

NERC Releases Annual Long-Term Reliability Assessment

Key Highlights

- The North American Electric Reliability Corporation (NERC) annually performs a long-term reliability assessments (LTRA) of the North American bulk power system.
- The LTRA provides a 10-year outlook primarily focused on the overall adequacy of bulk power supply and transmission systems in the major North American Interconnections.
- The 2019 LTRA identifies potential risks to inform industry planners and operators, regulators, and policy makers.

Overview

The North American Electric Reliability Corporation (NERC) annually performs reliability assessments of the North American bulk power system, as part of its assigned reliability responsibilities. Working in collaboration with industry (such as NRECA and G&T Cooperatives staff) and regional entities, NERC staff produces seasonal assessments, special case reliability assessments, and an annual long-term reliability assessment (LTRA) with a 10-year outlook primarily focused on the overall adequacy of bulk power supply and transmission systems in the major North American Interconnections.

The 2019 LTRA, as accepted by the NERC Board on December 12, 2019, serves as a comprehensive, reliability-focused perspective on the 10-year outlook for the North American Bulk Power System (BPS) and identifies potential risks to inform industry planners and operators, regulators, and policy makers.

Key Findings

Based on data and information collected for this assessment, NERC has identified the following four key findings:

- **Resource Adequacy: Projected reserves fall below the Reference Margin Level in TRE-ERCOT¹ and NPCC-Ontario²; there is sufficient generation supply in all other areas:**
 - The Anticipated Reserve Margin in TRE-ERCOT is projected below the Reference Margin Level in most of the first five-year period, but additional Tier 2 resources are in development and can be advanced.

¹ TRE-ERCOT = Texas Reliability Entity-Electric Reliability Council of Texas

² NPCC-Ontario = Northeast Power Coordinating Council-Ontario

- NPCC-Ontario projects a shortfall beginning in 2023 that is driven by nuclear retirements and refurbishments; however, market mechanisms that secure incremental capacity are expected to begin addressing the shortfall in future capacity auctions.
 - Emerging risk of energy deficiencies are being identified during off-peak conditions in the Midcontinent Independent System Operator (MISO) and the Western Electricity Coordinating Council (WECC) Regions.
 - Sufficient resources are planned to be available throughout the assessment period in all other areas.
- **Resource Mix Changes: Resource mix changes are driven by the addition of large amounts of new wind, solar, and natural gas resources:**
 - Some areas of North America have and continue to see more rapid resource mix changes, with North America as a whole having a diverse fuel mix.
 - Over 330 GW of installed capacity from solar and wind are planned through 2029.
 - To accommodate large amounts of solar and wind generation, additional flexible resources are needed to offset ramping and variability.
 - Solutions to inverter-based resource interconnection challenges are being implemented to reliably accommodate more resources.
 - The growth in natural gas generation requires continued and coordinated planning to maintain appropriate fuel assurance; guidance is currently being developed by the Electric Gas Working Group (EGWG).
- **Storage and Distributed Energy Resources: Large amounts of storage and distributed energy resources require coordinated interconnection and a robust transmission system:**
 - A total of 8 GW of BPS-connected electric storage is expected by 2024.
 - A total of 35 GW of distributed solar PV is expected by 2024.
 - Increasing installations of distributed energy resources (DERs) modify how distribution and transmission systems interact with each other.
 - Transmission Planners and Operators may not have complete visibility and control of DERs, but information and data are needed for system planning, forecasting, and modeling as growth becomes considerable.
- **Transmission: Transmission planning and infrastructure development need to keep pace with an increasing amount of utility scale wind and solar resources:**
 - Under 15,000 circuit miles of new transmission is expected over the next 6 years; this is considerably less than the nearly 40,000 circuit miles planned earlier this decade.

- Many new variable energy resources (VERs) will be located in areas remote from demand centers and existing transmission infrastructure. In some areas, such as the Southwest Power Pool (SPP) and the Electric Reliability Council of Texas (ERCOT), the level of VERs are reaching full subscription of the transmission network and exhaust current as well as planned transmission capacity.

Contact for Questions

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