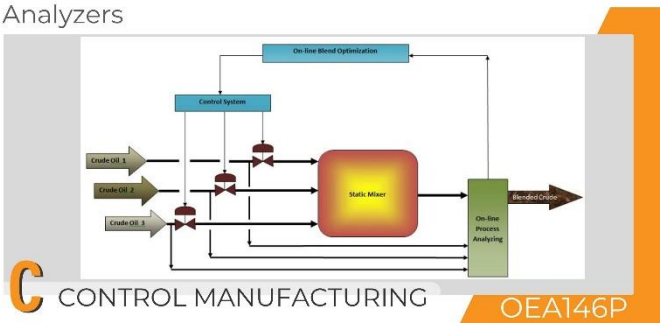
OMS eLearning Academy
For Refinery Offsite Operations Professionals

Crude Oil Online Blending

Analyzers



Topic ID	**OEA146T**
Title	**Crude oil online blending analyzers**
Category	**C-Control Manufacturing**
eLearning Level	**Basic**

Introduction

This topic discusses the requirements and challenges of Crude Oil Blending, such as the blending procedure, tools, and aspects of process optimization.

Why Crude Blending?

In the past, refineries were constructed to distill conventional light crude oils. However, current economic variations in the price of crude oils and shifting demand for distillates have forced refineries to reduce the cost of their distillation feedstock.

The requirement of uniform crude oil quality is commonly achieved by blending high-value light crude oils with heavy (unconventional) crude oils of inferior quality or buying ready-made blends.

Low-quality crudes include heavy crudes from known locations and opportunity crudes brought on the market by traders worldwide.

These crudes, of lower quality, can be purchased at a low cost. Blending these with expensive crudes is inevitable to produce crude blends that bear optimal properties to be processed and at minimum cost.

Mechanism of Crude Blending

In-line blending is performed by transferring different crude oils through an online static mixing device to the final blend tank. The predetermined flow ratio between the different crudes will provide a blend of the required quality.

In addition, in-line blending enables online correction of the quality of the blend by changing the ratio between feeds.

Components of a Crude Blending System

- Simulation software, such as linear programming or LP modeling, is widely used to predict the ratio between individual components to prepare a blend.
- Analyzer System to measure crude qualities and control the qualities of final crude oil feeding to the processing unit
- Crude assay database and prices of incoming crude oils to the blender
- Implementation of a suitable analyzer system to measure crude oil properties such as API, Sulphur, TAN, and distillation points

Summary

This topic describes the crude oil blending process, its operation challenges, and the analyzer used for crude oil blending and blending methodology.

Options for eLearning this topic

Mode of eLearning	Available?
Free Course	No
Refresher Course	Yes
Pick N Choose (Custom Curriculum)	Yes
Advanced Level Course	Yes
Structured MCOR Curriculum	Yes

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