



QLARITY

CONTENT CATALOGUE

2026 - 2027

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Please note that catalogue content is updated frequently and is subject to change. While specific details may vary, the core content of the materials will remain consistent.

Introduction

Welcome to Our Training Content Catalogue

This catalogue is designed to guide you through the materials available to grow your training program and support the growth, strengthen the skills, and unlock the potential of your employees. Whether you are looking to develop basic competencies or deepen expertise, our content library provides the resources and courses to support that.

We invite you to explore the learning experiences that will help you move confidently toward your goals.

Your next step forward starts here.



To access this content:

- Customers participating in the Qlarity Partnership Bundles, may request the resource from the Focus Learning Customer Success Team or your TAM.
- Customers are not participating in the Qlarity Partnership Bundles may request a quote to purchase individual training content and receive more information about the Qlarity Partnership Bundles.

**Find contact information on the last page of this catalogue.*

Job and Task Analysis (JTA) Resources



Summary

The Job and Task Analysis (JTA) resources included in this catalogue outline industry-standard job tasks and enabling objectives for each defined role.

Required Subscription Credits: 3 per resource

Delivery Method: Paper-based (Microsoft Word or PDF)

Job and Task (JTA) Analysis Resources

- Strawman Task List for Distribution System Operator
- Strawman Task List for Transmission System Operator
- Strawman Task List for Generator Operator
- Strawman Task List for IT System Analyst
- Strawman Task List for Technical Analyst
- Starter Enabling Objective List for Distribution System Operator
- Starter Enabling Objective List for Transmission System Operator

Training Program Design Resources (1 of 2)



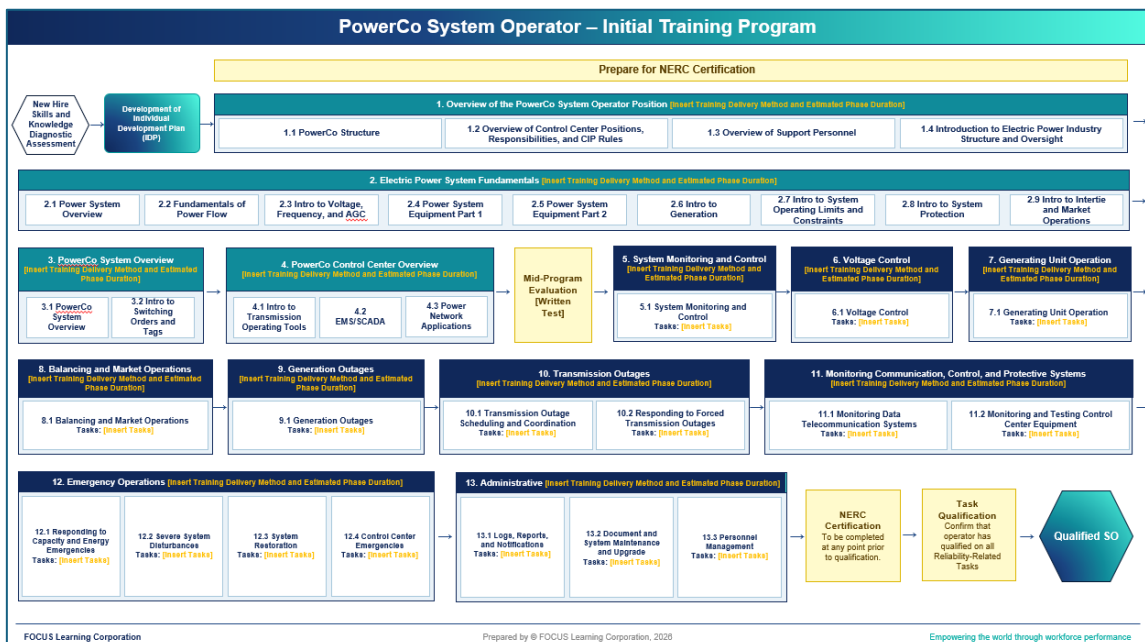
Summary

The Training Program Design resources included in this catalogue offer foundational documents to support the development of a training program map and streamline the process for applying for Continuing Education Hours. The provided Individual Learning Activity (ILA) applications are intended to be used in conjunction with the courses in the Clarity Training Library.

