

The NERC logo consists of the letters "NERC" in a bold, black, sans-serif font. A horizontal blue bar is positioned directly beneath the letters.

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Next Generation Measurement-Based Reliability Tools

NASPI/NERC SMWG Joint Workshop

Facilitator: Clifton Black, Vice-Chair SMWG
September 27, 2023

RELIABILITY | RESILIENCE | SECURITY

Introduction, Scope and Objectives

Focus Questions

1. What measurements do we need to monitor the grid, specifically new dynamics introduced by IBRs, DERs, etc., from both real-time control and offline analysis perspectives?
2. What tools do we need to effectively operate and control the changing grid - specifically new dynamics introduced by IBRs, DERs, etc., from both real-time control and offline analysis perspectives?
3. What are you (panelist) working on or planning to work on to meet the above needs?
4. How can we more effectively collaborate as a community, to deal with these challenges?

Introduction, Scope and Objectives

Panelists will each make a 6-minute presentation.

- NERC RTOS – Tim Beach, NERC RTOS Vice-Chair
- Schweitzer Engineering Laboratories (SEL) – Richard Kirby
- EPRI – Evangelos Farantatos
- Rensselaer Polytechnic Institute (RPI) – Joe Chow

The presentations will be followed by a discussion on the topic.



California ISO

North American Synchrophasor Initiative (NASPI)

Sept 27st 2023

Tim Beach - Director, Reliability Coordination

California ISO / RC West



California ISO / RC West

Within its Balancing Authority area, the California ISO:

- Maintains reliability on the grid
- Manages the flow of energy
- Oversees the transmission planning process
- Operates the wholesale electric market

For much of the western U.S., the ISO:

- Operates the Western Energy Imbalance Market (EIM)
- Serves as Reliability Coordinator (RC West)



RC West/ CAISO



California ISO / RC West oversight

Comply with

NERC

North American Electric
Reliability Corporation

Regulated by

FERC

Federal Energy
Regulatory Commission

The ISO is regulated by the federal government because management of interstate transmission lines falls under federal jurisdiction.

Part of

WECC

Western Electricity
Coordinating Council

Governed by a

FIVE

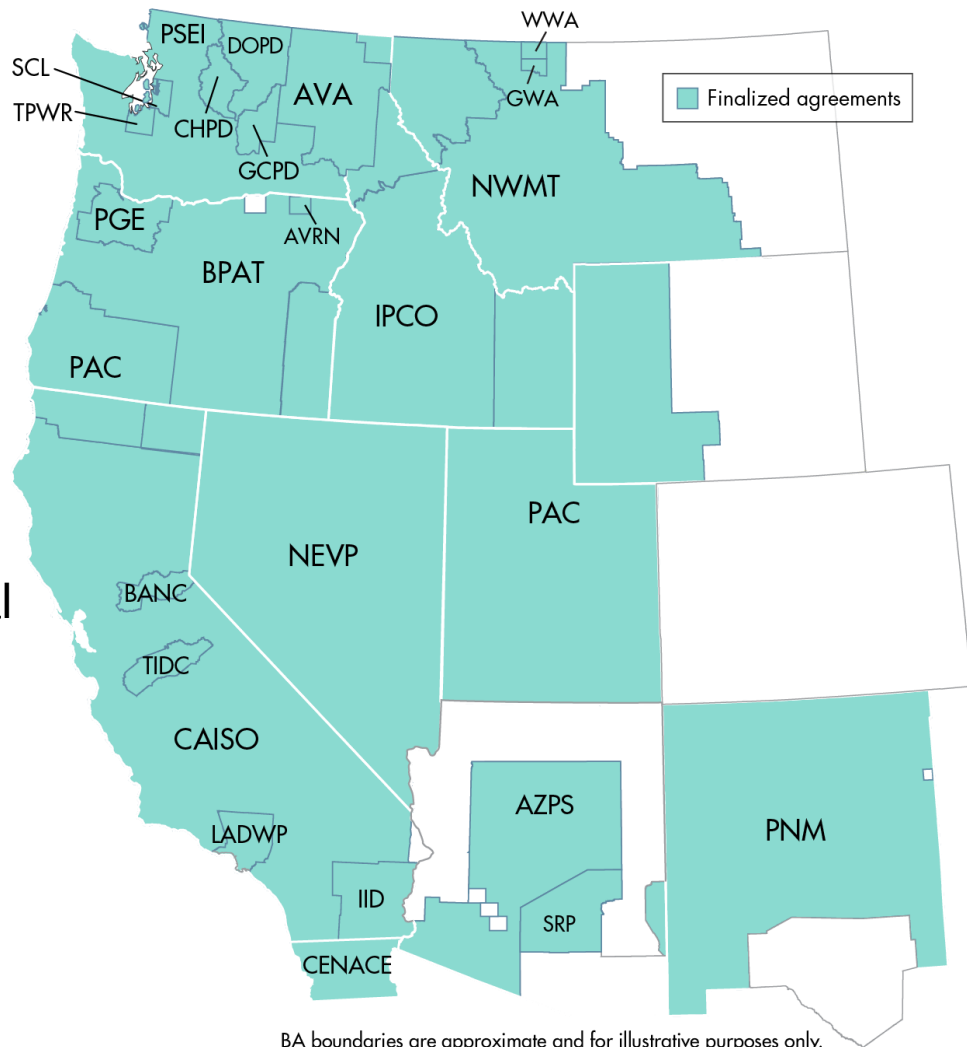
member board
Governor appointed,
Senate confirmed

