



Asset Integrity Management Course: Safety-Critical Elements, Operating Windows and Assurance



Asset Integrity Management Course: Safety-Critical Elements, Operating Windows and Assurance

Introduction:

Asset integrity management course on safety-critical elements, operating windows and assurance is a five-day course for integrity, inspection, maintenance, process safety and operations leads, ending with an AIM gap assessment and improvement plan for a case facility. Oil, gas and process plants lose containment and production when inspection, maintenance, corrosion control and operating limits run as separate activities with no single view of equipment condition. Nominees already lead integrity or plant teams, and the course is taught through case studies built on facility registers, performance standards and anomaly data. CoreConcept Training Center delivers this course on asset integrity management.

Course Objectives:

- Structure a facility asset integrity management system across design, operation, maintenance, modification and decommissioning with defined accountabilities
- Identify safety-critical elements from the hazard register and write performance standards covering functionality, availability, reliability and survivability
- Set integrity operating windows with critical and standard limits and define the response to each excursion
- Integrate inspection, maintenance, reliability and corrosion control tasks into one integrity management plan per equipment discipline
- Control anomalies, deviations, temporary repairs and plant changes so that the integrity basis stays valid
- Assess an integrity programme with KPIs, verification findings and audit scoring and build a prioritised improvement plan

Target Audience:

- Integrity leads responsible for the facility integrity management plan and its performance standards
 - Inspection supervisors responsible for static equipment inspection scopes and findings close-out
 - Maintenance and reliability leads responsible for preventive routines on safety-critical equipment
 - Process safety leads responsible for linking major accident hazards to the barriers that control them
 - Operations leads responsible for running units within operating limits and reporting excursions
 - Technical authorities responsible for approving deviations, deferrals and plant modifications
-

Course Outline:

Day 1: Asset Integrity Management Foundations and Facility Baseline

- AIMS Definition and Lifecycle from Design to Decommissioning
- Integrity Policy, Accountabilities and Technical Authority Structure
- Asset Register Hierarchy and Equipment Criticality Ranking Matrix
- Major Accident Hazard Link to Integrity Ownership Map
- AIM Current-State Baseline Using Integrity Maturity Checklist

Day 2: Integrity Frameworks, Safety-Critical Elements and Performance Standards

- ISO 55001 Asset Management System Clauses Applied to Integrity
- Safety-Critical Element Identification from Hazard Register Entries
- SCE Performance Standards for Functionality, Availability, Reliability, Survivability
- Integrity Management Plan Structure per Equipment Discipline
- Independent Verification Scheme Scope and Examination Frequency

Day 3: Integrating Operating Limits, Inspection, Maintenance and Corrosion Control

- API RP 584 Integrity Operating Windows Critical and Standard Limits
- IOW Excursion Alerts, Response Times and Operator Actions
- API RP 580 Inspection Plan Hand-Off into Integrity Schedule
- Reliability-Centred Maintenance Task Selection for SCE Assurance Routines
- Corrosion Management Strategy Matrix by Plant System

Day 4: Anomalies, Change, Ageing Assets and Integrity Performance

- Anomaly Register, Deviation Approval and Temporary Repair Control
- Management of Change Integrity Review for Plant Modifications
- Integrity KPI Dashboard with SCE Backlog and Overdue Tasks
- Ageing and Life Extension Screening for Late-Life Facilities
- FPSO Hull, Topsides and Subsea Integrity Interface Overview

Day 5: Case Study of an AIM Gap Assessment and Improvement Plan

- Case Facility Criticality and SCE Register Review
 - Case Performance Standard and Verification Findings Assessment
 - Case IOW Excursion and Anomaly Backlog Analysis
 - Integrity Assurance Audit Scoring Against AIMS Elements
 - AIM Gap Assessment and Improvement Plan Completion
-

Skills You Will Gain:

- Equipment Criticality Ranking
- Safety-Critical Element Definition
- Performance Standard Writing
- Operating Window Setting
- Anomaly and Deviation Control
- Integrity KPI Design
- Verification Planning
- Integrity Audit Scoring

Why Attend This Course:

- Deliver an AIM gap assessment and improvement plan for a case facility to the integrity manager and technical authority for adoption
- Decide whether a deviation, deferral or temporary repair on a safety-critical element can be accepted and for how long
- Avoid loss of containment, unplanned shutdowns and verification findings caused by overdue SCE tasks and unmanaged excursions
- Share performance standard, IOW and KPI templates with inspection, maintenance and operations colleagues

Conclusion:

Back at the facility, the participant hands the integrity manager and technical authority an AIM gap assessment and improvement plan that ranks weaknesses in SCE coverage, performance standards, operating windows, anomaly control and verification. Management uses it to decide which integrity actions receive budget and shutdown time first, and the operations and maintenance teams use its KPI set to track progress each month. After its first quarter in use, the unit should review SCE backlog, IOW excursion counts and verification findings closed against the plan.

Frequently Asked Questions FAQ:

What should participants know before an asset integrity management course on safety-critical elements and operating windows?

Participants should already work in inspection, maintenance, process safety or operations on an oil, gas or process facility and be familiar with its equipment registers and work order system. Bringing an anonymised SCE list or anomaly register helps them apply the case work.

How does an asset integrity management course differ from a pipeline integrity or risk based inspection course?

It manages integrity across a whole facility: policy, safety-critical elements, performance standards, operating windows, anomalies, KPIs and assurance. Pipeline, well and inspection planning courses go deeper into one asset type or one method, which this course only links into the facility plan.

Why do asset integrity management systems rely on performance standards for safety-critical elements?

Performance standards state what each safety-critical element must do, how often it must work and how that is proven. Without them, verification has no criteria, and a failed test or overdue task cannot be judged against an agreed acceptance level.

What do participants take back from an asset integrity management course on safety-critical elements and assurance?

Participants take back an AIM gap assessment and improvement plan for a case facility, with templates for SCE performance standards, IOW limits, anomaly control and integrity KPIs that can be adapted to their own site.
