

Announcement

NERC Continues Work on Sharing Potential Risks, Recommendations on Inverter Settings through Reports, Webinars and Industry Alerts

May 2, 2018

ATLANTA — Enhancing and improving the reliability and security of the bulk power system is the hallmark of NERC's work as the Electric Reliability Organization. NERC does this in a variety of ways, one of which is the identification, analysis and sharing of information regarding potential risks to the grid. A recent example of how NERC is assuring the effective and efficient reduction of risks to the grid is the work related to the performance of inverter-based resources connected to the bulk power system.

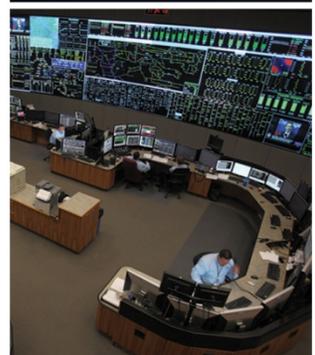
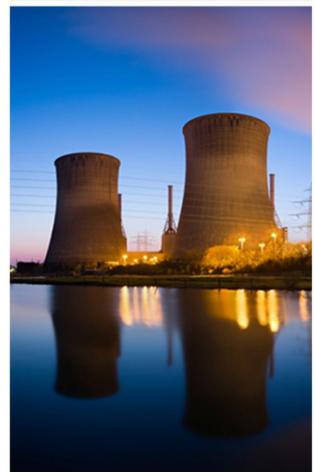
NERC conducted disturbance analyses of the Blue Cut and Canyon 2 fires in Southern California, which identified potential susceptibility of solar photovoltaic inverter tripping and reduction of output during these disturbances. NERC and the Western Electricity Coordinating Council launched a task force to identify the primary causes of the August 2016 Blue Cut disturbance, leading to the publication of the [Blue Cut Fire Disturbance Report](#). The report identified potential risks to the reliability of the bulk power system, including erroneous frequency-based tripping in some inverters and the use of momentary cessation used by inverters nearly across the fleet.

Once these issues were identified through the event analysis, NERC began outreach with industry and vendors to educate them on the potential risks and mitigation strategies. NERC posted a Level 2 alert — [Loss of Solar Resources during Transmission Disturbances due to Inverter Settings](#) — in June 2017, which required a response from recipients and recommended specific actions for registered entities to address and mitigate these adverse characteristics observed in bulk power system-connected solar photovoltaic resources.

Meanwhile, NERC formed the [Inverter-Based Resource Performance Task Force](#) to develop guidelines and recommended practices for inverter-based resources connected to the bulk power system. The task force recently completed the initial

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draft of the *Reliability Guideline: BPS-Connected Inverter-Based Resource Performance*, which will be released for industry comment soon and is expected to be published by September 2018.

The task force identified causes of the October 2017 Canyon 2 disturbance, leading to the publication of the [Canyon 2 Fire Disturbance Report](#). The report focused on voltage-related tripping actions in inverter-based resources and the continued use of momentary cessation.

Most recently, NERC posted a second Level 2 alert — [Loss of Solar Resources during Transmission Disturbances due to Inverter Settings – II](#) — that requires industry to respond for more data collection and recommends mitigating actions to address voltage-related tripping, improvements in dynamic modeling and mitigation of momentary cessation. These recommendations are intended to apply to all solar photovoltaic resources connected to the bulk power system.

To further awareness, NERC partnered with the Electric Power Research Institute, the North American Transmission Forum and the Utility Variable-Generation Integration Group to conduct a comprehensive [webinar series](#) related to inverter-based resources. The webinars, which began in March and will continue through June, focus on the increasing penetration of inverter-based resources in the bulk power system as well as in distributed energy resources. Each webinar has attracted more than 1,000 participants, demonstrating industry’s increasing focus in these areas.

“The increasing penetration of inverter-based resources, including renewable energy resources, presents many new opportunities as well as challenges in planning and operating a reliable bulk power system,” said Ryan Quint, senior manager of Advanced Analytics and Modeling. “It is imperative to reliability of the grid that these challenges be communicated across industry and that industry works collaboratively to address these issues. In our role as the ERO, we are continuously monitoring and preparing for the transformation and evolution of the grid.”

NERC, working collaboratively with industry, has taken the initial steps to better understand the changing resource mix and assure reliability of the bulk power system as the grid continues to evolve. This includes identifying faint signals, addressing emerging potential reliability risks and developing mitigating steps with industry stakeholders. NERC will continue analyzing grid events, working closely with the Inverter-Based Resource Performance Task Force and other industry forums to communicate these issues across industry.

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The vision for the Electric Reliability Organization (ERO) Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the eight Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.