

Relay Protection Training

2 Days - 16 Contact Hours ~ \$1295

Who Should Attend?

This hands-on course is intended for electricians, technicians and engineers responsible for testing, maintenance and diagnostics of solid-state protective relays.

Course Description

Our goal is to improve safety in the workplace by teaching you how to understand site-specific functions and applications of protective relaying. Students will gain troubleshooting skills to improve plant reliability. We will teach you how to read and interpret electrical drawings related to relay operation and power system interaction, specific to an industrial working environment. The hands-on lab will provide an opportunity to build their own control circuit using familiar relays as well as practice communicating with relays and downloading relay records and events.

Lab Time and Prerequisites

Hands-on training program augmented with round-table discussions. The student should have a basic knowledge of AC/DC electricity.

Course Outline

Review of Electrical Basics

- Ohm's law
- Delta, wye transformers
- Phase transformer
- Metering and protection
- Current transformers
- Voltage transformers
- Device numbers

Electrical Testing of Equipment

- Commissioning
- Maintenance

Basic Controls and Schematics

- Overall control circuit
- Trip & close circuits
- Lock-out relay
- Transformer devices
- Protection & control single line review

Protection Overview

- Line protection
- Overcurrent protection
- Breaker fail protection
- Bus differential
- Transformer differential

The Troubleshooting Process

- Actions for qualified electricians and relay technicians
- Actions for operators

Basics of Relay Connection & Event Downloading

- GE
- SEL

Protection and Control Circuit Lab

- Wiring of trip & close with breaker
- Wiring of block close scheme
- Overcurrent simulation with injection set (SEL 787)
- Motor starting simulation with injection set (GE 369)

