Overhead Lines, Maintenance and Construction Course

Venue Information

Venue: London UK

Place:

Start Date: 2026-10-27

End Date: 2026-10-31

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: EAPET

Course Code: EAPET-43

Syllabus

Course Description

Overhead Lines form the majority of Transmission and Distribution Circuits due to their significantly lower cost compared to equivalent cables at the same voltage and current ratings. An Overhead Line consists of three wires, one for each phase, known as conductors. At transmission voltage levels, the conductors are typically strung on steel-latticed towers of varying shapes and sizes. At distribution (lower voltage) levels, wooden poles and occasionally reinforced concrete structures are used.

This seminar covers the full range of overhead line technology across both transmission and distribution circuits, focusing on design, construction, operation, and maintenance practices.

Course Objective

- Enhance participants' knowledge of Overhead Line Technology and familiarize them with the latest developments.

Overhead Lines vs Underground Cables

Support Structures

- Steel Lattice Towers
- Wooden Poles
- Overhead Line Foundations
- Soil Investigation
- Foundation Types & Design
- Site Works

Overhead Line Routing

- Objectives & Preliminary Routing
- Survey Equipment Requirements
- Aerial & Ground Surveys
- Soil Condition Analysis
- Wayleaves, Access & Terrain
- Route Optimisation
- Detailed Line Survey & Profile
- Computer-aided Techniques

Structures, Towers & Poles

- Environmental Conditions & Parameters
- Impact on Support Design
- Conductor Loads
- Substation Gantry Design
- Lattice Steel Tower Design & Testing
- Pole and Tower Types

Conductors

- Conductor Selection & Types
- Aerial Bundled Conductor
- Breaking Strength & Bi-Metal Connectors

Lightning Protection

- Calculated Ratings & Power Capacity
- Corona Discharge & Line Rating Calculation
- Worked Examples & Exercises

Design Span, Clearances and Loadings

- Distribution & Transmission Voltage Clearances
- Clearance Calculations
- Worked Examples & Exercises

Overhead Line Fittings

- Aerodynamic Phenomena
- Suspension Clamps
- Sag Adjusters
- Other Fittings

Overhead Line Impedance

- Inductive Reactance
- Capacitive Reactance
- Resistance
- Worked Examples & Exercises

Overhead Line Maintenance

- Case Studies