



## Maintenance Operator Skills Training - Electrical

### 3 Weeks

#### Who Should Attend?

Designed for employees that perform Operations or Maintenance work on Electric Power Generation, Transmission, or Distribution installations.

#### Course Description:

This course is excellent for entry level personnel as well as cross-training different disciplines and others with the need to learn the proper technique and safety for using Electrical tools and meters, testing and troubleshooting. Emphasis is placed on personal Safety as well as process Safety.

Each Presentation Begins with learning objectives that cover the course contents. The Power Point Presentations are 50% Instructor led and 50% hands on. After each presentation there is a summary and discussion on the material that was covered with a review Quiz. For each week of training there will be a weekly exam and a final exam at the end of the 3 week Workshop. The students are also required to successfully complete a practical factors check list demonstrating their ability to perform the instruction taught in the class.

The students are encouraged to ask questions regarding the use or safety of any of the tools presented. The Instructors have many years of Power Plant experience that allows them to give practical answers and examples to broaden the students understanding.

The students will learn how to safely and properly use electrical tools, testing and troubleshooting in real-life situations.

Each student receives a course text and an UGLY's electrical book they get to keep for reference.

#### Learning Objectives:

- Know where plant indexes are and demonstrate how to find prints.
- Utilize electrical-electronic prints and drawings.
- Explain how to evaluate D.C. circuit.
- Troubleshoot A.C. circuits.
- Identify unwanted circuit grounds.
- Determine circuit outputs from specified inputs.

**Prerequisites:** None.

**TDSTI**

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#### Week 1

- Know where plant indexes are and demonstrate how to find prints
- Demonstrate how to read electrical-electronic prints and drawings
- Locate and identify symbols/components on prints and drawings
- Utilize electrical-electronic prints and drawings
- Draw/diagram a typical electrical system
- Redraw circuit diagrams (logic/wiring/schematic/connection)
- Use electrical-electronic test instruments
- Perform annunciator light bulb check

#### Tools covered:

- AEMC Model SC-1 Voltage Tester
- FLUKE 87
- FLUKE 36
- Tektronix 468 Digital Storage Oscilloscope
- B+K Precision Model 4011A Function Generator
- INSTEK GPR-6030 DC Power Supply
- RAYTEC ST80XB Infrared Thermometer
- FLUKE 1520 Megohmmeter
- TECAL 425S Temperature Calibrator
- Insulated Hand Tools

#### Week 2:

- Explain how to evaluate D.C. circuit
- Troubleshoot D.C. circuits
- Determine A.C. circuit outputs from specified inputs
- Determine the actual current of a circuit (wye/delta CT calculations)
- Perform measurements on single phase A. C. circuits
- Troubleshoot A.C. circuits
- Troubleshoot motors

- Describe which operational checks to perform when motor restoration motor is returned

#### Tools covered:

- AEMC Model SC-1 Voltage Tester
- FLUKE 87
- FLUKE 36
- FLUKE 1520 Megohmmeter

#### Week 3:

- Identify unwanted circuit grounds
- Demonstrate how to test for proper equipment ground
- Demonstrate the operation of the Bus Tie for 480 Volt system
- Demonstrate the operation of the Bus Tie for 480 Volt system (4160 for White Bluff Only)
- Explain how to test plant antifreeze panels
- Explain the proper procedure for putting the battery charger in service
- Explain the proper procedure for putting an inverter in service
- Determine circuit outputs from specified inputs

#### Tools covered:

- AEMC Model SC-1 Voltage Tester
- FLUKE 87
- FLUKE i410 Clamp
- FLUKE 36
- FLUKE 1520 Megohmmeter