Required Subscription Credits: 2 per resource

Training Program Design Resources

- Starter Initial Training Program Map PowerPoint Template
Delivery Method: PowerPoint



Training Program Design Resources (2 of 2)



Training Program Design Resources

- Individual Learning Activities (ILA) Applications
Delivery Method: Paper-based (Microsoft Word or PDF)

Control Center Emergencies Course ILA Application

Event Reporting ILA Course Application

Introduction to Generation Course ILA Application

Introduction to Load Tap Changers Course ILA Application

Introduction to Structured On-the-Job Training Course ILA Application

Generator Governor Control Course ILA Application

Introduction to Dynamic Line Rating (DLR) Technology Course ILA Application

Introduction to Synchronization Course ILA Application

Time Error Correction Course ILA Application

Introduction to System Monitoring & Control (Part 1) Course ILA Application

Introduction to System Monitoring & Control (Part 2) Course ILA Application

Introduction to System Monitoring & Control (Part 3) Course ILA Application

Equipment Operations During Restorative Conditions Course ILA Application

Introduction to System Protection (Part 1) Course ILA Application

Introduction to System Protection (Part 2) Course ILA Application

Introduction to System Disturbances and Emergencies Course ILA Application

Shift Turnover Process Course ILA Application

System Operational Processes Course ILA Application

Course Training Materials



Summary

The Course Training Materials included in this catalogue offer fully developed computer-based training modules, Human Performance Improvement (HPI) training materials, and comprehensive test banks addressing a wide range of foundational topics in the utilities industry.

Below is a complete list of available materials. Details about each offering will be included in the following pages.

How-to-Guides

- How to Develop On-The-Job Training Guides (OJT)

Self-Study Guide Computer-Based Trainings (CBTs)

- Control Center Emergencies
- Event Reporting
- Introduction to Generation
- Introduction to Load Tap Changers
- Generator Governor Control
- Introduction to Dynamic Line Rating (DLR)
- Introduction to Synchronization
- Time Error Correction
- Introduction to System Monitoring & Control (Part 1)
- Introduction to System Monitoring & Control (Part 2)
- Introduction to System Monitoring & Control (Part 3)
- Equipment Operations During Restorative Conditions
- Introduction to System Protection (Part 1)
- Introduction to System Protection (Part 2)
- Introduction to System Disturbances and Emergencies
- Shift Turnover Process
- System Operational Processes

Human Performance Improvement (HPI) Training

- HPI Microlearning CBT: Questioning Attitude
- HPI Microlearning CBT: Stop When Unsure
- HPI Microlearning CBT: STAR
- HPI Microlearning CBT: Peer-Checking
- HPI Microlearning CBT: Three-Part Communication
- HPI Microlearning CBT: Conservative Decision-Making
- HPI Microlearning CBT: Place-Keeping
- HPI Microlearning CBT: Procedure Use and Adherence
- HPI Microlearning CBT: Tailboards

Test Banks

- Capacity Emergencies
- CIP-FERC
- Communication Skills
- Generation Operations (Part 1)
- Generation Operations (Part 2)
- System Restoration
- Control Center Communications, Equipment, and Emergencies
- System Disturbances
- Generation Operations and Monitoring (Combined)
- Protective Systems and Data

How-to-Guide

How to Develop On-The-Job Training (OJT) Guides

Required Subscription Credits: 2

Delivery Method: Paper-based (Microsoft Word or PDF)

Summary: This how-to guide will provide detailed instructions describing the methods for developing on-the-job training guides to be used in your training program.



Self-Study Guide Computer-Based Training (CBT)



Control Center Emergencies

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge in the processes and procedures for Control Center malfunctions and emergencies. Topics include responding to a loss of computer system functions, monitoring communications, identifying and reporting physical or cyber-related events, and Control Center evacuation.

