Introduction to Corrosion Fundamentals in the Oil and Gas Industry

Goal

The Goal of this course is to review the causes of corrosion in the Oil and Gas Industry and develop guidelines for monitoring, controlling and preventing corrosion.

Introduction

The success of every company depends of each employee's understanding of the key business components of safety, sustainability, and profitability. Employee training and development will unlock the companies' key business components. When people, processes and technology work together as a team developing practical solutions, companies can maximize profitability and assets in a safe and sustainable manner. Training and development is an investment in future success - give yourself and your employees the keys to success

Objective

The objective of this course is review the basics of corrosion, the chemistry of corrosion, corrosion monitoring, choices of metallurgy, and prevention. Current corrosion control techniques will be reviewed, along with current methods.

To those with experience in the processing industry, this seminar can reinforce their practical experience and broaden their data base. To those new in the processing industry this seminar can serve as a platform to build their data base of experience.

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Course Outline

The goal of the course would be to refresh the knowledge of those who have a basic understanding of corrosion and to build a foundation to those who are new to corrosion fundementals. This course is an introduction to these topics – for a more detailed overview consider attending our advanced course.

Introduction

- Overview of the Chemical Processing Industry
- Chemistry of the Processing Industry
- Safety for the Operation and Maintenance Groups

Principles of Corrosion

- Ohm's Law
- Aqueous Corrosion
- High Temperature Oxidation
- High Temperature Corrosion
- Corrosion Kinetics
- Galvanic Corrosion
- Galvanic Corrosion Case Study

Types of Corrosion

- Pitting Corrosion
- Crevice Corrosion
- Under Deposit Corrosion
- Stress Corrosion Cracking
- Stress Corrosion Cracking Case Study
- Hydrogen Embrittlement
- Erosion Corrosion
- Erosion Corrosion Case Study
- Cavitation Corrosion
- H2S Corrosion
- CO2 Corrosion

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- Microbiological Corrosion
- Under Insulation Corrosion
- Corrosion of Welds
- External verses Internal Corrosion

Corrosion Control - Materials of Choice

- Metallurgy Guidelines
- Stainless Steel
- Plastics
- Carbon Steel

Corrosion Control

- Inhibitors
- Catholic Protection

Corrosion Monitoring

- Current Corrosion Monitoring Procedures
- Non Destructive Testing
- Behavior of Metals in different environments

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Who Should Attend:

- People who are making day to day decisions regarding operation, design, and economics of processing plants;

    1. 1st Line Operations personnel,
    2. Operation Supervisors,
    3. 1st Line Maintenance personnel,
    4. Maintenance Supervisors,
    5. Senior Plant Supervisors,
    6. Operations Engineers
    7. Process Support Engineers,
    8. Design Engineers,
    9. Cost Engineers

- Everyone with responsibility for any aspect of process corrosion
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations and Safety
- Other professionals who desire a better understanding of subject matter

What you can expect to gain:

- The basic fundamentals of corrosion
- The chemistry of corrosion
- Corrosion monitoring, choices of metallurgy, and prevention.
- Current corrosion control techniques will be reviewed, along with current methods.

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