Title: Refinery Distillation : Operation & Troubleshooting

Potential PDH: 16 **Code:** BTT052

Description:

The Refinery Distillation: Operation & Troubleshooting course covers fundamentals and practical application of distillation in refining processes. The material covers the fundamentals of distillation processing, process considerations, equipment considerations, control and troubleshooting. Extended material covers a variety of advanced topics. Every major distillation application in the refinery is discussed. Proper operation of these units is critical to meeting product specifications and achieving optimum profitability. Multiple case studies are used to illustrate the relative importance of different points.

Extensive coverage includes both process and equipment considerations in revamping existing units, as well as both conventional equipment and modern high-capacity equipment used to expand capacity of existing units. The revamp discussion covers practical considerations involved in tower revamps including equipment selection, impact of modifications on turnaround duration, balancing technical risk against stretch objectives and other practical needs that must be included for successful revamps. Extensive discussion covers many of the factors for assuring a successful revamp instead of a failed expansion project. Recent process intensification steps such as alternate process schemes including refinery applications of divided wall towers will be presented.

The program's content is both comprehensive and wide-ranging. Time is allocated each day to invite participation from participants for presentation to the audience. Attendees will gain an understanding of how process requirements, equipment operation, and economic objectives interact. Once the fundamentals are established, the session moves into the topics of operation, control, troubleshooting, and revamps. The program speaker is Mr. Andrew Sloley, a Principal Consultant at Advisian (WorleyParsons Group) in Bellingham, Washington.

Outline:

PROCESSES
- Introduction
- Distillation Fundamentals
- Distillation Types
- Simulation

HYDRAULICS
- Distillation Equipment (Trays and Packing)
- High Capacity Equipment and Revamps
- Efficiency Versys Performance

DISTILLATION TOWERS AS SYSTEMS
- Feeds and Draws
- Auxiliary Equipment
- Reboilers
- Condesers

REFINERY SERVICES
- Splitters

- Main Fractionators
- Strippers
- Gas Plants
- Absorbers
- Crude Units
- FCC Units
- Delayed Cokers
- Light Ends (Isom, Alky)
- Hydrotreaters and Crackers

OPERATION AND CONTROL

- Capacity Control and Optimization
- Product Quality Control
- Pressure Control
- Other Constraints
- Advanced Control

TROUBLESHOOTING

- Basic Principles
- Conventional Methods
- Advanced Methods

ADVANCED REFINERY DISTILLATION

- Reactive Distillation

Instructor:

Andrew W. Sloley is an independent consultant with over 40 years of experience in the hydrocarbon processing industry. His specialty in this area has been on product separation, distillation, and heat integration including process design, equipment design, troubleshooting, control analysis, training, and operations optimization. This has covered the range from crude and heavy oils to cryogenic systems for light-ends recovery and gas treating. His other responsibilities have included technology analysis and economic evaluation. Andrew has authored or co-authored over 400 publications in these areas. He is currently a contributing editor on equipment and plant design for Chemical Processing magazine. He has a B.S. degree in Chemical Engineering from the University of Tulsa and is a licensed professional engineer in Texas. His experience in over 100 crude units has covered the entire range of crude blending, process configuration, optimization, equipment design, control, and troubleshooting issues for all types of crude units. Specific experience in steam cracking covers all parts of the plant from furnaces and hot-ends through the cold-ends section including refrigeration systems.