



Corrosion Control in Refineries and Risk-Based Integrity Management

Consultant / Trainer:

Henk Helle

The **Petrogenium** course on Corrosion Control and Risk-based Integrity Management provides knowledge and background of the corrosion threats that may exist in refineries and it gives guidelines how to design, quantify and organize the response to those threats. The course will deal with all the main refinery processes: crude & vacuum, hydroprocessing, FCCU, amine, SWS and Claus units as well as the role of feedstock in these units.

Participants

Corrosion control and integrity management touches the responsibilities of pretty much all intermediate and experienced refinery personnel, but primarily those in technology and integrity management which includes unit technologists, process, corrosion and mechanical engineers, inspectors and compliance officers. And anyone who is confronted from time-to-time with integrity issues or constraints and wants to gain a clearer perspective may fruitfully follow the course.

This Petrogenium course can be tailored for awareness/inexperienced staff, for intermediate and for experienced personnel. Furthermore the course can be customized for a specific refinery, plant or unit. Naturally the alternative of an in-house course is possible. The option for post-course consultancy/help-desk support is also available.

Learning Objectives

Integrity management in refineries rests on four pillars: one, the origin and nature of corrodents in refinery processes; two, the severity, location and nature of the corrosion processes that these corrodents may cause and sustain; three, the ways to mitigate, detect or prevent corrosion; and finally, how to structure this integrity management process in a refinery organization. The participants will learn about these four pillars and can compare it with their own knowledge and way of working. Ample time is available for queries and discussion..

Programme

Day 1 : Structure of integrity management

- Introduction
- Technical Integrity Management
- Integrity Operating Windows
- Corrosion Control Documents
- Organisation

Day 2 : Degradation threats in refinery units

- CDU- feedstock and contaminants, desalter design and operation, caustic addition
- sulphidic corrosion, naphthenic acid corrosion
- CDU aqueous overhead corrosion, neutralizing amines, corrosion in the column
- Hydro-processing units, FCC units, boilers
- Amine units, sour water strippers, sulphur recovery units and tail-gas treaters
- Corrosion under Insulation

Day 3 : Mitigation of threats: the six elements of integrity management

- Key corrosion indicators
- Non-intrusive inspection and Internal visual inspection
- ND Inspection techniques
- Corrosion loops, Corrosion points
- Inspection, accuracy, evaluation
- Risk and risk reduction
- Consequence of failure
- Likelihood of failure
- Risk assessment and the notion of zero-risk
- Fitness for Purpose analysis