Q8 Research

# T R A I N I N G

## ADV01: Fouling and Corrosion Control in a Refinery

ADVANCED

NALCO Champion
An Ecolab Company

Q8Research

*Crude oil is a product of Nature and contains many different molecules with different properties. For a safe and reliable operation it is crucial to control both fouling and corrosion in the refinery. Fouling and corrosion is a complex topic with the many different Hydrocarbon and contaminant species as it also includes the domains of electrochemistry, vapour/liquid equilibria and multiphase fluid dynamics. Therefore, the training provides both an overview of fouling and corrosion mechanisms in a refinery and gives descriptions for the main refinery units with the typical corrosion and fouling problems and locations.*

CERTIFIED ISO 9001

# Course Objective

The program is designed for **professionals working in Operations, Maintenance and Engineering** who want to enhance their understanding on fouling and corrosion mechanisms and control in a refinery. The following topics are covered:

- Understand processes that can cause potential damage.
- Support safe operation by building knowledge on corrosion issues and types in the refinery, to take better decisions with available data
- Various fouling and corrosion types and mechanisms that refineries have to deal with
- Typical corrosion & fouling problems in the main process units
- State of the art corrosion and fouling management techniques
- Available tools & options to identify and address corrosion issues
- Failure Analysis Techniques and non-destructive inspection techniques
- Ways to control corrosion and fouling like materials of construction or chemical injection to mitigate and control corrosion

This is a **theoretical** and **practical** course that combines lectures with **exercises** that build on the knowledge gained during the training about corrosion and fouling. The course is given by a corrosion and fouling specialist from Nalco Champion with more than 20 years of experience and a Principle Process Engineer with more than 15 years of Process and Reliability engineering experience in refineries.

## *Practical*

| | |
|---|---|
| *Course duration:* | *4 days* |
| *# Participants:* | *max. 15* |
| *Location:* | *on request* |

# Course Modules

**Module 1**: *Introduction to Corrosion and Fouling*
This module will give the participant an overview of the various corrosion and fouling mechanisms and gain insight in the most critical process to minimize corrosion in the refinery, the dewatering/desalting process.

**Module 2**: *Total Cost of Ownership*
Some equipment has to be cleaned, repaired or replaced with a high frequency. With available corrosion and fouling mitigation techniques (material selection or design) it is possible to lower the Total Cost of Ownership/Operations. You can use the knowledge to lower equipment cost and extend equipment life.

**Module 3**: *Corrosion control and prevention*
Key in refinery corrosion is monitoring, predicting and staying on top of any corrosion anomalies. If not done carefully, financial costs and risks to safety can increase rapidly. This module will go deeper on these aspects.
Characteristics of corrosion mechanisms will be given and a model will be shown that can be used to predicted corrosion. API RP571 will be also used to understand the mechanisms. Working mechanisms of available chemical treatments to lower corrosion rates will be explained.

**Module 4**: *Corrosion and Fouling in refinery units*
The main refinery units have specific corrosion and fouling problems. Participants will gain a broad overview of the specific corrosion and fouling issues in the main equipment of the most important refinery units.

*Extensive hands-on knowledge shared by our experts*

**For more information**: please visit www.Q8Research.com
**For questions**, please call +32 496 58 00 86 or send an email to mahaute@Q8.com