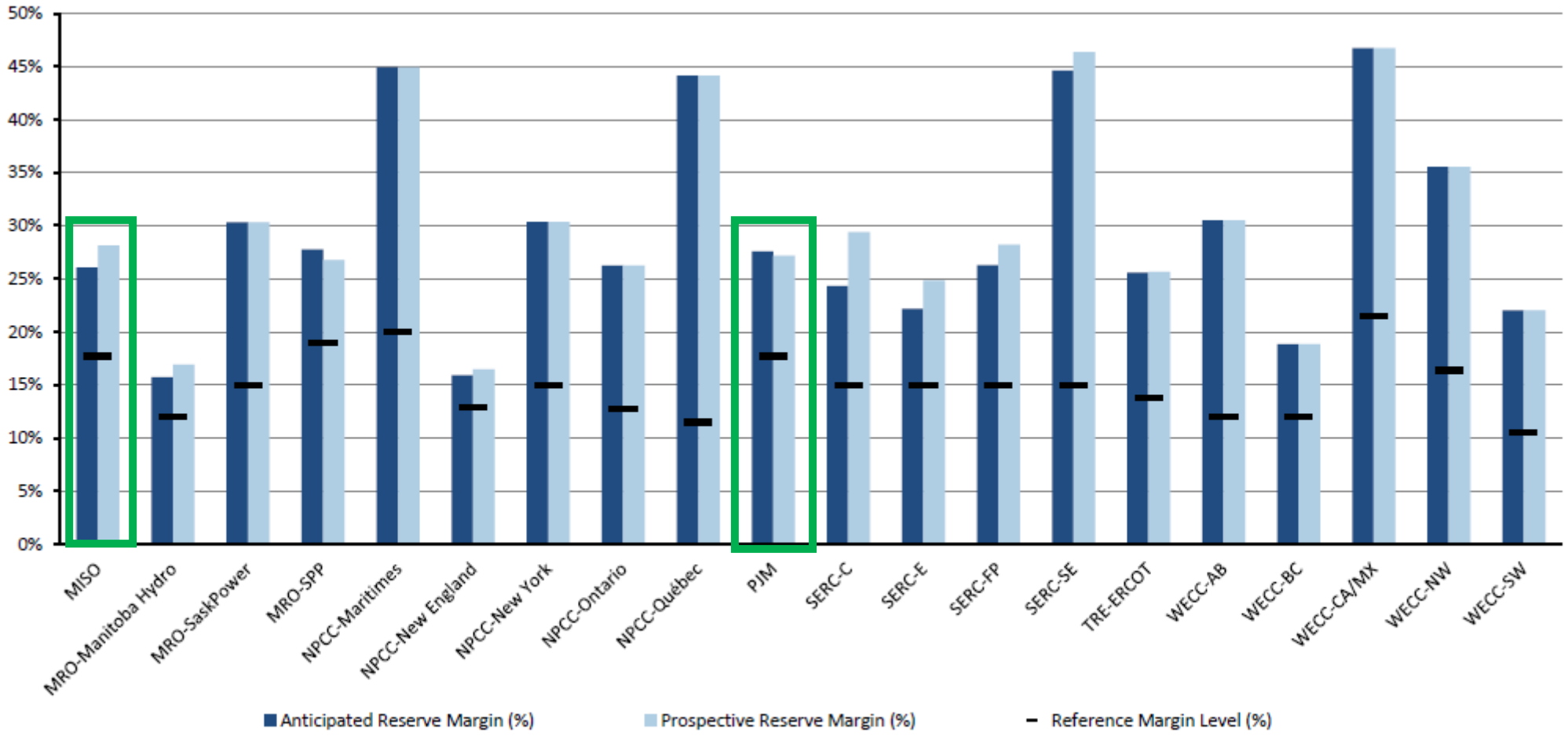
Seasonal Risk Assessment Summary	
High	Potential for insufficient operating reserves in normal peak conditions
Elevated	Potential for insufficient operating reserves in above-normal conditions
Normal	Sufficient operating reserves expected

RELIABILITY CONCERNS

- Rising demand is challenging resource and transmission adequacy in several areas.
- Occurrences involving the unexpected tripping of inverter-based resources (IBR) during grid disturbances continue to spread, underscoring the need for operator vigilance in the near term and urgent industry action on long-term solutions.
- Supply chain issues are delaying some new resource and transmission projects, raising concerns that some may not be completed prior to peak summer conditions.
- Stored supplies of natural gas are at high levels, but continued vigilance is needed to ensure the reliability of fuel delivery to natural-gas-fired-generators.
- Expanded demand-side management programs are an added resource for operators that should be carefully considered in operating plans and monitored during peak demand periods.

