

Commissioning, Testing and Startup Of Electrical Systems Training

Description

Introduction:

The safe and efficient operation of modern electrical equipment and control systems requires the successful testing, start-up and commissioning of this equipment, or system, to ensure correct operation, plus;

www.acculearn.co.uk

- Accurate troubleshooting
- Subsequent repair of this equipment, or system
- Ensuring continued productivity

Objectives:

- A better understanding of commissioning procedures
- A better understanding of troubleshooting procedures
- An improved capability in the use of test equipment
- A better understanding of failure modes and failure analysis
- A refreshed awareness of electrical safety concerns

The Course:

The Technology of Electrical Equipment

- Transformers – Power supplies (UPS) – Batteries
- Generators – Switchgear – Disconnect switches
- Neutral ground resistors (NGR)
- Motor control centers (MCC) – Variable frequency/speed drives (VFD/VSD)
- Programmable logic controllers (PLC) – Distributed control systems (DCS)
- Power monitoring
- Control relays/timers/switches – Motor/feeder protective devices
- Miscellaneous equipment – Heaters, solenoid valves, electric valve actuators andsignalling/alarm devices

Commissioning and Testing of Electrical Equipment

- Methods
- Principles – Special techniques
- NEC check lists

Troubleshooting of Electrical Equipment

- Methods – Terminology – Principles
- Special techniques
- Case studies/examples
- Single line drawings
- Group exercises

www.acculearn.co.uk

The Use of Test Equipment

- Digital voltmeter (DVM)
- Megger
- Frequency meter
- Temperature probes/pyrometers
- Ammeters, Power meters
- Load banks
- Digital hydrometers
- Cable fault locators

The Interpretation and Use of Drawings

- Single-line electrical drawings
- Control schematics
- Wiring lists
- P&ID’s
- Logic and standard symbols

The Development of a Job Plan

- Identification of the troubleshooting step-by-step sequence
- Procedure preparation

- Follow-up
- Safety considerations and training

The Identification and Repair of Problems/Failures

- Common mode failures,Phase imbalance
- Electronic component failure, Fusing
- Fusing
- Motor windings/bearings/brushes
- Excitation circuits
- Battery cells, Inverters/rectifiers
- Inverters/rectifiers
- Bushings – Switches
- Control circuits
- Ground faults

A review of Safety Requirements

- Area classifications
- NEC electrical codes, Safety Information

www.acculearn.co.uk