

Process Plant Equipment Inspection & Repair Techniques

Oil & Gas Engineering
Barcelona (Spain)
29 Sep - 10 Oct 2025

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Process Plant Equipment Inspection & Repair Techniques

Ref: 321587_126552 **Date:** 29 Sep - 10 Oct 2025 **Location:** Barcelona (Spain) **Fees:** 7400 Euro

Course Description

This intensive 10-day course provides comprehensive training on the inspection, evaluation, and repair of process plant equipment and connected piping. Participants will gain in-depth knowledge of industry standards, best practices, and cutting-edge techniques for maintaining plant integrity and reliability. The course covers a wide range of topics, from basic inspection methods to advanced repair strategies, equipping attendees with the skills needed to enhance plant safety and efficiency.

Learning Objectives

- Understand and apply industry codes and standards for equipment inspection and repair
- Master various inspection techniques and their appropriate applications
- Develop skills in evaluating equipment condition and determining fitness-for-service
- Learn effective repair and alteration methods for process plant equipment and piping
- Gain proficiency in risk-based inspection and maintenance planning
- Enhance decision-making skills for equipment lifecycle management

Course Modules

Day 1: Introduction to Process Plant Equipment Integrity

- Overview of process plant equipment and piping systems
- Importance of equipment integrity in plant safety and reliability
- Introduction to industry codes and standards ASME, API
- Basic principles of equipment lifecycle management

Day 2: Inspection Techniques and Tools

- Visual inspection methods and best practices
- Non-destructive testing NDT techniques
- Advanced inspection technologies e.g., drones, robotics
- Inspection data collection and management

Day 3: Corrosion and Degradation Mechanisms

- Common corrosion types in process plants
- Material degradation mechanisms
- Corrosion monitoring techniques
- Corrosion prevention and control strategies

A graphic of a chessboard with several chess pieces (king, queen, rook, knight, and pawns) in gold and silver. The text 'UK Training PARTNER' is overlaid on the board.

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Day 4: Risk-Based Inspection RBI

- Principles of risk-based inspection
- RBI methodologies and implementation
- Developing and managing an RBI program
- Case studies in RBI application

Day 5: Fitness-for-Service FFS Assessment

- Introduction to FFS concepts and methodologies
- API 579/ASME FFS-1 standards overview
- FFS assessment techniques for common damage mechanisms
- Practical examples and case studies

Day 6: Piping Inspection and Evaluation

- Piping system components and failure modes
- Inspection techniques for piping systems
- Evaluation of piping condition and remaining life
- Piping flexibility analysis and stress assessment

Day 7: Pressure Vessels and Storage Tanks

- Inspection and evaluation of pressure vessels
- Storage tank inspection techniques
- Fitness-for-service assessment for vessels and tanks
- Repair and alteration considerations

Day 8: Rotating Equipment Inspection

- Inspection techniques for pumps, compressors, and turbines
- Vibration analysis and monitoring
- Lubrication system inspection and maintenance
- Alignment and balancing considerations

Day 9: Repair and Alteration Techniques

- Welding repair methods and considerations
- Mechanical repair techniques
- Composite repairs for piping and equipment
- Quality control in repair and alteration projects

Day 10: Maintenance Planning and Management

- Developing effective maintenance strategies
- Shutdown planning and execution
- Root cause analysis of equipment failures

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- Continuous improvement in maintenance practices

Practical Wins for Participants

- Ability to develop and implement risk-based inspection programs
- Skills to perform fitness-for-service assessments on damaged equipment
- Knowledge to make informed decisions on equipment repair vs. replacement
- Capability to enhance plant reliability and reduce unplanned downtime

A graphic of a chessboard with several chess pieces (a king, a queen, and a pawn) positioned on it. The board is checkered in black and white, and the pieces are gold and silver. In the background, there are concentric circles radiating from the center of the board.

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