Process Reactors Operation, Troubleshooting, Start-Up & Shutdown

Energy Milestones Corporation

Advancing Professionals to the next level

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Overview

This course focuses on the essential knowledge for process plants. Specific areas that will be covered in the course include the basic parts of a reactor, reactor operation, reactor types, auxiliary equipment used with reactors, and the operator's role in reactor operations.

Course Objectives

At the end of this course, participants will be able to:

- Describe the chemical reactions, processes of the variables and tem perature of the process reactors.
- Analyse the reaction mechanism involved in the process reactors
- Learn knowledge on the process control unit, emergency cases , and troubleshooting catalyst deactivation
- Observe the gas oil, including its start-up guidelines and emergency procedure
- Familiarise yourself with the safety regulations and explain the catalytic reformer unit, including its chemical reactions
- Apply start-up and shutdown procedures with a deep understanding of the catalyst regeneration procedure.

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Course Content

- Process, basis of design and chemical reactions
- Process variables process
- Temperature of process reactors
- Gas and oil: start-up guidelines and emergency procedures
- Charging reactors and effects
- Temperature and pressure
- Components of a reactor and auxiliary equipment
- Stirred Tank Reactors and Batch Stirred Tank Reactors
- General operations
- Process reactors: reaction mechanism
- Operating variables and pressure
- Temperature
- Dehydrogenation process
- Operation and troubleshooting of process reac tors (process variables, Hydrogen Ratio, R/G and LHSV)
- Process control, deactivation and procedures: process con trol unit
- Emergency cases
- Troubleshooting Catalyst Deactivation
- Start-up and shut-down procedures
- Hydro Cracking Unit (chemical reaction and reaction mecha nism)
- Features & Functions, Catalysts, Troubleshooting
- Process Variables
- Hydrogen/Hydrocarbon Ratio
- Feed Preparation
- Catalysts Deactivation/Positioning
- Emergency Cases
- Troubleshooting and Runaway Temperature

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Targeted Audience

- Production engineers
- Process engineers
- Technicians
- Senior operators
- Section heads

Course Methodology

Facilitated by an experienced professional trainer, this training course will be conducted as a highly interactive workshop session. A variety of training methodologies and facilitation techniques will be used before and during the course whenever applicable. These methods are aimed at enhancing individual and group interaction while maximizing learning. Some of these methods are:

- Online Pre-post Test
- Colorful Visual Aids
- Gamification
- Self-Assessment Instruments
- Simulations
- Case Studies
- Videos
- Group Exercises & Discussions
- Role plays
- Indoor & Outdoor games