2024 SUMMER RESERVE MARGINS

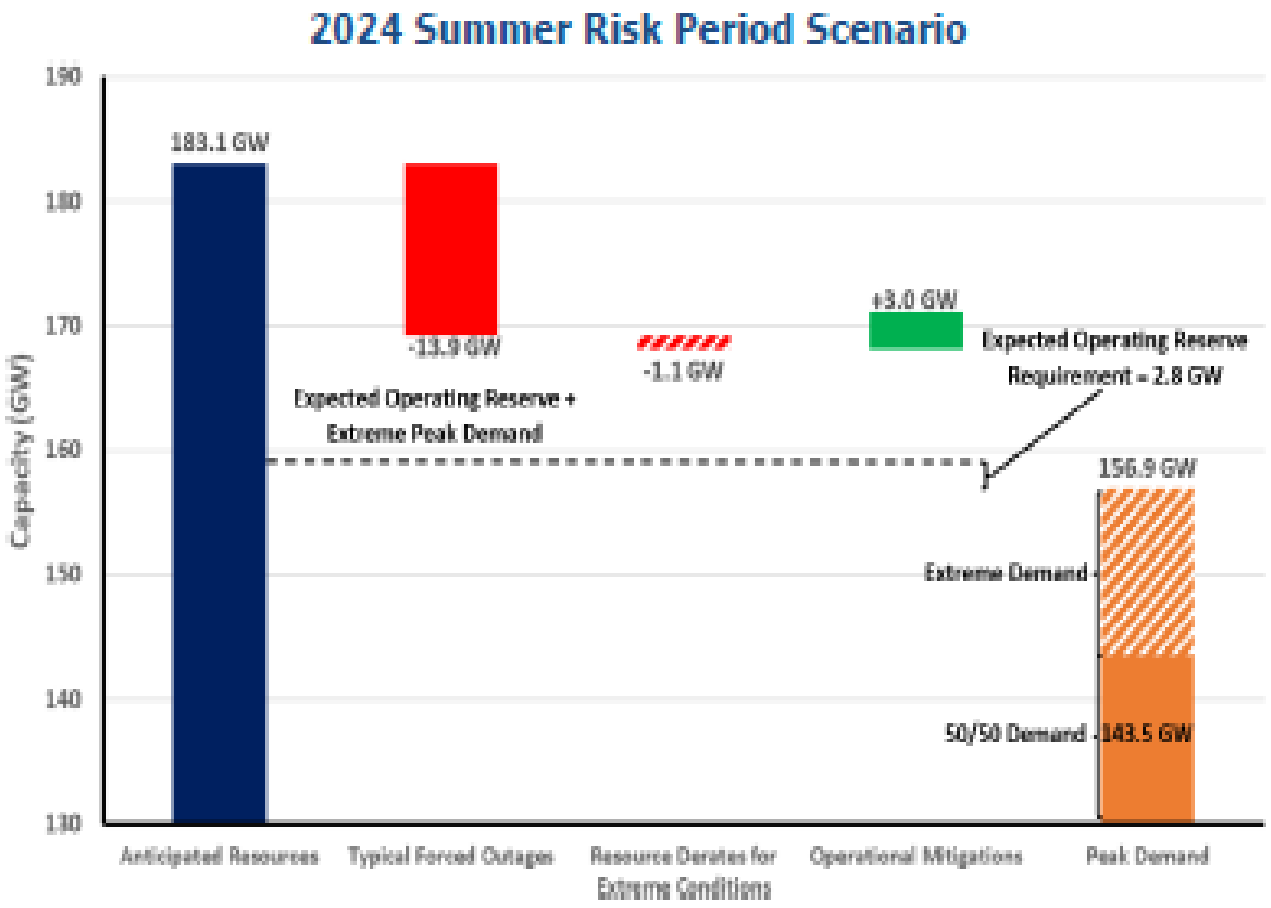
Anticipated Reserve Margins meet reference levels in all areas



https://www.nerc.com/comm/PC/Reliability%20Assessment%20Subcommittee%20RAS%202013/ERO%20Reliability%20Assessment%20Process%20Document.pdf