Learning Objectives:

- Recall computer malfunctions that affect Control Center operations
- Describe the SCADA computer failover systems
- Describe procedures for operating during loss of SCADA and other computer systems
- Describe the notification process for responding to different computer malfunctions including callout procedures for responsible personnel
- State NERC requirements for telecommunication systems used for voice and data communication
- Use control center tools for monitoring/controlling telecommunication systems
- Identify the procedure(s) that addresses the requirements of NERC COM 001, Communications
- Describe typical malfunctions of the telecommunication or fiber communication system and consequences for system operations
- Describe the required response to telecommunication or fiber malfunctions
- Identify personnel to contact for different types of outages or emergencies
- Describe requirements and procedures for testing the telecommunication systems
- List indications of suspected physical or cyber events
- Describe actions if a physical or cyber event is detected
- State NERC requirements governing reporting of physical or cyber events
- State NERC requirements for responding to loss of control center functionality (EOP-008)
- Describe conditions leading to Primary Control Center evacuation
- Identify and describe the Disaster Recovery Center Operating Plan that addresses NERC Standard EOP-008, Loss of Control Center Functionality
- Describe procedures to transfer control from the Primary Control Center to the Backup Control Center (BUCC)
- Describe how to test DRC functionality using the Backup Control Center (BUCC) Test Checklist

Self-Study Guide Computer-Based Training (CBT)



Event Reporting

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge and skills needed to comply with the requirements for Event Reporting.

Learning Objectives:

- Identify the event reporting responsibilities of Control Center personnel
- Identify the parties the System Operator must initially notify of potential reportable events
- Identify events that require a report to NERC or the DOE and the required time frames for submittal
- Describe the types of attacks that could be part of a cyber event
- List the parties that the System Operator must notify during a physical event involving actual or suspected intentional human action
- List the parties that the System Operator must notify during a cyber event
- Identify the information that must be obtained upon receiving a report of a suspicious physical or cyber event

Self-Study Guide Computer-Based Training (CBT)



Introduction to Generation

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides fundamental understanding of varied generation assets and their operational aspects including a variety of generation assets available to the System Operator and their associated operational capabilities.

Learning Objectives:

- List sources of energy (thermal, nuclear, hydro, kinetic, geothermal, etc.) used by the prime mover of a generating unit
- List advantages and disadvantages of different energy sources (cost, availability, environment)
- Describe processes/systems for energy conversion (combustion, fission, electric generator, solid state inverters) and their relative efficiency
- Describe the principle of operation of an electric generator
- Describe the basic components of an electric generator: rotor, stator, slip rings, cooling
- State the relationship between design speed and number of poles in a generator
- State the purpose of the generator's excitation system
- Describe the major components of the excitation system and explain the function of the automatic voltage regulator (AVR)
- Explain manual and automatic modes of voltage regulation
- Describe typical malfunctions of generator voltage regulators and the required response
- State the purpose of a power system stabilizer (PSS)
- Explain possible consequences if PSSs are out of service
- Sketch the shape of a typical reactive capability curve and explain the significance of each segment
- Use the reactive capability curve to identify the limits of operation for a generating unit (field winding limit, MVA rating, stator winding limit, turbine limit)
- State the purpose of a turbine
- Explain the principle of operation of different types of turbines (e.g., steam, impulse, reaction) and their applications
- Identify frequency operating limits for steam and combustion turbines and the consequences of off-frequency operation
- Identify the responsibility of the Control Center Operating Personnel in Event State the purpose of governor control
- Explain the principle of operation of governor control systems
- Identify and define different types of generating unit limits (normal, emergency, etc.)
- Define generating unit ramp rate and explain its importance for power system operation
- State the conditions under which a generating unit can operate islanded to its own load
- State factors affecting a generating unit's response to dispatch instructions

Self-Study Guide Computer-Based Training (CBT)



Introduction to Load Tap Changers

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides fundamental understanding of the process for monitoring the transmission system and responding to issues with respect to voltage control and the operation of load tap changers.

Learning Objectives:

- Describe the purpose of Load Tap Changers (LTC)
- Describe the basic construction and principle of operation of tap changers
- Describe the general settings of Load Tap Changers (LTC)
- Explain the tap changer control modes and how they are implemented
- Identify the location of LTCs on the electric system and the control options for each
- Differentiate between Load Tap Changers and No-Load Tap Changers
- Explain the reasons for blocking LTCs and turning off the instantaneous and reclosing elements of relays prior to performing switching activities
- Identify situation(s) that may permit the implementation of switching without blocking LTCs
- Explain the consequences for implementing the incorrect method of blocking LTCs
- Given examples of switching scenarios that operators may encounter, identify the correct method for blocking LTCs for each scenario

Self-Study Guide Computer-Based Training (CBT)



Generator Governor Control

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides fundamental understanding of key aspects of generator governor control and the concept of droop. Additional topics will include Automatic Generation Control (AGC) system components and AGC control modes.

