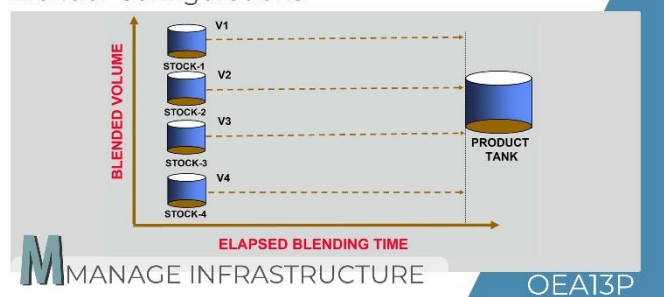




Blender Configurations

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Topic ID

OEA13T

Title

Blender Configurations

Category

M-Manage Infrastructure

eLearning

Basic

Level

Introduction

A blender gets benefited if appropriate fuel blending is done. This provides a competitive advantage. This is useful when prices in the crude oil market are low. A typical blending configuration may have many online analyzers. For terminals and refineries, there are tanks with specific configurations and numbers. Effectively using these tanks is a challenging task.

This topic will discuss Type of Blending, Mode of Blending, Number of Tanks for each Blend Stock, Direct Streams to Header, Streams Pooling, Number of Blend Header, Multi Blends Interactions, Product Destination, Number of Control Loops, etc.

Components of blending operations

In a refinery, finished chemicals are sent to tankers. Refineries are integrated for product sharing and proper feedstock management. Refinery pipeline transfers kerosene, naphtha, gasoline, white/black oil chemicals, etc., to help in the blending process and other operations.

Tank storage capacity should be known to assess refinery operations. For this purpose, tank farm model simulation has to be used. It helps to understand bottlenecks and extra storage capacity. It also helps to understand changes needed in dispatch utilities, blending, product receipt, etc. Therefore, a refiner should get a regular update concerning inter-refinery transfer (IRT) lines system, dispatch/blending utilities, the storage capacity of finished/intermediate products, available tanks, unit charge system, etc.

For an efficient blending process, flow metering systems and hydraulics should function properly. In addition, tankage requirements, advantages of online blending, and additional storage capacity must be assessed. Finally, for handling/storage, best practices should be evaluated.

As the product tank gets filled, blend configuration estimates the value of various components. This is done using analyzer input. Blend header is connected to the analyzer. Next, the product tank is filled with an analyzer-based control system. This is done as per the spec. An off-spec tank is not desired. Here, the tank may have to be split into two volumes. Then each volume may have to be rebled.

Blend ratio control

Distillate blending systems and gasoline are there in tank farms. At least, a simple ratio control scheme is implemented. Here, some components are mixed into a header. Then the refined product is sent to a pipeline or storage tank. Flow measurement maintains the volumetric ratio of components is maintained. If components cannot maintain desired low, then various blend configurations may be used. If blend rate has to be reduced, then pacing control may be used.

Summary

For a refinery, instrumentation, equipment, and storage tanks are vital assets. These assets help to have surge volume. It is obtained for batch refined product shipments/crude oil receipts. Tank farm automation support operational flexibility. Despite operational issues, the efficient operation should be ensured.

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