



Inverter-Based Resource Disturbance Analysis

February 15, 2018

On February 15, NERC hosted the first in a series of webinars titled “Inverter-Based Resource Disturbance Analysis Key Findings and Recommendations” which highlights the work of NERC’s Inverter-Based Resource Performance Task Force (IRPTF). The webinar focused on the IRPTF’s analysis of two recent system events in Southern California 1) [the Blue Cut fire event](#) where approximately 1,200 MW of solar resources tripped on Aug. 16, 2016 primarily due to frequency excursions and 2) [the Canyon 2 Fire disturbance](#) that occurred on Oct. 9, 2017 which shed about 900 MW primarily due to under voltage tripping. NERC issued a disturbance report regarding the Canyon 2 disturbance on February 21st, and is planning to release a NERC alert in the upcoming weeks that will seek to collect data from inverter-based generators.

1. Some of the findings from the February NERC Disturbance Report include:
 - a. The transient stability models currently used to model inverter-based resources in interconnection-wide studies do not sufficiently capture the effects of momentary cessation.
 - b. For faults at critical locations in the Western Interconnection, a three-phase bolted fault could cause more than 9,000 MW of solar PV resources to enter momentary cessation. The voltage depression caused by a fault at a 500 kV bus has a widespread impact on grid voltage during on-fault conditions and can be felt by solar PV resources across a large geographic area.
 - c. Potential stability issues may exist in the Western Interconnection, particularly under daytime summer conditions where electric demand is higher, major interties are more heavily loaded, and reactive reserves are reduced.
2. NERC is planning to release a NERC Alert with likely mandatory reporting in March 2018, regarding:
 - a. Mitigation of momentary cessation
 - b. Voltage protective control functions
 - c. PRC-024 curve interpretation
 - d. Transient overvoltage settings
3. There is also a strong possibility PRC-024 will be reformed. NERC will likely move the bounds for instantaneous tripping and highlight that areas outside of the “no trip zones” are NOT must-trip areas. In other words, if areas outside the “no trip zones” do not pose a risk to equipment, inverter-based generators should maintain trip settings well outside of the “no trip zones.”

Questions? We can help. Don’t hesitate to reach out:

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