

# Process Plant Equipment Inspection & Repair Techniques

Oil & Gas Engineering  
Baku (Azerbaijan)  
14 - 25 Jul 2025

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## Process Plant Equipment Inspection & Repair Techniques

**Ref:** 321587\_141384 **Date:** 14 - 25 Jul 2025 **Location:** Baku (Azerbaijan) **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 featuring a chessboard with several chess pieces (a king, a queen, a rook, and a pawn) in gold and silver. The text 'UK Training' is in a smaller font above the word 'PARTNER' in a large, bold, black font.

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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

A graphic of a chessboard with several chess pieces. A large gold king piece is in the foreground, with a silver pawn and a silver knight behind it. In the background, there are concentric circles emanating from a point on the board.

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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) on it, set against a background of concentric circles.

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