Advanced Generator Maintenance Course

Venue Information

Venue: London UK

Place:

Start Date: 2026-11-10

End Date: 2026-11-14

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: EAPET

Course Code: EAPET-11

Syllabus

Course Description

This course is designed for those who need to understand most aspects of power plant **generators**. It covers theory of generator operation, design considerations, construction, system relationships, excitation systems, auxiliaries, normal/abnormal operations, protective relaying, outage planning, disassembly, inspection/repair, and reassembly. There are no “small problems” with generators—design, construction, operations, safety, testing, and maintenance must be fully understood.

Course Objectives

Register for this course and get clear answers to questions such as:

- How does a generator function?
- Why is it designed as it is?
- What happens if the generator is synchronized out of phase?

- How do you repair fused stator punchings?
- Which components should be high-potential tested?
- How do we avoid accidental injury when testing the generator?
- What are probable causes of grounded fields?
- Why have hydrogen explosions occurred recently—and how do we avoid them?

Course Outlines

Upon successful completion, participants will be able to:

- **Explain generator fundamentals:** describe how a generator functions, why voltage drops with applied load, and how rotor speed and angle change as load is applied.
- **Differentiate active vs. reactive power:** how each is generated and how loads are shared among generators.
- **Identify major AC generator components** and understand risks during mis/abnormal operations.
- **Excitation systems:** operation and maintenance of common systems.
- **Speed governing:** how the governor alters output in response to frequency deviation and the governor's role during load application.
- **Voltage regulation:** how the regulator responds to voltage deviation, where drops are detected, and resulting control actions.
- **System dynamics:** causes/effects of voltage and frequency oscillations.
- **Operations:** normal/safe startup and shutdown procedures.
- **Synchronizing:** why the process is structured as it is; consequences of wrong phase rotation, voltage/frequency mismatch, and out-of-phase closing.
- **Abnormal operations & protection:** recommended actions and likely outcomes for equipment/system.
- **Maintenance planning:** major activities for generator maintenance.
- **Mechanical procedures:** proper disassembly and reassembly sequences.
- **Component care:** cleaning and inspection procedures for generator components.
- **Damage assessment:** common damage types, probable causes, and repair methods.
- **Electrical testing:** list of common tests on large AC generators and the purpose of each test (what results indicate).
- **Test execution:** procedures for conducting generator tests safely.
- **Safety:** comprehensive precautions for all electrical testing activities.