Design Of Modern Electrical Distribution Systems Training

Description

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In 1882 Sir Thomas Edison built the world's first electricity generating station in New York. The supply of Electricity spread rapidly across the globe in the ensuing years. Today, over a century later, the use of electrical energy has become commonplace. Global economics is rapidly changing methodology in the Distribution of Electricity throughout the world. Many Distribution Electricity Utilities have changed from State Ownership to Private Ownership and the trend is increasing worldwide.

Regulatory and shareholder pressures are now driving Utilities to deliver an improved supply performance and demonstrate a more commercial approach to their activities.An important step is to ensure that decision-making personnel possess sufficient up-to-date knowledge of distribution system behavior and modern distribution network design.

Course Objectives

On completion of the course the trainee/s will be competent in:

- The behavior of Modern Electrical Distribution Networks
- Constraints on Distribution Network Design
- Choice of Correct Components and Network Layouts
- Using Computers for secure and economic network design

Course Outlines

- Basics & Fundamentals Review.
- Overview Distribution systems.
- General Design Considerations.
- Loads: types, and estimations.
- Equipment design constraints:
- Current Rating
- Short circuit
- Power quality Problems

- Modeling of Distribution Elements.
- Studies on Distribution networks.
- Load Flow studies & Computer methods.
- Short circuit, PU & Symmetrical components.
- MVA method to calculate 3-phase short circuit current.
- Related IEC 60909, 61363 & ANSI C37.
- PQ & Harmonics and related IEEE 1159 & 519 standards.
- Power cable: Sizing (based on VD, short circuit & earth fault), de-rating factors.
- Voltage drop calculations.
- Power Factor correction & reactive power compensators.
- Distribution Transformers features & Sizing.
- LV & HV Switchgear preliminary design steps.
- Protection overviews.
- Shunt capacitors & Series reactors.
- Isolated networks & different schemes of power system architectures. Open & Closed RMU.
- Test Cases using ETAP/CYME/SKM software.