

# H S E

HEALTH

SAFETY

ENVIRONMENT



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## Hazard and Operability Studies (HAZOP)

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**Duration:** 5 Days



### Introduction:

Hazard and Operability Studies (HAZOP) is one of a number of Process Hazard Analysis (PHA) techniques used to identify Health Safety and Environmental risks in Major Hazard Facilities. HAZOP provides some measure of assurance

through a structured and systematic examination of the design and operability of a system that the process design will be safe. It also demonstrates compliance with HSE standards and legislation. It is process industry best practice.

HAZOP is a **proactive** and **systematic** identification, evaluation, and mitigation or prevention of potential hazards associated with the processing or handling of highly hazardous chemicals. It is a highly structured technique, which, when properly applied results in the rigorous analysis of the hazards than a process plant might face. It is generally implemented as a practical, multi-disciplined workshop or study, comprising all the necessary skills required to achieve the objectives of the study.

Whilst the technique is highly effective, it does consume considerable

resources to achieve an effective study. It is therefore vital that resources are directed where they are most needed so that the study is targeted for efficiency. Therefore, the role of the Team Leader is crucial in achieving the study goals.

Although HAZOP techniques have traditionally been applied to the process and oil/gas industries, they can be equally employed in other industries, activities and tasks. Ideally HAZOP techniques should be applied at the project development stage as part of the project HSE plan, but can also be applied to existing systems/processes as well as for process modifications.

## **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?**

This seminar is primarily designed to meet the needs of potential HAZOP Team Leaders and Secretaries, to provide them with the necessary skills and framework to guide the HAZOP team members through the various stages of the analysis to the production of a HAZOP report and action plan. This course is also aimed at all personnel involved in the process of risk assessment drawn from every level of process operations, production, design, maintenance and health & Safety.

## **Course Objectives:**

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### **By the end of this course delegates will be able to:**

The aim of this course is to provide the participants with the essential knowledge of HAZOPs and the team leadership skills required to lead teams in effective HAZOP studies.

In addition to an introduction and development of the tools and techniques used in HAZOP, this seminar provides an insight into the framework for HAZOP in the context of HSE Management System, which will enrich the effectiveness of the studies and produce a creative and innovative environment.

The course is based on OSHA 29CFR Part 1910 Process Safety Management (PSM) regulations and was developed by professional educators using instruction techniques and audio-visual materials specifically designed for adult learners. There is a focus on developing a practical understanding of what it takes to plan and lead a successful study and on practicing new skills.

### **Upon the successful completion of this course, participants will:**

- Have gained an understanding of the concepts of HAZOP and of the major techniques for hazard identification and when each should be used
- Have gained an understanding of the responsibilities involved in HAZOP leadership and training in the skills necessary for leading HAZOP studies
- Have gained basic skills in the use of the alternative techniques and in the use of software as a tool in the facilitation of Process Hazards Analysis.

## **Course Outline:**

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### **DAY 1**

- Seminar Introduction - Aims and objectives
- HSE Management philosophy
- Risk management principles

## **DAY 2**

- Process Hazard Analysis
- HAZOP at various stages of Project
- Teamwork and Team Effectiveness

## **DAY 3**

- HAZOP Methodology
- Alternative Process Hazard Analysis Methodologies
- Planning the HAZOP
- Process safety management (elements), function and management control.

## **DAY 4**

- PHA Documentation (Inputs and Outputs)
- PHA Software
- HAZOP Workshop Exercise
- Asset integrity process

## **DAY 5**

- Process safety audit requirements
- HAZOP Workshop Exercise (Continued)
- Q & A Session
- Conclusion