

Voltage Control

Background

This 1-day class is designed for real-time system operating personnel. The class covers the Standards, actions, and principles associated with maintaining voltage control on the bulk power system. It consists of lecture, group and individual exercises, and use of a power system simulator for demonstration and evaluation.

Course Level

Not Applicable

Target Audience

This course is intended for real-time system operators and support personnel operating on the Bulk Electric System who wishes to expand their knowledge and enhance their related skills associated with system voltage control. It is intended to provide attendees with the necessary training to understand the concepts and utilize the skills in performing their day-to-day tasks.

NERC Continuing Education Hours

8.0 CEHs – Total
1.0 CEHs – Standards
8.0 CEHs – Ops Topics
4.0 CEHs – Sim

NERC Emergency Training Requirement

8.0 hours of Emergency Operations

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Class Content

The class modules' content includes:

- Reactive Power
- Voltage Control
- Voltage Stability
- System Operator Actions
- Applicable NERC Standard requirements are integrated throughout the modules

Reactive Power

The Reactive Power segment defines the various types of power and the role of reactive power in the operation of the electric system. The module will then identify the various sources of reactive power that exist on the electric system and the principles of operation for these sources.

Voltage Control

The module covers the concepts of voltage control. It will step through the causes of low voltage and high voltage conditions, as well as the effects that each condition has on equipment and the reliable operation of the electric system. The class will then step through the use of voltage control equipment as a means for controlling system voltages.

Voltage Stability

The module will address the elements of voltage stability. It will define the three types of voltage instability: long term, classical, and transient. The module will then proceed to identify the techniques to assist in preventing voltage instability from occurring.

System Operator Actions

The module addresses the actions available to the System Operator for utilization in maintaining system voltage control. Operator actions will be identified and students will demonstrate these actions in a series of simulator scenarios that will require the mitigation of both high and low voltage conditions and will culminate with a demonstration of system voltage collapse.

Classroom Schedule

Day 1 - 8:00 AM to 5:00 PM (Lunch provided)

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Attendee Requirements

Attendees must sign-in for the training activity in accordance with the attendance verification process stated:

- Attendees are required to sign-in on the course sign-in sheet
- Attendees are required to provide their NERC SO Certification # on the sign-in sheet, if applicable
- Attendees are required to provide a photo ID as proof of identity
- Attendees must participate in all course activities
- Attendees must complete the activity assessment
- Attendees must submit a course evaluation form

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