

Blackstart Resource Availability and Readiness in the Eastern and Western Interconnections recommendations

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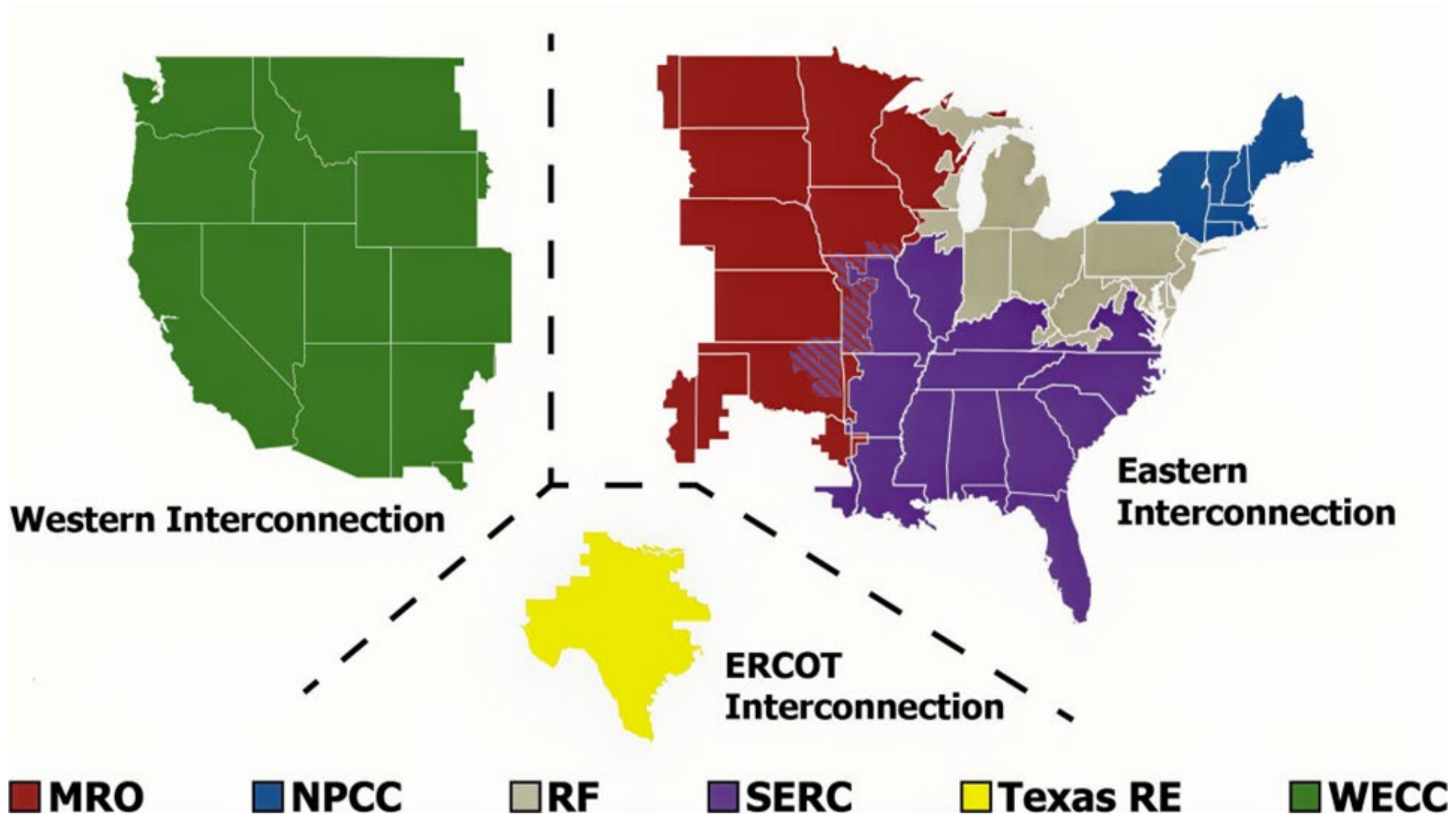
Agenda Topics

- Who did the study
- What was studied
- Where was the study area
- Why we did the study
- Recommendations
- Questions

Who was involved in the Study



Regions Involved



Why the Study was initiated

- Winter Storm Elliott in December 2022
- Recommendation 3 of the Elliott report
- A joint NERC-Regional Entity team, collaborating with FERC staff, should study the overall availability and readiness of blackstart units to operate during extreme cold weather conditions. This study should cover all portions of the U.S. not already studied, and should incorporate existing literature, studies, reports, and other analyses as to the availability and readiness of blackstart units.

