Hazardous Area Classification Course

Venue Information

Venue: London UK

Place:

Start Date: 2026-12-22

End Date: 2026-12-26

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: EAPET

Course Code: EAPET-28

Syllabus

Course Description

Electric power delivery system plays an important role in the social development and efficient operation of modern industrial plants. Electrical systems, which are of adequately designed, is essential to guarantee optimal availability, reliability, quality and efficiency in the presence of various type of disturbances that are imposed on it.

Electric Power Distribution Systems are designed to be as fault free as possible through appropriate network design, equipment design, proper installation and on-going maintenance. The Circuit breaker and its associated fault detection equipment, protective relaying, is an extremely important device, through its role of clearing short-circuit currents, disconnecting faulty elements from the power network, and thus maintaining the overall integrity of the power network.

Planned maintenance inspections that are regularly implemented ensure that safe operations are effected and those losses of production due to fault outages are minimized. Maintenance inspections can inform the Technician of the current status and operability of the organization's Electrical systems and record the expected performance

Course Objective

This course is designed to give the skills and knowledge necessary for planning maintenance activities in Electrical Power Industry in accordance with International standards and also gives the engineers or technician a greater understanding of maintenance procedures post installation.

Upon the successful completion of this course, participants will be able to specify, commission and maintain this equipment for their applications up to 33 kV voltage level. Further, participants will have enough knowledge to achieve reduced capital, operating and maintenance costs along with increase in efficiency. During the duration of this course, participants will:

- Overviews electrical power equipment and systems.
- The basic principles and operation of most important equipment up to 33 kV systems.
- Transformer failure modes, transformers maintenance and testing.
- Understand different type of Electrical Tests.
- Selection, principle of operation and maintenance of switching devices and circuit breakers.
- Hazards in electrical installations and electrical safety.
- Switchgear testing & failure analysis.
- Safe working practices.
- Understand importance of UPS, Battery chargers & DC batteries in Electrical Installations.

Course Outline

Overview Distribution systems & Different configurations

- Review Electrical Fundamentals.
- Introduction & Overview to Electrical power Distribution networks.

Electrical Equipment Testing & Maintenance

- Insulation Testing
- Insulation Resistance Testing
- Components of DC Leakage Current
- Polarization Index
- DC Hi-Pot Test
- Insulation Power Factor
- What is a Partial Discharge

- Transformer theory. Transformers main functions and classification.
- Transformer vector groups. Transformer losses & efficiency.
- Parallel operations.
- Power transformers and safety.
- Special design transformers (k-factor).
- Transformer Neutral Point Earthing.
- Oil & Dry type.
- Power transformer oil tests and oil quality.
- Power transformer electrical tests: criteria & applicable standards.
- Pole mounting & pad mounting transformers.
- Transformer Maintenance - Insulation Testing, High Potential Testing, Turns Ratio Testing, Polarity Testing, Power Factor, Excitation Current, DC Winding Resistance, Insulating Fluid Dielectric, & Dissolved Gas Analysis.
- Transformers and Relaying - Transformer Faults, Differential Relaying.

Medium voltage switchgear

- Load currents and fault currents
- Switchgear capabilities and ratings
- Types of switchgear manufactured today and their applications
- Comparison of different types of insulation methods (air, oil, vacuum, sf6)
- Advantages and disadvantages of different types of medium voltage switchgear
- Future trends

Switchgear Testing, Maintenance & Failure Analysis

- General breaker maintenance
- Insulation resistance
- Contact resistance tests
- Time travel motion tests
- Mechanical checks
- CT & VT testing
- SWGR Inspection and testing
- Maintenance intervals
- Preventative maintenance

Grounding/Earthing & Bonding Systems

Safety Policies & Electrical Hazards

- Electric Shock: Nature, effects and Protection
- Hazardous associated with electrical equipments
- Electrical hazards to human
- Arc Flashing hazards (IEEE 1584)
- Incident energy & Relevant categories
- Boundary distances/approaches
- Labeling
- PPE & Arc Flash PPE
- Approved & Standard organizations