



Electrical Protection Coordination and Relay Settings Training Course



AGILE LEADERS
Training Center

Electrical Protection Coordination and Relay Settings Training Course

Overview

Electrical Protection Coordination and Relay Settings Training Course is a one-week course for electrical, protection, power-system, maintenance, commissioning, utility, and industrial technical teams, who leave with a Protection Coordination Study Pack. The course connects fault-current analysis, protection zones, instrument transformers, protective-device characteristics, relay settings, time-current coordination, selectivity, testing, documentation, and fault diagnosis in one engineering workflow. Agile Leaders Training Center presents the course on electrical protection coordination and relay settings.

Who Should Attend

- Teams responsible for protection studies and relay settings
- Functions responsible for electrical network design and fault analysis
- Specialists responsible for commissioning protective relays and switchgear
- Teams responsible for maintenance, testing, and incident diagnosis
- Technical functions responsible for utility and industrial power-system reliability

The course assumes participants work with electrical single-line diagrams, power equipment, maintenance, commissioning, or network studies and leaves out introductory electrical theory, detailed power-flow control, relay firmware development, and certification preparation.

Departments and Industries

The course supports electrical protection decisions across utility, industrial, infrastructure, and process operations.

- Power-system protection and engineering departments
- Electrical maintenance and reliability teams
- Testing, commissioning, and asset-management functions
- Electric utilities and independent power facilities
- Manufacturing, mining, oil and gas, and water operations
- Transport, data center, healthcare, and large-building infrastructure

Learning Objectives

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



- Analyze fault-current paths, protection zones, and device duties
- Evaluate current and voltage transformer suitability
- Build overcurrent and earth-fault relay settings
- Compare differential and distance protection applications
- Apply time-current coordination and selectivity methods
- Diagnose coordination, testing, and documentation deficiencies

Course Agenda

Day 1: Fault Studies and Protection Architecture

- Single-Line Diagram and Protection Zone Map
- IEC 60909-0 Short-Circuit Current Calculation Method
- Fault Type and Current Path Scenario Matrix
- Breaker Duty and Interrupting Capacity Check
- Protection Philosophy and Selectivity Criteria Register

Day 2: Instrument Transformers and Protective Devices

- IEC 61869 Instrument Transformer Application Checklist
- Current Transformer Ratio, Burden, and Saturation Review
- Voltage Transformer Connection and Supervision Map
- Fuse, Breaker, and Relay Characteristic Comparison
- Protection Device Data and Setting Input Sheet

Day 3: Relay Functions and Settings

- Overcurrent Pickup and Time Dial Calculation
- Earth-Fault Sensitivity and Residual Connection Method
- Differential Protection Zone and Restraint Logic Map
- IEC 60255-121 Distance Protection Characteristic Review
- Relay Setting Calculation and Approval Record

Day 4: Coordination, Testing, and Troubleshooting

- Time-Current Curve Coordination Method
- Upstream and Downstream Selectivity Margin Check
- Relay Test Plan and Injection Result Record
- Trip Circuit, Logic, and Communication Verification
- Protection Misoperation Root Cause Workflow

Day 5: Protection Coordination Practice

- Fault Study and Protection Zone Exercise
- Instrument Transformer and Device Selection Exercise
- Relay Setting and Time-Current Curve Exercise
- Testing and Misoperation Diagnosis Exercise
- Protection Coordination Study Pack Capstone Exercise

Practical Exercises

The course uses suggested activities to practice electrical protection coordination and relay-setting decisions.

- Suggested activity: map fault paths, protection zones, breaker duties, and selectivity criteria from an electrical single-line diagram.
- Suggested activity: evaluate instrument-transformer data and compare fuse, breaker, and relay operating characteristics.
- Suggested activity: calculate overcurrent and earth-fault settings and coordinate upstream and downstream time-current curves.
- Suggested activity: assemble settings, curves, test evidence, approvals, and troubleshooting actions into a Protection Coordination Study Pack.

FAQs

Who suits electrical protection coordination training and what does it assume?