Learning Objectives:

- Recall the load/frequency relationship
- Recall the general operation of centrifugal ball-head and electronic governors
- Predict generator and/or system response when adding or removing load in a specific generator mode or changing the load settings of one or more governors
- Match generator governor modes with the related control function or characteristic
- Recall typical industry thumb rules and practices associated with generator operations and system restoration
- Predict generator and/or system response when adding or removing load in a specific generator mode or changing the load settings of one or more governors
- Recall the basic function of an AGC System and the difference between isolated and interconnected systems
- Recall the basic components of an AGC System
- Define the three modes of AGC control (constant frequency, constant net interchange, and tie-line bias) and state applications for each (BAL-003/R3)

Self-Study Guide Computer-Based Training (CBT)



Introduction to Dynamic Line Rating (DLR) Technology

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides fundamental understanding of Dynamic Line Rating (DLR) technology and how it can assist and impact monitoring and operation of the transmission system when responding to weather-related issues impacting transmission capacities.

Learning Objectives:

- Describe benefits of DLR technology
- Describe transmission congestion
- Describe transmission constraint
- Compare static line ratings and dynamic line ratings
- Recall the parameters monitored in real-time for a DLR sensor
- Explain the criteria used to determine when additional DLR sensors should be installed on a transmission line
- Recall DLR software outputs and how EMS applications use this data
- Recall how to retrieve DLR data through EMS
- Recall DLR indicators and alarms associated with EMS DLR applications
- Recall suggested operator responses to DLR alarms in EMS

Self-Study Guide Computer-Based Training (CBT)



Introduction to Synchronization

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge and skills needed to comply with synchronization concepts and processes.

Learning Objectives:

- Recall the purpose of synchronizing two or more areas (or subsystems)
- State the steps in synchronizing an island to the adjacent system (e.g., match frequency, voltage, and phase angle)

Time Error Correction

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge about the fundamental requirements for monitoring and maintaining accurate time associated with operation of the transmission system.

Learning Objectives:

- State NERC's requirements applicable to time error correction and maintaining the correct frequency
- Describe the purpose of each NERC Standards with respect to Time Error Correction
- Describe the Time Error Correction process to maintain the correct frequency
- Recall who is responsible for implementing Time Error Corrections

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Monitoring & Control (Part 1)

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to system control and operation of the Bulk Electric System (BES). Topics include MW and voltage control principles.

Learning Objectives:

- State the physical laws governing power flow (Ohm's Law, Kirchhoff's Law) and explain their application to the power system
- Use or describe distribution factors to determine the changes in power flow on transmission lines for loss (or return) of a given facility
- Explain the effect of interchange transactions on power flow
- Explain the concept of loop flow
- Explain the basis for thermal limits of power system equipment (I^2R heating; cooling mechanisms; conductor properties)
- Explain how voltage limits may limit the MW/MVA rating of a line and identify situations where this is the limiting factor
- Explain the basis for stability limits and situations where stability is the limiting factor for a transmission line or path
- Define IROL and SOL and explain how the values are determined
- Explain the use of generation shifts to control power flow
- Explain the use of phase shifting transformers (PSTs) to control power flow
- Explain the use of adjustments to interchange transactions to control power flow
- Explain the use of manual load shedding to control power flow
- Explain NERC standards regional policies/procedures governing response to actual or contingency limit violations
- Explain the relationship between reactive power flow and voltage
- Describe how reactive power flow contributes to system losses
- List typical VAR sources and identify their location on the BES
- Explain causes of high voltage on the power system, including Ferranti rise
- State consequences of high voltage
- State the relationships between voltage and load

(Learning objectives continued on next page)

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Monitoring & Control (Part 1)

Learning Objectives (continued):

