



# N641: PHA/HAZOP Facilitation Training

Tutor(s): Marcel Leal-Valias / Richard Carter

3 Days

Competence Level:  
Awareness



Classroom Course

## Summary

This 3-day PHA / HAZOP course is designed to deliver expert instruction on how to successfully plan and execute Process Hazards Analysis (PHA) studies efficiently and effectively. This includes understanding the principles behind each of the major PHA methods (HAZOP, What-if?, Checklist, FMEA), learning how to deal with challenging personalities within the PHA team and how to avoid common pitfalls and traps so your PHA studies run smoothly.

## Learning Outcomes

Participants will learn to

1. Develop a robust understanding of the key concepts of Process Hazards Analysis (PHA) and its role in Health, Safety and Environment management.
2. Define and apply the most common PHA hazard identification techniques.
3. Characterize the responsibilities involved in PHA participation and leadership.
4. Identify and apply the basic skills and practices of What-If? and HAZOP techniques.
5. Construct realistic guidelines and effective leadership strategies to facilitate PHA's within organizations.
6. Distinguish the principles behind each of the major PHA methods (HAZOP, What-If, Checklist, FMEA).
7. Formulate strategies for dealing with challenging personalities within the PHA team and avoid common pitfalls during PHA studies.
8. Provide practical opportunities to prepare drawings, populate software and facilitate studies using Piping and Instrumentation Diagram (P&ID) drawings.

## Duration and Training Method

Three classroom days providing 2.4 CEU (Continuing Education Units) or 24 PDH (Professional Development Hours)

## Who Should Attend

- Supervisors, managers and engineers responsible for PHA studies
- PHA / HAZOP Team Leaders & scribes
- Health & Safety / HSE professionals
- Process Safety Management (PSM) / Loss Management specialists

## Prerequisites and Linking Courses

It is recommended that the following courses be completed prior to attending this course.

- P&ID (Piping and Instrumentation Diagram) and Engineering Drawings Interpretation

## Course Content

### Day One

- I. Introduction
  - a. Piping and Instrumentation Diagram (P&ID)



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2. Quantitative and qualitative hazard analysis
3. Elements of facility risk
4. PHA teams
5. PHA methods
  - a. Hazards and Operability Study (HAZOP)
  - b. Preliminary Hazards Analysis
  - c. Checklist Analysis
  - d. What-If Analysis
  - e. Combined Checklist / What-If? Analysis
  - f. Failure Modes and Effects Analysis (FMEA)

## Day Two

6. Method selection criteria
7. PHA documentation issues
8. PHA leadership
  - a. PHA Facilitation Skills
  - b. Team Leader Qualifications
  - c. PHA Leader Responsibilities
  - d. PHA Group Dynamics
9. PHA management
  - a. Defining Scope and Objective
  - b. Estimating Time Requirements
  - c. Documenting the Study
10. PHA Workshop
  - a. HAZOP "Practice" Study

## Day Three

11. PHA Workshop (continued)
  - a. PHAZOP "Practice" Study
  - b. What-If? "Practice" Study