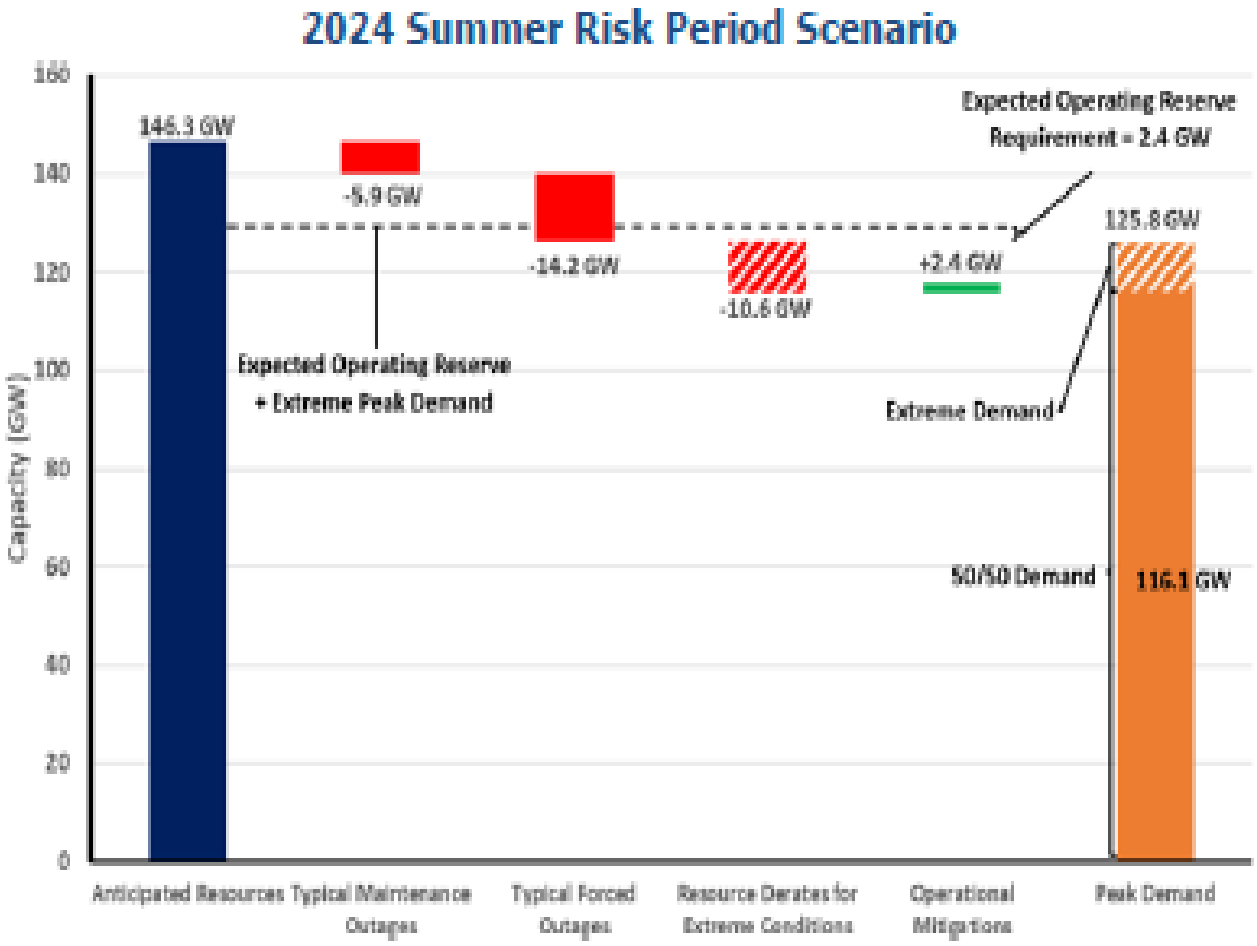
PJM ASSESSMENT – LOW RISK

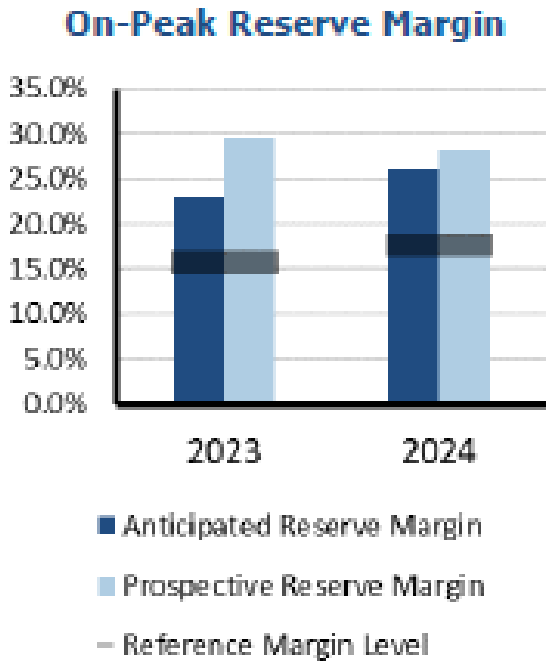
- PJM expects no resource problems over the entire 2024 summer peak season.
- Rising demand, generator retirements, and slower-than-anticipated resource additions contribute to lower reserve margins compared to last summer.



MISO ASSESSMENT – ELEVATED RISK

- Controllable and Dispatchable Demand Response for this summer have significantly increased over last year





MISO's Reference Margin Level increased from 15.9% in 2023 to 17.7% in 2024.

MISO ASSESSMENT – ELEVATED RISK

- MISO is expected to have sufficient resources, including firm imports, for normal summer peak demand
- MISO can face challenges in meeting above-normal peak demand if wind generator energy output is lower than expected
- Expect Max Gen alerts
  - Provides an early alert that system conditions may require the use of MISO's generation Emergency procedures.

https://cdn.misoenergy.org/Three%20Pager%20-%20MISO%20Operating%20Procedures%2010252022318965.pdf

FORWARD TOGETHER RF RELIABILITYFIRST

RF 2024 SUMMER RELIABILITY ASSESSMENT

COMPARISON OF ASSESSMENTS

- RF analysis uses the same load and resources data gathered during the NERC Assessment.
- RF publishes the results of the assessment in the RF monthly newsletter and posts them on our public website.

