



TROUBLESHOOTING & MAINTENANCE OF Electrical Equipment

Course Introduction:

Electrical equipment plays an important role in the safe transmission and distribution of electrical power. The equipment needs to be operated in a safe manner securing continuity of supply to consumers.

The attendees will learn how to fix electrical problems plain and simple. This 5-day training was created to bring students up to speed in their electrical troubleshooting skills as quickly and safely as possible and it was designed to cover the most commonly performed electrical troubleshooting tasks a maintenance technician faces in his job every day. For the novice or experienced electrician, this training course provides a no-nonsense, practical and real world systematic approach to electrical troubleshooting.

Course Objectives:

This course is designed to increase the troubleshooting diagnostic skills of engineering teams of a modern Power system.

Who Should Attend?

This course is applicable to all Electrical Professionals, Electrical Engineers, Electrical Supervisors, Technicians and Professionals responsible for the operation and maintenance techniques.

Course Outline:

Basic Skills for Electrical Troubleshooting

- Safety First
- OSHA Requirements Regarding Troubleshooting and Qualified Persons
- Using Electrical Drawings – Hands-on Exercise
- Using Meters (multimeters) and Circuit Measurements
- Developing a Logical, Systematic Approach to Troubleshooting

Troubleshooting Control Circuits

- Relays, Motor Starters and Control Devices
- Reading and Interpreting Ladder Diagrams
- Power Loss
- Control Circuit Industrial Applications
- Electric Motor Drives

- Solenoid-Operated Valves
- Heating Elements

Troubleshooting Motors

- Most Common Motor Problems
- Electrical Problems
- Testing Windings for Shorts, Opens and Ground Faults
- Phase Unbalance
- Mechanical Problems
- Phase Rotation Testing

Troubleshooting Power Distribution

- Wye and Delta Systems
- Overcurrent Protection
- Branch Circuits

Troubleshooting Power Quality Problems

- Sources of Power Quality Problems
- Test Equipment for Troubleshooting Power Quality Problems
- Harmonics

Troubleshooting Lighting Circuits

- Lighting Terminology
- Types of Lighting Circuits
- Incandescent Lighting
- Fluorescent Lighting
- HID Lighting

Troubleshooting Programmable Logic Controllers (PLCs)

- Overview of PLCs
- Reading PLC Ladder Diagrams
- Status Indicators and Error Codes
- Force and Disable
- Startup Procedures

Troubleshooting Variable Frequency Drives (VFDs)

- VFD Terminology
- VFD Basic Operation
- Components

- Pulse Width Modulation
- Types of VFDs
- Common Problems and Corrective Action

Electrical Preventative Maintenance

- Why Perform Electrical Maintenance
- Overview of an Electrical Maintenance Program
- Building Your Own Walk-Through Inspection Checklist

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

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International Centre For Training & Development

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:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

