

**Training Title:**

**TRAINING ON NFPA 70 AND 70 E**

**Training Duration:**

**5 Days**

**Training Venue and Dates**

REF EE088	Training on NFPA 70 and 70 E	5	19 - 23 July 2020	\$ 4,500	Dubai, UAE
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In any of the 5 star hotel. Exact venue will be informed soon.

**Training Fees**

- 4,500 US\$ per participant for Public Training including Course Materials/Handouts, Tea/Coffee, Refreshments & International Buffet Lunch

**Training Certificate**

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

While working in the industrial environment, particularly in Oil and Gas, Petrochemical or Power industries, occupational and electrical safety is one of the most important parameter.

OSHA (Occupational Safety and Health Administration) has laid down guidelines regarding safe operations at work place. NEC (National Electrical Code) particularly deals with NFPA 70 E (Standard for electrical safety at work place).

For the safe operation of plant's equipment and safety of human being, an employee need to be trained as per existing laws of the company or government and should possess right skills and knowledge to complete the given task in the safest way as per the guide lines of international organizations like OSHA.

It's the responsibility of the company to make sure that before taking up a particular job, the employee of the company is fully aware of not only technical knowledge and skills needed for that job, but the entire safety requirement to complete the job in safe way.

This five day course deals with the occupational safety, particularly electrical safety at work place. The role and scope of NEC (NFPA, NFPA 70 E) in enforcing the culture of safe work environment, which includes the rules and regulations to identify hazards, evaluating hazards and controlling them. This course covers comprehensively the concept of electrical isolation, LOTO (Lock out Tag Out), the PTW (Permit to Work) system.

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At the conclusion of the program, the participants should be able to know occupational safety guidelines laid down by OSHA, the role and responsibilities of electrical workman as per NEC, specific mandate of NFPA and NFPA 70 E and will cultivate the habit to work in safe electrical environment and encourage colleagues to follow the same.

### TRAINING OBJECTIVES

Upon successful completion of this course, the delegates will be able to:

- Understand the need for occupational safety
- Know OSHA
- Differentiate between “ Qualified” and “ Unqualified” person
- Understand the role of NEC ( National Electrical Code) / NFPA 70
- Understand 70 E ( Standard for Electrical Safety in workplace)
- Practice safety procedures at workplace as per NFPA 70 E
- Know the fire safety
- Select and use correct PPE
- Make site assessment following guidelines of NFPA 70 E
- Carry out status check survey
- Know the electrical hazards and associated risks
- Identify specific work related electrical hazards
- Evaluate and control electrical hazards
- Understand about arc flash and arc blast hazards
- Create and practice “ safe electrical working conditions”
- Know the safety requirements while working on or near live parts
- Understand the process of electrical isolation
- Practice isolation process for electrical safety
- Practice LOTO in isolation process
- Understand the PTW system
- Differentiate between cold and hot work permit
- Use the appropriate insulated tools
- Use the non sparking tools in classified zones

### WHO SHOULD ATTEND?

This course is designed for the Engineers, foreman, supervisors, senior technicians and technicians, who are working in the field of Electrical maintenance, testing and troubleshooting of LV and HV machines and equipment. All these personnel should be well acquainted with the guide lines of OSHA, NEC, NFPA / NFPA 70 E in making sure that work is completed in safe manner and proper rules and regulations are followed..

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## TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. The delegates will also be encouraged to raise their own questions and to share in the development of the right answers using their own analysis and experiences.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

## TOPICS COVERED

Preventive, predictive and corrective maintenance on centrifugal pumps; new pump models introduced in KOC; type of pumps, pumps components, pumps selection, operating philosophy, trouble shooting, service, maintenance and major repair of pumps, review and update equipment clearance data sheet; hands on training on maintenance (overhaul) of single and multistage pumps, repair procedures for pump parts, pump alignment, reconditioning dry seals, bearing technology (including white metal bearing technology).

## COURSE OUTLINE

### Day 1:

Occupational Safety and Health Administration (OSHA)

- Introduction of OSHA
- OSHA guidelines
- Role of OSHA in Electrical Safety
- Role of OSHA in Fire Safety
- Safety precautions at workplace
- Personal Protective Equipment (PPE)
- PPE for high voltages

### Day 2:

National Fire Protection Association (NFPA 70) and 70 E

- National Electrical Code (NEC)
- Guidelines of NEC
- NFPA 70 and its significance
- How NFPA 70 E is used in OSHA compliance
- Electrical safety in Industrial plants
- Site assessment as per NFPA

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- Status check survey and improvement programs of Electrical safety

Day 3:

**Electrical Hazards**

- Types of hazards
- Electrical shock, arc and blast
- Identifying hazards
- Evaluating hazards
- Controlling hazards
- Characteristics of arc flash hazards
- Characteristics of arc blast hazards
- Flash hazard analysis

Day 4

**Safety related work practices**

- Identifying specific electrical safety related hazards
- Working on or near live parts
- Electrical current and level of electric shocks
- Requirements for electrical safe work practices
- Definition of “ Electrical safe work conditions”
- Steps taken to make sure work conditions are “ Electrically Safe”
- Control of hazards with electrically safe work conditions

Day 5

**LOTO (Lock out Tag out) in Electrical Safety**

- Energized and de-energized work conditions
- Electrical Isolation
- Role of LOTO in Electrical Isolation
- Permit to work system ( PTW)
- Hot and Cold work permits
- Electrical permit and other types of permits
- Insulated tools and non sparking tools

**Note:**

**Pre & Post Tests will be conducted**

**Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.**

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