



Process Safety Management in High-Risk Industries Training Course

2 – 6 November 2026
Abu Dhabi



Process Safety Management in High-Risk Industries Training Course

Ref: 103600352_76532 **Date:** 2 – 6 November 2026 **Location:** Abu Dhabi **Fees:** 4500 Euro

Overview

Major hazard facilities operate under conditions where minor mechanical failures or operational deviations can trigger catastrophic events. The Process Safety Management in High-Risk Industries Training Course delivers disciplined engineering and management principles to safeguard hazardous operations. Participants master the design and execution of a formal process safety management system, applying risk assessment methodologies to keep operational risks as low as reasonably practicable. Through structured analysis of process hazard identification, asset integrity, and human factors, professionals develop operational safeguards to prevent loss of containment, fires, and toxic releases. This course is delivered by Agile Leaders Training Center.

Who Should Attend

- HSE managers and supervisors seeking structured governance for major hazard controls.
- Process safety engineers responsible for risk quantification and process hazard analyses.
- Site operation managers and maintenance managers directing plant uptime and operational integrity.
- Health and safety consultants and industrial risk specialists advising high-hazard facilities.
- Safety trainers and advisors tasked with embedding rigorous operating discipline across site teams.

Departments and Industries

This course supports technical, operational, and safety leadership across high-hazard operating environments.

- Health, Safety, and Environment HSE and Risk Management Departments
- Production and Plant Operations Divisions
- Engineering, Reliability, and Asset Maintenance Units
- Chemical Safety and Process Technology Teams
- Sectors including oil and gas, petrochemicals, chemical manufacturing, pharmaceuticals, utilities, power generation, and industrial processing plants

Learning Objectives

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



- Establish and sustain a structured process safety management system across hazardous operations.
- Execute process hazard identification using HAZID, HAZOP, Bowtie analysis, and FMEA techniques.
- Apply ALARP principles to evaluate operational risks and justify risk reduction investments.
- Evaluate safety-critical equipment using the FARSI model across operating life cycles.
- Mitigate chemical hazards, runaway reactions, and static electricity accumulation.
- Formulate robust emergency response planning protocols and coordinate facility incident management.
- Establish leading and lagging metrics to monitor barrier integrity and process safety performance.

Course Agenda

Day 1: Process Safety Foundations and Leadership

- Process Safety versus Occupational Safety Distinctions
- Leadership Accountability and Process Safety Culture Metrics
- Key Principles of a Process Safety Management System
- Organizational Learning and Operational Experience Feedback
- Management of Change Governance for Plant and Process Modifications
- Contractor Safety Oversight and Workforce Operational Discipline

Day 2: Managing Process Safety Risk

- Structured Risk Assessment and ALARP Criteria Application
- Hazard Analysis Methodologies: HAZID, HAZOP, Bowtie, and FMEA
- Asset Integrity Programs and Risk-Based Inspection Strategies
- Permit-to-Work Administration and Safe Isolation Protocols
- Shift Handover Discipline and Critical Operational Communication
- Root Cause Analysis of Major Industrial Loss of Containment Events

Day 3: Hazard Control and Operational Safety

- Standard Operating Procedure Development for Critical Plant States
- Safe Plant Startup, Transient Operations, Shutdown, and Alarm Management
- FARSI Model Verification for Safety-Critical Equipment
- Utilities Management and Energy Delivery Reliability in High-Risk Plants
- Static Electricity Hazard Control and Grounding Systems
- Contractor Safety Evaluation and Field Compliance Assurance

Day 4: Chemical Hazards, Storage, and Regulatory Compliance

- Hazardous Substance Properties, Toxicity, and Volatility Profiles
- Thermal Runaway Reaction Controls and Calorimetric Safeguards
- Bulk Chemical Storage Integrity, Bunding, and Secondary Containment Standards
- Fixed Fire Protection and Suppression Infrastructure for Storage Terminals
- Major Accident Prevention Guidelines and Process Safety Dossier Standards
- Dangerous Goods Segregation and Safe Warehousing Protocols



Day 5: Fire, Explosion Risk, and Emergency Preparedness

- Combustion Dynamics, Vapor Cloud Explosions, and BLEVE Phenomena
- Fire Detection and Deluge Systems for Process Units
- Combustible Dust Explosion Prevention and Area Classification Zoning
- Emergency Response Planning and Crisis Coordination Protocols
- Community Warning Systems, Evacuation Logistics, and Tabletop Drills
- Process Safety Performance Dashboard Design and Action Plan Review

Practical Exercises

Participants undertake practical exercises to apply process safety tools to plant operational scenarios.

- Suggested activity: Build a Bowtie analysis diagram mapping prevention and mitigation barriers for a hydrocarbon release scenario.
- Suggested activity: Complete a FARSI model evaluation matrix for high-pressure safety-critical equipment.
- Suggested activity: Conduct a simulated management of change review addressing equipment replacement with material specification deviations.
- Suggested activity: Develop a process safety performance dashboard incorporating both leading barrier integrity audits and lagging loss indicators.

FAQs

Do participants need any prior qualifications before attending?

No formal prerequisites are mandatory to attend this course. However, participants will benefit most if they possess a baseline understanding of industrial operations, technical maintenance, or occupational safety fundamentals.

How long is the course, and what is the daily schedule?

The program spans 5 instructional days. Daily sessions run for approximately 4 to 5 hours, comprising guided presentations, collaborative technical exercises, and structured breaks, totaling 20 to 25 contact hours.

What is the FARSI model and how is it applied?

The FARSI model assesses safety-critical equipment across five fundamental integrity dimensions: Functionality, Availability, Reliability, Survivability, and Interdependency. It ensures protective barriers perform reliably during abnormal operating conditions.



Conclusion

Operating in high-hazard sectors requires uncompromising vigilance and methodical process safety systems. By applying structured risk assessment, barrier integrity verification, and disciplined operational controls, technical leaders protect personnel, safeguard community environments, and secure operational assets against major accident hazards.