XCELERATE TRAINING INSTITUTE

your learning & development partner

ELECTRICAL ENGINEERING

Electrical Distribution Equipment Operation & Maintenance

DURATION	LANGUAGE	FORMAT
10 days	English	Classroom / Online

Upcoming dates

Dates	Venue	Format	Fee
12 – 23 ????? 2027	Live online	Online (live)	€1?800
18 – 29 ?????? 2027	Live online	Online (live)	€1?800
15 – 26 ?????? 2027	London	Classroom	€8?250

Register or ask a question

Online: x8ti.com/course/electrical-distribution-equipment-operation-maintena…

+491631686678 · info@x8ti.com

Electrical Distribution Equipment Operation & Maintenance

Introduction

Recent technological advancements and changes in utility and industrial operations have highlighted the importance of integrated protection and control systems. Maintenance systems are essential to prevent faults from damaging electrical plants and to isolate faulted sections, ensuring continuity of supply. Reliable, safe, and efficient power distribution equipment is crucial for electrical installations. This course covers the construction, operation, and maintenance of equipment such as circuit breakers, transformers, switches, ring main units, and protection devices. Safe operation of electrical equipment is vital, supported by modern relays and security devices. The course also addresses arc flash hazard analysis to ensure safe equipment operation and uninterrupted power supply.

Learning Objectives

Upon completing this course by Xcelerate Training Institute, participants will be able to:

- Recognize the importance and significance of maintenance.
- Understand major power distribution equipment.
- Choose the correct test instruments and understand their functions.
- Set up, test, and assign electrical equipment according to industry standards.
- Analyze test results to ensure equipment performance aligns with specifications.
- Determine various maintenance strategies.
- Understand different types of circuit breakers.
- Analyze the characteristics of oil-immersed transformers.
- Read and interpret construction drawings for electrical tasks.
- Design a simple electrical power distribution system.
- Ensure safe operation of circuit breakers and transformers.
- Understand principles of the electrical protection system.
- Obtain and analyze information on system diagrams/plans.
- Identify resources required for tasks according to industry standards.

Training Methodology

This collaborative training program includes:

- Lectures
- Seminars & Presentations
- Group Discussions
- Assignments
- Case Studies & Functional Exercises Following the ‘Do-Review-Learn-Apply’ model.

Benefits for Your Organisation

Organizations can benefit from:

- Understanding the need for routine inspection.
- Ensuring appropriate equipment use for each organization.
- Awareness of course objectives and their relationship to the organization.
- Emphasizing safe working practices.
- Analyzing various risk reduction techniques.

Benefits for You

Participants will gain:

- Responsibility for routine inspections, maintenance, and record-keeping.
- Knowledge of different maintenance management methods using safe systems of work.
- Skills to coordinate maintenance activities for optimal time and resource utilization while ensuring safety.
- Ability to assess switchgear and transformer maintenance procedures using cable installation and fault-finding techniques.
- Proficiency in non-intrusive condition monitoring methods.

Who Should Attend

This course is suitable for:

- Electrical Professionals
- Electrical Engineers
- Technicians
- Power Engineers
- Managers in charge of electrical installations
- Project Engineers
- Professionals responsible for operation and maintenance of distribution equipment
- Professionals involved in planning, monitoring, and implementing maintenance activities

Course Outline

Introduction to Electric Hazards and Safety Protocols

- Goals and Discussion
- The Smart Grid Architecture
- Maintenance of Electrical Equipment
- Managing Maintenance
- Safety Culture
- Safety Integrity Level (SIL)
- Electrical Safety Rules
- Electrical Hazards and Emergencies

Power Network Essentials and Systems Protection

- Power Network Fundamentals
- Faults and Protection
- Fault Levels for Transformers
- Types of Protection Relays
- Numerical Relays
- Arc Flash Mitigation
- Importance of Earthing
- Network Earthing

Power and Distribution Transformers – Operation and Maintenance Procedures

- Transformer Characteristics
- Transformer Cooling and Protection
- On-load Tap Changer Operation
- Transformer Site Testing
- Transformer Maintenance
- Dry Transformers
- Gas Insulated Transformers (GIT)
- Ester Oil for New Power and Distribution Transformers

Switchgear, Circuit Breakers, and Condition Tracking

- Switchgear Maintenance
- Circuit Breaker Ratings and Operation
- Circuit Breaker Examples
- Alternatives to SF6 Gas
- HV Vacuum Circuit Breakers
- Hybrid Outdoor Circuit Breakers
- Instruments for Partial Discharge Monitoring
- Instruments for Thermal Imaging and Corona Detection

Gas-Insulated Switchgear, Basic Voltage Cables, Faults, and Locating Methods

- Overview of Gas-Insulated Switchgears
- Power Cables Construction and Characteristics
- Common Underground Cable Faults
- Cable Fault Locating
- Heat Shrink and Cold Shrink Cable Terminations and Joints
- LV Wiring and Cabling Systems
- Wrap-up Session

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Registration Form

Electrical Distribution Equipment Operation & Maintenance

Preferred dates: ..... Venue or online: .....

Duration: 10 days Language: .....

Please complete and email this form to us, or register online. We confirm your place and send the invoice within one working day.

Delegate information

Full name (Mr / Ms / Dr / Eng): .....

Position: ..... Telephone / mobile: .....

Official email: ..... Personal email: .....

Company information

Company name: .....

Address: .....

City / country: ..... VAT / tax number: .....

Person responsible for training & development

Full name (Mr / Ms / Dr / Eng): .....

Position: ..... Telephone / mobile: .....

Email: .....

Payment

☐ Please invoice me ☐ Please invoice my company

Signature: ..... Date: .....

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Email this form
info@x8ti.com

Register online
Open the course page