NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

FERC Resource Adequacy Technical Conference Jim Robb Opening Comments

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Introduction

Good morning, Chairman Christie and Commissioners. It's an honor to be with you as always.

Evolution of Resource Adequacy

We have been conducting seasonal and longer-term resource adequacy assessments for decades. For most of our history, these engineering analyses weren't particularly interesting because everything generally looked pretty good.

Of course, we had growing concerns related to California's renewable penetration and integration, Texas's reserve margins, and New England's fuel adequacy, but, in general, the picture looked fairly manageable with the ingenuity of the respective ISO/RTOs.

But, for the first time, our 2018 LTRA showed a material expectation for unserved energy. Eighteen months later that expectation was realized with a significant load shed event in California during an August heatwave in 2020. Since then, our analyses have shown growing risk of unserved energy across the continent, as portrayed by the color-coded maps you have all seen.

Numerous and interrelated factors account for risk degradation:

- Disorderly retirements of traditional generation, largely driven by:
  - Policy decisions at state and federal levels
  - Declining capacity factors due to preferential dispatch
  - General aging of the traditional generation fleet coupled with reduced near-end-of-life maintenance spending resulting in higher forced outage rates
- Replacement resources not keeping up with retiring resources. New additions have been largely energy-constrained, inverter-based resources which:
  - Do not possess all the reliability benefits of traditional spinning mass generation
  - Introduce new systemic risks to the system, such as a lack of ride-through capability
  - Rely on balancing resources to mitigate variability
- Next, the risk from common condition failures, such as wind and solar droughts, is greatly increasing.
- In addition, as the diversity and depth of the generating fleet has declined, expanded reliance on natural gas has exposed winter gas deliverability risk.

- Finally, severe weather systems increasingly stress the grid. Recent winter storms and prolonged heat domes tell us that extreme events are no longer rare.

Need for Resource Adequacy Modernization

Turning to solutions, let me briefly summarize some specific actions we can cover more fully in discussion.

First, we need to modernize the design basis of today's grid beyond the outdated 1-in-10 standard. We need a design basis that reflects the contemporary realities of fuel supply limitations, common condition and common mode failures, and account for the additional complications presented by load growth. The design basis must be multi-dimensional and target acceptable levels of risk for outage frequency, magnitude, and duration. This multi-metric approach would create a planning paradigm based on energy assurance–—not just capacity—with better understanding of fuel and extreme weather risks.

And second, we need a consistent approach to accrediting capacity for its broad reliability contributions. This approach could then be used by FERC and market operators to design appropriate compensation mechanisms and better value interregional transfer capability.

NERC's Role

I'll close by noting that while these needs are most acute in the market areas, they are common across all planning regimes. NERC stands ready to work with industry and the Commission to outline standardized approaches to adequacy criteria and move this ball forward.