REFINERY ECONOMICS AND MARGIN IMPROVEMENT

The program begins with a detailed discussion of crude oil and products, including commercial transactions, which may have a large impact on refinery economics. The presentation then moves into the refinery to explore the effects of crude oil type on refining yields and to examine the interactions between crude oil selection and refinery complexity. The following sessions provide an understanding of how refining configuration and product markets affect refining margins.

Areas in which refinery margins can be improved are examined, beginning with refinery reliability. LP tools and techniques involved in short term planning are covered as are opportunities to improve margins by optimizing refinery unit operations. Cost reduction issues such as energy conservation and reducing refinery losses are explored. The program wraps up with a session on long term trends in the petroleum industry.

The sessions will be presented by Mr. Alan R. English, an independent consultant, with over 40 years of experience in the petroleum refining industry. He has an extensive background in petroleum refining technology and optimization.

This program combines a survey course, designed for anyone interested in the economics of the petroleum refining industry, with a more in-depth look at opportunities to improve refinery profit margins. It is ideal for refinery planning personnel, refinery engineers, product marketers and those in refinery coordination groups. Personnel from LP modeling companies, financial and insurance firms, service and consulting companies, catalyst suppliers and government agencies will also find the program informative and very useful.

PROGRAM OUTLINE

1. Crude Oil and Products
   • Crude Oil Supply and Demand Overview
   • What are the Major Petroleum Products?
   • Product Supply and Demand Overview

2. Commercial Transactions
   • How is Crude Oil Bought or Sold?
   • What Influences the Laid-in Cost of Crude Oil?
   • How are Petroleum Products Bought or Sold?
   • Futures Markets
   • Trading and Hedging Scenarios

3. Simplified Refinery Configurations
   • Topping / Reforming
   • Cracking
   • Coking

4. How Refinery Configuration Affects Profitability
   • Effect of Refinery Configuration on Margins
     + Topping / Reforming
5. Interaction of Product Markets and Refinery Profitability
   • Niche Markets
   • Impact of Product Specifications

6. Improving Unit / Refinery Reliability
   • Cost of Unscheduled Unit Outages
   • Reduction in Costs of Scheduled Shutdowns
   • Reduction in Maintenance Costs While Improving Reliability

7. Short Term Refinery Planning
   • Refinery Simulation and LP Tools
   • Best Practices Refinery Planning Processes and Tools
   • Crude Oil Evaluations
   • Variance Analysis

8. Optimizing Refinery Unit Operations
   • Objectives of an Optimization Program
   • Use of Simulation Models
   • Potential Areas of Optimization in Key Refinery Units

9. Energy Conservation and Oil Loss
   • Understanding Energy in a Refinery
   • Costing Energy and Marginal Mechanisms
   • Developing an Energy Management Program
   • Understanding Oil Loss
   • What is the Cost of Oil Loss?
   • How to Reduce Losses
   • Interaction Between Energy and Oil Loss

10. Long Term Investment Horizon Planning
    • Comparison to Short Term Planning
    • Tools
    • Scenario Development and Competitive Analysis

11. Trends in Long Term Refinery Profitability
    • Historical Margin Trends
    • Future State Conditions
    • Reference Sites and Texts

12. Open Forum

PROGRAM SPEAKER

Alan R. English, an independent consultant, has over 39 years of experience in the petroleum refining industry, having worked for Gulf Oil, Chevron, Sun Company and KBC Advanced Technologies. He has provided troubleshooting, technical support, optimization consulting and training to more than 40 refineries in North America, South America, Europe, Asia and the Middle East. While at Gulf and Chevron, Al was involved in the development and commercialization of the Tin additive for Vanadium passivation and the
Bismuth additive for Nickel passivation. He has authored or co-authored 13 publications and has served on the NPRA (now AFPM) Q & A Panel twice. He holds three US patents. He has a BS degree in Chemical Engineering from Lehigh University and has an Executive Masters degree in Technology Management from Stevens Institute of Technology. Al is a licensed Professional Engineer in Pennsylvania.