

# Offshore Barrier Performance and Assurance Training Course

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# Offshore Barrier Performance and Assurance Training Course

## Overview

Offshore Barrier Performance and Assurance Training Course is a one-week advanced course for offshore operations, technical safety, integrity and assurance professionals. Participants connect major-accident hazards, bowties, barrier functions, safety and environmental critical elements, performance standards, verification evidence, impairments and operational decisions. They leave with an Offshore Barrier Performance and Assurance Pack that makes barrier ownership, condition and action status traceable. Agile Leaders Training Center presents this operational barrier-management course.

## Who Should Attend

- Offshore installation and operations leaders accountable for safe operating status
- Technical safety and process-safety engineers defining barrier functions
- Asset integrity and maintenance professionals responsible for critical equipment
- Independent verification and technical assurance personnel
- Barrier owners, performance-standard owners and operational risk specialists
- Engineering, projects and management-of-change teams affecting critical barriers

Participants should understand offshore operations, major-accident hazards or integrity management. The course does not replace discipline-specific inspection certification or detailed safety-instrumented-system calculations.

## Departments and Industries

- Offshore oil and gas installations, drilling units and floating production assets
- Operations, maintenance, integrity, technical safety and process-safety departments
- Engineering, projects, commissioning and management-of-change functions
- Independent verification bodies and technical assurance organisations
- Marine terminals, subsea production and offshore energy operations
- Contractors maintaining or testing safety-critical equipment

## Learning Objectives

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

- Map major-accident hazards to preventive, control, mitigation and recovery barriers
- Identify safety and environmental critical elements and accountable owners
- Write measurable performance standards for function, availability, reliability and survivability
- Connect maintenance, inspection, testing and verification evidence to barrier requirements
- Assess impaired and cumulative barrier risk and define temporary controls
- Build a barrier-health dashboard and assurance action plan

## Course Agenda

### Day 1: Establish the Barrier Management Basis

- Major-Accident Hazard and Bowtie Register
- Threat, Consequence and Escalation-Factor Map
- Hardware, Human and Procedural Barrier Classification
- Barrier Function, Owner and Dependency Matrix
- Critical Element Identification and Traceability Record

### Day 2: Write Performance Standards

- Function, Availability, Reliability and Survivability Criteria
- Operating Limit, Demand and Environmental Condition Basis
- Performance Requirement, Acceptance Criterion and Evidence Map
- Safety-Critical Element Data-Sheet Review
- Performance-Standard Quality and Measurability Check

### Day 3: Build Assurance and Verification

- Inspection, Maintenance and Test Task Mapping
- Independent Verification Scope and Competence Requirements
- Work-Order, Test-Result and Defect Evidence Chain
- Assurance Frequency, Sampling and Escalation Rules
- Non-Conformance, Action Ownership and Closure Register

### Day 4: Control Barrier Impairments

- Barrier Failure, Degradation and Bypass Classification
- Impairment Risk Assessment and Compensating Measures
- Cumulative Barrier Risk and Common-Cause Review
- Operational Approval, Time Limit and Restoration Plan
- Shift Handover and Barrier-Status Communication

## Day 5: Practice Barrier Assurance Decisions

- Suggested Exercise: Build a Bowtie-to-Barrier Register
- Suggested Exercise: Challenge a Critical Element Performance Standard
- Suggested Exercise: Trace Verification Evidence to Acceptance Criteria
- Suggested Exercise: Decide Whether to Operate with Degraded Barriers
- Capstone Exercise: Present the Offshore Barrier Performance and Assurance Pack

## Practical Exercises

Suggested activities convert barrier requirements and operating evidence into defensible decisions.

- Map a loss-of-containment scenario to barrier functions, elements and owners.
- Rewrite vague requirements as measurable performance standards.
- Test assurance records for evidence gaps, overdue actions and weak acceptance criteria.
- Build a barrier-health dashboard showing impairments, cumulative risk and restoration priorities.

## FAQs

### What is offshore barrier management?

It is the coordinated process of identifying barriers that prevent or limit major accidents, defining their required performance, assigning ownership, monitoring condition and controlling degradation throughout operations.

### What makes an element safety or environmentally critical?

An element is critical when its failure could cause or contribute substantially to a major accident or when it is intended to prevent, control, mitigate or support recovery from that event.

### What belongs in a barrier performance standard?

A useful standard states the barrier function, operating conditions, capacity, availability, reliability, survivability, response, dependencies, acceptance criteria and evidence needed to demonstrate suitability.

### How are barrier impairments managed?

Teams identify the affected function, assess immediate and cumulative risk, define compensating measures, obtain accountable approval, set a restoration deadline, monitor conditions and communicate status across shifts.

## How does verification differ from maintenance?

Maintenance performs tasks intended to preserve or restore equipment. Verification independently examines whether critical elements and the supporting management arrangements meet defined performance requirements.

## What will participants take back to work?

They take back an Offshore Barrier Performance and Assurance Pack containing the bowtie register, critical-element map, performance-standard template, assurance matrix, impairment assessment and barrier-health dashboard.

## Conclusion

The course links hazard understanding to measurable barrier performance and operational evidence. Participants can use the pack to expose weak requirements, overdue assurance, degraded barriers and cumulative risk before those weaknesses combine into loss of control.

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