

BATTERY AND DC SYSTEMS DESIGN

OBJECTIVES:

Battery systems applications, components, operating principles and causes of failure for vented lead acid, valve regulated lead acid and nickel-cadmium batteries.

- Introduction to types of battery chargers
- NFPA 70E and IEEE requirements for batteries and battery rooms
- IEEE guidelines for a routine maintenance and testing program
- Use of Megger BITE, digital hydrometers, multimeters, Digital Low Resistance Ohmmeters(DLRO), insulation resistance testers and insulated/non-sparking hand tools
- Perform testing and maintenance in lab

WHO SHOULD ATTEND?

Designed for maintenance personnel that are responsible for battery systems in substations, power plants and other systems that require emergency power

MATERIAL LANGUAGE: English

PRESENTATION LANGUAGE: English/Arabic

COURSE CONTENTS:

- **Course Introduction**
- **Introduction to Batteries**
 - Battery Hazards
 - Battery Safety Equipment and Procedures
- **NFPA 70E Requirements**
 - Application and Scope
 - Definitions
 - Ground Fault Detection
 - Ventilation Requirements
 - Battery Room Requirements
 - Battery Protection
 - Personal Protective Equipment(PPE)
 - Shock Hazard
 - Flash Hazard
- **Megger Battery Maintenance and Testing**
 - Battery Basics





- Battery Types
 - Lead Acid
 - NiCad
- Battery Construction
- Battery Failure Modes
 - Lead Acid
 - NiCad
- Battery Testing
- Battery Charging and Discharge
- Data Analysis
- Locating Ground Faults
- Battery Maintenance
- **Battery Test Equipment**
 - Megger BITE
 - Digital Hydrometer
 - Multimeters
 - Insulation Resistance Testers