- Explain causes of low voltage on the power system, including the effect of heavy power transfers
- Sketch the voltage profile along a transmission line for different line loadings and hence explain the concept of Surge Impedance Loading (SIL)
- State consequences of low voltage
- State NERC and regional requirements governing voltage limits, reactive resources, and voltage control
- Explain the use of voltage schedules and the need for coordination of voltage schedules
- Describe the use of shunt capacitors for preventing or correcting low voltage conditions
- Describe the use of reactors for preventing or correcting high voltage conditions
- Describe the use of a generator excitation system to boost or buck VAR output
- Describe the use of LTCs to control voltage, including steps to prevent the problem of circulating VARs
- Describe the use of line switching for voltage control
- Describe typical procedures for voltage control in normal operating conditions (for example, getting ahead of the voltage)
- Describe the preferred method for re-energizing a line (use strong bus)
- State the relationship between bus voltage and VAR output/absorption by capacitors/reactors
- Explain the concept of a reactive transfer limit using the PV curve
- State the difference between static and dynamic reactive reserve and identify sources of dynamic reserve
- Describe conditions under which a power system is susceptible to voltage collapse
- Recognize symptoms of voltage collapse
- Describe methods for preventing voltage collapse (for example, the need for reactive reserve)

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Monitoring & Control (Part 2)

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to system control and operation of the Bulk Electric System (BES). Topics include frequency control, governor control, and automatic generation control (AGC).

Learning Objectives:

- Explain the meaning of an Interconnection and its relationship to frequency
- List the Interconnections in North America
- State the nominal frequency of power systems in North America and expected/allowed deviations during normal operations
- Use the energy balance concept to list the causes of frequency deviations
- Use the concept of stored energy (system inertia) to explain the initial frequency response of the power system to an energy imbalance
- State the load frequency relationship or different types of loads
- Describe consequences of frequency deviations
- Describe the response of the power system to normal frequency deviations and to sudden loss of load or generation
- State the purpose and limitations of governor control
- Explain the concepts of governor droop, droop characteristics and load reference set point
- Explain how generating unit governors control frequency in an islanded system (no AGC)
- State regional requirements for governor operation including droop level and deadband
- Explain how governors work with AGC to control frequency in an interconnected system
- Describe the Frequency Response Characteristic of a Balancing Authority
- Describe the impact of governor settings on a generator's MW response to a disturbance
- State and explain NERC frequency control requirements

(Learning objectives continued on next page)

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Monitoring & Control (Part 2)

Learning Objectives (continued):

- Define NERC's Control Performance Requirements/Standards (CPS1 & 2) including BAAL; explain their purpose; and state the associated measures & levels of non-compliance
- Describe the system operators' responsibilities for CPS performance
- Describe NERC's Disturbance Control Standard (DCS)
- Explain the concept of a Balancing Authority and define the meaning of net scheduled interchange as applied to a Balancing Authority
- State the responsibilities of Balancing Authorities for frequency/generation control
- State NERC requirements governing the metered boundaries of a Balancing Authority Area
- Explain the principles of Automatic Generation Control AGC
- Describe the effect of unit control mode, response rate, and operating limits on a generating unit's response to AGC signals
- Define the three modes of AGC control (constant frequency, constant net interchange, and tie line bias) and state applications for each
- Define Area Control Error (ACE) and use the ACE formula to calculate its value, given required data
- State NERC requirements governing the ACE calculation for a Balancing Authority Area
- Explain the significance of ACE deviations
- State reasons for ACE deviations and corrective actions for each
- Explain what is meant by a dynamic schedule and explain how ACE accounts for dynamic schedules
- Explain the meaning, derivation, and importance of a Balancing Authority's frequency bias
- State NERC requirements governing frequency bias (including the allowed short method for calculating the value) and frequency bias reporting requirement
- Define system load
- State factors affecting load
- State the effect of voltage reduction on system load
- Explain the meaning and applications of interruptible loads

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Monitoring & Control (Part 3)

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to system control and operation of the Bulk Electric System (BES). Topics include the goals and mechanisms of an interconnected systems.

Learning Objectives:

- State and explain reliability goals and criteria for power system operation [first(N-1) and second (N-2) contingency operation]
- State and explain economic/market goals and criteria for power system operation
- Define an Operating Instruction issued by a Reliability Coordinator and its significance
- State steps for issuing an Operating Instruction
- Identify information related to system security that should be shared with adjacent systems and/or published as public information
- State and explain NERC requirements for next day operations planning/studies
- State and explain NERC requirements for current day analysis of regional system reliability
- State and explain NERC's requirements for coordination of current day and next day operations with other operating entities
- Identify typical sources of baseload, must run, and peaking generation
- Identify major non-conforming loads and typical operating behavior
- Identify typical effects of interchange schedules on power flows on the electric system
- Identify environmental conditions (for example, fire) that affects system operations and describe typical effects
- Identify typical voltage problems on the electric system and the conditions under which they apply
- Identify typical operating constraints on the electric system and the conditions under which they apply
- Describe the nature of local operating problems, their effects on the power system, and procedures for addressing them

Self-Study Guide Computer-Based Training (CBT)



Equipment Operations During Restorative Conditions

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to concepts and principles fundamental to responding to major system emergencies and disturbances. The focus is on equipment operations during system restoration.

