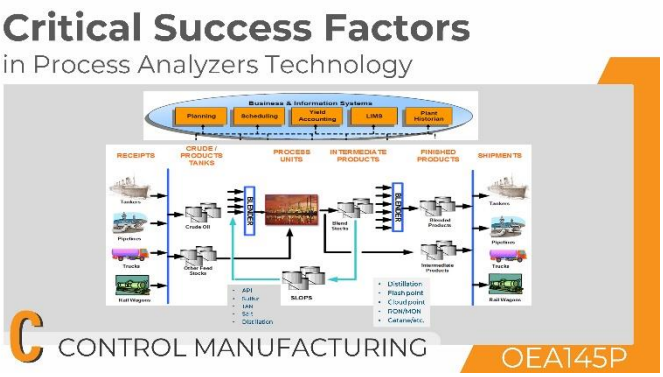
OMS eLearning Academy
For Refinery Offsite Operations Professionals



Topic ID	**OEA145T**
Title	**Critical Success Factors in Process Analyzers Technology**
Category	**C-Control Manufacturing**
eLearning Level	**Basic**

Introduction

This topic will discuss the challenges and trends faced by the refining industry to maintain product qualities due to continuous changes in crude oil quality.

A refinery uses multiplexed online or discrete analyzers to measure incoming crude oil qualities and outgoing products. The measured qualities may be different crude oil and end-user products.

Many analyzer technologies are available in the marketplace based on required quality analysis, sampling points, response time, etc. Hence, many critical factors exist to select, configure and commission a turn-key analyzer system.

Required Qualities Analyses

The refinery can install discrete or multiplexed online analyzers to measure the following qualities of crude oil or final end-user products.

Crude oil – API, Sulfur, TAN, Slat and distillation poont

Fuels products – Distillation point, Flash, cloud and pour points, Octane and cetane, etc.,

Analyzer Technologies

Many technologies are available in the marketplace based on quality, sampling point location, single vs. multi-component analysis, modeling requirement, and many more factors.

The selection of an analyzer system requires considering many critical factors such as required accuracy and sensitivity, investment, sampling system, model development, calibration, validation, etc.

Sampling System

Process sample probes and sample transport lines designed to ensure:

- Representative and rapid sampling avoids the possibility of contamination or dead volume
- Providing the sample in a state and condition compatible with the measurement technique used by the analyzer

Installation, configuration, validation, and commission of analyzers System

1. Install Analyzer cabinet, analyzer shelter, and analyzer house
2. Calibration
3. Validation
4. Configuration and Commissioning
5. Support and maintenance

Summary

There are many technologies and models available in the marketplace to analyze crude oil and refinery end products qualities

Careful consideration require to design, configure, model, and commission a suitable analyzer system in a refinery

Options for eLearning this topic

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