



Training Course: GT Control System PCS7 – Operation, Protection, and Troubleshooting

9 - 13 November 2025 In-House



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Training Course code: EN235979 From: 9 - 13 November 2025 Venue: In-House - Training Course Fees: | Euro

Introduction

This specialized training program focuses on the advanced control and protection systems of the Siemens SGT-800 Gas Turbine using the SIMATIC PCS7 platform. Participants will gain in-depth technical knowledge and practical skills in hardware configuration, alarm analysis, shutdown events, and diagnostic tools. The course integrates theoretical concepts with real-world troubleshooting case studies, enabling engineers and technicians to effectively manage, maintain, and optimize GT control system operations. Through focused sessions and hands-on simulations, this training equips professionals working in industrial or utility environments with the competencies required to ensure safe, efficient, and reliable turbine performance.

Target Audience

- Instrumentation & Control Engineers
- Electrical and Automation Technicians
- Maintenance and Reliability Engineers
- GT Control Room Operators
- PCS7 System Administrators and Engineers
- Engineering Supervisors involved in GT operation and diagnostics

Objectives

By the end of this training, participants will be able to:

- Understand the architecture and components of the PCS7-based GT control system
- Analyze alarm messages and shutdown causes from HMI and interpret diagnostic events
- · Perform effective troubleshooting and fault identification using CMS and HMI tools
- Execute backup and restore procedures for the turbine PLC control system
- Explain and monitor turbine protection systems including overspeed, vibration, and gas detection
- · Access and evaluate key equipment such as vibration monitors and guide vane actuators
- Confidently navigate hardware configurations and system communication setups



· Apply structured methods for alarm handling and disturbance management

Training Outlines

Day 1:

Introduction to GT Control System & PCS7 Hardware

- Overview of SGT-800 Control and Protection System
- SIMATIC PCS7 Hardware Configuration and Troubleshooting
- Understanding PCS7 Network Architecture and Communication Flow
- Control System Configuration and Interface with Auxiliary Systems
- Identifying and Locating System Hardware within Electrical Cubicles

Day 2:

HMI Alarm Events and Shutdown Diagnostics

- Introduction to HMI Diagnostic Tools
- Alarm Categories and Shutdown Events: MBA, MBH, MBJ, MBL, MBP, SAG, MBV, MBX, MKA, SFY, SGJ, etc.
 - · Hardware Fault Alarm
 - o GT Start Block / Abort
 - GT Instant Shutdown
 - o GT Unloading Shutdown 30 & 90 seconds
 - Baring Block 40 hours
- Fault Handling Procedures and Alarm Management Techniques

Day 3:

Turbine Operational Functions and Safety Monitoring

- Turbine Governing Functions: Controllers and Limiters
 - During GT Startup Conditions
 - During GT Normal Operation



- Turbine Protection System Overview:
 - Overspeed Monitoring
 - · Vibration Monitoring
 - Fire and Gas Detection Systems
- Accessing and Using Vibration Monitoring Equipment
- Diagnosing the Inlet Guide Vane Driver Mechanism

Day 4:

PCS7 Utilities, Backup & Condition Monitoring

- PLC Program Backup and Restore Procedures
- Using the Condition Monitoring System CMS for Fault Identification
- Navigating HMI Utilities: Controller Access, Set-points, and Trends
- Alarm and Disturbance Interpretation from System Logs
- Understanding Fault Communication and Equipment Interlock Conditions

Day 5:

Practical Applications and Troubleshooting Case Study

- Troubleshooting Case Studies Based on Real System Events
- Hands-On Practice: Using HMI Tools for Live Fault Finding
- Interactive Scenarios: Fault Simulation and Corrective Actions
- Final Session: Review, Open Q&A, and Knowledge Check
- Wrap-up and Feedback Collection



Registration form on the Training Course: GT Control System PCS7 Operation, Protection, and Troubleshooting

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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