Training - Heavy Cuts Processing

REF2-EN-P | Face-to-face only | 5 days

This course provides a comprehensive knowledge of refining processes available to upgrade heavy cuts into lighter ones

Level
Knowledge

Public
Engineers and supervisors interested or involved in the processing of heavy cuts

Objectives
Attendees will be able to implement the following skills:

- Understand differences between refining conversion processes with regard to planning, operations and investment issues
- Analyze the operating parameters of these conversion processes
- Acquire the basics for operating cracking units
- Know about on the latest developments in heavy cuts processing

Pedagogical & technical resources
Case studies based on real industrial situations

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites
No prerequisites are necessary to follow this course

Responsable
IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

OVERVIEW OF CONVERSION PROCESSES — 0.25 day

Origins and characteristics of conversion unit feeds.
Different types of conversion processes (principles, performance, operating ranges, economics): thermal cracking processes, catalytic cracking without hydrogen, catalytic cracking with hydrogen.

THERMAL CONVERSION PROCESSES — 1.5 days

Visbreaking and effects on quantity and stability of heavy fuel oils.
Delayed coking: process characteristics, process flow diagram, purification of the cracked products with

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hydrogen and end destination.
Management of coke drum switch and main steps of the decoking procedure, coke handling.
Flexicoking and fluid coker: principle, integration in the refinery and power.

CATALYTIC CRACKING — 1.25 days

Main fluid catalytic cracking processes.
Catcracking feed characteristics.
Mechanisms of catalytic cracking reactions and mode of action of FCC catalysts.
Yields and characteristics of FCC effluents with overview of purification treatments: propylene recovery, alkylation, ETBE and gasoline pool, LCO hydrotreatment.
Analysis of FCC operating balances.
Summary of operating parameters in the reaction section and in the regenerator.
FCC alternates to treat residues (R2R, HOC, etc.).
Maximization of C3 and C4 olefins, gasoline or cracked gasoil (LCO) production.
Presentation of different process schemes.

DISTILLATE HYDROCRACKING — 1.25 days

Different reactions of the hydrocracking process.
Catalysts: hydrotreating and hydrocracking; poisons and regeneration.
Hydrocracking processes: different types, process flow diagram, operating conditions.
Analysis of hydrocracking operating: parameters, hydrogen balance, sulfur balance.
Associated unit: hydrogen production, sulfur recovery.
Product yields and quality utilizations.

RESIDUE PROCESSING — 0.5 day

Overview of existing processes to upgrade vacuum residues: hydrotreatment, hydroconversion.
Associated units.
Refinery configurations with deasphalting unit.

LUBE BASE STOCKS MANUFACTURE — 0.25 day

Classification and required properties of base oils.
Main lube base stocks manufacturing schemes: vacuum distillation unit, deasphalting, extraction, dewaxing, hydrofinishing.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com

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