



# **Emergency Identification and Mitigation**

## **Background**

This 2-day class is designed for real-time system operating personnel. The workshop is comprised of three training modules covering the areas of: NERC Policy related to Emergency Operations, Critical Thinking Concepts, and Emergency Identification and Mitigation. The course consists of lecture, group and individual exercises, and use of a power system simulator for demonstration.

## **Course Level**

Tier 1: Operators with less than 5 years experience operating on the electric system in system operations or those who wish to refresh basic operating principles related to system emergencies.

### **Associated Tier II course:**

Emergency Operations: Thinking Our Way Through!

## **Target Audience**

This course is intended for real-time system operators and support personnel operating on the Bulk Electric System with less than 5 years experience or who wish to expand their knowledge and enhance their related skills. 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**

16.0 CEHs – Total  
3.0 CEHs – Standards  
16.0 CEHs – Ops Topics  
3.0 CEHs – Sim

## **NERC Emergency Training Requirement**

13.0 hours of Emergency Operations

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## **Emergency Identification and Mitigation**

### **Class Content**

The course modules' content includes:

#### ***NERC Standards***

The NERC Standards module provides an overview to the following standards related to system emergencies: EOP-001-0 Emergency Operations Planning, EOP-002-0 Capacity and Energy Emergencies, EOP-003-0 Load Shedding Plans, EOP-004-0 Disturbance Reporting, EOP-005-0 System Restoration Plans, EOP-006-0 Reliability Coordination – System Restoration, EOP-007-0 Establish, Maintain, and Document a Regional Blackstart Capability Plan, EOP-008-0 Plans for Loss of Control Center Functionality, EOP-009-0 Documentation of Blackstart Generating Unit Test Results, and CIP-001-0 Sabotage Reporting.

#### ***Critical Concepts***

The Critical Concepts module reviews the concepts of critical thinking and its application to problems in system operations. The process is used in identifying, verifying, and mitigating emergency situations when operating on the bulk electric system.

#### ***Emergency Identification and Mitigation***

The Emergency Identification and Mitigation module steps thru the process of identifying emergency situations in system operations related to:

- Voltage Collapse – what it is, what are the causes, how to identify, and actions to prevent
- VAR flow and its effects
- MW Line Loading - What are the causes of excess loading, types of loading problems, how to identify, and actions to prevent
- Generation - what types of emergencies occur, what are the causes, how to identify, and actions to mitigate
- System Protection - what is it, what purpose does it serve, and failures that occur
- Voltage Schedules - what are they, impacts of not maintaining, and actions to maintain

This module will utilize a system simulator to demonstrate identification and monitoring the impacts of actions implemented.

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## **Emergency Identification and Mitigation**

### **Classroom Schedule**

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

Day 2 - 8:00 AM to 5:00 PM (Lunch provided)

### **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 successfully complete the activity assessment and obtain a passing grade on the assessment. If the attendee is unsuccessful in the initial assessment, a second opportunity to successfully complete the assessment following remedial instruction will be given.
- Attendees must submit a course evaluation form

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