

Advanced Process HAZOP

INTRODUCTION

- It is universally recognised that for any company to succeed it must take a proactive approach to risk management. Over the last few years Companies and a number of Countries legislators have been focusing on Process Safety as a method to reduce the risks posed by hazardous industries. Process Hazard Analysis (PHA) is recognised as being a critical tool in the implementation of a successful risk management system.
- As Hazard and Operability (HAZOP) studies are now recognised world-wide as being the qualitative risk assessment methodology of choice in the Process Industries, there will be additional focus on this specific aspect of Process Hazard Analysis.

In this Health & Safety training seminar, the delegates will learn:

- How to Apply Advanced Risk Assessment Techniques?
- Mechanics of Dispersion, Fire, Explosion and Toxic Releases
- The Concept of Quantified Risk Assessment “QRA”
- Hazard and Operability (HAZOP) Study Methodology
- HAZOP Team Leadership

OBJECTIVES

Delegates attending this Health & Safety training seminar will:

- Understand the concepts of Risk Assessment and Risk Management
- Understand the estimation and evaluation of risks - Qualitative, Semi-Quantitative and Quantified Risks
- Techniques for Hazard Identification and Analysis - Check-Lists, Risk Profiling, HAZOP, FMEA and Task-Based Risk Assessment
- Cause-Consequences Analysis - The Role of Fault Trees and Event Trees in Accident Prevention
- Understand HAZOP studies their benefits and their short comings
- Understand the requirements of a Team Leader or Facilitator, scribe and team members during HAZOP studies
- Be able to facilitate a HAZOP study

TRAINING METHODOLOGY

- Participants will learn by taking part in exercises, syndicate and group workshops, as well as looking at case studies and real life situations.

ORGANISATIONAL IMPACT

- In addition to the professional development of staff, the organisation should be able to prioritise resources to demonstrate that process risks are adequately controlled.

PERSONAL IMPACT

- Attendees will be able to apply skills learnt from this Health & Safety training seminar on Advanced Process HAZOP at a practical level to identify sources of major hazards and to prioritise decisions for their control.

WHO SHOULD ATTEND?

- HSE Technical Personnel
- Project Engineers
- Maintenance Personnel
- Process Engineers involved in design and modification
- Instrumentation and Control Engineers

Course Outline

Introduction to Risk Assessment

- Training Seminar Introduction: Delegate and Instructor Introductions; Training Seminar Objectives
- The Concepts of Hazards, Risk and Risk Assessment
- Methods for Risk Evaluation
- Integrating Risk Assessment within Risk Management
- Qualitative, Semi-Quantitative and Quantitative Risk Assessment Methodologies
- Feedback and Review of

Risk Assessment Techniques: HAZOP

- Introduction to Hazards Identification and Analysis Techniques
- Techniques for Hazard Identification and Analysis – HAZOP
- Where and When to Use HAZOP and the Requirements for a Successful HAZOP Study
- Team Composition for HAZOP Studies
- Guide Words and Process variables used for HAZOP Studies
- Report Back and Review of

HAZOP Leadership Techniques

- HAZOP Team Leader / Facilitator Requirements
- HAZOP Scribe Requirements
- Facilitating HAZOP Studies - do's and don'ts
- Information required to allow Successful HAZOP Studies
- Review of Commercial Software used for HAZOP and Management of Change 'MOC'
- Report Back and Review of

Consequence Analysis

- Theory Behind Fire, Explosion and Toxic Dispersion Modelling Utilised in Quantitative Risk Assessments
- Types of Fires and their Effects on People and Equipment
- Types of Explosions and their Effects on People and Equipment
- Review of Software available for Consequence Calculations
- Report Back and Review of

The Role of QRA

- Introduction to Quantified Risk Assessment "QRA"
- The Role of Event Tree Analysis in Scenario Development
- The Role of Fault Tree Analysis for Multi-causation Analysis
- Applications for ETA and FTA
- Failure Data for Use in QRA's
- Societal Risk and Individual Risk
- Review of Software available for Quantitative Risk Assessments
- Report Back on and Discussion
- Programme Review and the Way Ahead