Mastering Corrosion Management

An Overview of Asset Corrosion Management in the Petroleum Sector

Introduction

The introduction of Corrosion Management (CM) as a concept and field of competence can be attributed to the release of the HSE book in the UK in May 2008 and the four volumes published by NACE since 2012.

Applications for Corrosion Management (CM) will improve the effectiveness, efficiency, and risk-biasedness of the current asset integrity management system. These applications improve personnel competency, teamwork, and communication all at the same time. Their ability to increase an organization's ability to prevent corrosion failure and optimise corrosion/integrity costs, however, are their two main advantages.

Corrosion management (CM) is not the same as corrosion engineering, and CM applications are meant to be used in conjunction with the existing corrosion engineering integrity measures. When CM concepts are applied, asset integrity can be significantly improved—sometimes at very little or no additional expense to the company. Since its successful implementation across the globe, Corrosion Management (CM) has attracted interest from non-hydrocarbon industries as well. CM was first introduced to the UK's offshore hydrocarbon industry.

This training session on Course N Carry will emphasise:

- How corrosion engineering and the Corrosion Management (CM) Concept differ
- How is the Corrosion Management (CM) Concept applied to an asset as a whole?
- What are the primary advantages of applications for Corrosion Management (CM)?
- The Corrosion Management (CM) application process's goods and instruments
- Preventing corrosion failure and optimising corrosion and integrity costs with the use of Corrosion Management (CM) software

Objectives

Participants in this Course N Carry training course will have the following skills at the end:

- Gain a thorough understanding and appreciation of the Corrosion Management (CM) idea.
- Create a strategy for asset corrosion management (CM) and put it into action.

- Find the matrices for corrosion control.
- Identify the important performance metrics for corrosion.
- Create and utilise a range of Corrosion Management (CM) instruments and goods.

Training Methodology

PowerPoint presentations featuring text, tables, graphs, photos, and other media will be used for the instruction. The instruction will be interactive, meaning that participants will be invited to contribute to a running topic, conversation, or exercise on a frequent basis. Throughout the training course, previous integrity case studies will be discussed in order to encourage excellent international practices and discourage integrity practices that have harmed the integrity of assets in diverse projects.

A brief test will be given at the conclusion of this Course N Carry training session to ensure all participants retain the key ideas, topics, and techniques covered.

Organizational impacts

The company as a whole will acquire new expertise that will enable them to optimise their relevant integrity costs and greatly improve their corrosion mitigation and control.

The benefits to the organisation will be as follows:

- Enhanced environmental protection and worker safety on the location
- Improved cooperation, correspondence, and documentation
- Enhanced organisational capacity to prevent corrosion failure
- Reduced expenses for corrosion and integrity
- Longer asset and equipment life as a result of lower corrosion rates
- Longer production and operating hours and less unscheduled shutdowns

Personal Imapct

By having a better grasp of the primary causes of most corrosion problems and failures, participants will be able to reduce and control corrosion more effectively. By participating in the course, they will:

- Find out what the notion of corrosion management is and how it varies from corrosion engineering.
- How is the corrosion management procedure applied to every equipment on board?
- How might a risk-based strategy make integrity management and inspections more efficient overall?
- How does the organisation become more adept at anticipating corrosion failures?
- How are the relevant corrosion and integrity costs optimised?

- How different integrity methods based on non-corrosion engineering could also greatly improve corrosion control and mitigation, frequently for free or extremely low cost?

Who should attend?

This training course would be extremely beneficial to anyone working for the company or one of its contractors who is involved in corrosion engineering, asset integrity management, inspections, chemical treatments, coating systems, cathodic protection, project engineering, asset management, and repair and maintenance.

A wide range of professionals can benefit from this Course N Carry training course, but the following are particularly noteworthy:

- Engineers in Corrosion and Integrity
- Engineers for Production and Operations
- Engineers for Inspection
- Engineers for maintenance and repair
- Engineers in Coating and CP
- Asset Managers and Project Engineers for Assets
- Providers of Chemical Treatment
- Providers of Corrosion Monitoring Systems and Laboratory Technicians

Course Outline

Day 1

The Oil and Gas Industry's Corrosion, Corrosion Engineering, and Corrosion Management

- Introductions: (Training Course, Instructor, and Audience)
- Primary Aetiology of Corrosion in the Hydrocarbon Sector
- Systems for Asset Integrity Management (AIMS)
- In the Industry: Corrosion and Corrosion Engineering (CE)
- Common Mechanisms of Upstream Corrosion Damage and Their Mitigation Techniques
- The Principal International Models for Corrosion Management (CM)
- The Definition of the CM Concept

Day 2

The Process of Implementing Corrosion Management

- The Procedure for Integrity Reviews
- Monitoring Performance and Evaluating Effectiveness

- The Implementation of the CM Process
- An Overview of Risk-Based Inspection (RBI) in Brief
- Fundamentals of Inspection
- Basics of Risk
- Fundamentals of Risk-Based Inspection
- Diagrams of Process Flow and Corrosion Loops

Day 3

Determining and Upholding the Twelve Management Requirements

- An Overview of Requirements for Management (12 Items)
- Registers, Plans, and Methods
- Data management, documentation, and databases
- The Importance of Interaction
- The Strategy Document for Asset Corrosion Management
- Corrosion Key Performance Indicators and Corrosion Control Matrices
- Roles and responsibilities within a team
- The Importance of Proficiency

Day 4

Benefits of Corrosion Management Application

- The Pre-emption Capability for Corrosion Failure
- Optimisation of Corrosion Cost
- Improved Asset Uptime, Safety, and Environmental Protection
- Limitations Associated with the Process of Implementing Corrosion Management
- The Process of Auditing Corrosion Management

Day 5

Additional Tools for Corrosion Management and Suggestions for Implementation

- The Process of Managing Change
- Anomalies and How They Are Handled
- Leak Registry, Failure Analysis, and Education
- Suggestions for the Optimal Implementation of Corrosion Management
- Principal Findings and Suggestions