

ASSET INTEGRITY MANAGEMENT

TRAINING COURSE

Learn the fundamentals of Asset Integrity Management and how to structure and efficiently implement its key elements using the latest risk based techniques.

AIE's asset integrity training course can make a significant and lasting difference to your asset integrity capabilities.

- **ANALYSE** the essential components of a functioning IM system
- **REVIEW** major incidents and target learning to real-life scenarios
- **LEARN** key asset threats and how to identify and mitigate them
- **IMPLEMENT** key Integrity services such as risk based inspection and pipeline Integrity
- **UNDERSTAND** the latest risk based IM methodologies & techniques
- **COMPLETE** a series of Integrity case studies and gain hands on experience
- **NETWORK** with a variety of influential personnel

WHO SHOULD ATTEND

The course is intended for Managers, Engineers, Inspectors and Technicians in the fields of:

- Integrity & Inspection
- Engineering
- Maintenance
- Process & Operations
- HSE

From heavy industry but especially:

- Oil & Gas
- Petrochemical & Chemical
- Refineries
- Power & Utilities
- Engineering
- Nuclear

TRAINING HANDOUT

On completion of the course we provide our asset integrity literature to reinforce the subjects that have been covered and to provide a clear and comprehensive reference for future learning.

AGENDA

COURSE OVERVIEW

Our 3-day Integrity course provides both theoretical and practical exposure to the foundations of asset integrity management and explains how it should be implemented to safeguard assets, people and the environment.

The course focuses on modern risk based methodologies to manage asset integrity in both newly constructed and aged facilities. It explains and then addresses key threats facing the Oil and Gas industry and provides both established and innovative practices to safely mitigate them.

Our literature and course content is completely code compliant and follows the latest industry-wide best engineering practices. We create an interactive learning environment which analyses asset specific threats and previous major incidents from a variety of locations and operating environments around the world.

The course is delivered in 10 intensive modules which are interrelated and written to create a structured and comprehensive learning environment. Each module is followed by a practical case study where delegates are given the chance to implement aspects of the training with guidance from our expert trainers.

PROGRAM SCHEDULE

(Day 1, Day 2 & Day 3)

09:00 - 10:30 Morning Session 1

10:30 - 11:00 Refreshments & Networking Break

11:00 - 12:30 Morning Session 2

12:30 - 13:30 Lunch

13:30 - 15:00 Afternoon Session 1

15:00 - 15:30 Refreshments & Networking Break

15:30 - 17:00 Afternoon Session 2

DAY 1

Introduction and Major Incident Review

An introduction to the course, its contents and the trainer, followed by an Integrity threat brainstorming session and a review of a major incident.

Module 1 – Asset Integrity Elements

An overview and explanation of the 10 elements making up a functioning Integrity management system. We explore the importance of each element and how they are interrelated and used to ensure a robust and effective asset-wide IM system.

- Integrity elements and their dependency on each other
- History of Integrity elements and their role
- Importance of integrity elements
- Integrity element definition and implementation

Module 2 – Asset Integrity Life Cycle

Targeted at addressing how Integrity should be considered and implemented at different stages of an asset's lifecycle. Providing a clear understanding on how the decisions or actions made at one stage affect the next.

- The Integrity lifecycle
- Concept selection and definition
- Detailed engineering and design
- Construction and commissioning
- Operation, modification and maintenance
- Acquisition and decommissioning

Module 3 – Asset Integrity Barriers

Introduction to Asset Integrity Barriers and how they are designed, structured, and maintained to prevent major accident hazards.

- Integrity barrier definition and introduction
- Hard and soft barriers
- The Swiss Cheese and Bow Tie models
- Barrier threats and mitigation measures

AGENDA

DAY 2

Module 4 – Safety Critical Elements and Equipment

Explanation of safety critical elements, equipment and the vital role they play in asset integrity. We explore the methodology to identify SCE and the standards and assurance process used to manage their condition and reliability.

- SCE and operational Integrity management
- Safety critical element vs safety critical equipment
- Major accident hazards
- Identifying SCE & performance standards
- Verification, assurance and ICP

Module 5 – Asset Degradation and Damage

Definition and analysis of the key degradation and damage threats found in the Oil and Gas industry, and the design concepts, identification techniques and mitigation actions used to manage them.

