TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000192

RPCH024 - Oil Desalting System

Oil desalting systems provide protection to capital intensive processing equipment by removing the salt component from crude oil.



Learn from the Best in the Business!

Course overview

Intermediate level

Why take this course

Oil desalting systems provide protection to capital intensive processing equipment by removing the salt component from crude oil. There are many significant variables to control in the crude oil production process. This course provides participants with knowledge necessary to understand that the desalting operation is one that must constantly be adjusted to maintain optimum performance.

The course will move from the fundamentals of the desalting process, through to the various design options and major process variables. Discussion will also include topics on electrical desalting and the types of desalting systems.

As the course progresses, discussion will focus on design considerations, components, operation, performance, and troubleshooting tactics used in desalting operations.

Who it is for and how it helps

Engineers, senior operation personnel and technical supervisors interested or involved in the operation, optimization and monitoring of crude oil atmospheric distillation and residue vacuum distillation units.

What you will learn

- grasp fundamental process control and the impact of each controller on the process and on the characteristics of the cuts produced
- analyse desalter operation and corrosion monitoring
- detect potential deficiencies by troubleshooting

Curriculum

Modules 01–04

01 General overview of the benefits of crude oil desalting

- Impact of crude oil quality on desalter performance
- Introduction to Desalting
- Crude Oil Impurities: Water, Salt and Solids
- Impact of Organic Acids, Asphaltenes
- Desalting Heavy and Opportunity Crudes
- Tankage Dehydration

02 Fundamentals of electrical desalting

- Wash Water Addition
- Rate and Wash Water Quality
- Mixing/Contact: Mix Valves & Static Mixer
- Coalescence: Stoke's Law and Electrical Voltage
- Performance Control Variables
- Dehydration Efficiency vs. Salt Removal Efficiency

03 Types of desalting systems

- Single-Stage Dehydrator
- Single-Stage Desalter
- Two-Stage Desalter
- Three-Stage Desalter
- Typical Operating Conditions and Performance

04 Desalter components

- Process Vessel
- Distribution System
- Electrodes and Transactors
- Mud Wash
- Level Control Devices

Curriculum

Modules 05–09

05 Desalter design considerations

- Vessel Size
- Number of Stages
- Transactor Size and Power Consumption
- Crude Properties

06 Commercial desalter designs

- PETRECO electric AC desalter
- NATCO electro-dynamic desalter Electrostatic Desalting Technology

07 Factors that affect desalter operation and performance

- Crude Oil Feed Rate and Quality
- Temperature/Viscosity/Density Relationships
- Electrical Field Intensity
- Wash Water Rate, Quality and Flow Configuration
- Emulsion Formation (Pumps, Exchangers, Valves, Mixers)
- Control of Water Level and Emulsion Layers
- Demulsifier Technology and Addition Rate
- Mud Washing and Brine Recycle

08 Types of desalting applications

- Heavy Crude Desalting
- FCC Feed Desalting
- Distillate Treating

09 Desalter troubleshooting

- Oily Effluent
- Poor Dehydration and/or Desalting
- Workshop

Participation and contacts

Joining the programme

Contact the Academy and quote course code 000192 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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