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Course Name

# Risk Based Inspection (RBI): Implementation, Integration & Management

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Sector Name

Maintenance & Reliability Management

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## **Risk Based Inspection (RBI): Implementation, Integration & Management**

### **Course Introduction**

In high-risk industries such as oil and gas, petrochemicals, power generation, and heavy manufacturing, maintaining asset integrity and operational safety is a top priority. The Risk-Based Inspection (RBI) Implementation training program equips engineering teams, inspection professionals, and maintenance managers with the knowledge and practical tools required to implement effective risk-based inspection strategies across industrial facilities.

This corporate training course focuses on applying internationally recognized RBI methodologies to optimize inspection intervals, reduce equipment failures, and improve plant reliability and safety performance. Participants will learn how to conduct risk assessments, evaluate probability of failure (POF) and consequence of failure (COF), prioritize inspection resources, and design data-driven inspection plans.

The program combines theoretical knowledge with practical industry examples to help organisations transition from traditional inspection methods to risk-based asset integrity management systems. By implementing RBI frameworks aligned with API standards and best practices, companies can minimize operational risks, reduce maintenance costs, and enhance regulatory compliance.

Through this training, engineering and inspection teams gain the capability to support predictive maintenance strategies, improve

equipment reliability, and strengthen overall asset integrity management, ensuring safer operations and long-term operational efficiency

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## Risk Based Inspection (RBI): Implementation, Integration & Management

### Target Audience

- ✓ Facilities Engineer
- ✓ Facilities Engineering Manager
- ✓ Facilities Manager
- ✓ Facilities Specialist / Coordinator
- ✓ Health and Safety Engineer
- ✓ Maintenance Group Leader
- ✓ Maintenance Helper / Assistant
- ✓ Maintenance Manager
- ✓ Maintenance Superintendent
- ✓ Maintenance Supervisor
- ✓ Mechanical Reliability Engineer
- ✓ Network Reliability Engineer
- ✓ Operations and Maintenance Specialist
- ✓ Reliability Engineer

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## Risk Based Inspection (RBI): Implementation, Integration & Management

### Learning Objectives

- ✓ Understand the RBI Process of Implementation, Integration Management.
- ✓ Understand how to establish an RBI program within your business
- ✓ Understand some of the key technical issues involved in RBI studies and the benefits of RBI.
- ✓ The participants will gain knowledge of programs and methods to achieve equipment integrity improvements to reach target performance by application of RBI methodology and software.
- ✓ They will learn the proven Best Practices that are appropriate to apply for different equipment, as well as the basics of implementing the practices to reach Integrity, Reliability, Availability, and Maintenance Cost Reduction Targets.
- ✓ Have knowledge of the inspection, design, fabrication, operation, or maintenance of process equipment and piping, as well as some knowledge of the most common pressure equipment design codes/standards.

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## Risk Based Inspection (RBI): Implementation, Integration & Management

### Course Outline

#### ✓ 01 DAY ONE

##### **Module (01) Introduction to RBI**

- ✓ Meaning of RBI
- ✓ Methodology within each Step of An RBI
- ✓ Contribution with RBIs is most effective
- ✓ The Information and Commitment Required
- ✓ The benefits of RBI
- ✓ Guidelines of RBI
- ✓ Guidelines on Periodicity of Examinations
- ✓ Guidelines on Risk Assessments
- ✓ Guidelines on Risk-Based Inspection
- ✓ Selection Process for RBI Approach

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### Course Outline

#### ✓ 02 DAY TWO

##### **Module (02) Application of Risk-Based Inspection**

- ✓ System Definition
- ✓ Criteria for Application
- ✓ Summary of Main Points
- ✓ References for Industrials
- ✓ Probability Analysis

##### **Module (03) The RBI Team**

- ✓ Composition and Competencies
- ✓ Role of the Competent Person
- ✓ Role of Team Leader
- ✓ Conduction of Approach to RBI Assessment
- ✓ Summary of main Points

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### Course Outline

#### ✓ 03 DAY THREE

##### **Module (04) Plant Data Requirements**

- ✓ Essential Data
- ✓ Failure Consequence Assessment
- ✓ Published Data, Experience, and Technical Guidance
- ✓ Case Studies for Practical Industrials

##### **Module (05) Risk Analysis Procedures**

- ✓ Elements of the Process
- ✓ Identification of Accident Scenarios
- ✓ Identification of Deterioration and Mode of Failure
- ✓ Probability of Failure Assessment
- ✓ Determination of the Risks from Equipment Failure
- ✓ Risk Ranking and Categorization

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### Course Outline

#### ✓ 04 DAY FOUR

##### **Module (06) Assessing Degradation/ Deterioration Risk**

- ✓ Developing De-gradation Risk Scenarios
- ✓ Generic Fixed Equipment Degradation
- ✓ Typical Risk Scenarios to be considered by RBI
- ✓ Assessing Failure Consequences
- ✓ Assessing Damage Mechanisms, Probability of Failure
- ✓ Inspection Planning using API RBI Technology
- ✓ Risk Matrix (Area and Financial)

##### **Module (07) Identification and Managing Risk**

- ✓ Define Credible Risk Scenarios
- ✓ Assess Unmitigated Risks for each Scenario
- ✓ Define Potential Mitigation Strategies
- ✓ Assess Mitigated Risks and Estimate Costs & Benefits for the Business

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### Course Outline

#### ✓ 05 DAY FIVE

##### **Module (08) Risk and Cost Benefits Analysis**

- ✓ Risk-based Benefits/Cost Analysis
- ✓ Evaluating the Need for Equipment Monitoring
- ✓ Inspection, Preventive Maintenance, or Repair
- ✓ Modification and Redesign
- ✓ Life Cycle Cost Analysis

##### **Module (09) RBI Integrated with O & M Planning**

- ✓ Review Risk Assessment to assure the Highest Risks have been mitigated
- ✓ Determine Optimum Mitigation Strategy involving Inspection, Operation, Maintenance for each Risk and among related Risks
- ✓ Prioritize Recommendations by comparing relative Value among Strategies.
- ✓ Compile a Risk-based, Prioritized, Cost-Effective Portfolio of Improvement Opportunities.
- ✓ RBI Assessment may identify Risks that may be Managed by Actions other than Inspection
- ✓ Upgrading the Safety and Detection System
- ✓ Removal of unnecessary insulation to reduce the Probability of Corrosion under Insulation

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## Risk Based Inspection (RBI): Implementation, Integration & Management

### Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Feb. 1, 2027	Feb. 5, 2027	5 days	4250.00 \$	UAE , Dubai
May 3, 2027	May 7, 2027	5 days	4250.00 \$	UAE , Dubai
Aug. 3, 2026	Aug. 7, 2026	5 days	4950.00 \$	France , Paris
Nov. 1, 2026	Nov. 5, 2026	5 days	4250.00 \$	KSA , Dammam

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