Learning Objectives:

- Describe how generators provide VAR support during restoration following a major system emergency
- Recall the general rule of thumb for restoring load to an islanded generator
- Recall potential causes of frequency excursions during restoration efforts
- Describe how the use of reactive devices during restoration may help or hinder efforts
- Recall when to operate capacitors and reactors during restoration
- Describe the limitation of operating SVCs during system restoration

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Protection (Part 1)

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to system protection requirements for monitoring and response to transmission system issues including protection of various bulk power equipment.

Learning Objectives:

- State minimum requirements for protection of transmission lines
- Explain the meaning of zones of protection as applied to transmission lines
- Explain the principle of operation of pilot relaying schemes
- Explain the principle of operation and applications of Direct Underreaching Transfer Trip (DUTT)
- Explain the principle of operation of Permissive Underreaching Transfer Trip (PUTT)
- Explain the principle of operation of Permissive Overreaching Transfer Trip (POTT)
- Explain the principle of operation of Directional Comparison schemes
- Explain the principle of operation of Phase Comparison schemes
- Describe use of 'smart' relays (e.g., SELs) to locate faults on transmission lines
- Explain the principle of operation of Zone Distance relay schemes
- Explain the need for secondary relay packages on transmission lines
- State minimum requirements for transformer protection
- Explain the principle of operation and application of transformer differential protection
- Explain the principle of operation and application of transformer overload protection
- Explain the principle of operation and application of sudden pressure protection (gas sensing)
- State minimum requirements for protection of buses
- Explain the principle of operation and application of bus differential protection
- Explain the principle of operation of ground fault bus protection
- Describe typical causes of breaker failure
- Describe potential consequences of breaker failure
- Explain the operation of breaker failure protection
- State generator protection requirements (from internal faults and abnormal operating conditions)
- Describe the relay protection schemes used for generator protection (differential, loss of excitation, thermal, negative sequence, volts per Hz, generator underfrequency, unbalanced phase, reverse power, over-speed, over-excitation)

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Protection (Part 2)

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to system protection requirements for monitoring and response to transmission system issues including various special protective schemes (SPS).

Learning Objectives:

- State the purpose of UFLS
- Describe the principle of operation and typical set points for UFLS
- Explain the need for coordination of UFLS across systems
- Use control center tools to monitor UFLS/UVLS
- List applicable NERC Standards for UFLS systems (operating, testing, emergencies)
- State the purpose of and principle of operation of UVLS
- List applicable NERC Standards for UVLS systems (operating, testing, emergencies)
- State the purpose of and principle of operation of RAS
- State the principle of operation of generator rejection and runback schemes
- State the purpose of operation of reclosing schemes
- Describe how high-speed tripping/reclosing schemes contribute to system stability
- Explain the principle of operation of reclosing schemes
- State conditions when reclosing should be disabled and methods for disabling reclosing

Self-Study Guide Computer-Based Training (CBT)



Introduction to System Disturbances and Emergencies

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to the requirements for monitoring and responding to system disturbances impacting electric system operations. Additionally, this course will address the fundamental principles and requirements to respond to system emergencies and disturbances, principally aspects related to system restoration and the associated dynamic aspects to the Bulk Electric System (BES).

