



Fundamental Risks  
Involved in Plant Operations

# safety awareness TRAINING



*Safety  
Training  
Series*

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# The ever changing environment of safety regulations...

## Overview

- ❑ Latest Trends
- ❑ Relationships of ANSI B11, OSHA 1910,
- ❑ NFPA 79, RIA Standards
- ❑ Safety Plans and Systematic Approaches to Identify all Tasks and Hazards
- ❑ Principles of Risks Assessments & Safety Strategy
- ❑ Safety Audits & Risk Analysis
- ❑ Safety Justification Examples

## Hazard Communication

- ❑ Addresses OSHA Standard 29CFR1910.1200
- ❑ Materials Safety Data Sheets
- ❑ Hazard Communication Sheets (HCS)

## Confined Space Entry

- ❑ Addresses OSHA Regulation 29CFR1910.146
- ❑ Principles of Confined Space Entry
- ❑ Monitoring Combustible Gases
- ❑ Emergency Procedures

## Fall Protection

- ❑ Address OSHA Regulation 29CFR1910.66
- ❑ Awareness of Workplace Hazards
- ❑ Use & Care of Fall Protection Systems

## Lockout Awareness

- ❑ Addresses OSHA Regulation 29CFR1910.147
- ❑ OSHA Requirements & Procedures
- ❑ Maintenance/Construction Energy Control
- ❑ Energy Isolation: Electrical, Pneumatic
- ❑ Potential, Hydraulic and Mechanical
- ❑ Individual Lockout/Tag Out Procedures

## Hot Work Requirements

- ❑ Definition
- ❑ Hot Work Permits
- ❑ Duration

## Material Hazards

- ❑ Hazchem Spills
- ❑ Handling Liquid Petroleum Gas
- ❑ Airborne Substances

## Crane & Hoist Safety

- ❑ Address OSHA Regulation 29CFR1910.179, 180
- ❑ Terminology and Nomenclature
- ❑ Federal Regulations of Overhead, Radio Controlled Cranes and Hoists
- ❑ Basic Operation Procedures/Safe Usage
- ❑ Proper Load Handling Procedures

## Facilities

- ❑ Vehicle Safety
- ❑ Control of Visitors and Contractors
- ❑ Safety Signage
- ❑ First Aid

## Ergonomic Issues

- ❑ Definition of Ergonomic Issues
- ❑ Identify and Minimize Risks
- ❑ Countermeasures and Improvements
- ❑ Lifting Equipment Usage

## Electrical Safety Practices

- ❑ Causes of Electrical Accidents
- ❑ Contact with Electricity
- ❑ First Aid for Electrical Shock Victims
- ❑ Selecting Sizes for Safety-Ground Cables
- ❑ Locking and Tagging
- ❑ Safe Work Practices for Energized and De-energized Work

## Hazard/Risk Analysis

- ❑ Safe Work Clearance for Energized Conductors
- ❑ Flash Protective Boundary
- ❑ Calculating the Incident Energy Exposure
- ❑ Selecting Appropriate PPE
- ❑ Specialized Protective Equipment
- ❑ Phasing Checks

## Equipment Design for Safety

- ❑ Interlock Devices
- ❑ Safe Lifting of Circuit Breakers
- ❑ Mechanical Hazards
- ❑ Provision for Locking, Tagging and Grounding
- ❑ Visible Disconnect Guarding

## Preparation for Maintenance

- ❑ Authorization for De-energization
- ❑ Establishing a Visible Disconnect
- ❑ Use of Voltage Detectors
- ❑ Safe Use of Multimeters
- ❑ Locking, Tagging and Grounding
- ❑ Use of a Grounding and Test Device
- ❑ Hazards of Removing Panels
- ❑ Control Circuit Hazards
- ❑ Instrument Transformer Hazards

## Cardio Pulmonary Resuscitation (CPR)

- ❑ Learning Objectives
- ❑ Protecting Your Heart and Blood Vessels
- ❑ Applying AHA Chain of Survival
- ❑ Life Threatening Emergencies
- ❑ CPR Practice
- ❑ Barrier Devices and Masks

## Machine Safety Circuits

- ❑ CAT 1-4
- ❑ Safety Combinations
- ❑ Emergency Circuits
- ❑ Protective Door Monitoring
- ❑ Load Feeders
- ❑ Safe Motion Control

## Robot Safety

- ❑ Steps to Safe Robots
- ❑ RIA 15.06.99-1999 Robot Safety Standards
- ❑ Safeguarding Workcells Gating and Entry
- ❑ Interference Zones
- ❑ Reach Restrictions and Perimeter Guards
- ❑ Pinch Points, Interlocks and Lockout

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## Siemens Energy & Automation, Inc.

3333 Old Milton Parkway  
Alpharetta, GA 30005

1-800-241-4453

seainfo@sea.siemens.com

[www.sea.siemens.com/training](http://www.sea.siemens.com/training)

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