



NERC Lesson Learned and Webinar Announcement



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NERC Lesson Learned: Auxiliary Power Loss to STATCOM Leads to UVLS Operation

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- Voltage disturbance led to loss of redundant auxiliary cooling system power sources for a static synchronous compensator (STATCOM), causing the STATCOM to trip
- Both auxiliary cooling power supplies fed from same high-voltage substation
- Loss of STATCOM exacerbated a low-voltage condition on the transmission system
- Undervoltage load shed (UVLS) relays on distribution feeders in the area tripped shedding 92 MW of firm load

- STATCOM auxiliary power critical to operating cooling system
 - Two pump motors: one cooling pump active / other standby
 - If power is disturbed, transfer switch to backup feed and pump
- A post insulator for a 138 kV transmission line failed, causing the line to fall across the 138 kV bus at the substation
 - Protection misoperations caused loss of 2 additional 138 kV lines
- +/- 150 MVAR STATCOM approximately 22 miles from the faulted substation bus

- Both of the auxiliary power supplies to the STATCOM's transfer switch were fed from the same transmission source
- Disturbance affected both feeds causing the transfer to fail and the cooling system to trip off, tripping the STATCOM
- Trip of STATCOM exacerbated the low-voltage condition in the area, causing the loss of an additional 57 MVAR capacitor bank
- Undervoltage load shed relays on distribution feeders in the area, set at 0.85 per unit with a two second time delay, responded to the low voltage and tripped 92 MW of firm load

- An uninterruptible power supply (UPS) was installed to supply the STATCOM auxiliary equipment

- Design philosophy for a device that maintains voltage should ensure that a voltage disturbance cannot prevent the device from functioning as intended
- Proper system design should ensure that auxiliary power sources are redundant and fed from sources that are electrically separated from areas that need STATCOM voltage support
 - If that is not feasible, a UPS should be considered

NERC Webinar Announcement: Winter Preparation for Severe Cold Weather

- September 7, 2017 | 2:00 – 3:00 p.m. ET
- NERC will conduct a webinar to prepare for severe cold weather
- Provide materials to assist in preparation for the upcoming winter weather forecasts and entity cold weather preparedness
- Webinar will provide an overview of current reference materials, lessons learned from previous extreme cold weather events, and ready to use training packages
- Information will also be shared from the 2017-18 Winter Reliability Assessment

- January 2014 Polar Vortex Review
- Southwest Cold Weather Event Report (2011)
- Lessons Learned from Southwest Cold Weather Event
- Previous Cold Weather Event Analysis
- Reliability Guideline: Generating Unit Winter Weather Readiness
- Winter Reliability Assessment

- Webinar Registration:
<https://cc.readytalk.com/r/nfgwbkc9zorl&eom>
- Material summaries to be covered at October SOS meeting