



STAR Strategic Team Awareness and Response Classroom Description

CLASSROOM

System Operations Success Intl Preparing Energy Professionals for Tomorrow

Strategic Team Awareness and Response (STAR) is a two-day, 16-hour, instructor-led course in which exercises and class participation are utilized to improve or enhance the ability of system operators to understand and manage generator and transmission facility operations during both normal and emergency conditions. Participants receive instruction on preventing as well as identifying and resolving various simulated scenarios using the *PowerSimulator*.

The course is split into a two-day schedule:

Day 1: Team Decision Making

The first day of instruction focuses on a review of basic concepts of the bulk electric systems, as well as the prevention, identification and resolution of power system emergencies.

Participants will learn to:

- Apply recognition-primed decision making techniques when evaluating power system emergencies in a team environment.
- Describe the roles and responsibilities of a reliability coordinator as well as transmission, generator and balancing operator during a power emergency.
- Describe how to communicate effectively and accurately with all team members during a power system emergency.
- Describe the major components of a power system
- Identify potential problem areas and situations in a power system
- Perform basic switching operations safely and reliably.
- Describe how voltage collapse occurs.
- Explain several methods of avoiding voltage collapse under various contingencies.
- Demonstrate how to implement manual load shedding to prevent emergency situations in compliance with NERC reliability standards.
- Operate the *PowerSimulator* to identify and resolve simulated power system emergencies.

Day 2: Analysis of Major Disturbances and System Restoration Procedures

The second day of instruction will focus on the components of system restoration and emergency procedures.

Participants will learn to:

- Demonstrate how to analyze and respond to major disturbances in the power system.

- Demonstrate correct usage of system operation techniques to survive the most severe single contingency and probable multiple contingencies.
- Demonstrate how to restore system to complete operation under various scenarios.
- Communicate clearly and effectively with all team members when resolving power system disturbances.

Teaching Methods

Participants are aligned into teams and work together to effectively communicate, analyze and resolve simulated scenarios that mimic actual power system problems and emergencies.

The simulated scenarios are based on actual cases from the related control area where resolution was hampered by poor team interaction or communication. When possible, the instructor uses simulations relevant to the immediate control area, such as hurricane simulations in Florida, earthquake simulations in California, etc. For this reason, scenarios will vary from class to class. The instructor may also add contingencies (such as weather, cascading events or unplanned outages) to the scenario to further observe individual and team responses.

During debriefings the instructor facilitates discussion on what participants observed and experienced during the simulation, with a focus on 'situation analysis' and 'action scripts' developed and used by the team. This group feedback is effective because it allows participants to analyze and critique individual and group decision-making processes while also reviewing operating principles, system performance and design characteristics.

CREDITS AVAILABLE: 16 : EO 16 : SIM 16 : CEH

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