The 2024 IERE-SwRI San Antonio Energy Transition Workshop
May 13–16, 2024

A Changing Risk Environment Requires Extraordinary Action —A Bulk Power System Reliability Perspective

Mark G. Lauby
Senior Vice President and Chief Engineer, NERC
Atlanta, Georgia

Keywords: *(Bulk Power System, Reliability, Artificial Intelligence, Cyber Secure Design)*

Abstract

As the energy transition gains momentum, it presents unique hurdles for grid operators and managers. These challenges encompass the integration of variable renewable energy sources, grid stability and reliability concerns, and the need to modernize infrastructure to accommodate the evolving energy landscape. By confronting these roadblocks, the transmission and distribution sector can devise innovative strategies and adopt advanced technologies to ensure the efficient integration of renewables, enhance grid flexibility and maintain a reliable power supply. Overcoming these challenges is crucial for realizing the vision of a cleaner, more sustainable energy future and achieving the collective goals of a greener grid.

In the coming decade this means substantial investments in renewable resources can be expected creating new opportunities and challenges for equipment testing. Some of this new equipment will require modernized testing standards/training requirements. This will present challenges such as integrating results from multiple vendors to create useful information that is actionable by customers, without compromising accuracy. Furthermore, customers may not have the personnel and expertise to synthesize testing results provided by multiple sources. Consequently, testing technologies will also need to evolve to support asset management programs and focus on services, measurement, and automation. And today, the role of Artificial Intelligence, the increased need for automation and cyber secure designs are just some of the many additional factors to be considered in this evolution. The big question is, how can the testing industry step up its game to support higher levels of reliability and compliance as the electric sector transitions to the electrification of everything?

Note: This document will be opened to the participants on IERE website before the Workshop and opened to the public afterward.