Recommendations

1. Entities responsible for the development of system restoration plans and the selection of BSRs should consider reviewing and revise (as needed) internal processes to ensure that the selection and qualifications of BSRs include the consideration of currently effective NERC Reliability Standard EOP-012-2 operational data and capability under R2 or R3, as it pertains to blackstart service/capabilities, extreme cold weather preparedness, and operations. These entities should consider implementing more frequent (perhaps annual, preseason) assessments or validation of blackstart capabilities of BSRs to ensure operational readiness for each winter season.

Recommendations

2. Entities responsible for BSRs should ensure that the blackstart procedures contain specific extreme cold weather preparatory actions and considerations to help operators successfully perform in extreme cold weather conditions.
3. Entities responsible for, or capable of, providing blackstart service should systematically evaluate and identify Generator Cold Weather Critical Components, including those components only used during system restoration.

Recommendations

4. Entities responsible for development of system restoration plans should evaluate their restoration plans and the BSR capabilities and procedures to ensure that restoration plans consider and manage fuel availability risk under extreme cold weather conditions for blackstart service of designated BSRs.
 - a. Entities responsible for the implementation of system restoration plans with identified dual-fuel capable BSRs should evaluate and establish/strengthen their documented requirements for a minimum amount of onsite or readily available backup fuel to successfully implement the plan.
5. Entities responsible for the development and implementation of emission/environmental regulation waiver requests, as applicable, should evaluate the existing emission/environmental regulation waiver request processes and procedures to ensure they will work during a system blackout and make sure that BSRs will be available when called upon. This waiver evaluation process should consider the entirety of the restoration plan beyond BSRs and establish clearly defined waiver triggers.
 - a. Emission/environmental waiver processes or procedures should consider requests to applicable air emission regulatory jurisdictions, which could include situations in which BSR(s) may be located in a different State (with a different environmental regulator outside the impacted area) and/or neighboring Reliability Coordinator Area.

Recommendations

6. The joint study team reaffirms recommendation 2 from the December 2023 Blackstart Study, emphasizing its continued relevance. Given the multi-jurisdictional nature of the Eastern and Western Interconnections encompassing multiple states and energy regulatory authorities, the joint study team recommends that each individual entity with system restoration plan requirements proactively collaborate, based on its regional electric system restoration assessments. These entities should also develop joint blackstart system restoration plans to address electric and natural gas system identified interdependency risks.
 - a. The joint study team recommends that SMEs from both electric and natural gas industries (electric/gas task force) evaluate the potential impact of a wide-area electric blackout on natural gas system functionality, consequent impacts on electric system restoration, and potential single points of failure, as it pertains to individual Transmission Operator Area system restoration plans. These SMEs should also help develop system restoration plans that include solutions to resolve identified issues. It is recommended that such restoration plans include the following:
 - i. Distinguishing between critical customer loads and system restoration critical loads, which includes natural gas supply, processing, storage, and delivery facilities; and
 - ii. Requiring Transmission Owners/Operators with natural gas-fueled BSRs in their system restoration plans to jointly work with natural gas transmission and delivery facility owners to identify necessary natural gas supply route(s) supporting BSRs. It is recommended that these Transmission Owners/Operators also identify the source of the natural gas supply (including storage).

Recommendations

7. Dual-fuel BSRs should identify, mitigate, and communicate the residual risk related to their primary and alternate fuel supply availability and deliverability during a blackout scenario to the entities responsible for the applicable system restoration plans.
 - a. BSR owners should evaluate primary and backup communication methods with fuel suppliers and delivery entities (e.g., trucking or barge delivery of alternate fuels). This communication should include the identification of critical communication infrastructure that supports both the natural gas system and alternate fuel delivery necessary for BSR participation in restoration in the event of a blackout.

Recommendations

8. Entities responsible for developing and implementing a system restoration plan should consider:
 - a. Incorporating a periodic (e.g., annual or pre-season) start-up test with alternate fuel for dual-fuel BSRs that indicate having an ability to start on an alternate fuel into its dual-fuel BSR testing requirements. When possible and practical, entities should look for opportunities to perform these tests during extreme cold weather, to verify performance in cold conditions.
 - i. Tabletop exercises in lieu of winter tests (where winter tests are not feasible or practical) are acceptable to identify extreme cold weather-related gaps in blackstart startup and operating procedures.
 - b. Implementing fuel switching BSR testing to confirm the capability and time required to switch between primary and alternate fuel for an extreme cold weather blackstart event; and
 - c. Including specific identified extreme cold weather considerations and actions in their system restoration plan to help operators perform successfully in cold weather conditions.

Recommendations

9. To strengthen the effectiveness of system restoration preparatory efforts, the joint study team recommends enhancements to existing simulator-based training to focus on system restoration during extreme cold weather operations.



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Questions ??



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