

Course No. 1653

HAZOP Study & Facilitation Training Course

**PROCESS SAFETY MANAGEMENT
OIL & GAS**

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The HAZOP Study & Facilitation Training Course provides a practical and structured approach to planning, conducting, facilitating, documenting, and reviewing Hazard and Operability Studies within oil and gas and other high-hazard process industries. The course focuses on developing the technical understanding and facilitation skills required to identify process deviations, evaluate their causes and consequences, assess existing safeguards, and generate effective risk reduction recommendations.

HAZOP is a structured technique used to systematically examine process designs and operating conditions by identifying deviations from intended operation. In oil and gas facilities, effective HAZOP studies can support safer design, improved operational readiness, better management of process changes, and stronger control of hazards associated with hydrocarbons, pressure, temperature, flow, containment, utilities, instrumentation, and process control systems.

This HAZOP Study & Facilitation Training Course goes beyond understanding HAZOP terminology. Participants will learn how to prepare for a HAZOP study, define study objectives and boundaries, select and organize the multidisciplinary team, establish effective working rules, apply guidewords consistently, and facilitate productive discussions. The program also addresses how to distinguish credible scenarios from assumptions that do not add value to the study.

A strong HAZOP facilitator must be capable of maintaining technical focus while encouraging constructive participation from process, operations, engineering, instrumentation, maintenance, safety, and other specialists. The course therefore emphasizes facilitation techniques, questioning skills, management of disagreements, control of meeting dynamics, effective documentation, and maintaining the quality and consistency of HAZOP sessions.

Through practical exercises and realistic oil and gas process scenarios, participants will conduct structured HAZOP discussions, identify deviations, analyze causes and consequences, evaluate safeguards, and formulate clear recommendations. The course also addresses HAZOP quality assurance, action tracking, revalidation, and the relationship between HAZOP findings and wider process safety management activities.

Objectives

- Analyze the principles, purpose, scope, and methodology of HAZOP studies within oil and gas and process industry environments.
- Develop a structured approach for preparing HAZOP studies, including scope definition, process information review, node selection, and team preparation.
- Apply HAZOP guidewords systematically to identify meaningful process deviations from intended operating conditions.
- Evaluate the causes and consequences of identified deviations using structured technical questioning and evidence-based discussion.
- Assess existing safeguards, control systems, alarms, procedures, and protective measures associated with identified scenarios.
- Facilitate multidisciplinary HAZOP sessions while maintaining technical focus, balanced participation, and effective time management.
- Improve questioning, listening, challenge, and consensus-building techniques required for effective HAZOP facilitation.
- Distinguish credible process safety scenarios from unrealistic, duplicated, or insufficiently supported assumptions during HAZOP discussions.
- Develop clear, specific, technically justified, and actionable HAZOP recommendations based on identified risks and safeguard gaps.
- Evaluate the quality and completeness of HAZOP worksheets, study records, recommendations, and supporting documentation.
- Strengthen the integration of HAZOP findings with process safety management, Management of Change, design review, commissioning, and operational readiness.
- Conduct a practical HAZOP study and demonstrate effective facilitation techniques by the end of the training program.

Who Should Attend

This training course is designed for professionals involved in process safety, engineering, operations, design, maintenance, project management, and risk management within oil and gas companies, refineries, petrochemical facilities, processing plants, energy organizations, and other high-hazard process industries.

The program is particularly suitable for Process Safety Engineers, Process Engineers, Chemical Engineers, Operations Engineers, Project Engineers, Design Engineers, Instrumentation and Control Engineers, Electrical Engineers, Mechanical Engineers, Reliability Engineers, HSE Professionals, and Risk Management Specialists. It is also highly relevant to Operations Managers, Engineering Managers, Maintenance Managers, Project Managers, Process Safety Managers, Facility Managers, and supervisors participating in HAZOP teams.

