How to Handle Quality
Violations and Giveaways

0 OPTIMIZE PRODUCTION

OEA31P

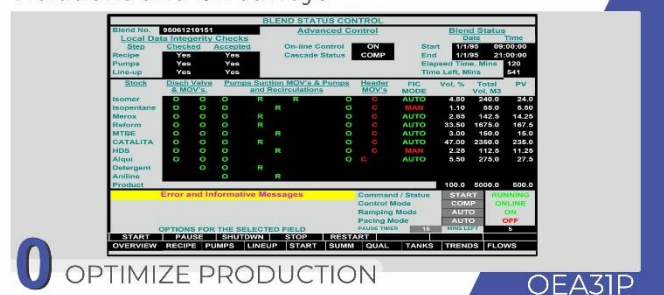| Topic ID	OEA31T
Title	**How to Handle Quality Violations and Giveaways**
Category	**O-Optimize Production**
eLearning Level	**Basic**

Introduction

Maintenance of petroleum product quality is one of the many challenging tasks in refinery processes. The petroleum refining processes transform crude oil into useful products such as liquefied petroleum gas (LPG), petrol, fuel oils, jet fuels, etc.

This topic will discuss various challenging issues, giveaways, and violations that affect the quality of petroleum products. It considers different methods to minimize or eliminate giveaways and violations to maintain the quality of petroleum products. In addition, there is a discussion about the required features of the distributed control system (DCS) of a regulatory blend control.

Factors Affecting Quality Giveaways or Violations

Key factors affecting the quality of petroleum products are as follows:

No real-time measurement of the quality changes of the running stock tanks during the blending process. Analyzer models used in the refining process may be outdated.

There may be a lack of real-time access to the application database to the updated data, so the recipe cannot be optimized.

Due to the lack of proper calibration and maintenance of field equipment, there are chances to get errors in readings. Actually, in the refinery process, the blending process is nonlinear. But used blend models are linear. This leads to model bias values. Therefore, they will not be updated in the model. In addition, there may be incorrect component inventories due to a malfunctioning automatic tank gauge (ATG) during the process.

It is difficult to eliminate infeasible solutions in a real-time process. Volatility and octane giveaway are major concerns for gasoline blending. Volatility giveaway consists of vapor/Liquid ratio, Reid vapor pressure, T50, etc. Per blend cost may be reduced by using butane as a blending component.

Solutions to Minimize Giveaways or Violations

The best practice is to fully automate all the controllers used in the refinery process to eliminate human errors. It is necessary to use the correct equipment to get a good product quality. Advanced nonlinear blend models eliminate the inaccuracies in the optimization process.

Proper maintenance and durability of field equipment increase product quality. In addition, model-based real-time optimization techniques in blending operations also increase product quality.

Summary

There is a discussion about some key issues, aspects, and challenges in the refinery process to get a quality product. Key factors affecting the quality giveaway or violations are described. Some essential methods used to eliminate the giveaways in the refinery process are explained here. Giveaways result in a decline in sales for heavy oil, distillate, and gasoline.

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