ELECTRICAL DIAGRAM ANALYSIS

Understanding the operation, maintenance and appropriate trouble response to power system equipment begins with a detailed knowledge of and ability to read and interpret electrical prints. This course is designed to provide the knowledge of the various types of electrical diagrams used in the industry, and to develop the skills necessary to read, draw, and interpret these diagrams. With a basic understanding of diagrams, technicians and engineers are able to develop a logical pattern of troubleshooting that can aid in the successful analysis of systems.

This class presents a logical approach to troubleshooting electrical power systems. Resources for predicting the likelihood of equipment failure will be provided, and a basic program for clearly identifying problems. Common electrical devices and their operational requirements will be discussed. Knowing what is required for their operation, it makes easier to determine what is preventing their correct operation. Diagram analysis for troubleshooting will be practiced.

Anyone who works on or near power generation, transmission, or distribution systems should attend as well as managers, supervisors and administrators.

Course Duration: 8 hours

INTRODUCTION
Purpose
Presentation Methods
Course Goals

BACKGROUND
History of Electrical Blueprints
Maps
Purpose of Electrical Diagrams
Blueprint Page Layouts

SYMBOLS AND TERMS
ANSI Designations
IEEE Standards
Abbreviations
Device Numbers

TYPES OF DIAGRAMS
Views
Schematics
One-Line Diagrams
Three-Line Diagrams
Interconnect Wiring Diagrams
PLC Diagrams (Ladder Logic)

SYSTEM APPLICATIONS
Switchgear
Transformers
Motors
UPS & ATS Systems
Generators (Synchronous & Asynchronous)

CONTROL CIRCUITS
Basic Controls
Simple Start / Stop Circuit
Dual Control Circuit
Time Delayed Operation
Complete Control Circuits

SAFETY
Qualified and Unqualified Persons
Diagram Safety

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