

Announcement

10-Year Outlook Underscores Reliability Impacts during Rapid Energy Transition

December 15, 2022

ATLANTA – NERC’s [2022 Long-Term Reliability Assessment](#) identifies energy and capacity risks that underscore the need for reliability to be a top priority for resource and system planners in North America as the energy transition unfolds. The assessment concludes that planners and operators of the grid must increasingly account for different characteristics and performance of resources being brought online during the energy transition.

“The bulk power system is undergoing unprecedented change on a scale and at a speed that challenges the ability to foresee and design for its future state,” said John Moura, NERC’s director of Reliability Assessment and Performance Analysis. “Managing the transformation and proactively preparing for the role that the grid will play is the greatest challenge to reliability over the next 10 years. Our assessment provides valuable insight into the reliability risks facing the bulk power system as it is shaped by government policies, regulations, consumer preferences and economic factors.”

The *LTRA* highlights five trends: integration of inverter-based resources (IBRs), growth in distributed energy resources (DERs), generation retirements, flat transmission growth and increased demand growth that, without careful planning, could negatively impact the ability of the bulk power system to service the energy needs in North America over the next 10 years.

While most areas are projected to have adequate electricity supply resources to meet demand forecasts associated with normal weather, reserves in some areas do not meet resource adequacy criteria. This indicates that the supply of electricity for these areas is more likely to be insufficient in the forecast period and that more firm resources are needed.

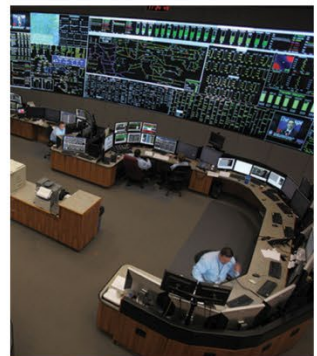
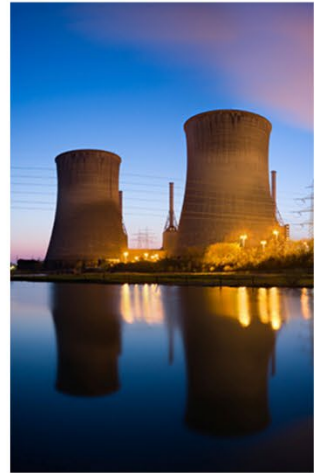
The areas forecast to be at high risk of shortfall in peak conditions are:

- **Midcontinent Independent System Operator (MISO):** A projected shortfall of 1,300 MW occurs next summer and continues to grow throughout the 10-year assessment period as coal, nuclear and natural gas generation retire faster than replacement resources are connecting.
- **Ontario:** A reserve margin shortfall of 1,700 MW begins in 2025 and continues to grow throughout assessment period due to generation retirements and lengthy planned nuclear maintenance outages.

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- **California:** The addition of new resources and retention of key generators is alleviating near-term capacity shortages, but energy risks persist. Variable resource output and changing demand could cause energy shortfalls that range from 1–10 hours.

Extreme weather-related events, like Winter Storm Uri in 2021 and recent wide-area heat waves in the West, have and will continue to strain electricity resources over major parts of North America — even those where traditional resource adequacy criteria are met. Scenarios and probabilistic analyses performed indicate that the U.S. Western Interconnection, Texas, New England and the Southwest Power Pool area are at elevated risk of shortfall in extreme conditions.

Recommendations are aimed at promoting actions that are capable of controlling the pace of the resource transition and are effective for identifying reliability risks and delivering solutions. The assessment recommends:

- **Reducing the Risk of Insufficient Energy:** The impact of wide-area and long-duration extreme weather events has underscored the need to consider extreme scenarios for resource planning. Industry and regulators should be mindful of all-hours energy availability analyses when evaluating and establishing resource adequacy and include extreme condition criteria in integrated resource planning and wholesale market designs. In addition, the Electric Reliability Organization (ERO) and industry should prioritize the development of Reliability Standard requirements to address energy risks in operations and planning.
- **Planning and Adapting for IBRs and DERs:** Industry should increase its focus on the technical needs for the bulk power system to reliably operate with increased amounts of DERs. Increased DER penetrations can improve local resilience at the cost of reduced operator visibility into loads and resource availability. Data sharing, models and information protocols are needed to support bulk power system planners and operators.
- **Addressing the Reliability Needs of Interdependent Electricity and Natural Gas Infrastructures:** ERO and industry planners should enhance guidelines for assessing and reducing risks through system and resource planning studies and develop appropriate Reliability Standards requirements to ensure corrective actions are put in place. The forum convened by the North American Energy Standards Board is one such important action that should be broadly supported.

Undertaken annually in coordination with the Regional Entities, NERC's 2022 LTRA is the ERO's independent assessment and comprehensive report on the adequacy of planned bulk power system resources to reliably meet the electricity demand across North America over the next 10 years.

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Electricity is a key component of the fabric of modern society and NERC, as the Electric Reliability Organization, serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable and secure North American bulk power system. Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.