



Electric Distribution System Equipment: Transformers, Switchgears, Circuit Breakers, Relays, Capacitors, Surge Arresters, Cables & Meters: Installation, Operation, Inspection, Testing, Maintenance & Troubleshooting

Course Introduction:

Distribution equipment plays an important role in the safe distribution of electrical power. The equipment needs to be operated in a safe manner securing continuity of supply. This requires the equipment to be designed, installed, commissioned, operated, and maintained in a satisfactory manner within a management system that is effective in meeting the reliability goals within budget targets.

This course focuses mainly on the operation and maintenance of distribution equipment with reference to auxiliary equipment necessary for its operation.

Course Objectives:

Delegates will gain a detailed appreciation of the following:

- The need for maintenance
- Management of maintenance
- Management and implementation of safe systems of work
- Co-ordination of maintenance activities
- Switchgear maintenance
- Transformer maintenance
- Cable installation and rating
- Condition monitoring using non-intrusive technology
- Routine inspections
- Properties of insulating oils
- Maintaining system safety
- The need for accurate records and documentation

Who Should Attend?

The course is aimed at Managers, Engineers and Technicians responsible for the operation and maintenance of distribution equipment who will benefit from sharing experiences in the planning, organization and implementation of maintenance activities.

Course Outline:

Introductions and Safety

- Goals & discussion

- Maintenance of electrical equipment
- Managing maintenance
- Safety
- Electrical emergencies
- Safe working distances
- Inter system safety precautions
- Wrap up session

Power Network Fundamentals

- Power network fundamentals
- Faults and protection
- Fault levels
- Earthing introduction
- Network earthing
- Earthing systems
- Earth bonding
- Wrap up session

Transformers

- Transformer characteristics
- Transformer cooling
- Transformer protection
- On load tap changer operation
- Transformer site testing
- Transformer maintenance
- Wrap up session

Switchgear

- Circuit breaker history
- Circuit breaker ratings and operation
- Circuit breaker examples
- Switchgear maintenance
- Fault reporting
- Properties and deterioration of insulating oils
- Thermal imaging
- Condition monitoring

- Wrap up session

Cabling

- HV cable ratings and installation methods
- HV cable volt drop
- LV cabling systems – an introduction to the wiring regulations
- Cable fault locating
- Course review and open session
- Wrap up session

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

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International Centre For Training & Development

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

