Training Title

CORROSION AWARENESS CONTROL AND MONITORING

Training Duration

5 days

Training Venue and Dates

REF WC031	Corrosion Awareness Control and Monitoring	5	20-24 Jan. 2025	$5,500	Abu Dhabi, UAE

In any of the 5-star hotels. The exact venue will be informed once finalized.

Training Fees

- **$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments, and buffet Lunch.**

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING OVERVIEW

COURSE DESCRIPTION

In order to proactively improve and enhance the safety reliability and profitability in chemical plants and oil field related plant and machinery, it is necessary to understand where why, and how the corrosion related mechanisms cause damage which eventually lead to sudden failures. Such an understanding of failure mode helps to establish plant reliability and safety at optimal cost.

TRAINING OBJECTIVES

- ✓ **To understand the fundamentals of material failure at normal and plant operating conditions and why different materials behave differently - strategic maintenance methods**
  To understand how plant aging can cause catastrophic failures and the methodology of inspection.
- ✓ **Importance of monitoring and modern methods**
- ✓ **Case studies from plant failures and failure analysis to reinforce understanding of theory.**
- ✓ **To understand corrosion in other structural materials such as concrete fiberglass and nonmetals**

WHO SHOULD ATTEND?

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Candidates who intend to take certification- For those interested in learning fitness for service of plant and equipment- for Managers and staff interested in health safety and environment of unintended plant failure planning Managers interested in MRO and plant maintenance and know all about inspection and monitoring. This five-day intensive Short Course is intended for Engineers, Technicians, Managers, Supervisors, Salespersons, Inspectors, and anyone needing a basic understanding of corrosion.

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your questions and to share in the development of the right answers using your analysis and experiences. Tests of the multiple-choice type will be made available daily to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- **30% Lectures**
- **30% Workshops and work presentation**
- **20% Group Work& Practical Exercises**
- **20% Videos& General Discussions**

DAILY OUTLINE

- ✓ **Corrosion**

- ✓ **The need for corrosion awareness**
- ✓ **The cost of corrosion**

- ✓ **Why do metals and materials deteriorate?**
- ✓ **The impact of the environment**
- ✓ **The school textbook definition of corrosion**
- ✓ **The modern definition of corrosion**
- ✓ **The atomic theory**
- ✓ **Setting up a corrosion cell in the lab.**

- ✓ **Why different materials react in different ways and rates.**
- ✓ **More definitions of corrosion – spontaneous, unseen, irreversible**
- ✓ **The mistaken common notion, anode, cathode**
- ✓ **Polarization – the slowing down process.**
- ✓ **Tafel's slope – a clue to control corrosion.**

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- ✓ **Understanding corrosion – forms – causes –soil, water, bacteria, atmosphere, gases and vapors, and steam-operating conditions such as pressure, temperature, velocity, stress, product input variations**
- ✓ **Avoidance and control of each – explained through.**
- ✓ **Case studies.**

- ✓ **Four-way method of controlling corrosion**
- ✓ **What is cathodic protection – how it works – principles?**
- ✓ **Typical examples of CP**
- ✓ **The galvanic and impressed.**
- ✓ **The components**

- ✓ **Coating – types**
- ✓ **limitations**
- ✓ **Failure and detection**
- ✓ **how it works with CP**

- ✓ **Inhibitors - types**
- ✓ **limitations**
- ✓ **case studies**

- ✓ **Material selection and design**

- ✓ **Cost of overdesign**
- ✓ **new materials**
- ✓ **S Steel, High Ni alloys, fiberglass**

- ✓ **Estimating corrosion loss**
- ✓ **Faraday's law**
- ✓ **Weight loss, coupon**
- ✓ **ER**
- ✓ **Polarization techniques**
- ✓ **NDT – Eddy – UT, PT, RT**
- ✓ **Microscopy/lab techniques**

- ✓ **Corrosion monitoring - coupon**
- ✓ **Pig**
- ✓ **Endoscopies**
- ✓ **Acoustic**
- ✓ **CP**
- ✓ **Coating failure**

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- ✓ **Corrosion of - SS**
- ✓ **Concrete**
- ✓ **Fiberglass and plastics**
- ✓ **Bacterial**
- ✓ **Nonferrous Al, Cu alloy**

- ✓ **High temp. Corrosion.**

NOTE:

Pre-& Post Tests will be conducted.

Case Studies, Group Exercises, Group Discussions, Last Day Reviews and assessments will be carried out.

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