

Continuous Catalyst Regeneration Reforming unit

AXENS OCTANIZING™ PROCESS

OPERATIONS TRAINING

Objective: To provide in-depth knowledge of the **OCTANIZING™** 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 5 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.

Octanizing™: continuous Catalyst Regeneration Reforming Unit

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

Day 2

4. Reforming Process Description

- Process Flow Diagrams
- Main equipment and principles (Process circulation)

5. Catalyst Continuous Regeneration and Circulation Process Description

- Process Flow Diagrams
- Main equipment and principles
 - Sealing system,
 - Lift pots,
 - Catalyst transfer,
 - Elutriation

Day 3

6. Start up Preparation

- Pre commissioning key points
- Leak test
- Dry-out
- Catalyst loading
- Inerting
- Catalyst circulation and drying

7. Main Start up Operations

- Catalyst reduction
- Oil-in at low severity
- Lining-out at design capacity and normal severity
- Catalyst regeneration

Day 4

8. Normal Operation and Operating Parameters

- Operating parameters
- Performance follow-up (yield, etc)
- Analysis

9. Shutdown and Restart

- Planned shutdown
- Normal restart

10. Emergency Shutdown

- Safety Interlock
- Lifts stops

11. Troubleshooting

- Typical causes and resolution of product quality issues
- Operational disturbances

12. Catalyst Special Procedures

- On-the-fly replacement
- Catalyst decoking
- Catalyst unloading

13. Health, Safety and Environment

14. Quiz