

# € TRAINING

Risk Based Process Management in Oil and  
Gas Industry

A photograph of four smiling professionals in a meeting. A woman in a black top and beaded necklace is in the foreground, looking towards the camera. Behind her are three other people (two men and one woman) in white shirts, looking towards the right. The background is a blurred office setting. A large blue curved graphic element is overlaid on the top and right sides of the image.

22 December 2024 -  
2 January 2025  
Sharm El-Sheikh (Egypt)



# Risk Based Process Management in Oil and Gas Industry

REF: E1813 DATE: 22 December 2024 - 2 January 2025 Venue: Sharm El-Sheikh (Egypt) - Fee: 7590 Euro

## Introduction:

This training program provides comprehensive instruction on managing risks inherent to oil and gas operations. It equips professionals with the skills and knowledge needed to implement effective risk-based process management strategies in the complex environment of the oil and gas industry.

## Program Objectives:

At the end of this program, participants will be able to:

- Implement risk-based process management strategies effectively in oil and gas operations.
- Identify, assess, and prioritize risks to enhance operational safety and efficiency.
- Develop and implement risk mitigation plans tailored to the specific needs of their organizations.
- Utilize industry best practices and regulatory guidelines to ensure compliance with risk management standards.
- Foster a culture of proactive risk management and continuous improvement within their teams and organizations.

## Targeted Audience:

- Marine Terminal Facility Managers and Coordinators.
- Terminal Superintendents, Supervisors, and Engineers.
- Safety and Environmental Managers, Engineers and Officers.
- Spill Management Team Members.
- Transfer Supervisors.
- Marine Shipping Coordinators.
- Dock Maintenance Planners.

## Program Outline:

### Unit 1:

Introduction to Risk-Based Process Management in Oil and Gas Industry:

- Overview of risk management principles and their application in the oil and gas sector.
- Understanding the importance of risk-based process management in ensuring operational safety and efficiency.
- Exploration of key concepts such as risk identification, assessment, mitigation, and monitoring.
- Introduction to regulatory frameworks and industry standards governing risk management practices in the oil and gas industry.
- Case studies highlighting the significance of effective risk-based process management in preventing incidents and optimizing operations.
- Discussion on the role of leadership and organizational culture in fostering a proactive risk management culture.

## Unit 2:

### Risk Assessment Techniques and Tools:

- Introduction to qualitative and quantitative risk assessment methodologies.
- Hands-on training in conducting risk assessments using techniques such as HAZID Hazard Identification, HAZOP Hazard and Operability Study, and FMEA Failure Mode and Effect Analysis.
- Utilization of risk assessment tools and software for scenario analysis and risk modeling.
- Interpretation of risk assessment results and prioritization of risk mitigation actions.
- Application of risk matrices and bow-tie diagrams for visualizing and communicating risk scenarios.
- Case studies demonstrating the practical application of risk assessment techniques in oil and gas operations.

## Unit 3:

### Process Safety Management Systems:

- Overview of process safety management PSM principles and regulations.
- Understanding the elements of a comprehensive PSM system, including process safety information, process hazard analysis, and management of change.
- Implementation of risk-based inspection RBI programs for equipment integrity management.
- Development of emergency response plans and procedures for mitigating process safety incidents.
- Integration of PSM systems with other management systems such as quality, health, safety, and environmental QHSE management.

- Discussion on best practices and lessons learned from process safety incidents in the oil and gas industry.

## Unit 4:

### Risk Mitigation Strategies and Controls:

- Identification of risk mitigation options and selection of appropriate risk control measures.
- Implementation of engineering controls, administrative controls, and procedural safeguards to reduce risk exposure.
- Application of safety instrumented systems SIS and other barrier-based risk control measures.
- Training and competency development programs for enhancing workforce awareness and skills in risk management.
- Integration of human factors engineering principles in risk mitigation strategies.
- Evaluation of the effectiveness of risk controls and continuous improvement initiatives.

## Unit 5:

### Asset Integrity Management:

- Introduction to asset integrity management AIM principles and frameworks.
- Identification of asset integrity threats and degradation mechanisms in oil and gas facilities.
- Implementation of risk-based inspection RBI strategies for assessing equipment integrity and reliability.
- Utilization of predictive maintenance techniques and condition monitoring technologies for early detection of asset failures.
- Development of integrity management plans and corrosion management programs.
- Case studies illustrating the importance of asset integrity management in ensuring safe and reliable operation of oil and gas assets.

## Unit 6:

### Environmental Risk Management:

- Overview of environmental risk assessment methodologies and regulations.
- Identification of potential environmental hazards and impacts associated with oil and gas operations.
- Implementation of environmental management systems EMS and pollution prevention measures.
- Development of spill response plans and emergency preparedness procedures.

- Integration of environmental risk management into overall risk-based process management frameworks.
- Discussion on sustainable practices and technologies for minimizing environmental risks in the oil and gas industry.

## Unit 7:

### Contractor Management and Supply Chain Risks:

- Understanding the risks associated with outsourcing and subcontracting in the oil and gas industry.
- Development of contractor management frameworks and contractor qualification criteria.
- Implementation of risk-based contractor selection processes and performance evaluation systems.
- Monitoring and supervision of contractor activities to ensure compliance with safety and quality standards.
- Assessment and mitigation of supply chain risks, including supply chain disruptions and dependencies.
- Collaboration and communication strategies for enhancing risk awareness and coordination among stakeholders.

## Unit 8:

### Operational Risk Management:

- Identification of operational risks arising from day-to-day activities in oil and gas operations.
- Assessment of operational risks using techniques such as job safety analysis JSA and task risk assessment TRA.
- Implementation of control measures and safe work practices to minimize operational risks.
- Development of operational risk registers and risk mitigation plans.
- Training and competency development programs for enhancing operational risk awareness and skills.
- Continuous monitoring and review of operational risks to identify emerging trends and improvement opportunities.

## Unit 9:

### Crisis Management and Business Continuity Planning:

- Introduction to crisis management principles and frameworks.
- Development of crisis management plans and incident response protocols.
- Conducting crisis simulation exercises and tabletop drills to test response capabilities.

- Integration of crisis management with business continuity planning BCP for maintaining essential functions during emergencies.
- Coordination with external stakeholders and emergency response agencies in crisis situations.
- Post-incident analysis and lessons learned sessions for improving crisis management and business continuity capabilities.

## Unit 10:

### Regulatory Compliance and Risk Reporting:

- Overview of regulatory requirements and industry standards related to risk management in the oil and gas industry.
- Implementation of risk reporting frameworks and risk communication strategies.
- Preparation of risk assessments, risk registers, and risk mitigation plans for regulatory compliance.
- Conducting internal and external audits to assess compliance with risk management requirements.
- Continuous improvement of risk management systems based on regulatory feedback and industry best practices.
- Collaboration with regulatory authorities and industry associations to address emerging risk management challenges.