

## Course Overview:

An electric power system is made up of electrical components to generate, transmit and use electric power. This could be the elaborate network that supplies power to a region's home and industry through an electrical grid transmission system from generating plants located faraway. Or, this could even be a captive power plant/micro grid which generates and consumes power within the same premises itself. The majority of these systems rely upon three-phase AC power - the standard for large-scale power transmission and distribution across the modern world. Specialized power systems are also found in aircraft, electric rail systems, ocean liners and automobiles that do not always rely upon three-phase AC power. The planning, design, and operation of these commercial and industrial power systems requires in-depth engineering studies to evaluate existing and proposed system performance, reliability, safety, and economics.

## Course Objective:

- Fault analysis in electrical network means verifying the adequacy of the power distribution system and its components.
- Recognize coordination related disturbances and outages.
- Collect the required data to perform a detailed coordination study.
- Derive complete protective device settings for some of the simpler electrical power systems that are consistent with NEC requirements.

## Course Outline:

- Review On Electrical Power System
- Introduction To Faults
- Fundamentals Of Faults Clearing And Switching Phenomena
- Rated Characteristics Of Current Of Circuit-Breaker
- Fault Calculation And Relay Settings Table Of Contents
- Symmetrical Components
- Symmetrical Faults And Current Limiting Reactors
- Unsymmetrical Faults On An Unloaded Generator
- Faults On Power Systems
- System Grounding
- Fault Characteristics
- Inadvertent Trips- Cause And Prevention
- Fault Investigation And Analysis
- Case Study- Protective Relaying System For 500 Kv System - Relay Performance Analysis

## Who Should Attend:

This course is intended for anyone who must perform calculations, provide settings or approve the work performed by others. The trainee should be a graduate engineer or have the equivalent practical work experience in electrical power systems.

## Training Language:

EN / AR

## Training Methodology:

- Presentation & Slides
- Audio Visual Aids
- Interactive Discussion
- Participatory Exercise
- Action Learning
- Class Activities
- Case Studies
- Workshops
- Simulation