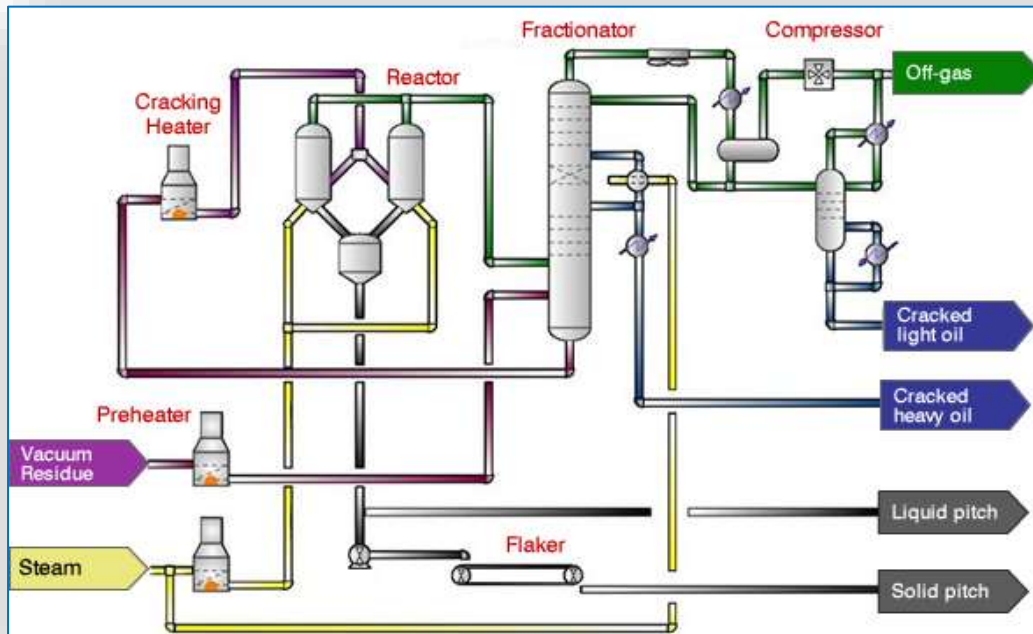




PCE008

Process Reactor Operation, Troubleshooting, Start-up & Shutdown

Course Introduction:

The aim of this 5 days course is to provide the participants with a **complete and up-to-date overview** of **hydro-treating units, the purpose, catalyst used, reactions & operating variables**. Further, the course covers the catalytic reformer unit, the type of catalyst, its function, deactivation, chemical reactions and operating variables. The start-up, shutdown procedures, and emergency cases will also be covered.

The last part of the course handles the hydro-cracking unit of VHGO, the catalyst used, the chemical reactions, the operating variables, the start-up, shutdown procedures, emergency cases and run-away temperatures.

The reactors play a capital role in many factory process operations. Basically a reaction is an apparatus or structure in which fissile material can be made to undergo a controlled, self-sustaining nuclear reaction with the consequent release of energy. This course focuses on the essential knowledge for process plants. Specific areas that will be covered in the course are, the basic parts of a reactor, reactor operation, reactor types, auxiliary equipment combined with reactors, and the operator's function in reactor operations.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ Describe the chemical reactions, processes of the variables and temperature of the process reactors
- ✓ Analyze the reaction mechanism involved in process reactors
- ✓ Learn knowledge on the process control unit, emergency cases troubleshooting catalyst deactivation
- ✓ Observe the gas oil including their start-up guidelines and emergency procedure
- ✓ Familiarize with the safety regulations and explain catalytic reformer unit including its chemical reactions
- ✓ Apply start-up and shutdown procedures with depth understanding of the catalyst regeneration procedure

Who Should Attend?

This course is intended for all process engineers, production engineers, section heads, senior operators, shift controls, shift supervisors, technicians, plant operators and those who are connected with process reactors.

Course Outline:

Day 1:

- Process, basis of design and chemical reactions
- Process variables process
- Temperature of process reactors
- Gas and oil : start-up guidelines and emergency procedures

Day 2:

- Reactor principles
- Design and general operation
- Charging reactors and effects
- Temperature and pressure
- Components of a reactor and auxiliary equipment
- Stirred Tank Reactors and Batch Stirred Tank reactors
- General operations

Day 3:

- Process reactors: reaction mechanism
- Operating variables and pressure
- Temperature
- Dehydrogenation process
- Operation and troubleshooting of process reactors (process variables, Hydrogen Ratio, R/G and LHSV)

Day 4:

- Process control, deactivation and procedures: process control unit
- Emergency cases
- Troubleshooting Catalysts Deactivation
- Start-up and shut down procedures
- Hydro Cracking Unit (chemical reaction and reaction mechanism)

Day 5:

- Features & Functions, Catalysts, Troubleshooting
- Process Variables
- Hydrogen/Hydrocarbon Ration
- Feed Preparation

- Catalysts Deactivation/Positioning
- Emergency Cases
- Troubleshooting and Run-away Temperature

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course location. This rate includes participant's manual, and-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

- | | |
|---------------|----------------------|
| 08:00 - 08:20 | Morning Coffee / Tea |
| 08:20 - 10:00 | First Session |

10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

