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API 510 Pressure Vessels Inspection Program

Paris (France)

28 June - 9 July 2027

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API 510 – Pressure Vessels Inspection Program

Code: OG32 From: 28 June - 9 July 2027 City: Paris (France) Fees: 10600 Pound

Introduction

The API 510 Pressure Vessels Inspection Program is a specialized professional course designed to develop advanced inspection and evaluation capabilities for pressure vessels used in industrial facilities.

The program focuses on enabling participants to apply recognized inspection principles, assess vessel integrity, and support safe and reliable operation.

It is intended for engineers, inspectors, maintenance professionals, and technical supervisors who are responsible for pressure equipment integrity and compliance.

The course delivers practical knowledge aligned with inspection standards, damage mechanisms, and decision-making processes.

By completing this program, participants strengthen their ability to manage pressure vessel inspections effectively and contribute to operational reliability.

Course Objectives

This program aims to build technical competence and inspection confidence for pressure vessel professionals.

Upon completion, participants will be able to:

- Understand pressure vessel fundamentals and operating principles.
- Apply inspection requirements and acceptance criteria correctly.
- Perform visual and technical inspections in a structured manner.
- Identify common damage and deterioration mechanisms.
- Evaluate vessel fitness for continued service.
- Calculate corrosion rates and remaining life.
- Prepare accurate and professional inspection reports.
- Support maintenance, repair, and replacement decisions.

Course Outlines

Day One: Pressure Vessel Fundamentals

- Definition and classification of pressure vessels.
- Main components and operating conditions.
- Design pressure and temperature concepts.
- Overview of inspection responsibilities.
- Introduction to inspection standards.
- Discussion of basic inspection scenarios.

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Day Two: Design and Materials

- Pressure vessel design principles.
- Common construction materials.
- Material properties and service limitations.
- Welding considerations and joint efficiency.
- Review of design documentation.
- Practical examples of material selection.

Day Three: Damage Mechanisms

- Internal and external corrosion types.
- Stress-related damage mechanisms.
- Cracking, deformation, and blistering.
- Environmental and process influences.
- Early warning signs of failure.
- Case study analysis.

Day Four: Visual Inspection

- Visual inspection requirements and scope.
- Inspection tools and access methods.
- Identification of visible defects.
- Evaluation of surface condition.
- Recording inspection findings.
- Practical inspection exercises.

Day Five: Non-Destructive Examination

- Principles of non-destructive examination.
- Common examination techniques.
- Selection of appropriate methods.
- Interpretation of examination results.
- Limitations and reliability of techniques.
- Practical application examples.

Day Six: Thickness and Corrosion Calculations

- Thickness measurement techniques.
- Minimum allowable thickness determination.
- Corrosion rate calculation.
- Remaining life estimation.
- Data analysis and verification.
- Calculation exercises.

Day Seven: Fitness-for-Service Evaluation

- Acceptance criteria for pressure vessels.
- Fitness-for-service concepts.

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- Risk-based decision making.
- Repair versus replacement assessment.
- Documentation of technical decisions.
- Scenario-based discussions.

Day Eight: Repairs and Alterations

- Types of approved repairs.
- Repair planning requirements.
- Quality control during repairs.
- Post-repair inspection requirements.
- Return-to-service conditions.
- Repair case examples.

Day Nine: Reporting and Documentation

- Inspection report structure.
- Clear and accurate technical writing.
- Documentation of inspection results.
- Record retention practices.
- Compliance documentation.
- Review of sample reports.

Day Ten: Review and Final Evaluation

- Comprehensive review of course content.
- Technical discussion and clarification.
- Integrated inspection case studies.
- Final knowledge assessment.
- Practical evaluation exercises.
- Key learning outcomes summary.

Why Attend This Course: Wins & Losses!

- Strengthens technical inspection expertise.
- Improves pressure vessel assessment accuracy.
- Enhances decision-making based on standards.
- Reduces risk of equipment failure.
- Supports maintenance planning.
- Improves inspection documentation quality.
- Develops professional inspection confidence.
- Supports career advancement in inspection roles.

Conclusion

The API 510 Pressure Vessels Inspection Program provides a structured and professional pathway for developing advanced inspection capabilities. It balances theoretical understanding with practical application to support accurate vessel assessment and integrity management.

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Participants gain the skills needed to evaluate pressure vessels, support safe operation, and contribute to effective maintenance strategies. The program enhances technical competence while reinforcing disciplined inspection practices. As a result, professionals completing this course are better equipped to manage pressure vessel integrity throughout their operational lifecycle.

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