HSE 2020

BTS
Training & Consultancy

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Process Safety Management Compliance

Duration: 5 Days

Introduction:

Oil, gas and chemical field companies handle the most dangerous chemicals and processes across all industries. Catastrophic incidents and casualties are products of the failure to manage process safety

The international and US standards for Safety Instrumented Systems (SISs), International Electro technical Commission IEC 61511 and ISA 84, require that Safety Integrity Levels (SILs) be determined for Safety Instrumented Functions (SIFs) to meet tolerable risk criteria. The standards identify several methods that can be used for this purpose including Layers of Protection Analysis (LOPA), risk graphs and risk matrices. This course explains how these methods can be used. A detailed procedure is provided for using LOPA for SIL determination. Course participants will have one sight visit day to a company related to their jobs specification (Petrochemical Company).

Methodology

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration.

Who Should Attend?

- Process safety personnel
- Instrument Engineers
- Control systems engineers
- Project engineers
- Facility personnel who are involved in implementing standards for safety instrumented systems

Course Objectives:

- Apply and gain an in-depth knowledge on OSHA Process Safety Management (PSM)
- Learn how to perform a LOPA study to evaluate the effectiveness of process safeguards
- Be able to determine required SILs for SIFs using LOPA, risk graphs and risk matrices
- Improve safety skills through techniques in process safety management
- Promote business continuity improvement through understanding of safer systems design.

- ## Course Outline:

DAY 1

- Introduction
- Overview
- Requirements of SIS standards
- Concept of hazardous events for SIFs
- Meaning and development of risk criteria
- Use of risk matrices

DAY 2

- Use of risk graphs
- Process Safety Concepts
- Overview of LOPA
- Use of LOPA
- Documentation and example application
- Selection of hazard scenarios

DAY 3

- Definition of scenario consequences
- Identification of initiating events
- Consideration of enablers
- Failure data
- Making risk decisions
- Remaining Steps

DAY 4

- Understanding protection layers
- Other uses of LOPA
- SIL Terms and concepts
- Requirements for SIL verification
- Reliability metrics

DAY 5

- SIL determination
- SIS components and their failures
- Diagnostics
- Common cause failures
- Failure modes, effects and diagnostic analysis