



ASSET

Integrity Management

Course Introduction:

Asset integrity management (AIM) is a broad group of tools to maintain plant assets in a fit-for-service condition while extending these assets remaining life in the most cost effective, safe and reliable manner.

Course Objectives:

This course is designed to provide the attendants with basic and deeper knowledge and practice about asset integrity management methods and tools. Specifically, by attending this course you will:

- Become familiar with asset integrity management (AIM) systems
- Learn about tools used in AIM
- Gain a deeper knowledge about inspection techniques
- Learn about the principles of risk based inspection (RBI)
- Learn about life cycle cost (LLC) methodologies
- Learn about root cause failure analysis (RCFA) - corrosion and mechanical wear
- Learn about the principles of fitness-for-service (FFT) techniques
- Learn about different maintenance management programs
- Learn about process safety and assets mechanical integrity

Who Should Attend?

This course will benefit all Managers, Engineers, Inspectors, Technicians, Maintenance personnel, Supervisors, Operators and Safety personnel in the fields of Integrity and Inspection, Engineering, Maintenance, Process, Operations and HSE.

Course Outline:

Day 1:

- *Registration*
- *Welcome and Introduction*
- **Pre-Test**
- **Asset Integrity Management (AIM) System**
- **Integrity Elements**
- **Asset Integrity Lifecycle**
- **Process knowledge and documentation**
 - Chemical and Occupational Hazards
 - Process and Equipment Design
 - Protective Systems

- Normal and Upset Conditions
- Process Risk Management Decisions
- Company Memory (Management Of Information)
- Material Safety Data Sheet

Day 2:

- **Process Safety Review Procedures for Capital Projects**
 - Hazard Reviews
 - Plot Plan
 - Process Design and Review Procedures
 - Project Management Procedures and Controls
- **Process Risk Management**
 - Hazard Identification
 - Risk Analysis of Operations
 - Reduction of Risk
 - Residual Risk Management
 - Process Management During Emergencies
 - Selection of Business/Equipment with Acceptable Risks
- **Case Study: Process Management Used During Emergencies**

Day 3:

- **Management of Change**
 - Change of Process Technology– Case Study
 - Change of Facility
 - Guideline for Review of Plant Changes or Modifications
 - Control Of Change - Safety Management Practices
- **Process Equipment (Asset) Integrity**
 - Reliability Engineering
 - Materials of Construction
 - Fabrication and Inspection Procedures
 - Installation Procedures
 - Preventative Maintenance
 - Process, Hardware and Systems Inspection and Testing
 - Maintenance Procedures
 - Alarm and Instrument Management
 - Decommissioning and Demolition Procedures

Day 4:

- **Case Study:** Plant Management System for Materials of Construction (MOC)
- **Case Study:** Test and Inspection Equipment and Procedures
- **Case Study:** Field Inspection and Testing of Process Safety Systems
- **Case Study:** Hot Work Permit
- **Case Study:** Criteria For Test and Inspection of Safety Relief Devices
- **Case Study:** Management System for Critical and Unique Safety Features
- **Risk Based Inspection (RBI)**
 - Benefits and Limitations
 - RBI Methodology and Implementation
 - Inspection Scheduling

Day 5:

- **Life cycle cost (LLC) methodology**
 - Asset Assessment
 - Fitness-For Service
 - Determining Equipment Condition
 - Identifying Degradation Mechanism And Rate
 - Estimating Point of Failure
 - Maintenance Systems
 - Health And Safety Risk Assessment
 - Determining LCC in net present value (NPV)
 - Root Cause Failure Analysis (RCFA)
 - Corrosion
 - Mechanical Wear
- **Case Study:** Pipeline Integrity Management
- Course Closure

POST-TEST

Presentation of Course Certificates

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session