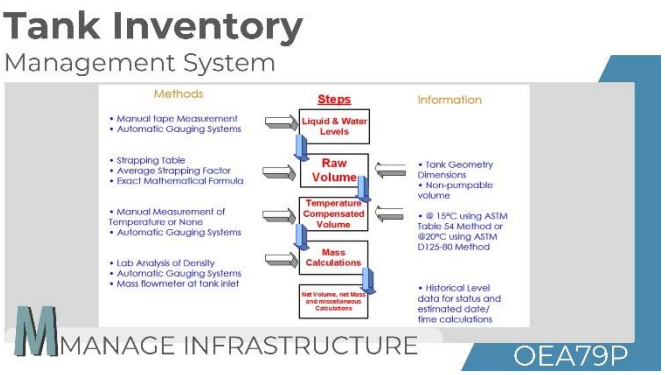

Topic ID	**OEA79T**
Title	**Tank Inventory Management System**
Category	**M-Manage Infrastructure**
eLearning Level	**Basic**

Introduction

Tanks are used for the storage of crude oil, intermediate products, and finished products. To manage the complete inventory of chemicals, a refinery should have a functional inventory management system. Tank inventory requires the most important information about tanks, process parameters for the tank, geometry, flow calculations, tank volume calculations, strapping factor, strapping table, and different equations concerning these calculations.

This topic will discuss estimation of tank inventory, tank information system (TIS), the role of a tank, required information of a tank, required process parameters for a tank, cylindrical tank anatomy, and conventions,

Additionally, the topic discusses the flow of calculations, tank volume calculations from tank geometry, strapping factors versus strapping table, spherical and horizontal bullet tanks, inventory calculation equations, tank status, and estimation of completion date times.

Tank Inventory Management System

The process parameters required for a tank are level, temperature, density, pressure, and water level. All these parameters are measured through a manual system or through automation. The level indicator in a tank is used for the alarm system and inventory calculations. The temperature indicator is used to perform fugitive emission control calculations and temperature-based inventory calculations.

Density is used for mass-based inventory calculation. A pressure indicator is used for fugitive emission control and safety for pressurized tanks.

The water level is used to control water contents and purge excessive water. Therefore, inventory, quality, and emission are the required parameters for a tank.

Different types of tanks are used in a refinery. Cylindrical, spherical, horizontal cylindrical, vertical bullet and horizontal bullet are commonly used. Therefore, one must know all equations for the volume calculations concerning the geometry of these tanks.

The strapping table provides information about the direct volume of the oil against the specific level. This table is provided by the manufacturer of the tank. The strapping table is used for a specified tank because it is related to the tank's geometry. For example, a strapping factor is a different tool that is used for cylindrical tanks. Advanced inventory management systems have additional features. These features cover leakage detection, flow meter calibration offset, mass reconciliation, and lost oil estimation.

Summary

Different parameters involved in the inventory calculations of the tank are discussed here. For example, oil level, temperature, pressure, density, water level, strapping tables, and strapping factors for volume calculations. Variation in volume concerning temperature is also discussed. Furthermore, different equations for different geometry of tanks & features of advanced inventory control systems are described here. For example, the strapping factor is not used for spherical tanks.

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