Electrical Hazards & Safety at Workplace

Course general description:

Electrical hazards can result in serious injury or death of personnel that works on or around electrical equipment in industrial facilities. To ensure a safe workplace, personnel must understand electrical safety regulations, electrical hazards, and the use of safe work procedures and protective equipment. Research is ongoing to improve these practices, so employers may have difficulty keeping up with revisions in OSHA, NFPA 70E, NEC, and other applicable electrical safety standards. The ability to interpret these standards and understand how to apply the requirements is essential to realizing the benefits of an electrical safety program – fewer electrical accidents, improved power system reliability, OSHA compliance, and potential discounts on insurance.

Audience:

This course is designed for:

1- Electrical supervisors
2- Electrical Engineers
3- Anyone involved in design & define the electrical hazards & safety issues at workplace & plants

Course objectives:

Upon the successful completion of this course, each participant will be able to:-

- Explain the hazards of electricity and effects
- Select appropriate personal protective equipment for a variety of applications
- Utilize safe work practices for work on or around metal-clad switchgear, substation equipment, motor control centers, and facility electrical systems
- Install and test permanent and temporary grounding systems for personal protection
- Apply lockout/tagout procedures, energized work permits, and overhead Line clearances
- Interpret applicable regulations.

Course duration:

5 days

Course location:

Dubai

Course contents:

Day-1:

- How Is an Electrical Shock Received?
- Dangers of Electrical Shock
- Electrical Fires
- First Aid Fact Sheet
- **Overview of the Safety Model**
- What Must Be Done to Be Safe?
- **Safety Model Stage 1—Recognizing Hazards**
- How Do You Recognize Hazards?
- Inadequate wiring hazards
- Exposed electrical parts hazards
- Overhead powerline hazards
- Defective insulation hazards

Day-2:

- Improper grounding hazards
- Overload hazards
- Wet conditions hazards
- Additional hazards
- Summary of Section 5
- **Safety Model Stage 2—Evaluating Hazards**
- How Do You Evaluate Your Risk?
- Safety Model Stage 3—Controlling Hazards:
- Safe Work Environment
- How Do You Control Hazards?
- How Do You Create a Safe Work Environment?

Day-3:

- Lockout and tag out circuits and equipment
- Lock-out/tag-out checklist
- Control inadequate wiring hazards
- Control hazards of fixed wiring
- Control hazards of the flexible wiring
- Use flexible wiring properly
- Use the right extension cord
- Control hazards of exposed live electrical parts: isolate
- energized components
- Control hazards of exposure to live electrical wires

Day-4:

- use proper insulation
- Control hazards of shocking currents
- Ground circuits and equipment
- Use GFCI's
- Bond components to assure grounding path
- Control overloads current hazards
- Safety Model Stage 3—Controlling Hazards:
- Safe Work Practices

Day-5:

- How Do You Work Safely?
- Plan your work and plan for safety
- Ladder safety fact sheet
- Avoid wet working conditions and other dangers
- Avoid overhead powerlines
- Use proper wiring and connectors
- Use and maintain tools properly
- Wear correct PPE
- PPE fact sheet

Methodology:

- 50% lectures & concepts

- 10% Videos
- 10% Case studies
- 10% Exercises
- 10% Discussions
- 10% Software (if applicable or examples)

Course code: (TEEI011)