



EE202

Electrical Inspection & Testing Workshop

Course Introduction:

To successfully inspect and test electrical equipment, Electrical personnel must first fully understand the technology of the equipment. After the successful start-up and subsequent continued operation, electrical equipment requires periodic inspection and testing.

This will ensure the electrical equipment operates correctly so that production is maximized in a safe, cost effective and efficient manner.

Delegates are encouraged to raise queries both during and at any time after attending the workshop and are also asked to bring with them any technical issues that they may have.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- Have a better understanding of inspection and testing methods
- Better understanding of troubleshooting procedures
- Improved capability in the use of test equipment
- Refreshed outlook on reading electrical drawings
- Refreshed awareness of electrical safety concerns

Who Should Attend?

This course is designed for Electrical Engineers, Electrical Supervisors and Electrical Technicians engaged in the inspection and testing of Electrical Equipment.

Course Outline:

Day 1:

The Technology of Electrical Equipment

- Transformers
- Power supplies (UPS)
- Batteries
- Generators
- Switchgear
- Motor control centers (MCC)
- Disconnect switches

- Neutral ground resistors (NGR)
- Variable frequency/speed drives (VFD/VSD)
- Programmable logic controllers (PLC)
- Power monitoring
- Control relays/timers/switches
- Motor/feeder protective devices
- Motors (AC & DC)
- Miscellaneous equipment - heaters, solenoid valves and electric valve actuators

Day 2:

The Use of Test Equipment

- Digital voltmeter (DVM)
- Oscilloscopes
- Megger
- Frequency meter
- Temperature probes/pyrometers
- Ammeters
- Power meters
- Load banks
- Digital hydrometers
- Cable fault locators

Day 3:

Inspection and Testing of Electrical Equipment

- Methods
- Terminology
- Principles
- Special techniques
- Troubleshooting of Electrical Equipment
- Methods
- Terminology
- Principles
- Special techniques
- Case studies/examples
- Single line drawings
- Group exercises

Day 4:

The Necessity for Inspection and Testing

- Common mode failures
- Phase imbalance
- Contact pitting/arcing
- Electronic component failure
- Fusing
- Motor windings/bearings/brushes
- Ballasts
- Excitation circuits
- Battery cells
- Inverters/rectifiers
- Bushings
- Switches
- Control circuits
- Ground faults

Day 5:

The Interpretation and Use of Drawings and Safety

- Single-line electrical drawings
- Control schematics
- Wiring lists
- Logic and standard symbols.
- The Development of a Job Plan
- Identification of the troubleshooting step-by-step sequence
- Procedure preparation
- Documentation
- Safety considerations and training
- A review of Safety Requirements
- Area classifications
- NEC electrical codes

Course Certificate:

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

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

Course Fees:

To be advised as per the course location. This rate includes participant's manual, and-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