

Human Performance Improvement

Background

This on-line course is intended to provide participants with necessary tools and understanding of human performance and how it can be improved and utilized in fulfilling their everyday role in real-time operations. The course will identify the meaning of H-P-I, evaluate consideration in an event analysis, identify steps for reducing error, explore elements that influence performance, and present human performance tools. Participants will be required to utilize these principles and tools in approaching system issues that require mitigation. Exercises will utilize the Finist Simulator system. The situations presented in the exercises will deal with various system events.

Target Audience

The class is intended for System Operators and System Personnel who wish to expand their knowledge of Human Performance Improvement and identify principles that can be utilized to improve individual and team performance.

NERC Continuing Education Hours

16.0 CEHs – Total

16.0 CEHs – Operating Topics

0.0 CEHs – Standards

8.0 CEHs – Simulation

NERC Emergency Training Requirement

16.0 hours of Emergency Operations

Module Objectives

- Define the meaning of H-P-I
- Evaluate the steps for consideration in an event analysis
- List actions that can be implemented for reducing error
- Identify the elements that influence performance
- Describe human performance tools, for individuals and work teams

Class Content

The following content will be delivered over a 2-day period. The class is developed on the principles identified in the Department of Energy – Human Performance Improvement Handbook. The principles identified in the handbook are adapted to the world of System Operations and all exercises included in the class delivery are System Operations related. The content of the lecture portion of the class activities are identified in the outlines provided. This content includes human performance, event analysis, reducing error, performance influences, error prevention principles and tools, and human performance tools for individuals and work teams. Integrated throughout the course will be numerous simulator activities that are inclusive of the HPI principles discussed. Exercises involving system events will be completed utilizing the OTS Cloud Finist simulator. The course is intended to consist of approximately 50% of lecture and 50% of simulation.

Course Outline

- 1) Introduction to Human Performance
 - a) Human Performance and Events Overview
 - b) Human Performance
 - c) Anatomy of an Event
 - d) Strategic Approach for Human Performance
 - e) Principles of Human Performance
- 2) Reducing Error
 - a) Human Fallibility
- 3) Performance Modes
 - a) Information Processing, Memory, and Attention
 - b) Generic Error Model System (GEMS)
 - c) Skill-Based Performance
 - d) Rule-Based Performance
 - e) Knowledge-Based Performance
- 4) Error-Likely Situations
 - a) Error Precursors
 - b) Common Error Precursors
 - c) Error Prevention Tools
- 5) Managing Controls
 - a) Controls
 - b) Severity of Events
 - c) Reliability of Controls

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- d) Performance Improvement Processes
- e) Human Performance Improvement Plans
- 6) Human Performance Tools for Individuals
 - a) Task Preview
 - b) Job-site Review
 - c) Questioning Attitude – at activity level
 - d) Questioning Attitude – work planning and preparation
 - e) Pausing when Unsure
 - f) Self-Checking
 - g) Procedure Use and Adherence
 - h) Assumption Validation
 - i) Effective Communication
 - j) Place-Keeping
 - k) Do Not Disturb Sign
- 7) Human Performance Tools for Work Teams
 - a) Pre-Job Briefing
 - b) Checking and Verifications
 - c) Flagging
 - d) Turnover
 - e) Post-Job Review

Attendee Requirements

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

- Attendees are required to sign-in using their designated sign-in and password
- Attendees must complete all course activities
- Attendees must successfully complete the activity assessment
- Attendees must submit a course evaluation form