Differences in analyses:

- RF uses actual historical Generator Availability Data System (GADS) data from a rolling five-year period from May through September.
- NERC polls the assessment area (i.e., PJM and MISO) and requests the average forced outages for June through September weekdays, over the past three years.

RESOURCE ADEQUACY ANALYSIS

PJM Capacity and Reserves

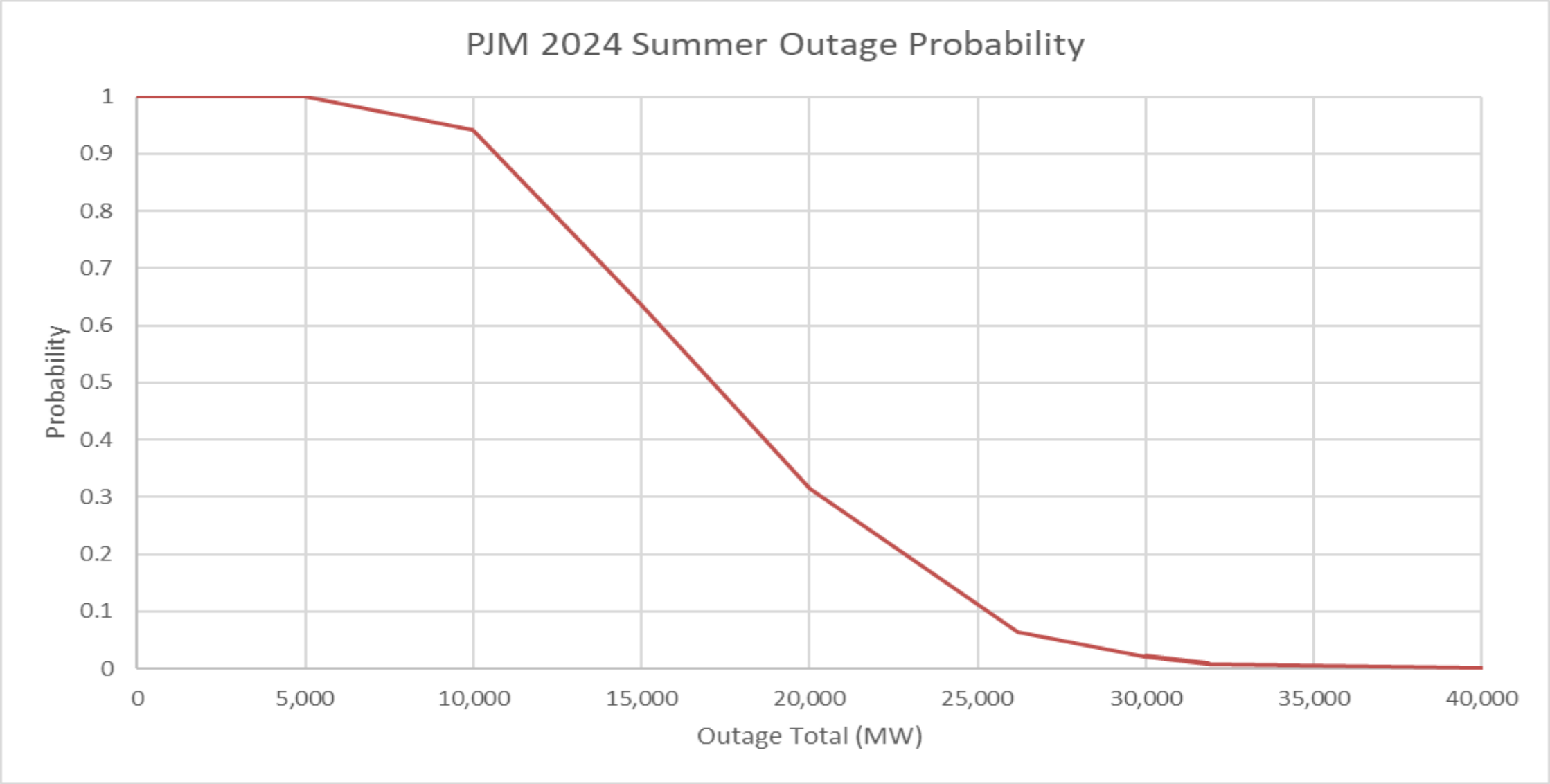
Net capacity Resources	183,083 MW
Projected Peak Reserves	39,592 MW
Net Internal Demand (NID)	143,491 MW
Planning reserve margin	27.6%

