Cracked gasoline hydrodesulphurization

AXENS PRIME-G+ ™

OPERATIONS TRAINING

Objective: To provide in-depth knowledge of the **PRIME-G+™** process and particularly the client's unit. By the end of the course, the participants will have:

- A general understanding of the significance of the unit within the refinery scheme
- A broad technical understanding of the catalyst and the chemical reactions involved in the process
- A solid knowledge of the Process Flow Diagram and equipment
- A thorough knowledge of operating conditions and their impact on performance
- A good overview of the start-up and shutdown activities
  (NB: a detailed review of procedures is not included in the course).
- A sound knowledge of the main troubleshooting actions

Duration: The training course lasts 3 days. The duration can be tailored to the participants' level of understanding.

Attendance: This course is targeted to unit process engineers, unit technical managers, shift leaders, and board men. Suitably qualified or experienced outside operators may attend to enhance their process knowledge.

Program: The program below may be modified due to specific customer requirements, subject to an agreement between the customer and AXENS.

AXENS' OPERATIONS TRAINING PROGRAM

Prime G+ TM: cracked gasoline hydrodesulphurization

Day 1

1. Introduction

- Supply/demand situation
- Market trends
- Environmental regulation
- Focus on the unit in its context

2. Process Objectives

- General information
- Feed characteristics
- Unit duty
- Products' specifications
- Material Balance

3. Chemical Reactions

- Chemistry and catalysis basics
- Feed chemical composition
- Chemical reactions
- Catalysts
- Catalyst contaminants

4. Process Description

- Process Flow Diagrams
- Piping & Instrumentation Diagrams
- Main equipment
  (Drawings, pictures and functions)

Day 2

5. Start up Preparation

- Pre-commissioning operations
- Commissioning operations:
  - Leak tests
  - Dry out
  - Inerting
  - Catalyst loading…

6. Main Start up Operations

- Detailed description of the steps involved in introducing fresh feed :
  - Cold naphtha circulation
  - Hot naphtha circulation
  - Reactive feed introduction
  - Capacity increase and unit tuning

7. Normal Operation and Operating Parameters

- Summary of main operating conditions
- Operating variables
- Operating conditions adjustments
- Analytical control

Day 3

8. Troubleshooting

- Catalyst activity and selectivity issues
- Operational disturbances

9. Shut-down and Restart

- Detailed description of a:
  - Planned shut-down for:
    - Stand–by
    - Maintenance
    - Catalyst handling
  - Normal restart

10. Emergency Situation Description

- Emergency procedures
- Interlock loops

11. Catalyst Special Procedures

When applicable:
- Sulfiding
- Regeneration
- Unloading

12. Health, Safety and Environment

13. Quiz