



In House Programs

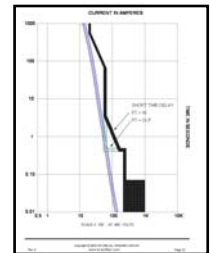
T₂G

TECHNICAL TRAINING GROUP

Short Circuit and Protective Device Coordination Analysis

This 2 Day class shows you how to perform both a Protective Device Coordination Study and Short Circuit Studies. Many studies today are performed using computer simulations, however it is very important to have a solid understanding of the study fundamentals. Learn how to determine a device's adequacy as well as select a device's settings using time current curves. Draw time current curves and perform the detailed studies.

Course Credit: 2 Days - 1.6 CEUs or 16 PDHs



Course Agenda

DAY ONE

SHORT CIRCUIT CALCULATIONS

Short Circuit Study Basics, X/R Ratio, Data Collection, Code Requirements

SOURCE IMPEDANCE

Utility Company Data, Equivalent Impedance, System Configuration, Future Conditions

CONDUCTOR SHORT CIRCUIT CALCULATIONS

Conductor Calculations, Effect of Conductor Length, Size, Conduit and Insulation on Impedance, Conductor Calculation Worksheets, Calculation Examples

TRANSFORMER SHORT CIRCUIT CALCULATIONS

Transformer Impedance, Transformer Calculations, Adding Source Impedance, Transformer Calculation Examples

MOTOR CONTRIBUTION

Sub transient Reactance, X_d'' , Effect on Short Circuit Current

DEVICE INTERRUPTING RATINGS

Circuit Breaker and Fuse Interrupting Ratings, Testing Methods, Effect of X/R Ratio on Interrupting Ratings

SERIES RATINGS

Proper Application of Series Ratings, Fully Rated vs. Series Rated, Current Limitation, U.L. Tested Combinations

CASE PROBLEM

Short Circuit Study of Small Industrial System

DAY TWO

COORDINATION STUDIES

Selective Coordination Basics, Time Current Curves, Data Requirements, Device Settings, Log Log Graph, Scale

COORDINATION OF DEVICES

Molded Case Circuit Breaker Coordination, Adjustable Instantaneous Settings, Coordination of Multiple Devices

SOLID STATE / ELECTRONIC TRIP DEVICES

Long Time, Short Time, Instantaneous Settings, I^2T Settings, Coordination of Devices, No Instantaneous

GROUND FAULT DEVICES

Residually Connected Schemes, Zero Sequence Relaying, Setting of Devices, Nuisance Tripping, Ground Fault Requirement for Services and Feeders, Coordination Requirements for Health Care Facilities

OVERCURRENT RELAYS

Amp Tap, Time Dial, Instantaneous, Current Transformers, Time Margins, Setting Selection, Time Current Curves

TRANSFORMER PROTECTION

NEC Requirements, Inrush, ANSI C57 Thru Fault Curves, Adjustments to Thru Fault Curves Based on Winding Configurations, Delta-Wye and Delta Delta

CASE PROBLEM

Coordination Study of Small Industrial System

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For more information contact:

T₂G Technical Training Group® at 800-874-8883.

See sample videos of Jim's teaching style at:

www.brainfiller.com