CORROSION AND FOULING MANAGEMENT

TRAINIT ACADEMY

FMC225

Facility Integrity, Inspection, Metallurgy and Corrosion Engineering

COURSE TITLE

CORROSION AND FOULING MANAGEMENT

COURSE DATE/ VENUE

5th - 9th Oct 26'

London, U.K.

COURSE REFERENCE

FMC225

COURSE DURATION

05 Days

DISCIPLINE

Facility Integrity, Inspection, Metallurgy and Corrosion Engineering

COURSE INTRODUCTION

Corrosion and fouling problems occur in the petroleum refinery in various processes and operations. The magnitude of a petroleum refinery unit and the complex of the processes are such that a wide variety of equipment types can be subject to corrosion and fouling depending on the process. Some refinery equipment types are more vulnerable to corrosion and fouling, than others usually due to their role in the process. Uncontrolled corrosion in petroleum refineries can cause release of hazardous substances and components or can reduce both the performance and reliability of equipment until their failure. As such, corrosion hazards can put at risk the safety and well-being of plant employees and the general public as well as lead to severe damage of process units, and in some cases shutdown of refinery operations.

In petroleum refineries, many processes are subject to problems with heavy fouling that affect overall plant performance and profitability. Operating costs associated with fouling in refinery heat exchangers typically include increased fuel needs, increased pumping power, and reduced throughput and capacity of produced products. Estimates have been

made of fouling costs, due primarily to wasted energy caused by excessive fuel use, that are as high as 0.25% of the gross national product of the industrialized countries.

COURSE OBJECTIVE

Upon successful completion of this course, the delegates will be able to:

- ✓ Identify common refinery corrosion and fouling problems, including where they typically occur.
- ✓ Describe the type of corrosion or fouling that is present based on location, process conditions, and symptoms
- ✓ Identify control strategies for common corrosion and fouling problems, including their benefits and liabilities
- ✓ Use problem-solving techniques to resolve corrosion problems
- ✓ Apply knowledge of corrosion and fouling management to solve less common problems.

COURSE AUDIENCE

Refinery engineers, technologists, operators, inspectors, corrosion professionals and chemists.

COURSE CONTENT

DAY 1

1-Significance of corrosion & fouling petroleum refining industry

2-Refinery feedstock

3-Refinery products

4-Refinery processes

5-Refinery equipment

6-Metallurgy of refinery specific process equipment

DAY 2

7-Introduction to corrosion fundamentals

8-Forms of corrosion

9-Corrosion of refinery specific equipment

10-Damage mechanisms

11-Group discussion -Applicable API 579 standard for damage mechanisms

DAY 3

12-Introduction to fouling

13-Types of fouling

14-Fouling influencing factors

15-Fouling diagnosis

16-Refinery specific process unit fouling problems

17-Case Study-Refinery fouling problem

DAY 4

18-Refinery corrosion inhibitors injection in specific process units

19-Refinery corrosion monitoring in specific process units

20-Group Discussion-Applicable NACE standards for weight loss coupons

21-Case Study-Refinery corrosion monitoring

DAY 5

22-Refinery fouling detection and monitoring in specific process units

23-Refinery fouling mitigation control and removal in specific process units

24-Fouling control by chemical treatment (antifoulants)

25-Mechanical methods for fouling removal

26-Chemical cleaning

27-Environmental and safety impact

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

£5,500 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions