Global Horizon
TRAINING CENTER

Training Course:
Electrical Power System Study, Fault Levels, Relay Coordination

26 - 30 October 2025
In-House

Training Course:
Electrical Power System Study, Fault Levels, Relay Coordination

Training Course code: EN236097 From: 26 - 30 October 2025 Venue: In-House - Training Course Fees: 35000 Euro

Introduction:

Power system studies are essential for ensuring the safe, stable, and efficient operation of electrical networks. This course, developed by Global Horizon Training and Consulting Center, provides participants with in-depth knowledge of power system analysis, short-circuit and fault level calculations, and the principles of protective relay coordination. The training combines theory with practical application to help professionals make informed engineering decisions that enhance system reliability and protect critical assets.

Objectives:

By the end of the course, participants will be able to:

- Conduct comprehensive electrical power system studies.
- Analyze and calculate symmetrical and asymmetrical fault levels.
- Understand the fundamentals of protection systems and relay coordination.
- Design and evaluate protection schemes for industrial and utility systems.
- Utilize software tools for fault and coordination studies.

Course Methodology:

- Technical presentations and guided analysis
- Real-world case studies and simulation-based exercises
- Software demonstrations ETAP / DIgSILENT / SKM, if applicable
- Hands-on fault calculation and relay coordination examples
- Group problem-solving and expert feedback

Organizational Impact:

- Improved system safety and reduced outage risks
- Optimized protection settings and relay coordination
- Enhanced capability in planning and operational support

- Cost savings through better fault response and system protection

Target Audience:

- Electrical and Power Systems Engineers
- Protection and Control Engineers
- Grid and Substation Engineers
- Utility and Industrial Electrical Technicians
- Project Engineers involved in system design and analysis

Outlines:

Day 1:

Electrical Power System Fundamentals

- Overview of power generation, transmission, and distribution
- Power flow and voltage profile analysis
- System components: transformers, buses, lines, and loads
- Single-line diagrams and per-unit system basics

Day 2:

Short Circuit and Fault Level Analysis

- Types of faults: symmetrical and unsymmetrical
- Fault current calculations using Thevenin's method
- Equipment duty requirements and breaker sizing
- Impact of fault level on equipment and system design

Day 3:

Protection Systems Overview

- Principles of protection and fault isolation
- Types of relays: overcurrent, distance, differential, etc.

- Protection schemes for transformers, feeders, generators
- Instrument transformers: CTs and VTs fundamentals

Day 4:

Relay Coordination Principles

- Time-current characteristics and curves
- Coordination of primary and backup relays
- Selectivity, sensitivity, speed, and reliability criteria
- Coordination tools and coordination study steps

Day 5:

Application & Case Studies

- Relay setting examples and fault analysis
- Case study: industrial or utility system protection
- Practical coordination exercise with relay curves
- Discussion of relay misoperations and how to avoid them
- Wrap-up and technical Q&A

Registration form on the Training Course: Electrical Power System Study, Fault Levels, Relay Coordination

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

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Position: .....
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Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
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Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
- ☐ Please invoice me
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Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.