Electrical protection coordination training suits engineering, protection, maintenance, commissioning, utility, and industrial technical professionals. It assumes familiarity with electrical equipment and single-line diagrams but not prior ownership of a coordination study.

How does protection coordination training differ from general power-system engineering training?

Protection coordination training focuses on fault duties, protection zones, instrument transformers, relay functions, device curves, settings, selectivity, tests, and misoperations. General power-system engineering training covers broader generation, transmission, distribution, load flow, stability, and equipment design topics.

What is selectivity in electrical protection coordination?

Selectivity is the ability of the protective device nearest a fault to operate while appropriate upstream devices remain closed. Engineers coordinate pickup levels, operating times, curves, zones, and device duties to achieve the intended isolation sequence.



How do relay parameters support a protection coordination study?

Relay parameters define pickup thresholds, time delays, directional or zone behavior, restraint, and trip logic. A coordination study compares these values with fault currents, equipment limits, device curves, and upstream and downstream protection.

What evidence belongs in an electrical protection coordination study?

An electrical protection coordination study records network assumptions, fault calculations, device data, instrument-transformer inputs, relay settings, time-current curves, selectivity checks, test requirements, approvals, revisions, and unresolved engineering actions.

Conclusion

Participants take a Protection Coordination Study Pack back to work. It connects fault calculations, zones, instrument transformers, device characteristics, relay settings, time-current curves, selectivity checks, test evidence, and troubleshooting records. It changes isolated protection data into traceable settings decisions, coordinated clearing sequences, verified tests, and documented corrective actions.



Training Course Categories

Agile PM and Project Management Training Courses

Agribusiness & Food Security Training Courses

Aviation Management and Operations Training Courses

Certified Courses By International Bodies

Communication and Public Relations Training Courses

Crisis Management and Business Continuity Training Courses

Data Analytics Training and Data Science Courses

Digital Government & Public Service Training Courses

Education and Learning Development Training Courses

Environment & Sustainability Training Courses

Facilities and Real Estate Training Courses

Finance and Accounting Training Courses

Governance, Risk and Compliance Training Courses

Healthcare Management Training Courses

Heritage Conservation and Museum Management Training Courses

Hospitality and Tourism Training Courses

Human Resources Training and Development Courses

IT Security Training & IT Training Courses

Leadership and Management Training Courses

Legal Training, Procurement and Contracting Courses

Maintenance Training and Engineering Training Courses

Marketing, Customer Relations, and Sales Courses

NGO, Humanitarian and Development Management Training Courses

Occupational Health, Safety and Security Training Courses

Oil & Gas Training and Other Technical Courses

Personal & Self-Development Training Courses



Training Course Categories

Quality and Operations Management Training Courses

Secretarial and Administration Training Courses

Shipping, Maritime and Ports Training Courses

Training Cities

Abu Dhabi UAE	Accra Ghana	Addis Ababa Ethiopia
Amman Jordan	Amsterdam Netherlands	Athens Greece
Baku Azerbaijan	Bali Indonesia	Bangkok Thailand
Barcelona Spain	Berlin Germany	Cairo Egypt
Cape town South Africa	Casablanca Morocco	Chicago USA
Doha Qatar	Dubai UAE	Frankfurt Germany
Geneva Switzerland	Istanbul Turkey	Jakarta Indonesia
Johannesburg South Africa	Kuala Lumpur Malaysia	Kuwait Kuwait
Lagos Nigeria	Langkawi Malaysia	Lisbon Portugal
London UK	Madrid Spain	Manama Bahrain
Marbella Spain	Milan Italy	Montreux Switzerland
Munich Germany	Muscat Oman	Nairobi Kenya

Training Cities

New York

USA

Nice

France

Paris

France

Phuket

Thailand

Port Louis

Mauritius

Porto

Portugal

Prague

Czech Republic

Rome

Italy

San Diego

USA

Seoul

South Korea

Sharm El-Sheikh

Egypt

Singapore

Singapore

Tashkent

Uzbekistan

Tbilisi

Georgia

Tokyo

Japan

Toronto

Canada

Trabzon

Turkey

Vienna

Austria

Zanzibar

Tanzania

Zoom

Online Training

Zurich

Switzerland