Disturbance Analysis for Power Systems

TE297

Course Overview:

Disturbance Analysis for Power Systems begins with an introduction to the power system disturbance analysis function and its implementation. The book then guides readers through the causes and modes of clearing of phase and ground faults occurring within power systems as well as power system phenomena and their impact on relay system performance. The next series of chapters presents more than ninety actual case studies that demonstrate how protection systems have performed in detecting and isolating power system disturbances

Course Objective:

-Review of phasors, per-unit, and three-phase power concepts
-Modeling information for transmission lines, transformers, generators, and loads
-Power flow analysis and system operation
-Short circuit analysis including symmetrical components
-Transient stability analysis
-Perform three-phase power system calculations using phasor analysis and the per-unit system
-Model key power system components, such as transmission lines, transformers, generators, and loads
-Understand power flow analysis and know the basics of operating a power system
-Use symmetrical component theory and sequence networks to analyze short-circuit faults
-Understand the equal-area criterion for transient stability

Course Outline:

-Power System Disturbance Analysis Function
-Determination Of Power System Equipment Health Through System Disturbance Analysis
-Phenomena Related To System Faults And The Process Of Clearing Faults From A Power System
-Classification Of Shunt Faults
-Power System Phenomena And Their Impact On Relay System Performance
-Generator SystemDisturbances
-Transformer System Disturbances
-Breaker Failure Protection System Disturbances

Who Should Attend:

-Engineers and technicians new to the power industry
-Intermediate-level engineers and technicians working in the planning, design, and operation of power systems
-Professionals involved with the generation, transmission, distribution, or utilization of electric power
-Individuals working on integrating renewable energy resources into the existing

Training Language:

English

Training Methodology:

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

power grid

-Practitioners interested in modernizing and optimizing the performance of the power system