



## **Congestion Management**

### **Background**

This 1-day class is designed for real-time system operating personnel. The class covers the causes, actions, and principles associated with controlling congestion 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 congestion management. 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  
0.0 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:

- Real Power Transfer
- Transfer Limitations
- Mitigation Techniques and Equipment
- System Operator Actions

#### ***Real Power Transfer***

The Real Power segment defines the various types of power and the role of real power in the operation of the electric system. The module will then identify the principles of power flow and how it occurs and the factors that affect active power flow.

#### ***Transfer Limitations***

The module covers the recognition of power flow or power transfer limits. It will then define the various types of limits: thermal, angle stability, and voltage limits. The module will then explore the determination of power transfer limits.

#### ***Mitigation Techniques and Equipment***

The module will address the equipment utilized and the mitigating techniques to control congestion on the transmission system. This will include the use of distribution/generation shift factors, generation resources, interchange adjustments, non-cost solutions, and market solutions.

#### ***System Operator Actions***

The module addresses the actions available to the System Operator for utilization in controlling congestion on the transmission system. Operator actions will be identified and students will demonstrate these actions in a series of simulator scenarios that will require the mitigation of congestion on a generic simulator system.

### **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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