



MAESTRO
CONSULTANTS

ELECTRICAL EQUIPMENT & CONTROL SYSTEM

COURSE OUTLINE 2020

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TRAINING TITLE

ELECTRICAL EQUIPMENT & CONTROL SYSTEM

VENUE

Dubai, UAE

DURATION

5 Days

DATES

08 - 12 March 2020

PRICE

US\$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet daily.

TRAINING 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 the correct operation plus accurate troubleshooting and subsequent repair of this equipment or system to ensure continued productivity.

Delegates are encouraged to raise queries both during and at any time after attending the seminar. Delegates are also encouraged to bring with them any issues that they may have to this seminar.

TRAINING OBJECTIVES

Following the attendance at this seminar, participants will return to their respective organizations equipped with new or refreshed skills to ensure that electrical equipment and control systems are tested and commissioned in a fashion that ensures reduced costs and or start-up delays plus identified faults or problems are repaired and the underlying causes are identified and eliminated to reduce further failures.

On successful completion of this seminar, participants will have:

- 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

TRAINING AUDIENCE

This seminar is intended for Electrical Engineers, Electrical Supervisors and Electrical Technicians engaged in the commissioning, testing, start-up, troubleshooting, maintenance and repair of Electrical Equipment and Control Systems. Because the methods and examples are generic, personnel from all industries will benefit. Participants need no specific requirements other than good understanding of electricity and magnetism and some relevant experience

COURSE OUTLINE

Safety Requirements

- Roles and responsibilities
- Legislation, standards and codes
- Safety standards
- Emergency procedures

The Technology of Electrical Equipment

- Transformers
- Power supplies (UPS)
- Batteries
- Generators
- Switchgear
- 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
- Motors (AC & DC)

Commissioning and Testing of Electrical Equipment

- Methods
- Terminology
- Principles
- Techniques

Troubleshooting of Electrical Equipment

- Methods
- Terminology
- Principles
- Techniques
- Case studies/examples
- Single line drawings

The Use of Test Equipment

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

The Interpretation and Use of Drawings

- Single-line electrical drawings
- Control schematics
- Wiring lists

The Development of a Job Plan

- Identification of the troubleshooting step-by-step sequence
- Procedure preparation
- Documentation
- Follow-up
- Safety considerations and training

The Identification and Repair of Problems/Failures

- Common mode failures
- Phase imbalance
- Contact pitting/arcing
- Electronic component failure
- Fusing
- Motor windings/bearings/brushes
- Battery cells

- Inverters/rectifiers
- Bushings
- Sealing end
- Switches
- Control circuits
- Earth faults

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of “real life” issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.