



Electrical Maintenance, Testing, Inspection & Risk Assessment

Course Introduction:

This course will discuss application, installation, electrical maintenance and testing issues related to Low Medium and High Voltage Electric Circuit Breakers, Switchgear, and Electrical Power. The course will provide the delegates with a solid understanding of theory and standards. The course will make the delegates aware of issues concerning the proper application, installation and maintenance of these types of equipment with a strong emphasis on safety.

This course provides an overview of electric power system, focusing on the types of equipment used most commonly in the Utility, Industrial, Commercial and Institutional applications. Basic Circuit Breaker, electrical safety, and common maintenance techniques are major components of this course.

Course Objectives:

Upon Completion of this course the participant will be able to:

- Understand the objectives of electrical testing & inspection
- Know the operation of different power system equipments
- Understand rules & safety during testing, maintenance, & inspection
- Learn various equipments used in electrical testing & inspection
- Gain knowledge on risk assessments

Who Should Attend?

This course is design for:

- Engineers & technicians involved in electrical operation
- Engineers & technicians involved in electrical maintenance
- Engineers & technicians involved in electrical design
- Engineers & technicians involved in electrical testing
- Engineers & technicians involved in electrical inspection

Course Outline:

Introduction to Switchgear, Circuit Breaker and Transformer

- Definitions, Ratings, Typical Construction
- Control Power System

Electrical Maintenance of Protective Equipment & Instrument Transformers

- Potential & Current Transformers
- Transformer Differential Protection
- Feeder & Motor Protection

Circuit Breaker

- Construction and Contact Operation
- Manual and Electrical operating Controls
- Safe Operating Methods
- Mechanical Inspections
- Contact Resistance Tests
- Insulation Resistance Tests
- Insulating Gas and Oil Analysis

Transformer Construction

- Tank , Core, Coils, Types and Ratings
- Bushings , Tap Changers , Factory Testing
- Dry, Oil and Liquid Filled Types
- Operation
- Auxiliary Equipment

Failure Causes

- Detailed analysis of several case histories
- Lightning , Oil Decay , Component Failures
- Internal & External Faults

Electrical Testing

- Insulation Resistance and Polarization Index Tests
- Turns Ratio, Excitation Current and Polarity Testing
- Capacitance and Power Factor Testing
- Winding Resistance Tests

Risk Assessment

- The need and concept of risk assessment
- Review of the existing work procedures
- General risk assessment relating to electrical machinery.
- Identification of deficiencies that relate to electrical safety
- Manpower, Public and Equipment safety
- Risk management, Problems and case studies
- Identification of additional safety measure related labels and signage locations within your facility.

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 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:

08:30 - 08:50	Morning Coffee/Tea
08:50 - 10:20	First Session
10:20 - 10:40	Recess (Coffee/Tea/Snacks)
10:40 - 12:20	Second Session
12:20 - 12:40	Recess (Coffee/Tea/Snacks)
12:40 - 14:30	Last Session