

# Corrosion Management Masterclass

## INTRODUCTION

- Corrosion Management (CM) is a new concept and expertise whose advent could be traced back to the publication of the UK's HSE book on the subject in May 2008 and NACE's four books since 2012.
- Corrosion Management (CM) applications will render an existing asset integrity management system (AIMS) more effective, efficient and risk-based. Simultaneously, such applications enhance teamwork, communication and personnel competency. However, their two most important benefits are the increasing corrosion failure pre-emption capability of an organisation and the optimizing of corrosion / integrity costs.
- The Corrosion Management (CM) concept is different from corrosion engineering and CM applications simply complement the incumbent corrosion engineering integrity measures already in place. Utilizing CM principles could bring about significant asset integrity enhancements, sometimes at very little or no extra costs to the organization. Corrosion Management (CM) initially started from UK's Offshore Hydrocarbon Industry; however, upon successful applications worldwide other non-hydrocarbon industries have also become interested in receiving CM training and consultancy services.

This training course will highlight:

- The Corrosion Management (CM) Concept and how it differs corrosion engineering
- How the Corrosion Management (CM) Concept is implemented across an asset?
- What the main benefits of Corrosion Management (CM) applications are?
- The products / tools of the Corrosion Management (CM) application process
- Corrosion failure pre-emption & corrosion / integrity cost optimization via Corrosion Management (CM) applications

## OBJECTIVES

- Fully understand and appreciate the Corrosion Management (CM) concept
- Develop asset Corrosion Management (CM) strategy and implementing it
- Determine corrosion control matrices
- Determine corrosion key performance indicators
- Design and apply various Corrosion Management (CM) tools and products

## TRAINING METHODOLOGY

- The teaching will be done via PowerPoint slides containing text, tables, plots, pictures, etc. The teaching will be interactive; that is, on a regular basis the participants will be asked to participate in an ongoing topic, discussion or challenge. Past integrity case studies will be presented throughout the training course to promote best international practices while simultaneously discouraging integrity practices which had resulted in impairing asset integrity in various projects.
- This training course will end with a short exam to further help all the participants to remember all the important subjects, concepts and practices discussed throughout the course.

## ORGANISATIONAL IMPACT

- The organization as a whole will gain a new knowledge and set of skills which will help them to significantly enhance their corrosion mitigation and control and further optimise their pertinent integrity costs.

The organization gains will include:

- Improved (site) personnel safety and environmental protection
- Enhanced teamwork, communication and reporting
- Increased corrosion failure pre-emption capability across the organization
- Optimised corrosion and integrity costs
- Extended equipment and asset life due to reduced corrosion rates
- Increased production / operation times and reduced number of unplanned shutdowns

## PERSONAL IMPACT

- Participants will learn to mitigate and control corrosion more efficiently through improved understanding of premier root causes behind the majority of corrosion issues and failures. Attending the course will help them to:
  - Learn what corrosion management concept is and how it differs from corrosion engineering
  - How the corrosion management process is implemented across an asset?
  - How the overall integrity management and inspections could become more efficient through a risk-based approach?
  - How the organisation's capability in pre-empting corrosion failures increases?
  - How the pertinent integrity and corrosion costs are optimized?

## WHO SHOULD ATTEND?

- Anybody within the company or among its contractors who is associated with corrosion engineering, asset integrity management, inspections, chemical treatments, coating systems, cathodic protection, project engineering, asset management and repair and maintenance would greatly benefit from this training course.

This training course is suitable to a wide range of professionals but will greatly benefit:

- Corrosion & Integrity Engineers
- Production & Operation Engineers
- Inspection Engineers
- Repair & Maintenance Engineers
- Coating & CP Engineers
- Asset Project Engineers & Asset Managers
- Chemical Treatment Suppliers
- Corrosion Monitoring Systems Suppliers & Lab Technicians

## Course Outline

Corrosion, Corrosion Engineering and Corrosion Management in the Oil and Gas Industry

- Introductions
- Corrosion and Corrosion Engineering (CE) in the Oil and Gas Industry
- The Two Current Corrosion Management (CM) Models
- The Corrosion Management Concept Definition

The Corrosion Management Implementation Process

- The Integrity Review Process
- The Corrosion Engineering and Corrosion Management Interactions Post-Commissioning
- The Corrosion Management Process Implementation
- A Brief Introduction to Risk-Based Inspection (RBI)
- Inspection Basics
- Risk Basics
- Risk-Based Inspection Basics
- Corrosion Loops and Process Flow Diagrams

## Identification and Maintenance of Management Requirements

- An Introduction to Management Requirements
- Registers, Strategies and Procedures
- Databases, Documentation and Data Management
- The Significance of Communication
- The Asset Corrosion Management Strategy Document
- Corrosion Control Matrices and Corrosion Key Performance Indicators

## Corrosion Management Shortcomings and Other CM Requirements

- Corrosion Management Shortcomings
- Corrosion Failure Pre-emption
- Corrosion Cost Optimisation
- Other Important CM Requirements
- The Corrosion Management Audit
- The Management of Change Process
- Anomalies and their Management
- Leak Register, Failure Investigations and Learning

## Corrosion Management Application Benefits and Implementation Recommendations

- Potential Benefits of Corrosion Management Applications
- Recommendations for Optimised Corrosion Management Implementation
- Main Conclusions
- Main Recommendations
- Post-Course Assessment