Conversion of light olefins into gasoline and kerosene

AXENS POLYNAPHTHA™ PROCESS

OPERATIONS TRAINING

Objective: To provide an in-depth knowledge of the **POLYNAPHTHA™** 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 shut-down 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 2 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

Polynaphtha: convergent of light olefins into gasoline and kerosene

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 and Catalysts**
   - Chemistry and catalysis basics
   - Feed chemical composition
   - Chemical reactions
   - Catalysts
   - Catalyst contaminants
   - Molecular sieves
4. **Process Description**
   - Process Flow Diagrams description (including molecular sieves section)
   - Main equipment
5. **Start up Preparation**
   - Pre commissioning key points
   - Leak test
   - Inerting

Day 2

6. **Main Start up Activities**
   - Oil circulation, columns start-up
   - Grading, sieves and catalyst loading
   - Special catalyst procedures
7. **Normal Operation and Operating Parameters**
   - Operating parameters
   - Performance follow-up
   - Analysis
8. **Shutdown and Restart**
   - Planned shutdown
   - Normal restart
9. **Shutdown**
   - Emergency
   - Unscheduled
   - Safety Interlocks
10. **Catalysts and Sieves**
    - Catalyst special procedures
    - Sieve regeneration
    - Unloading
11. **Troubleshooting**
    - Typical causes and resolution of product quality incidents
    - Operational disturbances