

**Training Title**

**HAZARD IDENTIFICATION & HAZOP STUDY**

**Training Duration**

5 days

**Training Venue and Dates**

REF HS018	Hazard Identification & HAZOP Study	5	16-20 September 2024	\$6,500	London, United Kingdom
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In any of the 5 star hotels. The exact venue will be informed soon

**Training Fees**

- \$6,500 per participant includes Training Materials/Handouts, Tea/Coffee breaks, Refreshments and Lunch.

**Training Certificate**

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

**TRAINING OVERVIEW**

**TRAINING INTRODUCTION**

Unexpected releases of toxic, reactive, or flammable liquids and gases in processes involving highly hazardous chemicals have been reported for many years. Incidents continue to occur in various industries that use highly hazardous chemicals which may be toxic, reactive, flammable, or explosive, or may exhibit a combination of these properties. Regardless of the industry that uses these highly hazardous chemicals, there is a potential for an accidental release any time they are not properly controlled. This, in turn, creates the possibility of disaster.

A Process Hazards Analysis — or PHA — has two primary purposes. The first is to identify high-risk hazards associated with a chemical process — where a process is defined as any activity involving the use, storage, manufacture, handling or movement of chemicals. Once the high-risk hazards have been identified, corrective action can then be taken either to eliminate them or to minimize their impact.

The second purpose of a PHA is to create a way of thinking among all managers, employees and contract workers so that they will recognize process hazards during the normal course of their work.

The success of every company depends of each employee's understanding of the business's key components. Employee training and development will unlock the companies'

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profitability and reliability. When people, processes and technology work together as a team developing practical solutions, companies can maximize profitability and assets in a sustainable manner.

**TRAINING DESCRIPTION:**

This course is designed for participants experienced in the HAZOP technique. It begins by thoroughly revising the principles of HAZOP and the group response required for HAZOP to be most effective, and then concentrates on the organisation, leadership and management of HAZOP study teams. Almost half the time available is dedicated to workshops, enabling participants to practice leadership skills and team management under tutored observation. This provides an opportunity for expert guidance in a controlled environment before exposure in the real world. The course includes guidance on post-action procedures and the use of recording software, and highlights potential pitfalls that can significantly affect the efficiency of a study

**TRAINING OBJECTIVES:**

Upon completion of this course, participants will have a complete understanding of the following:

- How to plan and execute PHA study effectively and efficiently.
- Understand the Concept of Safety and Risk in oil & gas industry
- Identify Work related Hazards (HAZID)
- Carry out (what if analysis)
- Carry out Job Hazard Analysis (JHA)
- Carry out Hazard and Operability Studies (HAZOP)
- Understand the Limitation of HAZOP
- Understand the Optimization of HAZAN
- Carry out Failure Mode and Effects Analysis (FMEA)

To Learn how to effectively lead, manage and organise a HAZOP study team.

Process Hazard Analysis (PHA) studies are the foundation for process safety and risk management of hazardous process systems. They help companies identify hazard scenarios that could adversely affect people, property, or the environment.

There are several predictive PHA techniques and methodologies. They include Hazard and Operability Studies (HAZOP), What If Studies, Failure Modes and Effect Analysis (FMEA), and Major Hazard Analysis (MFA).

The HAZOP Team leader's roles are;

1. Prepares for the study

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2. Advises on the selection of team members
3. Methodology and definition of study scope
4. Oversees the team's brainstorming of cause and consequences of possible accidents
5. Formation of recommendations for appropriate corrective actions

- a) To lead teams in effective HAZOP Analysis
- b) To perform multi disciplinary team study intended to identify and analyze the significance of potential process hazards
- c) Make recommendations for eliminating the hazards for reducing the consequences of accidents
- d) Improving the general facility safety

The goal of the course would be to refresh the knowledge of those who have a basic understanding of PHA techniques and to build a foundation to those who are new to the PHAs.

#### TRAINING OUTCOMES:

- How to perform a Process Hazard Analysis to meet Process Safety Management requirements for initial PHAs and management of change analyses.
- How to analyze operating procedures for critical scenarios.
- Realistic workshops

Apart from learning the above, the participants will gain the following benefits after attending the course

- How to organise a HAZOP study
- How to manage a HAZOP team
- The importance of a positive approach to HAZOP
- Post-action procedures

#### WHO SHOULD ATTEND?

Those with previous HAZOP study experience and a basic knowledge of loss prevention and safe working practice, including:

- safety managers
- plant designers
- process engineers
- project engineers
- operational personnel
- maintenance engineers

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Besides the above mentioned, the following personnel will also benefit

- People who are making day to day decisions regarding operation, design, maintenance, and economics of process industry plants.
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding of process safety.
- Other professionals who desire a better understanding of the subject matter

#### 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. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course. Very useful Course Materials will be given.

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

#### COURSE OUTLINE

- Introduction - OHSAS and HAZOP  
The place of HAZOP in risk management  
Basic principles of the HAZOP techniques
- Hazard Assessment Definition
  - Review of actual industry hazards
  - PHA Study Objectives
- HAZOP study reporting  
The leadership of a HAZOP study team:
  - the influence of time
  - features of a team; coping with the variety of personalities
  - guidance notes for team leaders; leadership techniques
  - controlling discussion
  - questioning/listening techniques
  - the responsibilities of team members
  - ensuring understandable actions are generated
  - major considerations when leading a HAZOP study
  - assessing productivity and team effectiveness
- Team Leader Responsibilities

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- Preparation and Organization of HAZOP Studies
- *Elements of Facility Risk*
- PHA Teams
- PHA Methods
- - HAZOP
- - Preliminary Hazards Analysis
- - Checklist Analysis
- - What-if? Analysis
- - Checklist / What-if? Analysis
- - FMEA
  
- Importance of Business Records / PHA Terminology
- Selection of Study Nodes / Design intent of node
- Introduction of Guide words
- The management of HAZOP studies:
  - HAZOP documentation
  - main planning features of a study; time-tabling
  - planning a complex HAZOP study
  - identification of nodes or division of a drawing into sections
  - estimating the time required for a study
  - the HAZOP study team environment
  - post-HAZOP study activities including report preparation
  - control of modifications
  
- Guidelines for managing the team
- Recording Study Results / Maintaining Quality Control
- Management of Results and Recommendations
- Case Study
- General points about carrying out a HAZOP study:
  - common mistakes made by team leaders
  - potential problem areas with HAZOP studies
  - quality control of HAZOP studies
  - problems arising during a HAZOP study and how to deal with them
- Communication of Results to Management
- Management of Change

NOTE:

**Pre & Post Tests will be conducted**

**Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will**

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be carried out.

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