

Asset Integrity Management

5 days
Overview

INTEGRI-EN-P

LEVEL

Skilled

PURPOSE

This course aims to bring elements related to the implementation of actions, such as the inspections and tests required to ensure that the installations and equipment important to safety and productivity will correctly work for their whole service life.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:

- know the asset integrity management process, from the failure mode and effects analysis to the implementation of adapted actions and reference standards,
- formulate or use equipment specifications, Identify the corrosion mechanisms,
- implement the risk assessment and critical safety element identification techniques,
- identify the test and inspection elements that ensure a machine is in good operating condition,
- implement the culture of asset integrity management.

WAYS AND MEANS

Applications and case studies illustrating the techniques studied.
Active pedagogy calling on participants' experiences.

LEARNING ASSESSMENT

Written test upon training course completion.

PREREQUISITES

Management on site equipment and installation operation and maintenance.
Significant experience in the industry.

Agenda

ASSET INTEGRITY MANAGEMENT PROCESS

Definition of risk, failure, reliability, availability of installations.
Concept and identification of major risk of equipment failure.
Measurement and follow-up of reliability.
Criticality, safety critical elements.

0.5 d

CRITICALITY & RISK ASSESSMENT TOOLS

Main models, failure probability, statistical functions.
FMECA and cause tree: areas of application, method principle, examples.
Identification of 3 groups: static equipment, dynamic equipment, and safety instrumented systems.
Understanding the functioning, the failure possibilities and the need for an adequate policy of operating condition maintenance.

1 d

INSPECTION & TESTS

1 d

Standards and regulations in force.

Inspection tools and techniques: non-destructive examinations, sampling.

Example of installation commissioning.

CORROSION

1 d

Definition of corrosion.

Elements of metallurgy.

Corrosion mechanisms.

Different types of corrosion.

Corrosion control methods.

INSPECTION & MAINTENANCE BASED ON FAILURE RISK (RBI)

1 d

Integrating Asset Integrity Management in the operating and maintenance policy.

Preventive, condition-based and predictive maintenance.

Maintenance and inspection based on failure risks.

Notion of life cycle cost.

IMPLEMENTATION & CHALLENGE

0.5 d

Safety and productivity objectives.

From outage management to equipment management.

Lowering the tolerance threshold to anomalies and involvement of the operators.

Need for general commitment: implementation of the Total Productive Maintenance.

Detailed preparation, planning, identification of critical operations.

Maintenance plans by equipment item and type of equipment.

Improvement plans, key performance indicators, dashboards. Maintenance audits.