



# Risk-Based Process Management in the Oil and Gas Industry

PIK858-0226 SNGP-1



<b>Place</b>	: Singapore	<b>Venue</b>	: Compass Offices (Singapore Land Tower) - TBC
<b>Start Date</b>	: 23-02-2026	<b>End Date</b>	: 27-02-2026
		<b>PPP</b>	: £4950



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**If you can't train them,  
you can't blame them!**

### Short Description:

This intensive five-day training program provides participants with a deep understanding of risk-based process management principles and their application within the oil and gas sector. The course bridges the gap between traditional process management and modern risk management frameworks, focusing on proactive risk identification, assessment, and mitigation strategies that align with industry best practices such as ISO 31000, API RP 754, and IEC 61511. Participants will explore how to integrate risk-based thinking into decision-making, operational planning, and process optimisation. Through a combination of lectures, interactive discussions, and practical case studies drawn from upstream, midstream, and downstream operations, participants will gain hands-on experience in applying risk-based approaches to improve safety, reliability, and operational performance. By the end of the course, attendees will be equipped with the tools and methodologies necessary to establish a sustainable risk-based process management culture within their organisations.

### Course Overview:

#### Target Audience

- Process engineers and operations engineers in oil and gas facilities.
- Health, Safety, and Environment (HSE) professionals.
- Risk management and compliance officers.
- Project managers and maintenance supervisors.
- Technical leaders and decision-makers involved in process safety.

### Course Objectives

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

1. Understand the fundamentals of risk-based process management (RBPM) and its relevance to the oil and gas industry.
2. Identify, assess, and prioritise operational and process risks using structured methodologies.
3. Integrate risk-based approaches into process design, operations, and maintenance activities.
4. Apply industry standards and frameworks (e.g., ISO 31000, API, IEC) to improve process safety performance.
5. Develop and implement effective risk control and mitigation strategies.
6. Monitor and continuously improve risk-based process management systems.
7. Foster a risk-aware organizational culture that supports proactive decision-making.

### Program Outline:

#### DAY 1: Foundations of Risk-Based Process Management

1. Overview of Process Management in Oil & Gas Operations.
2. Introduction to Risk-Based Thinking and its Importance.

3. Key Standards and Regulatory Frameworks (ISO 31000, API, IEC).
4. Elements of an Effective Process Safety Management System.
5. Building a Risk-Based Culture in Organisations.

## **day 2: Risk Identification & Assessment Techniques**

1. Understanding Process Hazards and Operational Risks.
2. Qualitative & Quantitative Risk Assessment Methods.
3. Tools and Techniques: HAZOP, FMEA & Bow-Tie Analysis.
4. Risk Ranking and Prioritisation for Decision-Making.
5. Practical Case Study: Risk Identification Workshop.

## **DAY 3: Risk Control & Mitigation Strategies**

1. Designing & Implementing Risk Control Measures.
2. Engineering vs. Administrative Controls.
3. Layers of Protection Analysis (LOPA).
4. Emergency Preparedness & Response Planning.
5. Case Study: Risk Mitigation in Offshore Operations.

## **DAY 4: Integration of Risk Management into Process Systems**

1. Embedding Risk Management in Design and Operations.
2. Linking RBPM with Maintenance and Reliability Programs.
3. Performance Monitoring and Key Risk Indicators (KRIs).
4. Digitalisation and Data-Driven Risk Management.
5. Workshop: Developing a Risk-Based Process Management Plan.

## **DAY 5: Continuous Improvement & Organisational Implementation**

1. Auditing and Reviewing Risk-Based Processes.
2. Lessons Learned and Incident Investigation Techniques.
3. Leadership and Accountability in Risk-Based Management.
4. Change Management and Organisational Learning.
5. Final Group Exercise: Building a Risk-Based Process Improvement Roadmap.