NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Announcement

Urgent Need for Resources over 10-Year Horizon as Electricity Demand Growth Accelerates, 2024 LTRA Finds

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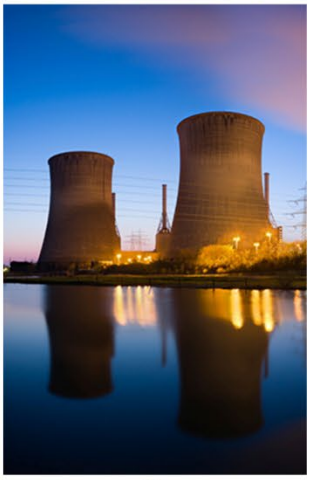
WASHINGTON, D.C. – Trends identified in NERC's *2024 Long-Term Reliability Assessment* (LTRA) highlight critical reliability challenges that industry is facing over the next 10 years: satisfying escalating energy growth, managing generator retirements and removing barriers to resource and transmission development. As a result, well over half of the continent is at elevated or high risk of energy shortfalls over the next 5 to 10 years.

While generator retirement plans continue over the next 10 years, electricity demand and energy growth are climbing rapidly. New data centers, which have the potential to consume enormous amounts of power and can be built relatively quickly, are driving much of the explosive demand growth. Electrification in various sectors and other large commercial and industrial loads, such as new manufacturing facilities and hydrogen fuel plants, are factoring into higher demand forecasts.

"Demand growth is now higher than at any point in the last two decades, and meeting future energy needs in all seasons presents unique challenges in forecasting and planning," said Mark Olson, NERC's manager of Reliability Assessments. "Meanwhile, announced generator retirements, over the 10-year period total 115 GW and are largely being replaced by variable generation. The resulting mix of resources will be able to serve energy needs at most times, but will need to have adequate amounts of dispatchable generators with assured fuel supplies, such as natural gas, to be reliable all the time."

The LTRA, previewed in the 2024 LTRA video, indicates that the summer peak demand forecast is expected to rise by more than 122 GW for the 10-year period (15.7% higher than the current level). Since the 2023 LTRA, the 10-year summer peak demand forecast has grown by more than 50%. Similarly, the winter peak demand forecast is expected to rise by nearly 14% for the 10-year period.

When compared to last year's LTRA, indicators point to greater investment and enhancements in the regional planning processes to support grid expansion with more transmission projects reported as either under construction or in planning for construction over the next 10 years. However, John Moura, NERC's director of Reliability Assessments and Planning Analysis, stressed caution. "While we are encouraged by the significant



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increase in transmission development, industry and policymakers must address the persistent challenges of siting, permitting, and construction to ensure this growth becomes a reality," Moura said. "Overcoming these barriers is critical to realizing a more reliable and resilient grid."

NERC's *Interregional Transfer Capability Study* (ITCS) found that an additional 35 GW of transfer capability across the United States would strengthen energy adequacy under extreme conditions. Increasing transfer capability between neighboring transmission systems has the potential to alleviate energy shortfalls and could become one of the solutions that entities put in place to address the resource adequacy issues identified in the LTRA.

The LTRA's energy and capacity analysis identifies areas for future potential electricity shortfalls — most of which are projected to have adequate electricity supply resources to meet demand forecasts associated with normal weather. While multiple areas are identified as being at elevated risk in extreme conditions, the Midcontinent Independent System Operator is highlighted as not having the reserves to meet resource adequacy criteria in normal conditions as resource additions are not keeping up with generator retirements and demand growth. Consequently, reserve margins fall below Reference Margin Levels in both winter and summer.

The assessment identifies recommendations for energy policymakers, regulators, and industry to promote actions to reliably meet growing demand and energy needs while the resource mix transitions:

- **The pace of generator retirements should be carefully scrutinized and managed** by industry, regulatory and policy-setting organizations considering the projected reliability risks.
- **Enhance long-term assessment processes** by incorporating wide-area energy analysis with modeled interregional transfer capability, as found in the ITCS.
- **Support from regulators and policymakers at the federal, state, and provincial levels** is urgently needed to address siting and permitting challenges to remove barriers to resource and transmission development.
- **Collaboration across regulators, electric industry and gas industry member organizations** is needed to address the operating and planning needs of the interconnected natural gas-electric energy system.
- **Ensure essential reliability services are maintained** by regional transmission organizations, independent system operators and regulators**.**

Undertaken annually in coordination with the Regional Entities, NERC's 2024 LTRA is the Electric Reliability Organization'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. The 2024 LTRA includes a probabilistic assessment and use of energy risk metrics to identify potential supply shortfalls.

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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.