Learning Objectives:

- Describe the automatic response of the power system to a frequency disturbance
- Describe the dynamic/transient response of a generator to a frequency disturbance
- Describe the term 'system disturbance' and how it applies to transmission operations
- Recall various types of system disturbances and the required response
- Recall notification requirements following a system disturbance
- State the expected indications of loss of a transmission element
- State the possible causes and consequences of loss of one or more major transmission elements
- State the purpose of the Cold Weather/Extreme Weather Conditions Operating Plan
- Identify the key elements of a utility's 'no touch' guidance
- Recall situations that may lead to capacity shortages
- Recall the difference between Capacity Alerts and Warnings
- Describe how cascading outages may lead to major system disturbance(s) on the electric system
- Describe the dynamic phenomena associated with major system disturbances
- Recall principles for responding to system emergencies including blackstart
- Describe the use of various tools for evaluating system conditions following a major disturbance
- Identify the key elements that may be used to maintain situational awareness of weather and other factors that affect the BES
- State company reporting requirements as they affect system operations (e.g., *Preliminary Disturbance Report*)
- Explain DOE Preliminary reporting and follow-up reporting (Schedule 1 and Schedule 2)
- Identify events that would require completion of a system disturbance report per EOP-004 Attachment 1

Self-Study Guide Computer-Based Training (CBT)



Shift Turnover Process

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge related to gathering information and effectively conducting shift change to transfer duties and responsibilities between the outgoing and incoming operators.

Learning Objectives:

- Describe information that impacts future shift operations and should be relayed to the incoming Operator
- Recall the elements of an effective shift turnover
- Recall factors that may contribute to an effective shift turnover
- Recall the various sources of information available to prepare for and conduct an effective shift turnover
- State the purpose of the Daily Operating Log form and its role in the shift turnover process
- Describe the actions that should be performed by the incoming Operator during the shift turnover process
- Describe the actions that should be performed by the outgoing Operator during the shift turnover process

Self-Study Guide Computer-Based Training (CBT)



System Operational Processes

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides foundational knowledge for monitoring and control of the transmission system and responses to potential issues.

Learning Objectives:

- Explain the need to operate to the lowest limit when different derived operating limits are discovered on the transmission system
- Describe the process for prioritizing key alarms
- Identify time requirements for various alarm priorities
- Identify personnel to call out for various alarms
- Identify locations of callout lists for various alarms
- Recognize failed points on SCADA
- Provide examples of consequences of bad/failed data quality (e.g., bad information can be fed to RTCA)
- Demonstrate where to find RTCA results
- Describe the process for creating a PI trend
- Interpret PI displays
- Explain NERC requirements for performing a Real-Time Assessment (RTA)(TOP-001)
- Describe the responsibility of the Control Room (CR) Transmission Desk in performing an RTA
- Identify personnel responsible for creating an OPA and Operating Plan
- Describe the purpose and information provided within an OPA
- Describe the purpose and information provided within an Operating Plan
- Identify system events that would require the creation of an Operating Plan
- Describe how to identify and resolve possible issues within an Operating Plan
- Explain typical problems on neighboring systems and actions to be taken for each
- Identify typical outages that would be required to be entered into iTOA and RC Outage Coordination tool (i.e., CROW), and/or another utility-specific tool
- Explain the meaning of GMD
- Describe the causes of GMDs and their potential consequences for electric utility systems and equipment
- Describe historical examples of GMDs and lessons learned
- Provide examples of notifications sent or received through the RC Messaging System (communication, load shed, blackstart, flow gates, RTCA, and reports)

Human Performance Improvement (HPI) Training



Questioning Attitude – HPI Microlearning Computer-Based Training

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge of the HPI tool of using a “questioning attitude.”



Learning Objectives:

- Recall the purpose of Questioning Attitude
- Recall why the performance of Questioning Attitude is important to the Power Dispatcher
- Recall why failing to adopt a Questioning Attitude may have negative consequences in performance of the Power Dispatcher role
- Identify the use of Questioning Attitude during normal operations
- Recall times when it is appropriate to use Questioning Attitude

Stop When Unsure – HPI Microlearning Computer-Based Training



Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge of the HPI tool of Stopping When Unsure.

Learning Objectives:

- Recall the purpose of Stop When Unsure
- Recall why the performance of Stop When Unsure is important to the Power Dispatcher
- Recall why failing to implement Stop When Unsure may have negative consequences in performance of the Power Dispatcher role
- Identify the use of Stop When Unsure during normal operations
- Recall the Power Dispatcher's responsibility to stop work when unsure of operational impacts on the Bulk Electric System

Human Performance Improvement (HPI) Training



STAR – HPI Microlearning Computer-Based Training

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

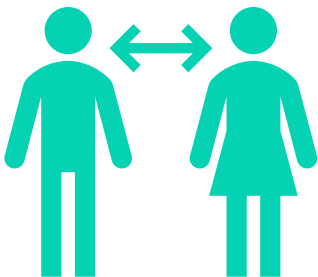
Summary: This course provides knowledge of the HPI tool of the Stop-Think-Act-Review, or STAR, method.



