

ASSET INTEGRITY AND RISK-BASED INSPECTION (RBI)

“Ensuring Operational Reliability through Strategic Risk-Based Inspection”

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

▶ **Available delivery methods:** In-House Training

Introduction

In the oil, gas, petrochemical, and energy sectors, asset integrity and risk-based inspection (RBI) are critical tools for preventing failures, optimizing maintenance, and extending asset life. This course equips professionals with the methodologies, standards, and tools required to implement RBI frameworks and asset integrity programs in line with global best practices.

Objectives

By the end of this course, participants will:

- Understand the fundamentals of Asset Integrity Management Systems (AIMS)
- Apply the principles and processes of risk-based inspection (API 580/581)
- Assess and categorize risk based on likelihood and consequence
- Design and implement inspection strategies and mitigation plans
- Align RBI with reliability, safety, and regulatory requirements

Why Attend

- Learn to reduce inspection frequency and costs without compromising safety
- Develop skills to evaluate and prioritize asset risks in hazardous environments
- Improve inspection planning with real-time data and RBI software insights
- Gain industry-recognized techniques for asset reliability and risk reduction
- Enhance compliance with international asset integrity codes and frameworks

Target Audience

- Inspection Engineers and Asset Integrity Professionals
- Reliability and Maintenance Engineers
- Plant and Facility Managers
- HSE and Risk Management Officers
- Process Engineers and Operations Supervisors
- Technical Auditors and Regulatory Affairs Professionals

Individual Benefits

- Advance your career by gaining specialized expertise in RBI
- Master inspection planning and optimization for static and rotating equipment
- Improve decision-making on asset health and reliability
- Boost your confidence working with API 580/581 methodologies

Organizational Benefits

- Reduce equipment downtime and optimize inspection resources
- Improve safety margins by focusing on high-risk assets
- Strengthen regulatory compliance with proven RBI methodologies
- Enhance asset lifecycle management and long-term profitability

Instructional Methodology

- Instructor-led expert sessions
- Practical case studies and RBI assessments
- Group exercises and RBI software demonstrations
- API 580/581 standard reviews
- Interactive workshops and troubleshooting scenarios

Course Outline

DETAILED 5-DAY COURSE OUTLINE (Customizable) Training Hours: 07:30 AM – 03:30 PM Daily Format: 3–4 Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Asset Integrity Foundations

- Module 1 (07:30 – 09:30): Overview of Asset Integrity Management Systems (AIMS)
- Module 2 (09:45 – 11:15): Key Degradation Mechanisms and Asset Failure Modes
- Module 3 (11:30 – 01:00): International Standards (API, ASME, ISO) in Integrity Planning

Day 2: RBI Principles and Frameworks

- Module 4 (07:30 – 09:30): Risk-Based Inspection Fundamentals and Objectives
- Module 5 (09:45 – 11:15): Risk Matrix, Likelihood vs. Consequence, Risk Ranking
- Module 6 (11:30 – 01:00): RBI Process Steps and API 580/581 Methodology

Day 3: Risk Assessment & Inspection Planning

- Module 7 (07:30 – 09:30): Damage Mechanism Identification (DMRs)
- Module 8 (09:45 – 11:15): Inspection Data Collection and RBI Software Tools
- Module 9 (11:30 – 01:00): Optimizing Inspection Intervals and Coverage

Day 4: Implementation and Integration

- Module 10 (07:30 – 09:30): RBI Implementation Strategy and Resource Allocation
- Module 11 (09:45 – 11:15): Aligning RBI with Maintenance & HSE Systems
- Module 12 (11:30 – 01:00): RBI Case Studies: Refinery, Offshore, and Pipeline

Day 5: Simulation and Strategic Planning

- Module 13 (07:30 – 09:30): RBI Workshop: Risk Categorization & Mitigation Planning
- Module 14 (09:45 – 11:15): RBI Reporting and Audit Compliance
- Module 15 (11:30 – 01:00): Final Review, Action Plan, and Certificate Ceremony

Certification

Participants will be awarded a Certificate of Completion in “Asset Integrity and Risk-Based Inspection (RBI)” following full attendance and participation.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
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In-House / Customized Training

Interested in running this course for your team?

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