



*Training Course:
Advanced Failure Analysis and Repairs of Piping
and Vessels*

*2 - 6 May 2027
Cairo (Egypt)*

Training Course: Advanced Failure Analysis and Repairs of Piping and Vessels

Training Course code: EN2005 From: 2 - 6 May 2027 Venue: Cairo (Egypt) - Training Course Fees: 4410 € Euro

Introduction

Failures in piping systems and pressure vessels can lead to significant safety risks, operational disruptions, and financial losses in industrial environments. Advanced failure analysis enables engineers to identify root causes, prevent recurrence, and implement effective repair strategies that ensure system integrity and reliability.

This program, designed by Global Horizon Training Center, equips participants with advanced knowledge and practical techniques to analyze failures, assess damage, and execute appropriate repair methods for piping systems and vessels in accordance with international standards.

Course Objectives

By the end of this program, participants will be able to:

- Understand failure mechanisms in piping systems and pressure vessels
- Identify causes of corrosion, fatigue, creep, and mechanical failure
- Apply root cause analysis RCA techniques
- Evaluate damage and assess fitness-for-service FFS
- Select appropriate repair and mitigation methods
- Interpret inspection and NDT results
- Ensure compliance with relevant codes and standards API, ASME
- Improve reliability and extend asset life

Target Audience

This program is designed for:

- Mechanical and Integrity Engineers
- Inspection and NDT Engineers
- Maintenance and Reliability Engineers
- Corrosion Engineers and Specialists
- Oil & Gas, Petrochemical, and Industrial Professionals
- Technical Personnel involved in asset integrity and repair

Outline

Day 1: Failure Mechanisms in Piping and Vessels

- Overview of common failure types and modes
- Corrosion mechanisms uniform, pitting, SCC
- Fatigue, creep, and brittle fracture
- Mechanical and operational causes of failure
- Introduction to failure investigation process

Day 2: Inspection Techniques and Damage Assessment

- Inspection methods and NDT techniques
- Interpreting inspection data and reports
- Identifying damage mechanisms and severity
- Fitness-for-service FFS assessment principles
- Risk-based inspection RBI concepts

Day 3: Root Cause Analysis and Failure Investigation

- Root cause analysis RCA methodologies
- Failure investigation procedures
- Data collection and evidence analysis
- Failure case documentation and reporting
- Lessons learned from real failures

Day 4: Repair Techniques and Standards Compliance

- Repair methods for piping systems and vessels
- Welding repairs and material considerations
- Temporary vs. permanent repair solutions
- Codes and standards API 510, API 570, ASME
- Quality control and verification

Day 5: Prevention Strategies and Case Studies

- Preventive maintenance and integrity management
- Corrosion control and mitigation techniques
- Lifecycle management and asset reliability
- Developing failure prevention strategies
- Case studies and real-world applications

Registration form on the Training Course: Advanced Failure Analysis and Repairs of Piping and Vessels

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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