Learning Objectives:

- Define the STAR HPI tool and explain its purpose
- Describe instances when the STAR HPI tool should be used
- Identify the potential consequences of failing to apply the STAR HPI tool
- Effectively utilize the STAR HPI tool in applicable situations

Peer-Checking – HPI Microlearning Computer-Based Training



Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge of the HPI tool of Peer-Checking.

Learning Objectives:

- Recall the purpose of Peer-Checking
- Recall why the performance of Peer-Checking is important to the Power Dispatcher
- Recall why failing to perform a Peer Check may have negative consequences in performance of the Power Dispatcher role
- Identify the use of Peer-checking during normal operations
- Recall times when it is appropriate to implement a Peer Check

Human Performance Improvement (HPI) Training



Three-Part Communication – HPI Microlearning Computer-Based Training

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

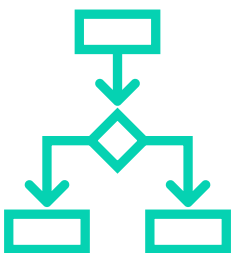
Summary: This course provides knowledge of the HPI tool of using three-part-communication to convey information.



Learning Objectives:

- Recall the purpose of three-part communication
- Recall why the performance of three-part communication may have negative consequences of the Transmission Dispatcher role
- Describe the use of three-part communication during normal operations
- Recall times when three-part communication is required

Conservative Decision-Making – HPI Microlearning Computer-Based Training



Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge of the HPI tool of Conservative Decision-Making.

Learning Objectives:

- Define Conservative Decision making and explain its purpose
- Identify scenarios where CDM should be employed
- Recognize at-risk practices that undermine conservative decisions

Human Performance Improvement (HPI) Training



Place-Keeping – HPI Microlearning Computer-Based Training

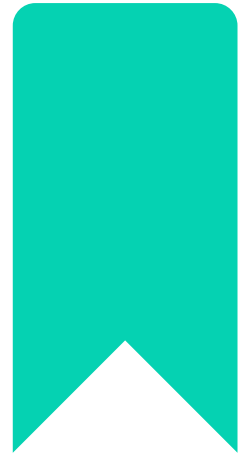
Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge of the HPI tool of Place-Keeping.

Learning Objectives:

- Define the Place-Keeping HPI tool and explain its purpose
- Identify scenarios where Place-Keeping is critical
- Recognize consequences of poor or missing Place-Keeping



Procedure Use and Adherence – HPI Microlearning Computer-Based Training



Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge of the HPI tool of Procedure Use and Adherence.

Learning Objectives:

- Recall the purpose of Procedure Use and Adherence
- Describe the importance of Procedure Use and Adherence for the Power Dispatchers
- Identify the potential consequences of not following procedures
- Describe the role of Procedure Use and Adherence in normal and emergency operations
- Recall how to correct errors in procedures

Human Performance Improvement (HPI) Training



Tailboards – HPI Microlearning Computer-Based Training

Required Subscription Credits: 4

Delivery Method: CBT SCORM file (can't edit), Paper-based SSG only, or full ownership of editable CBT (client must have Articulate subscription to transfer ownership).

Summary: This course provides knowledge of the HPI tool of Tailboards.



Learning Objectives:

- Recall the purpose of Tailboards
- Recall why the performance of Tailboards is important to the Power Dispatcher
- Recall why failing to perform a proper Tailboard may have negative consequences in performance of the Power Dispatcher role
- Identify the use of Tailboards during normal operations
- Recall operational information that should be discussed during the Tailboards

Test Banks



- **Delivery Method:** Paper-based (Microsoft Word or PDF)

Test Bank	Required Subscription Credits
Capacity Emergencies	2
CIP-FERC	3
Communication Skills	2
Generation Operations (Part 1)	3
Generation Operations (Part 2)	3
System Restoration	3
Control Center Communications, Equipment, and Emergencies	2
System Disturbances	3
Generation Operations and Monitoring (Combined)	3
Protective Systems and Data Test Bank	3

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