API 580/581
Exam Preparation Presentation

5 DAY
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CLASSROOM TRAINING

Contact us

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Course includes: 5 weeks access to our eLearning platform for homework assignments & Mock Examination; and Final Skype Q & A session with lecturer prior to ICP examinations

Who should attend?

This training course is recommended for:

- Inspectors
- Engineers
- Technicians
- Asset Integrity Engineers
- Engineering Management
- Statutory or Regulatory Representatives
- Inspection Management

Involved in or responsible for the maintenance and inspection of pressure vessels, pressurised pipework or above ground storage tank.

Course Outcomes:

- Understand the principles related to an RBI program based on API RP 580.
- Be able to generally identify credible degradation mechanism (API RP 581 & API RP 571)
- Understand the general principles of risk and generally calculate probabilities related to specific outcomes.
- Generally, understand the techniques and quantitative procedures available with API RP 581 and have a functional understanding of how to continue your development towards competently applying this Recommended Practice.
- An understanding to the advantages and disadvantages of utilizing quantitative vs qualitative approaches.
- Understand the roles and responsibilities of the RBI team members.
- Understand the use of quantitative, qualitative, and semi-qualitative analysis for equipment in potentially degraded conditions to determine risk for continued service, deferral of inspections and/or deferred replacement/repair activities.
- Provide a foundation and road map for preparation for those whom may undertake the API ICP API 580 Examinations.

Primary Course Objectives:

- Perform a detailed overview and discussion on the principle and practices contained with RBI, and in particular API RP 580/581
- Engage in several workshop examples to practice the application of some of the more common fundamental elements related to the understanding and application of API RP 580/581
- Perform a general review of damage mechanism identification and how this is applied within an RBI assessment (includes an overview of common resources e.g. API RP 571)
- Perform general review of inspection codes inspection strategies (API 510, 570, 653) and how inspection plans are generally developed and controlled when RBI is applied.
- This course presents a practical introduction to the application of the latest techniques in API580/581 Risk-Based Inspection and related analysis of pressure retaining Asset Integrity throughout its lifecycle. It discusses practical techniques for application of RBI for the analysis.

Course Schedule:

Basic Schedule Monday (Day 1 08:30 – 16:30)

Registration & Tea/Coffee

Introduction, Course Objectives & ICP Exam Overview

Overview of Codes & Standards API and ASME
Introduction to RBI

Overview of RBI definitions & Acronyms
RBI Assessment & Basic concept
Planning of RBI

Data collection
Identifying Deterioration Mechanisms

Identifying Failure Modes
Assessing probability of failure

Question & Answer session

Homework Distribution

Basic Schedule Tuesday (Day 2 08:00 – 16:30)

Registration & Tea/Coffee

Assessing Probability of Failure (Cont.)
Assessing Consequence of Failure

Risk Determination, Assessment and Management
Risk Management with Inspection Activities
Other Risk Mitigation Activities

Reassessment and Updating RBI Assessments
Roles, Responsibilities, Training and Qualifications

RBI Documentation and Recordkeeping
Summary of Risk-Based Inspection Pitfalls

Question & Answer session

Homework Distribution

Basic Schedule Wednesday (Day 3 08:00 – 16:30)

Registration & Tea/Coffee

API RP 581 document Structure
Damage Tolerance (General concepts)
API 510/570/653 initial concepts on setting inspection intervals

API RP 581 Inspection planning methodology, scope & definitions and acronyms
API RP 581 Part 1 Basic Concepts

API RP 581 Part 1 Basic Concepts cont.

API RP 581 Part 1 Pressure Vessels and Piping (Review)
API RP 581 Part 1 Pressure Vessels and Piping (Workshop example)

Question & Answer session

Homework Distribution

Basic Schedule Thursday (Day 4 08:00 – 16:30)

Registration & Tea/Coffee

API RP 581 Part 2 probability of failure methodology

API RP 581 Part 2 – Damage factors
API RP 581 Part 2 – Determination of corrosion rates

API RP 581 Part 2 – Levels of inspection effectiveness

API RP 581 Part 2 Probability of failure methodology (Review)
API RP 581 Part 2 Probability of failure methodology (Workshop example)

Question & Answer session

Homework Distribution

Basic Schedule Friday (Day 5 Overview)

Registration & Tea/Coffee

API RP 581 Part 3 Consequence of failure methodology (Review)

API RP 581 Part 3 CoF methodology (Review)
API RP 581 Part 3 CoF Methodology (Workshop Example)

API RP 571 Overview
General review of repair and FFS codes

Question & Answer session

Final comments and presentation of Certificates.

Information on our Course Developer / Trainer:

Our course developer and lead lecturer, Mr. Kevin R. Maley is a 41-year-old Senior Inspection Engineer / Authorized Inspector of pressurized equipment and Quality Assurance / Control Specialist for the inspection, testing and certification of new and in-service equipment.

He has 21 years' experience in fabrication shops, in-service condition inspection and repair of equipment within petrochemical, power, utility, pulp, and nuclear environments (Currently focussed mainly within the petrochemical field).

He is an experience and patient lecturer that has been directly involved in and responsible for the development of effective and professional training material for API ICP 510, 570 and 653 inspector examinations since 2007 and currently maintains his certification in all the primary API ICP certification and holds ASNT NDT Level III certification in the MT, PT, RT & VT methods.

Key Qualifications & Certifications

- IEng MInstNDT (EngC reg. no. 608847)
- BSc (hons) NDT (University of Northampton)
- API 653 Authorized above ground storage tank Inspector (Cert no: 33577)
- API 570 Authorized Pressurized Piping inspector (Cert no: 33340)
- API 510 Authorized Pressure Vessel Inspector (Cert no: 31035)
- API 571 Supplementary certification, Advanced knowledge of corrosion and materials (Cert no: 35833)
- API 580 Supplementary certification, Advanced knowledge of Risk-Based inspection practices (Cert no: 35875)
- API 577 Advanced knowledge in welding and metallurgy (Cert no: 37575).
- API 936 Refractory personnel certification (Cert no: 37502)
- IIW International Welding Inspector Diploma Comprehensive Level (Cert no: ZA/IWI-C00032)