RC West

The ISO became the reliability coordinator for the majority of the Western Electricity Coordinating Council (WECC) in 2019.

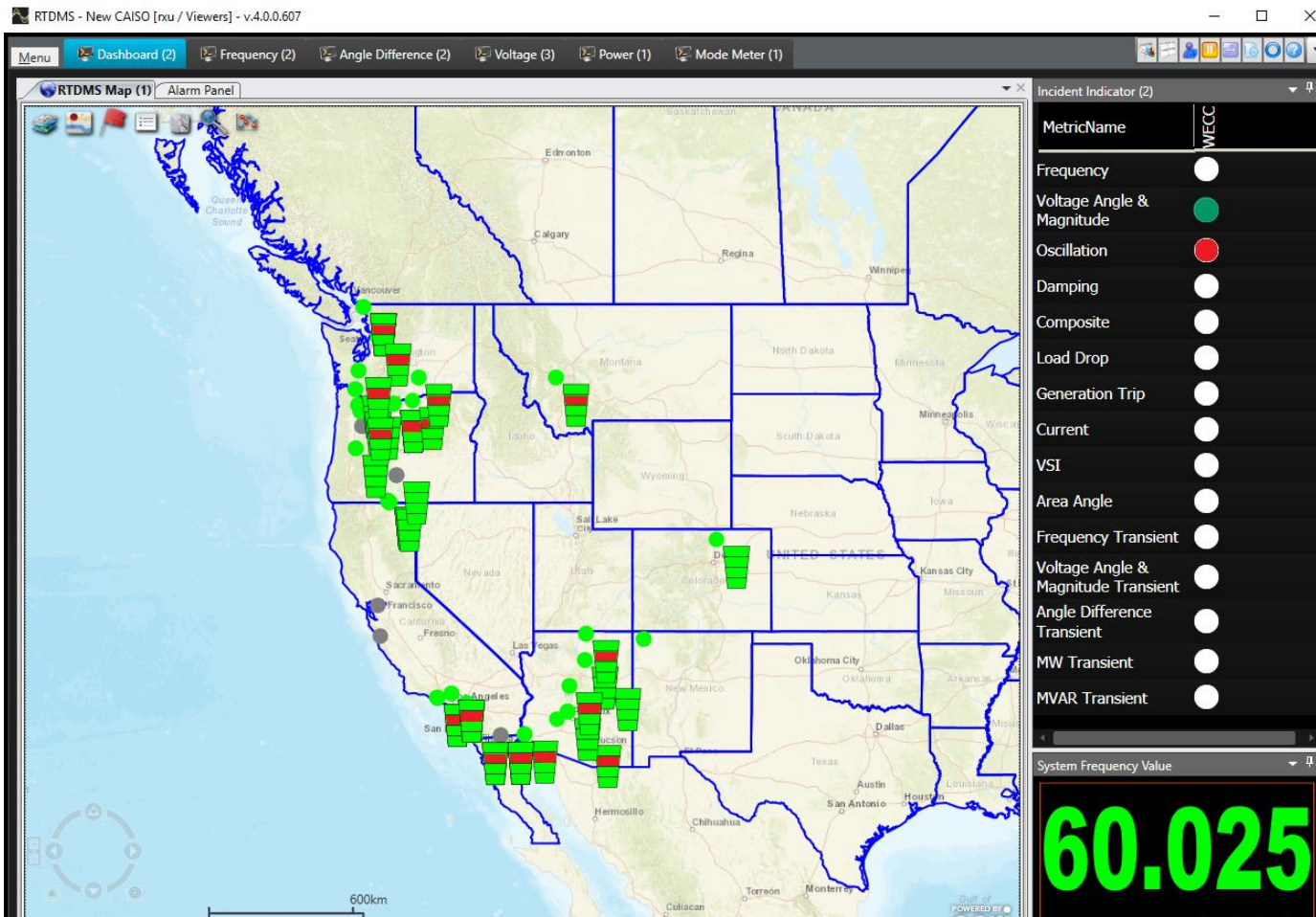
Reliability coordinators:

