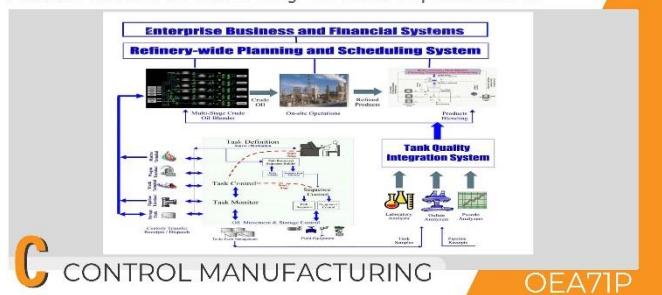




Strategic Management of Automation of Refinery Offsite Operations



Topic ID OEA71T
Title Strategic Management and Automation of Refinery Offsite Operations
Category C-Control Manufacturing
eLearning Level Basic

Introduction

Offsite operations involve receiving crude oil, blending, terminal operations, raw crude storage tanks, product storage tanks, product blending, and order and dispatching products. In addition, different equipment participates in efficient offsite operations. Therefore, a refinery has various challenges in the context of offsite operations.

This topic will discuss onsite vs. offsite operations, offsite operational activities, problems and challenges, integration of offsite and onsite operations, offsite operations and hydrocarbon management, ROI vs. implementation for blending automation, cost, and benefits of offsite automation, automation strategy for offsite operations, etc.

Onsite and Offsite Operations

Onsite operations involve the complete refining process. This means that after receiving crude oil, the onsite operation starts. This involves various processes like distillation, cracking, stripping, absorption, and much more. Then the final products are ready for delivery. Polymerization, separation, and many more processes are some of the onsite refinery operations. Offsite operations involve receiving the crude oil and its blending and storage at terminals. After processing the product, terminal operation, product storage, and product blending are important offsite operations.

A huge amount of equipment is needed for various operations. Some types of equipment involved include piping, tanks, pumps, flow meters system, flow control system, piping, mixtures, and manual valves.

There are various challenges concerning offsite refinery operations. These challenges are the terminal charges, losses from the unavailability of the finished products, extra delivery of the products due to faulty/non-calibrated meters

Also, there are challenges due to product purity variation, environmental impurities to products, and issues arising from the unavailability of storage tanks.

There are many components concerning individual offsite operations. For example, blending the products involves blending from ship to tank, blending from tank to tank, etc. Blending may be done manually or in batch operations. In addition, there may be rundown and open-loop/close-loop blending. Some of the challenges involved in blending are maintaining the quality of product, delay in product delivery, minimizing the frequency of blending, and overflow chances.

Summary

Like an onsite operation, the offsite operation has its own importance. Various components of these operations are described here. There are many issues/challenges concerning offsite operations. Equipment, implementation of automation, and other subjects are also described here.

A refinery faces challenges for terminal operations due to improper feed/products preparation for lack of tanks, demurrage charges, and in-time billings.

Additional challenges are opportunity loss due to product unavailability, lack of proper scheduling of resources, failure to schedule product shipment, etc.

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