



This is a two-day, hard hitting program focusing on how to read and use all types of electrical drawings, with special attention given to schematics and ladder diagrams. The program is designed for maintenance personnel who work with electricity, troubleshooting, and/or repairing electrical problems. This is NOT theory, but down-to-earth practical procedures.

WHO SHOULD ATTEND

This comprehensive seminar is designed to expand and strengthen the skills and knowledge of maintenance personnel who deal with electrical systems, as well as teach the essentials to those who plan, supervise and manage electricians. Including: Building Maintenance Technicians Refrigeration Mechanics, Instrumentation Mechanics, Electricians, Cross Trade Trainees, Maintenance Supervisors, Service Managers, Plant and Facility Engineers, Utility Engineers.

INSTRUCTORS

Steve Poffenbarger is a training professional with over twenty years of industrial experience including control, distribution and automation products and systems associated with employment for major equipment manufacturers.

Over the years Steve has held various quality control, R&D and field service positions with companies such as Westinghouse, Gould and Telemecanique. His in plant experience has provided him with the understanding of how industrial electrical products are designed and built. Having also worked in the field he has had hands-on experience in a variety of facilities such as factories, hospitals, chemical plants, nuclear plants and on board ships. This provides him with an understanding of how to create "real world" solutions.

Steve is an experienced technical trainer specializing in the field of electricity. As a consultant Steve has an additional 6 years of experience creating and conducting training seminars. A background in quality assurance, technical knowledge, and real world applications makes Steve an engaging and dynamic instructor.

AGENDA

Types and Purpose of Electrical Drawings

- ✍ Pictorial Drawings
- ✍ Label or Line Drawings
- ✍ Purpose of Block Diagrams
- ✍ How to Use Harness Diagrams
- ✍ Schematic Diagram Logic
- ✍ Ladder Diagram Layout
- ✍ Load Lines and Number System
- ✍ Tracing Circuits
- ✍ Troubleshooting with Ladder Diagrams

Types and Use of Electrical Symbols

- ✍ Identifying Electrical Symbols
- ✍ Common Abbreviations
- ✍ Series vs. Parallel Connections

Purpose and Use of Transformers

- ✍ Transformer Symbols and Connections
- ✍ Single Phase Transformers for Control Circuits
- ✍ Three Phase Transformers - Delta and Wye

Relays and Timers

- ✍ Operation and Types of Solenoid Valves
- ✍ Operation and Types of Relays ac/dc, solid state, plug-in sockets, latching, master control, time delay, on-delay

- relays, off-delay relays, lock-out relays, ice cube relays
- ✎ Ladder Diagrams Using Solenoids and Relays
- ✎ Which coil controls what contacts
- ✎ Operator Indicators and Annunciator
- ✎ Lights, Horns, Buzzers, Sirens

Solenoid Valves and Motor Capacitors

- ✎ How Solenoid Valves Operate
- ✎ Different Uses for Solenoids
- ✎ Identifying Solenoids on Electrical Drawings
- ✎ Start and Run Capacitors
- ✎ Purpose and Operation of Capacitors