



API 580/581: RISK BASED INSPECTION

Risk-Based-Inspection (RBI) of Pipelines, Piping, Vessels and Tanks in Refineries,
Gas, Oil and Petrochemical Facilities



TRAINING METHODOLOGY

This interactive training seminar includes the following training methodologies as a percentage of the total tuition hours:-

- 65% Lectures
- 25% Workshops & Work Presentations
- 10% Exercises

TO REGISTER CALL NOW!

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VISIT: www.worldwidetank.com.au
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WHO SHOULD ATTEND

The course is recommended for standard engineers, process plant and pipeline/piping engineers and inspectors responsible for the initial and continued integrity and cost-effective operation of equipment, piping systems and pipelines

- Inspection Engineers/Technicians aspiring to sit the American Petroleum Institute - ICP Examination for API RP 580 as a Pre-Examination training module.
- Asset Integrity Engineers, Engineering Management involved in budgetary considerations, Statutory/Regulatory Representatives, Inspection Management



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Course Description

This course presents a comprehensive and practical introduction and application of the latest techniques in Risk-Based Inspection (RBI) analysis of inspection results. It discusses practical techniques for application of RBI for the analysis of equipment, piping and pipelines defects and degradation. The focus of the course is on predicting degradation in service, setting optimum inspection intervals (API 580-581), projecting remaining life based on generic data corrected for plant specific conditions and assumptions, and applying qualitative/quantitative analysis for degraded conditions to determine upon a 'risk basis' time to next inspection or failure.

The course includes a discussion on identification of API RP 571 damage mechanisms, risk management, and risk mitigation strategies. Requirements for input data and information, and the roles of the RBI Assessment Team will be described. Approaches to levels of RBI assessment and basis for implementation will be examined.

The exercise will give Delegates the opportunity to key elements for implementation of an RBI system to a process facility. No software will be used in this course.

Course Objectives

- Apply the latest techniques in Risk Based Inspection (RBI) and identify the various repair practices of pipelines, piping vessels and tanks in refineries, gas, oil and petrochemical plants.
- Practice the analysis of defects and degradation of equipment, piping and pipelines.
- Predict degradation in service and set optimum inspection intervals (API-580/581)
- Estimate the remaining life based on general data corrected for plant specific conditions
- Use quantitative, qualitative and semi-qualitative analysis for degraded conditions to determine risk for continued service or should be repaired or replaced.



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DAY 1

0800-0830 Registration & Coffee
0830-0900 Introduction & Welcome
0900-0945
Overview of Codes and Standards API and ASME

0945-1030 Introduction to RBI
1030-1045
Overview of RBI-Definitions and Acronyms

1045-1115 RBI Assessment & Basic Concept
1115-1230 Planning of RBI

1230-1330 Lunch

1330-1430 Data Collection
1430-1530
Identifying Deterioration Mechanisms and Failure Modes

1530-1545 Assessing Probability of Failure
1545 - 1630 Technical Proposal for the client (Gas to Liquid) Workshop

1630 Questions and Answers Session followed by End of Day 1

DAY 2

0830 - 0930 Assessing Probability of Failure
0930 - 1030 Assessing Consequence of Failure
1030 - 1045
Risk Determinations, Assessment and Management

1045-1145
Risk Management with Inspection Activities

1145 – 1230 Other Risk Mitigation Activities

1230-1330 Lunch

1330 – 1430
Reassessment and Updating RBI Assessments

1430-1530 Roles, Responsibilities, Training and Qualifications

1530-1545 Break

1545-1630 Questions and Answers Session followed by End of Day 2.



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DAY 3

0830-0915

API 581 Failure Likelihood Analysis

0915 - 0945

Corrosion Loops and Failure Margins

0945 -1015

API 581 Failure Consequence Analysis

1015 -1030 Break

1030 - 1115 Preparation of Inspection Matrix

1115- 1200 Examples of Plant RBIs

1200- 1245 Lunch

1245 - 1345 Determine Corrosion Rate

1345 - 1415

Calculate Likelihood and Consequence of Failure

1415 - 1500

Rank Systems and Equipment for Inspection

1500-1515 Break

1515 - 1630 API 571 Damage Mechanisms

1630 - 1700 Questions

DAY 4

0830-0930 Other Risk Mitigating Methods

0930 –1030

Reassessment and Re-Rating of RBI Components

1030 –1045 Break

1045-1145

Roles & Responsibilities of RBI Team

1145 – 1230

Documentation and Record Keeping

1230-1330 Lunch

1330 – 1430

Technical Proposal writing for Implementation of RBI

1430-1530

Technical Proposal writing for Implementation of RBI

1530-1545 Break

1545-1630

Risk Management with Inspection Activities



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DAY 5

0800 – 1230

Practical exercises using P & ID & Piping/Tank & Vessel Drawings to establish likely damage mechanisms and monitoring points.

1230 - 1330 Lunch

1330 - 1530 Summary of Course

1530 - 1545 Break

1545 - 1700 Summary of Course - Close

Dress Code:

Smart casual wear is suggested along with a sweater or jacket in case the conference room is cool.

Payment Terms:

Payment must be made prior to the event or admittance will not be permitted. A tax invoice and confirmation letter will be emailed to the attendee upon completion of a valid registration. Payment may be made by EFT, cheque or credit card.