

# HAZARD IDENTIFICATION & HAZOP STUDY



**HSE110**  
**Health, Safety &**  
**Environmental**

**COURSE TITLE****HAZARD IDENTIFICATION & HAZOP STUDY****COURSE DATE/VENUE**

24 - 28 August, 2020

London, UK

**COURSE REFERENCE**

HSE110

**COURSE DURATION**

05 Days

**DISCIPLINE**

Health, Safety & Environmental

**COURSE 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' 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.

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

### **COURSE OBJECTIVE**

**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)

### **COURSE AUDIENCE**

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

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

## **COURSE CONTENT**

- 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
- 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

### **COURSE CERTIFICATE**

**TRAINIT ACADEMY** will award an internationally recognized certificate(s) for each delegate on completion of training.

### **COURSE FEES**

\$6,150 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

### **COURSE METHODOLOGY**

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation,

discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. 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.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions

