Topic ID	**OEA68T**
Title	**Single-Product, Single-Period Optimization**
Category	**O-Optimize Production**
eLearning Level	**Basic**

Introduction

A refiner may choose a single blend spec for various grades of products. Here, quality is controlled by valves and RDOI control. A single product is chosen for a single period, then its recipe or volume is controlled according to the requirement. Operations are performed as per the stock availability and daily stock production prices.

This topic will discuss a case for single-blend single-period blend optimization and walk through all input data screens, optimization options, discussion points, a lab exercise using Ecopetrol blend data, component tanks, blend tanks, blend specs, production requirements, stock production rates, stock allocations, case blend models, recipe optimization using different options, etc.

Single-Product, Single-Period Optimization

Single-product blends are made by blending a single product such as gasoline. Single-period optimization means optimization in a day with different optimization options. Component tanks contain different products. Data concerning physical properties, cost of stock, and pools is used to generate blends. Blend tank healing quality uses data on physical properties as well as volumetric data. Blend specs apply to the group pools. They include all grades of the products such as medium, prime, and regular. They also include the blend product prices and quality giveaway control.

As per the product requirement, a single-blend product is chosen to meet blend specs. For some products, a single period is specified, such as, one-day optimization for medium gasoline. In multi-period blending, stock availability and its cost should be considered because they influence quality during blend optimization. Stock allocation includes the effect of the cost concerning stock product on blend quality. Either volume limit of blends or recipe is controlled after assessing stock cost.

In a blend model, there are various specifications such as gasoline octane number, RVP, and distillation point. Once a blend model is chosen, the optimization option is specified. For example, maximum profit, minimum giveaway, or no optimization

Marginal cost analysis includes the comparison of extra benefits of an activity to the added cost of the same activity. A refiner uses marginal cost analysis as a tool when making decisions regarding the blending process to get maximum profit.

Summary

Here, optimization of a single product for a single period has been described. Goal-seeking analysis is extended in the form of optimization analysis, which is more complex. Instead of setting a specific value for the target, an operator should find its optimized value. The backcasting method is used to predict a desirable future and then work backward to identify policies and programs that connect the future to the present. It is ideal for inventory management.

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