MISO Capacity and Reserves

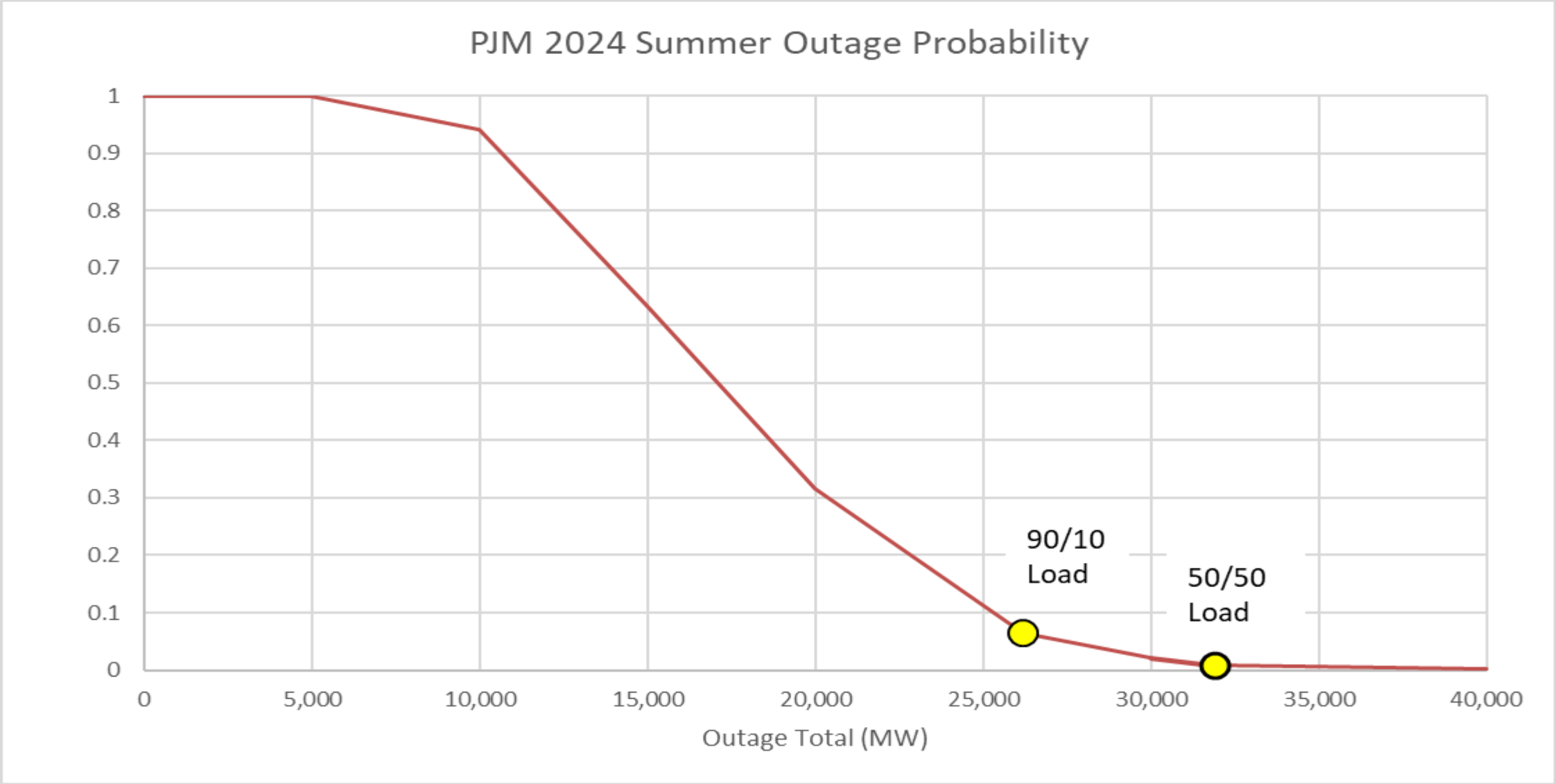
Net capacity Resources	146,337 MW
Projected Peak Reserves	30,257 MW
Net Internal Demand (NID)	116,080 MW
Planning reserve margin	26.1%

