Electrical Equipment Installation Control Systems Commissioning Testing Start Up Of Electrical System 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-21

Syllabus

Course Description

Maximum efficiency, reliability, and longevity of electrical equipment such as the various types of motors, variable-speed drives, transformers, generators, rectifiers, inverters, uninterruptible power systems, circuit breakers, fuses, power station electrical and protective systems are of great concern to many industries. These objectives can only be achieved by understanding the characteristics, selection criteria, common problems and repair techniques, preventive and predictive maintenance.

This course is a MUST for anyone who is involved in the selection, applications, or maintenance of electrical equipment. It provides the latest in technology. The course covers how this equipment operates and provides

Course Objectives

This course is designed to provide a comprehensive understanding of the various types of motors, variable-speed drives, transformers, generators, rectifiers and inverters, uninterruptible power systems (UPS), circuit breakers, and fuses. Upon the successful completion of this course, participants will be able to specify, select, commission and maintain this equipment for their applications.

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:

- Understand diagnostic testing and inspection, advanced fault detection techniques, critical components, and common failure modes.
- Study selection criteria, commissioning requirements, predictive and preventive maintenance, reliability, testing and cost.
- Discover the maintenance required to minimize their operating cost and maximize their efficiency, reliability and longevity.

Course Outlines

Testing, Troubleshooting Principles and Commissioning Guide Of Electrical Equipment

- Introduction
- Basic principles in using a drawing and meter in Troubleshooting circuits
- Checks for circuit continuity with disconnected supply
- Checks for circuit continuity with live supply
- Tests and methods
- Testing devices
- Testing and Commissioning Methods
- Testing and Commissioning Procedures

Maintenance of Particular Types of Electrical Equipment

- Nomo gram for temperature correction
- Test voltages for Commissioning and Maintenance
- Recommended insulation values for equipment

Principles Of Maintenance

- Types of Maintenance: Corrective, Preventive, Reactive, Condition Monitoring, Scheduled

Condition Monitoring For Electrical Equipment

- Reliability Centered Maintenance (RCM)
- Partial Discharge
- Insulation Resistance Monitoring
- On-line measuring and monitoring

On-Line Monitoring Of Transformers

- Local Indications
- Thermography
- PDA - Partial Discharge Analysis
- Insulating Oil Properties And Tests
- Dissolved Gas Analysis (DGA)

Earthing Systems

- Equipment and System Earthing
- Types: Unearthed, Solid, Resistance, Reactance
- Neutral Earthing Compensator, Zig Zag Transformers
- Testing earthing electrode resistance

Electrical Control Devices Fundamentals Maintenance and Troubleshooting

- Control Devices, Types & Applications
- Relays: Classifications, Characteristics, Applications, Testing
- Diodes, Thyristors, Transistors
- Power Devices: Rectification, Inverters
- Temperature Control Devices: Thermocouple, RTD, Thermistor

Generator Fundamentals Maintenance, Testing And Troubleshooting

- Principles of AC Generators
- Excitation and Voltage Control
- Diesel generator sets
- Synchronising, Load sharing, Load shedding
- Troubleshooting: No/Low/High/Fluctuating voltage

- Enclosures and Cooling
- Power, Starting Methods, Power Factor Correction

Circuit Breaker Fundamentals, Maintenance, Service, Testing And Troubleshooting

- Air, Vacuum, SF6, Oil Circuit Breakers
- Fuses
- Trip Circuit Supervision
- Low Voltage Molded Case Breakers

Transformer Fundamentals, Maintenance, Testing And Troubleshooting

- Principles and Construction
- Losses and Efficiency
- Cooling Types
- Polarity, Applications, Accessories
- Maintenance and Inspection
- Testing and Failure Analysis

UPS, Rectifiers, Inverters And Batteries

- UPS Fundamentals
- Rectifiers and Inverters
- Batteries and Charging
- Battery Safety
- Electrolyte Handling