



Reliability Coordinator Update



Reliability Coordinator Responsibilities



Reliability Coordinator Responsibilities

- The Reliability Coordinator (RC) is the entity with the “highest level of authority who is responsible for the Reliable Operation of the Bulk Electric System [(BES) and] ... the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations.”

Source ~ North American Electric Reliability Corporation, Glossary of Terms



Western Interconnection Balancing Authorities (38)

- AESO - Alberta Electric System Operator
- AVA - Avista Corporation
- AZPS - Arizona Public Service Company
- BANC - Balancing Authority of Northern California
- BCHA - British Columbia Hydro Authority
- BPAT - Bonneville Power Administration - Transmission
- CFE - Comision Federal de Electricidad
- CHPD - IPUD No. 1 of Chelan County
- CISO - California Independent System Operator
- DEAA - Arlington Valley, LLC
- DOPD - PUD No. 1 of Douglas County
- EPE - El Paso Electric Company
- GCPD - PUD No. 2 of Grant County
- GRID - Gridforce
- GRIF - Griffith Energy, LLC
- GRMA - Sun Devil Power Holdings, LLC
- GWA - NaturEner Power Watch, LLC
- HGMA - New Harquahala Generating Company, LLC
- IID - Imperial Irrigation District
- IPCO - Idaho Power Company
- LDWP - Los Angeles Department of Water and Power
- NEVP - Nevada Power Company
- NWMT - NorthWestern Energy
- PACE - PacifiCorp East
- PACW - PacifiCorp West
- PGE - Portland General Electric Company
- PNM - Public Service Company of New Mexico
- PSCO - Public Service Company of Colorado
- PSEI - Puget Sound Energy
- SCL - Seattle City Light
- SRP - Salt River Project
- TEPC - Tucson Electric Power Company
- TIDC - Turlock Irrigation District
- TPWR - City of Tacoma, Department of Public Utilities
- WACM - Western Area Power Administration, Colorado-Missouri Region
- WALC - Western Area Power Administration, Lower Colorado Region
- WAUW - Western Area Power Administration, Upper Great Plains West
- WWA - NaturEner Wind Watch, LLC

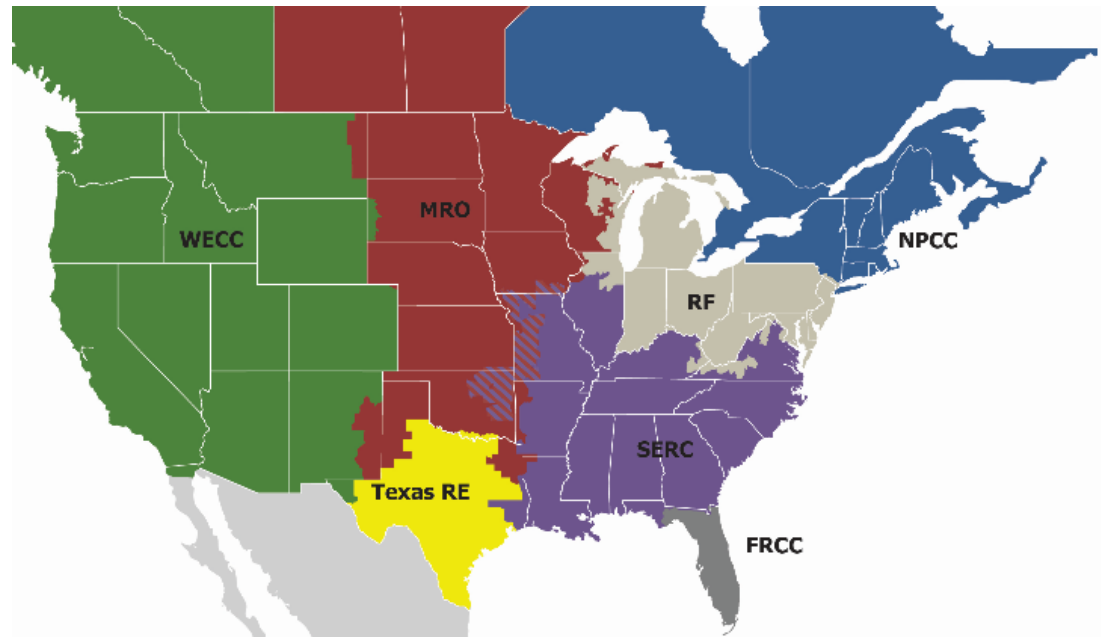


Reliability Coordinator Responsibilities

- Maintains a wide-area view of the transmission system by utilizing real-time operational information
- Ensures the generation-demand balance is maintained, which in turn, ensures that the interconnection frequency remains within acceptable limits
- Issues reliability alerts
- Issues corrective actions and emergency procedure directives
- Coordinates planned system maintenance and system configuration
 - Coordinates nightly calls with balancing areas to discuss next-day operating plans
 - Coordinates approval of planned outages

Reliability Coordinator Compliance Structure

- The reliability coordinator (RC) is a Registered Entity, subject to the North American Electric Reliability Corporation (NERC) Reliability Standards and compliance oversight by the Regional Entity Western Electricity Coordinating Council (WECC), NERC and Federal Energy Regulatory Commission (FERC)
- The RC (along with Balancing Authorities and Transmission Operators) must also be certified by NERC prior to beginning operations



