

**Intensive Course on**  
**Lightning Protection and Insulation**  
**Coordination for Power Systems**

طرق الحماية من الصواعق وتنسيق العزل بنظم القوى الكهربائية



***BACKGROUND & OBJECTIVES:***

The reliability of an electricity supply system during thunderstorms is very dependent on the effectiveness of its lightning protection. Lightning outages on transmission lines, important sub-transmission line and major substations can have widespread impacts on the system and so considerable attention is given to their protection. This is achieved by effective shielding and by controlling back-flashover to achieve acceptably low lightning outage rates. In contrast, it is not economically possible to achieve low lightning outage rates on un-shielded sub-transmission and distribution lines or on exposed distribution transformers and low voltage systems. Even so, it is possible to achieve tolerable lightning outage and damage rates.

Insulation coordination is the process of correlating the dielectric strength of electrical equipment and the characteristics of protective devices with expected over voltages. The short course will present many different cases of insulation coordination and relationships between lightning protection devices and insulation. One case deals with Graded Insulation and Short Length of Cable does the high velocity of a surge has a similar effect to high frequency, would inserting a short length of cable between the overhead line and the transformer be effective and possible to reduce the magnitude of the voltage surge before it reaches the transformer. Also, addressing the selection of insulation level relates more to statistical data than to a mathematical function.

The course objectives include – (i) providing an understanding of the various modes by which lightning can cause overvoltage including the relevant characteristics of ground flashes, (ii) detailed consideration of the various factors that control the lightning protection of shielded and unshielded lines, and (iii) outlining the measures required for lightning protection and insulation coordination of substations and of exposed distribution transformers. (iv) Insulation and BIL and Volt Time curves, (v) Insulation Coordination methods and applications.

### WHO SHOULD ATTEND?

The course will present a practical approach to lightning protection and insulation coordination. It is intended for managers and engineers concerned with the design of new lines and substations and with implementing appropriate measures to improve the lightning performance of existing lines and substations. Also it is targeting Technical Managers, Engineers, technician from: Electric Utility, governmental and private Contractors engineers and technical staff from Construction industry, Communication industry service providers, Oil producers, refineries, and oil storage industry, Chemical and explosive material manufacturing/storing companies, Military, Meteorology Sector and Electronic industry.

### Training Methodology

1. Expert tutor input using power points.
2. Participants' discussion and involvement.
3. Case studies, Best practice examples.
4. Supportive comprehensive course manual enabling practical application and reinforcement.
5. Workshops Topics and Handouts, Power Point Presentation for each session.

### Training Duration:

The training course duration is **5 Days**

### Course Certificate

**MSTC** certificate will be issued to all attendees completing minimum of 80% of the total tuition hours of the course.

## INTERNATIONAL SPEAKERS:

Delivering information through knowledge & experience obtained by renowned international speakers is one of the effective tools adopted by **MSTC**.

## ON SITE TRAINING:

- ✓ Customize the training program to your workplace.
- ✓ Conduct the training program when & where you need it.
- ✓ Save more than 50% by conducting **MSTC** training workshop at your premises.

To request full detailed outlines, instructor's profile or any information about registration, please don't hesitate to contact us at:

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