



Advanced Process Safety Leadership and Improvement Training Course

10 – 14 January 2027
Toronto

Advanced Process Safety Leadership and Improvement Training Course

Ref: 1378_201817 **Date:** 10 – 14 January 2027 **Location:** Toronto **Fees:** 12000 Euro

Overview

Advanced Process Safety Leadership and Improvement Training Course is a one-week advanced course for process safety managers, operations leaders, engineers, maintenance professionals, HSE teams, and risk specialists who leave with a Process Safety Improvement Plan. Participants convert lessons from major incidents into stronger hazard controls, critical barriers, operating discipline, mechanical integrity, emergency readiness, and performance assurance. Agile Leaders Training Center presents process safety leadership through practical risk, barrier, and improvement decisions.

Who Should Attend

- Functions that lead process safety strategy and governance
- Operations teams responsible for stable and controlled high-hazard processes
- Engineering functions that evaluate hazards and safeguard performance
- Maintenance teams responsible for equipment integrity and assurance
- HSE and risk functions that monitor major-hazard controls

The course assumes participants already manage process risks, operations, engineering, maintenance, or assurance and leaves out basic occupational safety, detailed equipment design, and legal interpretation.

Departments and Industries

The course serves departments and industries that manage fire, explosion, toxic-release, and loss-of-containment risks.

- Oil, gas, refining, and petrochemical operations
- Chemical, pharmaceutical, and specialty-material manufacturing
- Power generation and energy infrastructure
- Process engineering, operations, and maintenance departments
- HSE, risk, assurance, and emergency-management functions

Learning Objectives

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



- Analyze major-incident lessons and systemic causes
- Apply process hazard analysis and risk prioritization methods
- Evaluate critical barriers and performance standards
- Diagnose operating-discipline, change, and integrity weaknesses
- Build leading and lagging process safety indicators
- Build a Process Safety Improvement Plan

Course Agenda

Day 1: Major Hazards and Incident Learning

- Personal and Process Safety Boundary Map
- Major-Accident Scenario Development Method
- Incident Timeline and Causal-Factor Chart
- Systemic Cause and Control-Failure Analysis
- Incident Learning Action-Strength Matrix

Day 2: Hazard Analysis and Risk Decisions

- Process Safety Information Quality Checklist
- HAZOP Study Facilitation Method
- What-If and Checklist Analysis Method
- Bow-Tie Major-Hazard Risk Model
- Risk Ranking and Recommendation Register

Day 3: Critical Barriers and Asset Integrity

- Critical Barrier Identification Map
- Barrier Performance Standard Template
- Mechanical Integrity Assurance Framework
- Safety-Critical Equipment Verification Plan
- Barrier Degradation and Escalation Trigger Matrix

Day 4: Leadership, Change, and Performance Assurance

- Management of Change Decision Workflow
- Operating Discipline Observation Guide
- Pre-Startup Safety Review Checklist
- Emergency Readiness Assurance Scorecard
- Leading and Lagging Indicator Dashboard

Day 5: Process Safety Leadership Practice

- Exercise: Analyze a Major-Incident Control Breakdown
- Exercise: Facilitate a Process Hazard Review
- Exercise: Challenge a Critical Barrier Standard
- Exercise: Evaluate a Management of Change Case
- Capstone Exercise: Process Safety Improvement Plan

Practical Exercises

The course uses process scenarios from energy, chemical manufacturing, and power operations.

- Suggested activity: reconstruct an incident timeline, identify failed controls, and rank corrective actions by strength.
- Suggested activity: build a bow-tie model and define performance requirements for prevention and mitigation barriers.
- Suggested activity: review an equipment change for technical basis, risk, authorization, training, and startup readiness.
- Suggested activity: select indicators, owners, thresholds, evidence, and review routines for a process safety dashboard.

FAQs

Who suits advanced process safety leadership training, and what does it assume?

Advanced process safety leadership training suits managers, engineers, maintenance professionals, HSE teams, and risk specialists who already make or support decisions about high-hazard processes and their controls.

How does process safety leadership differ from general occupational safety training?

Process safety leadership addresses low-frequency, high-consequence events through engineered safeguards, operating controls, asset integrity, change management, and major-hazard assurance rather than routine personal-injury prevention.

How are critical barriers managed in process safety?

Critical barriers are managed by defining their intended function, performance standard, owner, verification method, degradation limits, escalation triggers, and restoration actions.

Which process safety indicators provide early warning?

Leading indicators test the health of critical controls and management-system activities, while lagging indicators track loss-of-containment events, control failures, and consequences.



How does management of change support process safety improvement?

Management of change supports process safety improvement by testing the technical basis, risk impact, procedure updates, authorization, training, and startup readiness before a change enters service.

Conclusion

The course integrates incident learning, hazard analysis, critical barriers, mechanical integrity, change control, emergency readiness, and performance measurement. Participants take back a Process Safety Improvement Plan with priorities, owners, indicators, assurance evidence, and review points. The plan helps their organization convert major-hazard lessons into stronger controls and governed improvement.