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 summer period

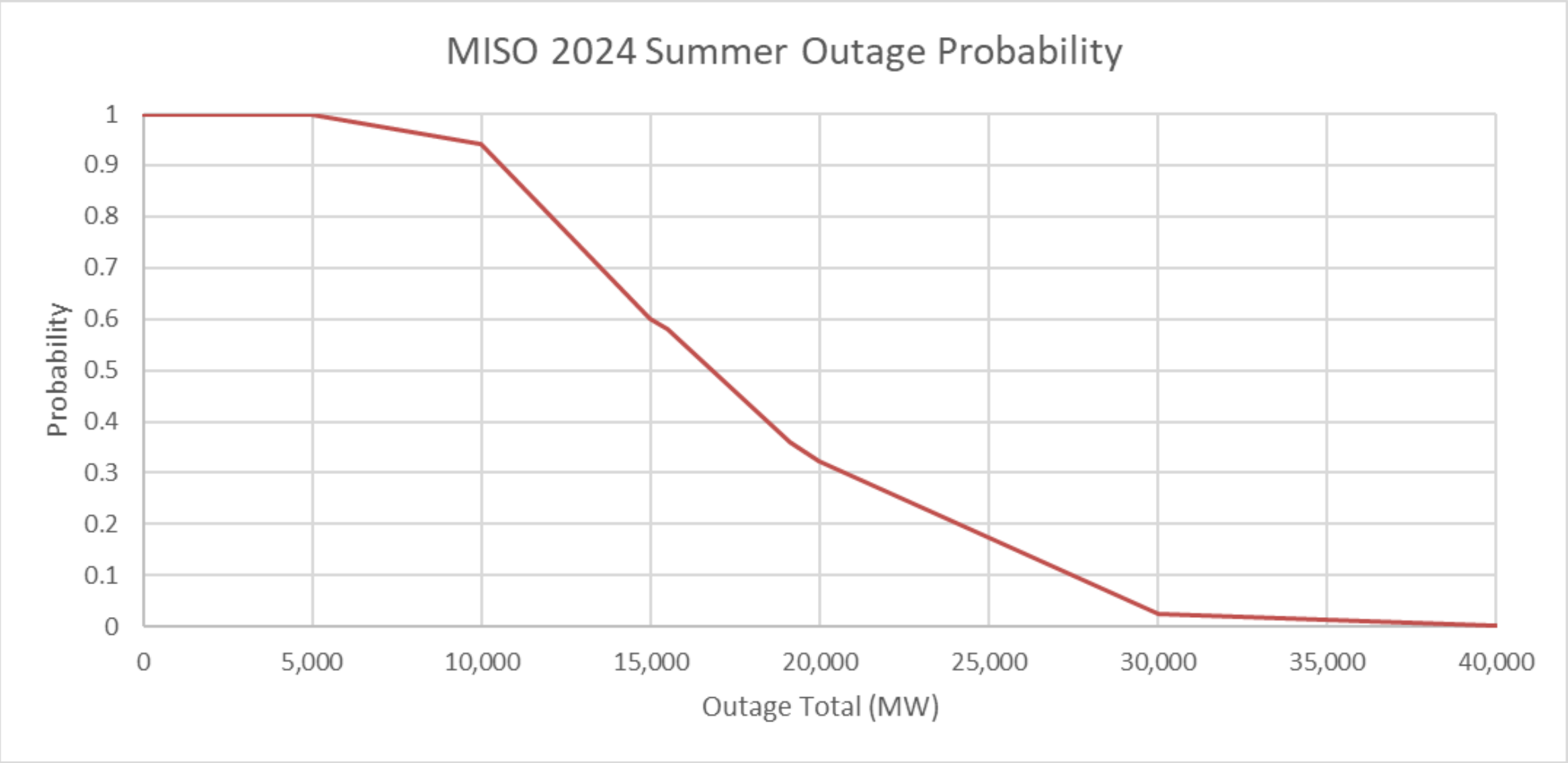
RANDOM GENERATOR OUTAGE RISK ANALYSIS



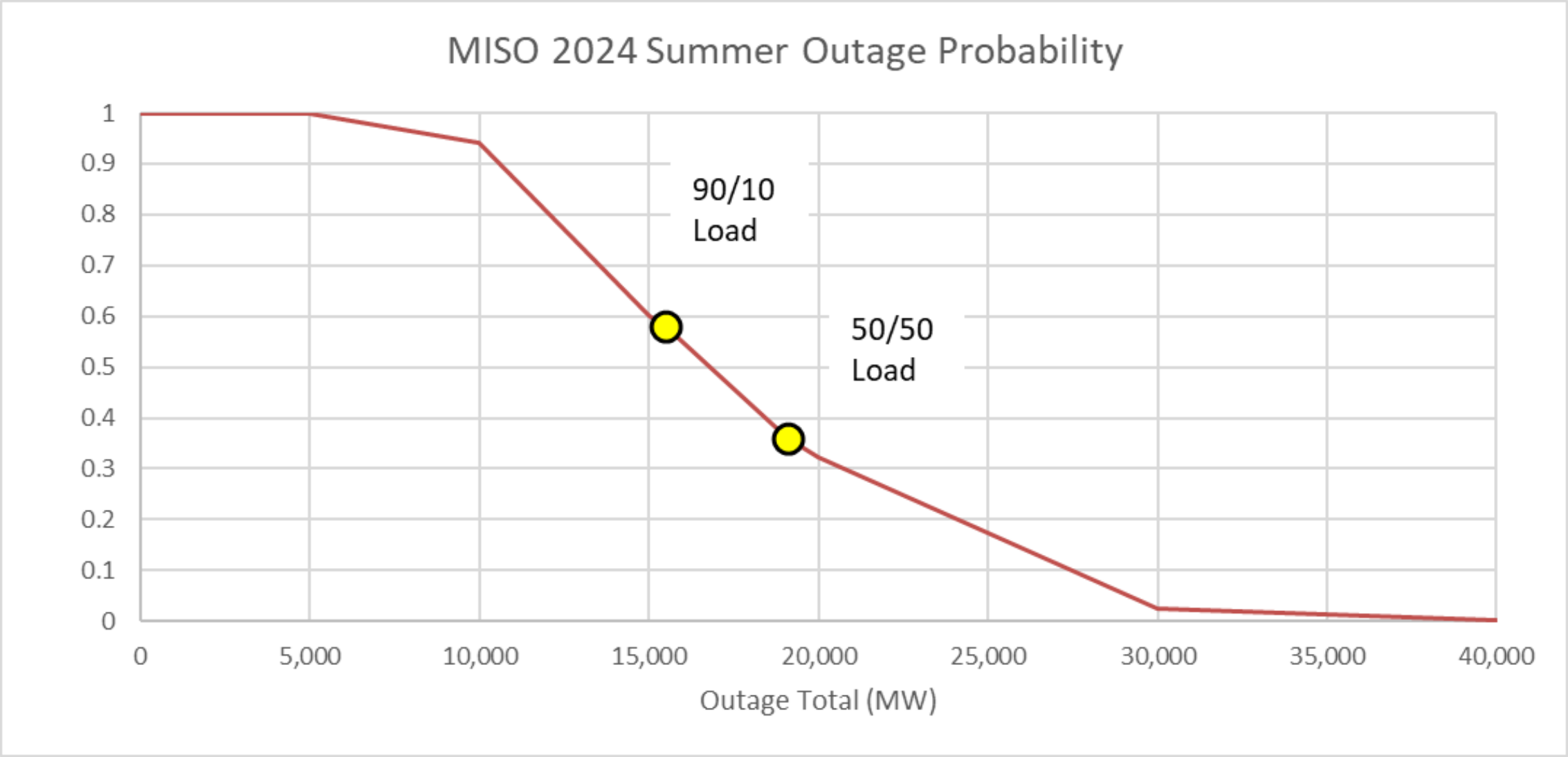
RANDOM GENERATOR OUTAGE RISK ANALYSIS



RANDOM GENERATOR OUTAGE RISK ANALYSIS