The course is especially valuable for professionals who are expected to participate in or facilitate HAZOP studies and need to strengthen their ability to lead structured technical discussions, challenge assumptions, document findings, evaluate safeguards, and develop meaningful recommendations. It is also appropriate for professionals involved in new project design, plant modifications, commissioning, start-up, operational changes, and Management of Change activities.

Learning Outcomes

- Explain the purpose, principles, structure, and application of HAZOP studies in oil and gas operations.
- Prepare the required process information, drawings, documents, and team arrangements for an effective HAZOP study.
- Define appropriate HAZOP study boundaries, process nodes, design intent, and operating parameters.
- Apply guidewords systematically to identify deviations involving flow, pressure, temperature, level, composition, control, and other process variables.
- Identify credible causes and consequences associated with process deviations.
- Evaluate existing safeguards, including alarms, interlocks, shutdown systems, procedures, containment systems, and other protective measures.
- Facilitate multidisciplinary discussions using effective questioning, listening, clarification, challenge, and consensus-building techniques.
- Manage different technical viewpoints and maintain productive participation during complex HAZOP sessions.
- Differentiate significant process safety concerns from issues that do not require additional action.
- Develop clear and actionable HAZOP recommendations with appropriate technical justification and priorities.
- Review HAZOP documentation for consistency, completeness, traceability, and technical quality.

- Connect HAZOP findings with Management of Change, process safety management, design verification, commissioning, and operational readiness.

Course Outline

DAY 01

HAZOP Fundamentals and Study Preparation

- Principles, objectives, scope, and role of HAZOP within process safety management
- HAZOP applications across oil and gas facilities, processing plants, refineries, and petrochemical operations
- HAZOP terminology, process variables, design intent, deviations, causes, consequences, and safeguards
- Study preparation, process information requirements, team composition, study boundaries, and node selection

PRACTICAL APPLICATION

Review a process flow diagram and prepare the scope, nodes, design intent, and study parameters for a HAZOP session

DAY 02

HAZOP Methodology and Deviation Identification

- Application of HAZOP guidewords to process variables and operating conditions
- Systematic identification of deviations from intended process operation
- Analysis of causes and consequences using structured technical questioning
- Identification of credible scenarios and evaluation of existing safeguards

PRACTICAL APPLICATION

Conduct a detailed HAZOP analysis for selected process nodes from an oil and gas facility

DAY 03

HAZOP Facilitation and Multidisciplinary Team Management

- Role, responsibilities, and competencies of an effective HAZOP facilitator
- Planning and structuring productive HAZOP meetings
- Facilitation techniques for technical questioning, clarification, challenge, and consensus
- Managing disagreements, dominant participants, incomplete information, and time constraints

PRACTICAL APPLICATION

Facilitate a simulated HAZOP session involving process, operations, engineering, instrumentation, maintenance, and HSE participants

DAY 04

Safeguard Evaluation and Recommendation Development

- Identification and evaluation of preventive and mitigation safeguards
- Control systems, alarms, interlocks, shutdown systems, procedures, and engineered protections
- Assessing safeguard adequacy and identifying gaps in risk control
- Developing clear, specific, technically justified, and actionable HAZOP recommendations

PRACTICAL APPLICATION

Review HAZOP findings, evaluate safeguards, challenge recommendations, and prioritize required actions

DAY 05

HAZOP Quality Assurance, Reporting, and Implementation

- HAZOP worksheet quality, documentation, traceability, and study consistency
- Review and validation of HAZOP findings and recommendations
- Action tracking, recommendation closeout, and verification of completed actions
- Integration of HAZOP with Management of Change, design reviews, commissioning, start-up, and operational readiness

DAY 05 — CONTINUED

FINAL WORKSHOP

Conduct and facilitate an integrated HAZOP study for an oil and gas process, document findings, evaluate safeguards, develop recommendations, and prepare an implementation action plan

Register or Request More Information

Course page: <https://quest-training.com/courses/hazop-study-facilitation-training-course>

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