€TRAINING

Corrosion Control in Oil and Gas Exploration Industry

5 - 16 August 2024
London (UK)

Corrosion Control in Oil and Gas Exploration Industry

REF: E2349 DATE: 5 - 16 August 2024 Venue: London (UK) - Fee: 9560 Euro

Introduction:

This training program equips participants with comprehensive knowledge and practical skills to mitigate corrosion risks in upstream operations. This program addresses the economic, environmental, and safety implications of corrosion, emphasizing its significance in maintaining asset integrity and operational efficiency.

Program Objectives:

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

- Understand the causes and control of corrosion in oil and gas production and processing.
- Provide an overview of corrosion, its major issues in upstream operations, and its risk and impacts on industry installations.
- Learn about different types of corrosion and their control, including cathodic protection and coating techniques.
- Gain skills in monitoring corrosion and implementing basic corrosion control fundamentals.
- Understand the economic, environmental, and safety significance of corrosion, along with various methods for monitoring and inspecting corrosion.
- Differentiate between scarified and impressed current anodes and identify instrumentation required for cathodic protection of underground pipelines.
- Acquire knowledge of various inspections, monitoring, and testing practices essential for corrosion control in the oil and gas industry.

Targeted Audience:

- Engineers and technicians involved in oil and gas exploration and production.
- Corrosion control specialists and inspectors in the oil and gas industry.
- Environmental health and safety professionals working in oil and gas facilities.
- Managers and decision-makers responsible for asset integrity and maintenance.
- Researchers and academics interested in corrosion prevention in the oil and gas sector.

Program Outlines:

Unit 1:

Oil & Gas Production Fluid:

- Origin and Production of Oil & Gas
- Chemical Compositions of Production Fluids
- Oilfield Equipment
- Overview of Oilfield Processes & Operations

Unit 2:

Metallurgy:

- Chemical Properties of Metals and Mechanical Properties.
- Alloying Elements, Cooling of Metals, Crystalline Forms of Metals.
- Metal Defects and UNS Numbers.
- Properties of Common Oilfield Metals & Alloys.
- Metallurgy of Oilfield Equipment.

Unit 3:

Corrosion Damage:

- Corrosion Fundamentals.
- Common Forms of Corrosion.
- Corrosion Monitoring in Plant and Facilities.
- Non-Destructive Testing NDT.
- Corrosion Failure & Root Cause Analysis.
- Group Discussion- Applicable Standard Study for Corrosion Monitoring.

Unit 4:

Oilfield-Specific Corrosion:

- Internal, Water, Sour, Sweet, Oxygen Corrosion.
- Top of Line Corrosion TLC, Microbiologically Induced Corrosion MIC.

- Sand, External Corrosion, Atmospheric Marine Corrosion, Oilfield Equipment Corrosion.
- Corrosion Under Insulation CUI, Corrosion of Pipe Flanges.
- Underground Corrosion, Stray Current Corrosion, Seawater Corrosion.

Unit 5:

Corrosion Prevention & Control Measures:

- Corrosion Control by Operations.
- Corrosion Control by Processes.
- Corrosion Control Design.
- Corrosion Control by Material Selection.

Unit 6:

Biocide Treatment:

- Microbiologically Influenced Corrosion MIC.
- Sulphate-Reducing Bacteria.
- Biocide Selection & Treatment.

Unit 7:

Corrosion Management Strategy CMS:

- Corrosion Management of Oilfield Equipment.
- Corrosion Economy, Corrosion Data Management.
- Corrosion Key Performance Indicators KPIs.
- Corrosion Data Management.
- Case Study-Catastrophic Corrosion Failure.

Unit 8:

Chemical Treatment:

- Corrosion inhibitors.

- Performance Evaluation of Corrosion Inhibitor.
- Application of Corrosion Inhibitors.

Unit 9:

Barrier Film Coatings and Lining:

- Coating Fundamentals.
- Performance Characteristics of Industrial Coatings.
- Types of Coating Systems.
- Surface Preparations.
- Coating Applications.
- Coating Defects.

Unit 10:

Cathodic Protection CPS Systems:

- Cathodic Protection Fundamentals.
- Galvanic Anodes CPS.
- Impressed Current CPS.
- CPS System Maintenance.