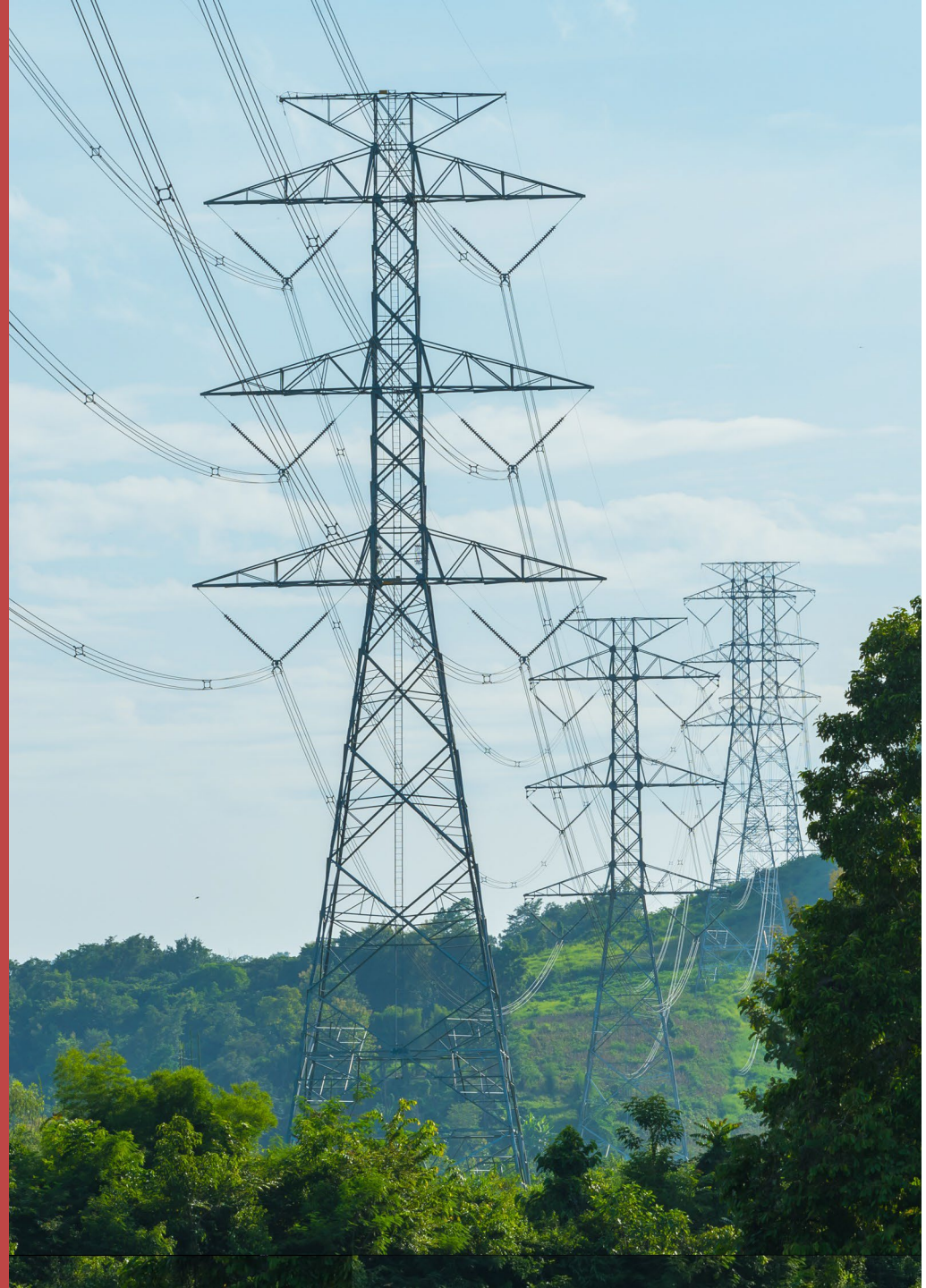
RANDOM GENERATOR OUTAGE RISK ANALYSIS



RF ASSESSMENT - SUMMARY

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

- 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.