What the Reliability Coordinator is NOT

- Not able to randomly reduce loading/limits on transmission lines to clear an emergency
 - RC typically directs Transmission Operator to take appropriate actions to not exceed operating limits
- Not part of market operations
 - Decisions / directives are not based on economic dispatches
- Not going to specifically target a type of generation to clear an emergency unless there is only one type of generation available
 - RC typically directs balancing area to manage its generation-demand-interchange balance and take whatever action is necessary to ensure balance doesn't impact reliability





PacifiCorp's Typical Experience with the Reliability Coordinator

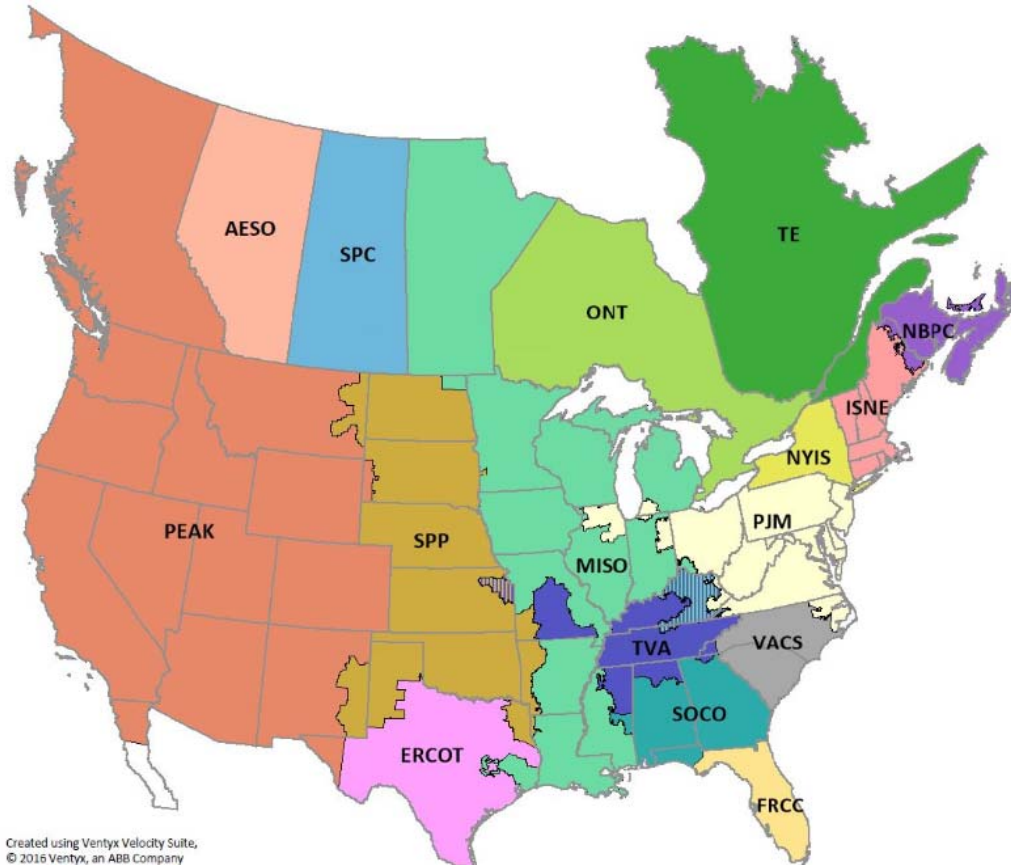
- Reliability coordinator issues operating instructions to reduce transmission line loading ~ +/- 12 times a year
- Reliability coordinator issues operating instructions to support the generation-demand-interchange balance ~ +/- 10 times a year
- Reliability coordinator performs Operational Planning Assessment (OPA) coordination reviews and develops coordinated mitigation plans ~ +/- 130 times a year
- Reliability coordinator helps respond to requests by PacifiCorp to assist in verifying or mitigating equipment overloads ~ +/- 10 times a year
 - *These types of interactions are generally resolved in the day-ahead studies or model validation between PacifiCorp and reliability coordinator models*



Reliability Coordinator and the Changing Landscape

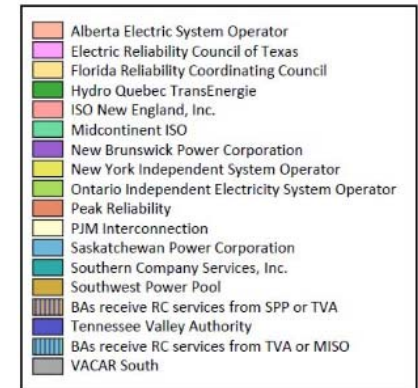
NERC Reliability Coordinators

- Peak has been a reliability coordinator since February 12, 2014
- Peak has announced a wind down at the end of 2019
- California ISO and Southwest Power Pool are offering reliability coordinator services



NERC Reliability Coordinators

As of June 1, 2015



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Key Items of Interest for PacifiCorp

- Maintaining the reliability of the power system is top priority
 - Peak has to ensure reliability is maintained through the transition
 - All entities need to be transitioned to a new reliability coordinator by the end of 2019
 - The new reliability coordinator(s) has to ensure reliability is maintained
- Limiting the number of reliability coordinator to reliability coordinator seams across PacifiCorp's footprint
- Ensuring governance/oversight or tariff structure that makes clear that the reliability function is separate from any market functions and allows PacifiCorp the ability to positively impact decisions that will maintain/improve reliability

