



# Advanced Generator Maintenance Course

## Venue Information

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**Venue:** London UK

**Place:**

**Start Date:** 2026-07-28

**End Date:** 2026-08-01

## Course Details

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**Net Fee:** £4750.00

**Duration:** 1 Week

**Category ID:** EAPET

**Course Code:** EAPET-11

## Syllabus

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### 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.