- Have authority and responsibility for grid stability
- Monitor the interconnected grids in the West for compliance with federal and regional standards
- Authorize measures to prevent or avoid system emergencies in day-ahead or real-time operations
- Lead system restoration following major incidents



Current Synchrophasor use

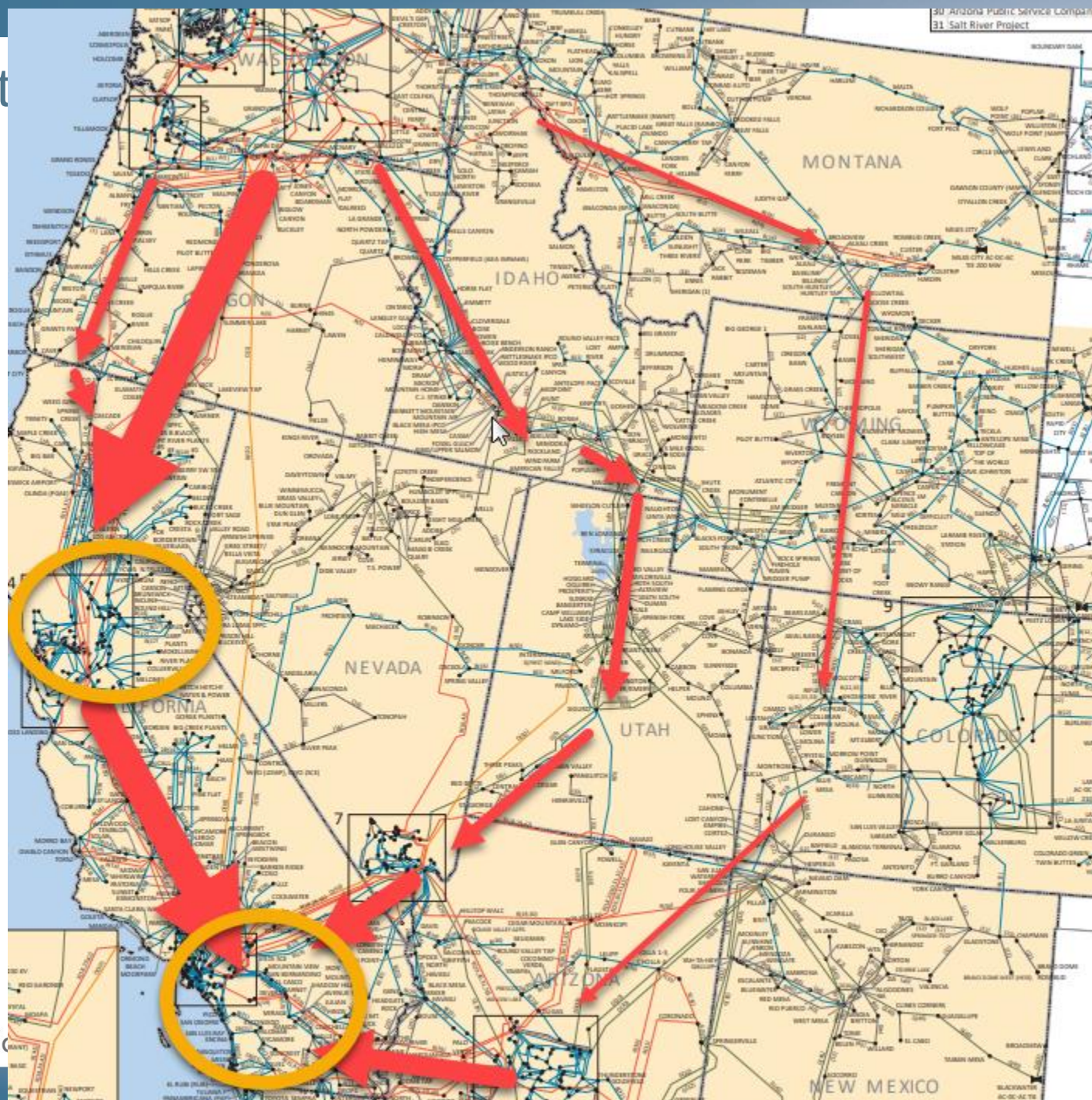
- ✓ RC West uses Real-Time Dynamic Monitoring System (RTDMS)
- ✓ Frequency Monitoring



Future Uses

- ✓ Angle Limit Monitoring
- ✓ Real-Time Contingency Analysis
- ✓ Open Loop Monitoring and Management

Operat



Questions ?