
ELECTRICAL SAFETY TECHNIQUES FOR INDUSTRY



WHAT YOU WILL LEARN:

- How to protect yourself and others from electrical hazards
- Identify electrical hazards when doing maintenance work
- Best practice in electrical design for safety
- Identify key electrical safety parameters
- Apply electrical safety to hazardous areas
- Standards that apply to electrical safety
- Key procedures in safe electrical working
- Regular periodic inspection and planned maintenance for safe operation of electrical equipment
- How to conduct an electrical safety audit and ensure your plant is in compliance
- How to report accidents, carry out investigations and determine measures to improve safety

The Workshop

A number of serious accidents and fatalities occur every year in the industry due to accidents involving electricity, taking a huge financial and human toll. The dangers and risks from electrocution, shock, explosions and arc blast can never be eliminated but you can take definite steps to protect yourself and your co-workers.

Safety should be built into the design of electrical equipment and followed up with proper installation, operation, maintenance and periodic inspection. Electrical safety is not just a technical issue. Accidents can only be prevented if appropriate safety procedures are developed and enforced. This includes complete familiarity with equipment and systems often imparted through structured training to each and every person who operates or maintains the equipment. In this workshop, we will take a look at the theoretical aspects of safety as well as the practical issues including the statutory and safety-training related aspects.

This know-how will certainly enable participants to deploy appropriate safety procedures in their workplace and improve their safety record.

The Program

PRINCIPLES OF SAFETY RULES

- Electrical hazards
- Safety requirements
- Operative training and competency
- Safety documentation

ELECTRICAL SHOCK AND SHOCK PREVENTION

- Direct and indirect contact
- Touch and step potential
- Effects on the human body and first aid
- Earth leakage circuit breakers
- Role of electrical insulation

HAZARDS DUE TO ELECTRICAL ARCING AND HEATING

- Arc flash and arc blast
- Hazards due to arcing/flashover
- Reducing arc-flash hazard

STATIC ELECTRICITY AND PROTECTION

- What is static electricity?
- Generation of charge
- Energy of spark and ignition capability
- Control of static electricity
- Assessment and prevention

SAFETY ASPECTS IN ELECTRICAL EQUIPMENT DESIGN AND SELECTION

- Safe design and selection
- Ratings and fault withstand capability
- Containing and deflecting arcs
- Equipment enclosures
- Over current protective devices
- In-built earthing devices and interlocks
- Restrictive conductive locations

SAFE OPERATION AND MAINTENANCE OF ELECTRICAL EQUIPMENT

- Key safety issues in O&M of electrical installations
- Operational and safety locking, safety notices and remote operation
- Personnel protective equipment
- Underground cable systems
- Gas safety and ventilation
- Electrical testing procedures
- Inspection and maintenance

EARTHING AND BONDING

- Role and safety implications
- Earthing of equipment enclosures
- Neutral earthing
- Thermal capability
- Protective metallic conduits
- Objectives of Equipotential bonding

SUBSTATION SAFETY

- Outdoor switchyards and overhead lines
- Switchgear - special precautions
- Substation check list
- Fire protection

SAFETY IN BATTERY INSTALLATIONS

- Hazards and precautions
- Transportation, installation and commissioning
- Charging and storage
- Dismantling and disposal
- Protective clothing

REGULATIONS GOVERNING WORKPLACE SAFETY

- Legislation and regulations
- Codes of practice and standards

ORGANISATIONAL REQUIREMENTS OF SAFETY

- Statutory requirements
- Competency and authorisation
- Employer and employee responsibility
- Safety organisation
- Accident reporting, investigation and analysis
- Safety awareness promotion

SUMMARY, OPEN FORUM AND CLOSING