

RISK MANAGEMENT FOR OIL AND GAS



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TRAINING CENTER



Introduction

Risk Management for Oil and Gas Training Course prepares professionals in the energy sector to control the hazards and uncertainties that define upstream, midstream, and downstream operations. Oil and gas carries major safety, environmental, operational, and financial exposure, and a single failure can cause lasting damage. This programme applies risk management to that reality. It covers process safety risk, project and operational risk, contractor exposure, and financial hedging decisions. Furthermore, it aligns practice with ISO 31000, IEC 61511, and industry process safety standards. In addition, participants test their judgement on realistic field scenarios. As a result, they can protect people, assets, and production.

Risk Management for Oil and Gas Course Objectives

- Apply ISO 31000 risk processes to oil and gas operations.
- Distinguish personal, process, and enterprise risk in energy assets.
- Conduct HAZOP, HAZID, and LOPA studies with confidence.
- Assess process safety risk using IEC 61511 and SIL concepts.
- Build risk registers for wells, facilities, and pipelines.
- Manage operational risk with barrier models and bow-tie analysis.
- Evaluate contractor and supply chain risk in field operations.
- Apply ALARP principles to risk reduction decisions.
- Analyse commodity price, currency, and project financial risk.
- Report risk to management, regulators, and joint venture partners.



Course Methodology

This course combines technical presentations, case analysis, and facilitated group workshops. Participants run a simulated HAZID session, build a bow-tie model for a process hazard, and review a risk register for a producing asset. In addition, financial risk scenarios link operational exposure to commercial outcomes. Templates, checklists, and peer review support immediate application.

Who Should Take This Course

- HSE and process safety professionals in energy companies.
- Operations, maintenance, and production managers.
- Risk managers in upstream, midstream, and downstream units.
- Project and drilling engineers and contracts specialists.
- Assurance, audit, and compliance staff in oil and gas.

Risk Management for Oil and Gas Course Outlines

Day 1: Risk Management Foundations in Oil and Gas

- Defining risk, hazard, and uncertainty in energy operations.
- ISO 31000 process applied to oil and gas assets.
- Personal, process, and enterprise risk distinctions.
- Risk governance and regulatory obligations.
- Risk registers for wells, facilities, and pipelines.
- Risk culture in high-hazard operations.
- Case study: a major process safety incident.



Day 2: Hazard Identification and Process Safety

- HAZID and HAZOP study methods.
- LOPA and layers of protection concepts.
- IEC 61511 and safety integrity level basics.
- Bow-tie analysis for major accident hazards.
- Barrier models and safety critical elements.
- ALARP and risk reduction decision criteria.
- Workshop: conducting a HAZID session.

Day 3: Operational and Asset Risk Management

- Operational risk in production and maintenance.
- Asset integrity and mechanical degradation risk.
- Well integrity and drilling risk management.
- Pipeline and transport risk assessment.
- Emergency response and crisis preparedness.
- Permit-to-work and control of work systems.
- Exercise: building a bow-tie for a process hazard.

Day 4: Contractor, Project, and Commercial Risk

- Contractor prequalification and performance risk.
- Contract risk allocation and insurance basics.
- Project risk in EPC and capital developments.
- Cost, schedule, and scope risk analysis.
- Commodity price and currency exposure.

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- Joint venture and partner risk considerations.
- Simulation: a project risk review meeting.

Day 5: Monitoring, Assurance, and Reporting

- Key risk indicators for production and safety.
- Incident investigation and root cause analysis.
- Assurance reviews and audit coordination.
- Risk reporting to boards and regulators.
- Cumulative risk and portfolio exposure.
- Lessons learned and control improvement.
- Action planning for asset risk reduction.

Conclusion

By successfully completing the Risk Management for Oil and Gas Training Course, participants will have acquired the knowledge to apply ISO 31000 to energy operations, run HAZOP and LOPA studies, and build effective barrier and bow-tie models. They will understand how process safety, asset integrity, contractor, and commercial risks connect to overall performance. As a result, they can reduce exposure across their assets. Gentex Training Center delivers this programme with practical tools participants apply directly in the field.

FAQs for the Risk Management for Oil and Gas course





Q1 What is the "Risk Management for Oil and Gas" course about?

It applies risk management to the specific hazards and uncertainties of oil and gas operations across upstream, midstream, and downstream. The course covers process safety studies, asset integrity, contractor and project risk, and commercial exposure, so participants can protect people, assets, and production.

Q2 What are the key benefits of the "Risk Management for Oil and Gas" course?

Participants gain a method that connects technical hazard analysis with operational and financial decisions. The course improves process safety performance, strengthens barrier and control management, reduces contractor and project surprises, and provides reporting that satisfies regulators, boards, and joint venture partners.

Q3 What skills will I gain from the "Risk Management for Oil and Gas" course?

Participants develop hazard identification and process safety analysis, operational and asset risk management, contractor, project, and commercial risk assessment, and risk monitoring, assurance, and reporting. These four skills form the core capability set the course reinforces through its workshops.



Q4 What tools, methods, or standards are covered in the "Risk Management for Oil and Gas" course?

The course covers ISO 31000, HAZID and HAZOP study methods, LOPA, IEC 61511 and safety integrity levels, bow-tie analysis, barrier models and safety critical elements, ALARP principles, permit-to-work systems, risk registers, key risk indicators, root cause analysis, and contract risk allocation frameworks.

Q5 How is the "Risk Management for Oil and Gas" course applied in real-world practice?

Professionals apply it by running HAZID and HAZOP studies before design or modification, maintaining bow-tie models for major accident hazards, and tracking safety critical element performance. They also screen contractor risk, analyse commodity exposure, and report asset risk to management, regulators, and partners.