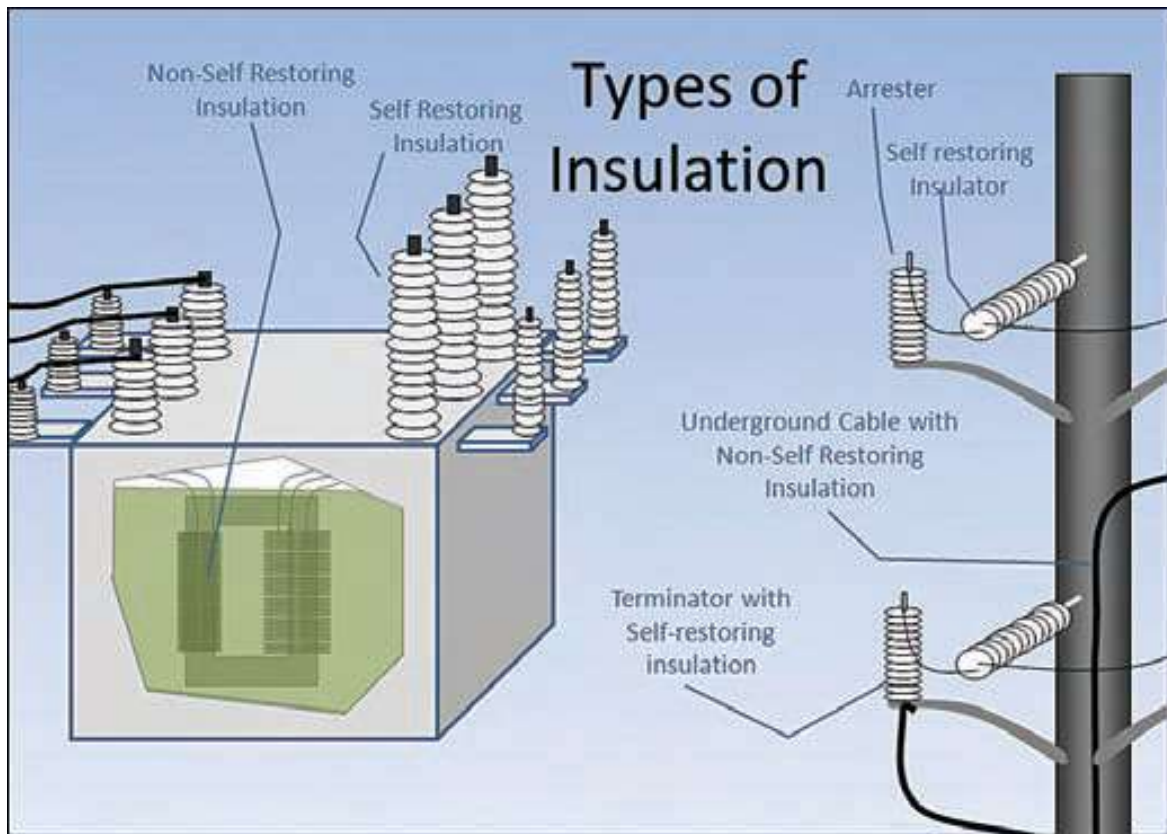




Insulation Coordination for Power Systems

Course Introduction:

This course provides delegates with a fundamental understanding of transient phenomena common to electric power systems. The material is especially suited for those who simulate transients with tools such as EMTP, those who analyze waveforms from transient recorders, those who conduct failure analysis, and those who design and specify transmission and distribution systems and equipment.

Course Objectives:

The main objective of this course is to improve the participant's understanding of power system transient and overvoltage events such as faults, switching and lightning surges. The participant will exit the course with greater ability to analyze waveforms from EMTP type simulations or from transient recorders. The participant will also have a stronger understanding of insulation coordination and surge arrester applications.

Who Should Attend?

The course is structured for electrical engineers that have some familiarity with electric power system analysis. Prior experience with transients is not necessary.

Course Outline:

Day 1

- Rated Voltage Stresses
- Overvoltages from Faults and Ferranti rise
- Backfeeding
- First Order Transients
- Second Order Transients

Day 2

- Capacitor Switching
- Circuit Breaker Transient Recovery Voltage
- Fault Current Asymmetry
- Transformer Inrush currents
- Temporary Overvoltages
- Ferroresonance
- Blackstart

Day 3

- Traveling Waves

- Switching Surges from Line Energizing
- Lightning Surges on Transmission Lines

Day 4

- Surge Arrester Behavior
- Surge Arrester Construction
- Surge Arrester Applications

Day 5

- Protective Margins and Insulation Coordination

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:30 - 08:50	Morning Coffee/Tea
08:50 - 10:20	First Session
10:20 - 10:40	Recess (Coffee/Tea/Snacks)
10:40 - 12:20	Second Session
12:20 - 12:40	Recess (Coffee/Tea/Snacks)
12:40 - 14:30	Last Session

