

METALLURGY CORROSION & PREVENTION OF FAILURES

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TRAINING TITLE

METALLURGY CORROSION & PREVENTION OF FAILURES

VENUE

Dubai, UAE

DURATION

5 Days

DATES

14 - 18 March 2021

PRICE

US\$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet.

TRAINING INTRODUCTION

The first step in safety and reliability of refinery equipment is identifying, understanding, preventing the relevant failure mechanisms. Corrosion is the primary cause of failure of components in the process industries. The success or failure of the equipment to corrosive environment to a great extent depends on the right metallurgy. Thus proper understanding of the metallurgy and corrosion phenomenon helps engineers to mitigate corrosion and to monitor it on a periodic basis, based on which, corrective actions can be taken. Premature failure of critical components like pipelines, tanks, pressure vessels, boilers and related equipment, heat exchangers and welded joints often results in operating down time, loss of production, environmental pollution and in some cases, loss of human life. Millions of dollars are spent every year by these industries to combat corrosion. The course crosses the boundaries from the fundamental information to top notch in the recent technological achievement in this field.

TRAINING OBJECTIVES

- To understand the fundamentals of material failure at normal and plant operating condition and why different material 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

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- To understand corrosion in other structural materials as concrete fiberglass and nonmetals

TRAINING AUDIENCE

For all maintenance staff who are interested in knowing why some components fail more often than expected- Corrosion awareness- For plant engineers who interested in learning fitness for service of plant and equipment- for Managers interested in health safety and environment in case of unintended plant failure-for Managers interested in MRO and plant maintenance cost and know all about inspection and monitoring-This is a value added package.

TRAINING OUTLINE

- Metallurgy
- History-The stone age and the discovery of metals-metals and non metals-ferrous and non ferrous-the art and science of metallurgy-steel making ancient and modern-discovery of other metals and periodic classification-physical and chemical properties-atomic model-crystal structure and grain boundaries-mechanical properties-demerits of carbon steel-discovery of stainless steel
- Definition of corrosion-the importance of corrosion studies-why metals are attacked-the energy diagram-pH and the pourbaix diagram-the galvanic series-faradays laws- the corrosion theory- factors that influence corrosion-case studies
- Controlling corrosion – anode cathodic and the four components of corrosion cell – polarization cathodic protection – coating – inhibitors – better material and design – how each of them help to control corrosion – inspection.
- Monitoring corrosion – what is monitoring – why it is necessary – what are the equipment and methods – NDT – record keeping.
- Safety health and environment.

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of

individual exercises, questionnaires, team exercises, training videos and discussions of “real life” issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.

