



T₂G

TECHNICAL TRAINING GROUP

In House Programs

Protective Relaying

This class shows you how to work with protective relays and determine settings for protection and coordination. The Class begin with the basics of relaying in part 1 and moves on to more advanced topics in part 2 including differential protection, generator protection, transformer protection and more. The Class includes many of the popular relays such as overcurrent, synch check, reverse power, differential, frequency as well as many others.



Course Credit: 2 Days - 1.6 CEUs or 16 PDHs

Course Agenda

DAY ONE

INTRODUCTION

Overcurrent Protection, Data Requirements, Selective Coordination, Zones of Protection

SHORT CIRCUIT CONSIDERATIONS

Three Phase and Line-to-Ground Faults
Short Circuit Calculations

OVERCURRENT RELAY PROTECTION SCHEMES

Time Current Graphs, Induction Disk Relay, Current Transformer, Circuit Breaker

CURRENT TRANSFORMERS

Polarity Markings, Saturation, Excitation Curves
Saturation Calculations

OVERCURRENT RELAYS

Amp Tap Settings, Time Dial Settings, Instantaneous Settings, Time Margins

COORDINATION OF RELAYS

Curve Shapes and Characteristics
Coordinating Relays with Other Devices

CONDUCTOR PROTECTION

National Electrical Code, Conductor Damage Curve
Setting Relays to Protect Conductors

GROUND FAULT PROTECTION

Residually Connected Relay Scheme
Zero Sequence Relay Schemes

CASE PROBLEM

DAY TWO

INTRODUCTION

Overcurrent Protection, Protecting Equipment
Design Criteria, Standards and Data Requirements

DIRECTIONAL RELAYS

Relay Operating Principles, Use of Directional Relays

TRANSFORMER OVERCURRENT RELAYS

NEC 450, Magnetic Inrush, ANSI Thru Fault Requirements

DIFFERENTIAL PROTECTION CONCEPTS

Overcurrent Differential Relays, Percentage Differential Relays, Bus Differential Relays

TRANSFORMER DIFFERENTIAL PROTECTION

Fixed Percentage Differential Protection, Percentage Differential Protection, Delta-Wye Considerations

MOTOR PROTECTION

Motor Protection Requirements, Motor Starting
Characteristics

LOAD SHEDDING

Local Generation, Loss of Utility, Back feeding to Utility,
Frequency Relays

GENERATOR PROTECTION

Protection Requirements, Short Circuit Considerations
Relay Schemes and Settings

CASE PROBLEM

Copyright © 2006 - Technical Training Group

For more information contact:

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

See sample videos of Jim's teaching style at:

www.brainfiller.com