Advanced Process Hazard Analysis and HAZOP Training Course

3 – 7 October 2027
Chicago

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Training Center

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Ref: 1302_196281 **Date:** 3 – 7 October 2027 **Location:** Chicago **Fees:** 12000 Euro

Overview

Advanced Process Hazard Analysis and HAZOP Training Course is a one-week advanced course for process safety engineers, HSE managers, occupational safety professionals, operations leaders, risk analysts, and supervisors who leave with a Process Hazard Analysis and HAZOP Study Portfolio. Participants connect occupational safety responsibilities with process hazard analysis, HAZOP study facilitation, safeguard evaluation, human factors, and recommendation tracking. The course applies OSHA process safety management requirements as a regulatory reference and IEC 61882 HAZOP guidance as a methodological reference; it does not provide OSHA certification, approval, or endorsement. Agile Leaders Training Center presents HAZOP as a disciplined team study rather than a checklist exercise.

Who Should Attend

- Process safety engineers responsible for process hazard analysis
- HSE and occupational safety managers working with high-hazard operations
- Risk analysts who assess deviations, consequences, and safeguards
- Operations and maintenance leaders who contribute process knowledge to studies
- Supervisors and technical specialists preparing to lead or support HAZOP sessions

The course assumes familiarity with industrial operations, safety risk assessment, and process documentation. It excludes basic workplace inspection, detailed quantitative risk assessment, safety integrity level verification, and any claim of regulator-issued certification.

Departments and Industries

The course supports functions and industries that manage hazardous processes and need auditable risk-analysis decisions.

- Process safety, occupational safety, HSE, and enterprise risk functions
- Operations, engineering, maintenance, projects, and technical assurance teams
- Oil and gas, petrochemical, chemical, energy, and utilities organizations
- Pharmaceutical, food processing, mining, and industrial manufacturing facilities
- Consultancies and public organizations overseeing process-risk governance

Learning Objectives

By the end of this course, participants will be able to:

- Distinguish occupational hazards from process-safety scenarios and connect their controls
- Define the scope, boundaries, nodes, design intent, and team roles for a HAZOP study
- Apply guide words and parameters to identify credible process deviations
- Develop traceable cause, consequence, safeguard, and recommendation records
- Evaluate safeguard independence, human factors, and action quality
- Plan recommendation tracking, change control, revalidation, and study closeout

Course Agenda

Day 1: Occupational Safety and Process Risk Context

- Occupational Hazard and Process-Safety Scenario Boundary Map
- OSHA Process Safety Management PHA Requirement Matrix
- High-Hazard Process Information Readiness Checklist
- Incident, Human-Factor, and Operating-History Evidence Review
- Process Hazard Analysis Method Selection Guide

Day 2: HAZOP Definition and Preparation

- IEC 61882 HAZOP Study Lifecycle Map
- Study Terms of Reference and Scope Charter
- Process Node and Design-Intent Definition Worksheet
- Multidisciplinary Team Role and Competence Matrix
- P&ID, Procedure, and Process-Data Readiness Review

Day 3: Guideword Examination and Scenario Development

- Guideword and Process-Parameter Application Matrix
- Deviation, Cause, and Consequence Reasoning Chain
- Existing Safeguard Evidence Register
- Human Action and Organizational-Factor Prompt Set
- HAZOP Study Facilitation and Session-Control Protocol

Day 4: Safeguards, Recommendations, and Risk Decisions

- Safeguard Function and Independence Challenge Guide
- Consequence Severity and Scenario-Priority Matrix
- Recommendation Necessity and Quality Test
- Action Owner, Due Date, and Resolution Register
- Management of Change and Residual-Risk Decision Route

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Day 5: HAZOP Governance and Applied Practice

- Exercise: Node Definition and Design-Intent Review
- Exercise: Facilitated Guideword Examination
- Exercise: Safeguard and Recommendation Challenge
- Exercise: Action Closeout and Revalidation Planning
- Capstone Exercise: Process Hazard Analysis and HAZOP Study Portfolio

Practical Exercises

Participants work through suggested industrial scenarios that require clear evidence, disciplined facilitation, and defensible decisions.

- Suggested activity: separate occupational exposures from loss-of-containment process scenarios.
- Suggested activity: prepare nodes and design intent from a simplified process diagram.
- Suggested activity: conduct a guideword examination and record deviations, causes, and consequences.
- Suggested activity: challenge safeguards and rewrite weak recommendations into trackable actions.

FAQs

What is process hazard analysis and how does HAZOP support it?

Process hazard analysis is a systematic evaluation of process hazards and failure scenarios. HAZOP supports it by applying guide words to design intent and identifying deviations, causes, consequences, safeguards, and required actions.

Does this course provide OSHA certification?

No. The course uses OSHA process safety management requirements as an authoritative reference but does not provide OSHA certification, approval, accreditation, or endorsement.

What does HAZOP study facilitation require?

HAZOP study facilitation requires a defined scope, prepared process information, competent multidisciplinary participation, consistent guideword use, neutral questioning, clear records, and disciplined time management.

How are safeguards evaluated during a HAZOP study?

Safeguards are evaluated for their documented function, relevance to the scenario, reliability evidence, independence, human dependence, and vulnerability to common causes or operating conditions.

What happens after recommendations are issued?

Recommendation tracking assigns ownership, due dates, evidence requirements, risk decisions, change controls, and verification. Closeout confirms that actions address the recorded scenario without introducing unmanaged changes.

Conclusion

The course integrates occupational safety context, process hazard analysis, HAZOP preparation, guideword examination, safeguard evaluation, and recommendation tracking. Participants take back a Process Hazard Analysis and HAZOP Study Portfolio containing charters, node sheets, session records, decision matrices, and an action register. This portfolio turns workshop discussion into traceable process-risk decisions and verified follow-up.