

RELIABILITY IMPACTS PERFORMANCE:

DISTRIBUTED ENERGY RESOURCES AND THE EVOLVING GRID

The use of distributed energy resources (DERs), such as wind and solar, is growing significantly, and the grid is evolving into a bi-directional system to support this growth. In many areas, distribution systems are not equipped to handle this transformation, and building on a weak foundation leads to problems. Grid reliability is crucial to ensuring DERs can effectively deliver power to customers.

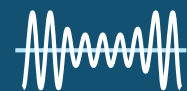


RISKS



FREQUENT MOMENTARY OUTAGES

A blink or brief interruption can cause wind and solar generation inverters to trip offline. This contributes to a partial outage at the distributed energy site and loss of revenue for the DER owner.



VOLTAGE VARIATIONS

Loss of generation leads to undesirable swings in voltage on entire feeders, particularly in systems that have difficulty managing a large volume of wind and solar generation assets.



FAULT-DETECTION CHALLENGES

A fault receives current from a nearby DER, which reduces substation fault-current flow. This makes substation fault detection challenging and delays or reduces protection response and effectiveness.



SOLUTIONS



ADVANCED SWITCHING & PROTECTION TECHNOLOGY

Advanced protection technology can identify, isolate, and eliminate momentary outages—keeping DER inverters online while lessening the chance of load swings.



INCREASING SEGMENTATION OF DISTRIBUTION LATERALS AND FEEDERS

Adding segmentation to distribution systems using accurate protection technology can improve fault detection, enable quick response to localize faults, and eliminate the impact of DER loss.



ADVANCED RESTORATION SYSTEMS

Advanced switching and protection technology can enable DERs to resume generation to the grid soon after faults are isolated by reconnecting back to alternative feeds quickly.

Want to discuss strategies for improving reliability?
Contact us for opportunities to conduct a power system study.

CONTACT US
at sandc.com

