



### **Advanced Process HAZOP**

**Course Venue:** France - Paris

**Course Date:** From 26 Sep 2021 To 30 Sep 2021

**Course Place:** Champs Elysees

**Course Fees:** 7500 GBP



## **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 training course , 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**

- 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

## **The Course Contents**

### **Day One**

#### **Introduction to Risk Assessment**

- 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

### **Day Two**

#### **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
- Syndicate exercise – application of HAZOP to relevant processes

### **Day Three**

#### **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
- Case study where each delegate has the opportunity to facilitate a HAZOP meeting
- Review of commercial software used for HAZOP and Management of Change 'MOC'

### **Day Four**

#### **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

### **Day Five**

#### **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
- Programme review and the way ahead