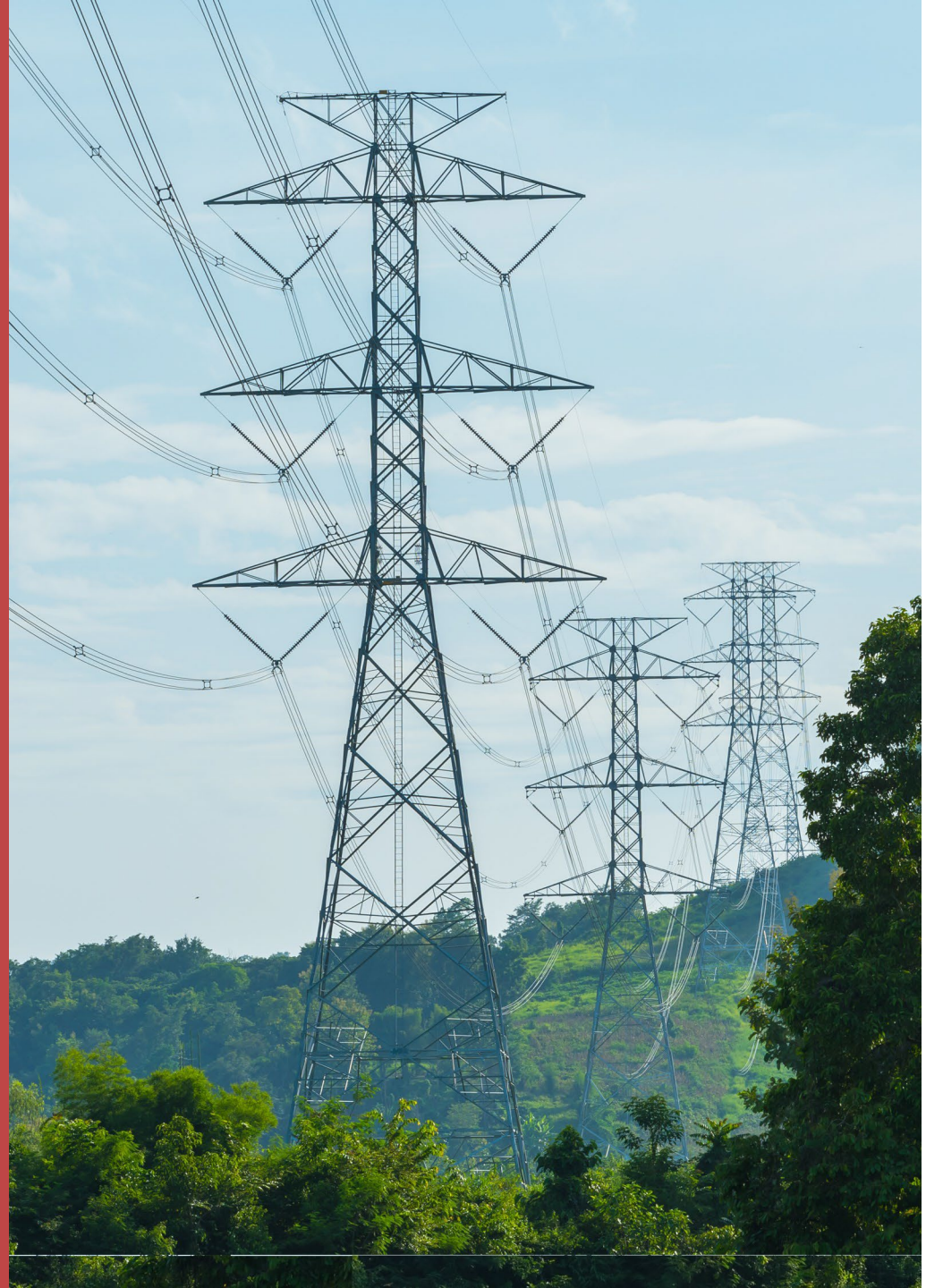


FORWARD TOGETHER RELIABILITYFIRST

QUESTIONS & ANSWERS

Tim Fryfogle, Principal Engineer

tim.fryfogle@rfirst.org



FORWARD TOGETHER RELIABILITYFIRST

THANK YOU

Join us for our next Tech Talk – July 15

Christmas in July

Webinar Link