

## Refinery Distillation : Operation & Troubleshooting

**Potential PDH:** 16

### 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 Versus Performance

### DISTILLATION TOWERS AS SYSTEMS

- Feeds and Draws
- Auxiliary Equipment
- Reboilers
- Condensers

### 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



### Who Should Attend:

The *Refinery Distillation: Operation & Troubleshooting* training is ideal for process engineers, operations personnel, maintenance engineers, plant managers, supervisors, technical support staff, and new graduates or entry-level engineers involved in refinery operations. This course provides practical knowledge to optimize and troubleshoot distillation units, helping participants understand core principles, enhance operational efficiency, resolve common issues, and maintain effective distillation processes.

### Subject Matter Expert (SME):



**Andrew W. Sloley** is an independent consultant with over 40 years of experience in the hydrocarbon processing industry. He has worked extensively on petrochemical and refining units. His specialty in this area has been on product separation, distillation, and heat integration. 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. Specific experience in distillation includes process design, equipment design, troubleshooting, control analysis, training, and operations optimization.