- Degradation, damage and its impact
- The Bath Tub Curve
- Time independent vs. time dependent failures
- Key degradation and damage threats
- Design concepts, identification and mitigation measures

Module 6 – Risk Based Inspection

An introduction to risk based inspection, its components, benefits limitations and a step-by-step methodology on how to implement it.

- Introduction and the history of RBI
- Benefits and limitations
- RBI methodology and implementation
- Written schemes of examination
- Inspection scheduling

DAY 3

Module 7 – Pipeline Integrity Management

An overview of the structure and necessary components of a functioning pipeline integrity management system. Explanation of key threats, mitigation actions and how to implement pipeline integrity using a modern risk based approach.

- Pipeline integrity process and elements
- Pipeline threats and anomalies
- Pipeline mitigation techniques and overview
- Risk based pipeline integrity methodology

Module 8 – Key Performance Indicators

An explanation of KPIs and the strategic role they play in communicating integrity performance. A variety of KPI structures are explored in order to understand how they can be used to maximum effect.

- KPIs and their function
- Lagging and leading KPI's
- KPI tiers and setup
- Using KPIs to drive Integrity

Module 9 – Emergency Repairs

A comprehensive review of emergency repair options and techniques available on the market to use as part of a reactive integrity management system, and the advantages, disadvantages, limitations and safe applications of each.

- Emergency repair and loss of containment
- Fitness for service and defect assessment
- Sleeves, clamps and mechanical connectors
- Composites and clock spring
- Mechanical replacement
- Line stopping and hot tapping

Module 10 – Asset Integrity Review Process

Learn how to complete an independent review of an asset's integrity management status and how the results should be analyzed and presented to demonstrate the risk profile of the asset.

- The asset integrity review team
- The review process
- Integrity review strategy and preparation
- Implementing a review
- Reporting and evaluation of results

TERMS & CONDITIONS

PAYMENT

Payment must be made in full at time of registration. The course fees include lunches, refreshments and course handout materials. Registration will only be confirmed once payment is received in full and notification is received back from AIE. All bank charges to be borne by the payer. All early bird bookings must be paid in full before the offer date closes, otherwise course fees will be charged in full and discount will be lost.

CANCELLATION AND POSTPONEMENT POLICY

Payments are non-refundable in the event of a cancellation. However, substitute delegates are permitted at any time by providing advance notice to AIE. In the event that AIE postpones the course and the delegate is unable or unwilling to attend on the rescheduled date, a full refund of monies will be provided. This repayment is limited to the course fees only and does not cover travel and accommodation expenses.

AIE shall assume no liability in the event of this conference being cancelled due to any unforeseen or uncontrollable circumstances.

PAYMENT METHOD

Payment must be made by direct bank transfer. An invoice will be submitted within 5 days of making the booking which will include all bank account and transaction details.

COURSE FACILITATOR

Our Integrity training course is delivered by one of our Integrity trainers who each have a significant amount of expertise in asset Integrity setup, implementation and management. Our trainers have many years of practical IM experience and are considered to be integrity management experts within the industry; they have also published a variety of related papers. Their skills and experience are fully harnessed to make a lasting impact on our delegates.



PRE-COURSE PREPARATION

We target our training to the work environment of the delegates. A questionnaire is forwarded to each delegate before the course starts and the results are analyzed by the training team prior to the event. This allows us to focus on familiar integrity threats and challenges which helps to reinforce learning and provide practical solutions to real threats.

REGISTRATION

Please complete the below form in full using **BLOCK CAPITALS**.

One completed form is required per delegate. Booking forms and any enquiries should be emailed to training@aiegroup.org.

DELEGATE DETAILS

Title: Mr Mrs Ms Dr Other _____

Company Name _____

First Name _____

Surname _____

Email _____

Job Title _____ Department _____

Address _____

Postcode _____ Country _____

Telephone _____ Fax _____

Name of Department Head _____

Name of Training Manager _____

I hereby agree to AIE's terms and conditions for this training course

Signature _____ Date _____

TRAINING PRICES

Course Title	Early Bird Price	Normal Price
Asset Integrity Management	2200 USD*	2600 USD

Prices quoted are per delegate attending. Team discounts are available on request. Please note: accommodation and travel costs are not included in the course fees.

*The Early Bird Price expiry date is as per the training schedule shown on our Public Training Courses webpage (<https://www.assetintegrityengineering.com/training/public-courses/>).