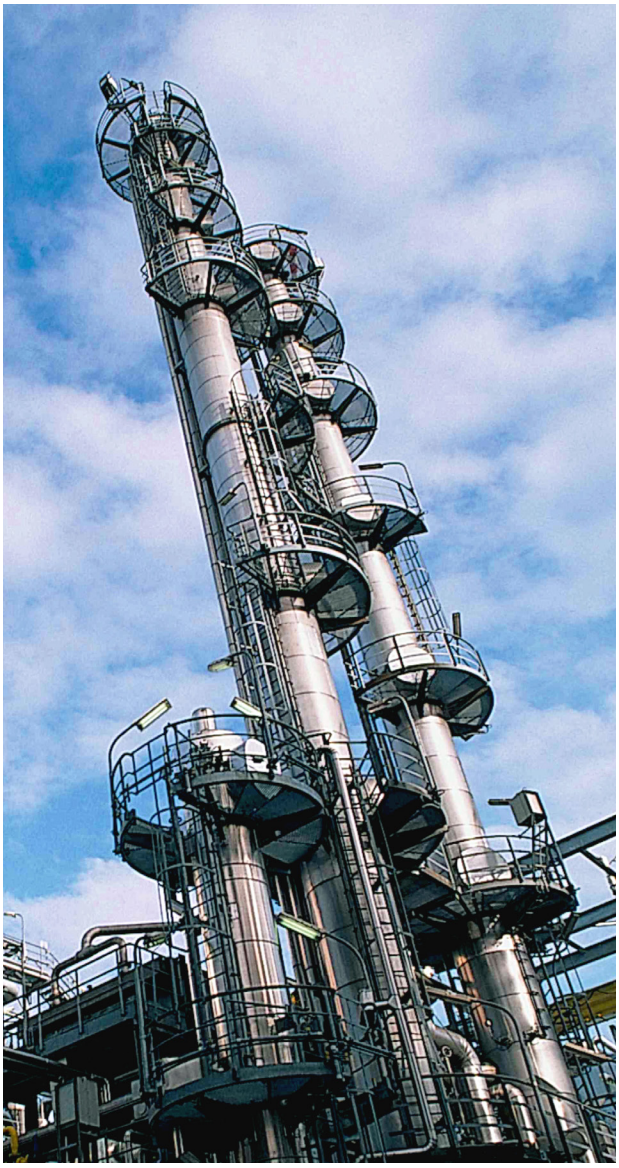
March 9-11, 2026
8:00 AM - 5:00 PM CST
Houston, Texas
South Shore Harbor
Resort & Conference Center

Practical Distillation Technology

Special Emphasis on Troubleshooting Techniques



3 Day In-Person Seminar

Your Guide for:

- Improving operating efficiency
- Lowering costs and energy consumption
- Promoting reliable column performance
- Troubleshooting distillation columns

To register for the course, visit:
https://www.kisterdistillationseminars.com/upcoming-public-seminar

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Email us with any questions at:
events@kisterseminars.com

Taught by

Henry Z. Kister

Known as 'The Tower Doctor', Henry is a Fluor Corporation Senior Fellow and Director of Fractionation Technology, with a vast background in all phases of distillation, including operation, troubleshooting, controls, design, and start-up. Henry is the author of four distillation textbooks, over 150 technical articles, and has presented this course over 550 times in public and for major corporations in 26 countries on all six continents.

KISTER BOOKS & SEMINARS

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About the Course

INTRODUCTION

- This down-to-earth course gives comprehensive coverage of distillation technology, with particular emphasis on the problems that can occur and how to solve them.
- It provides an excellent opportunity to develop a working knowledge of key techniques that can promote trouble-free operation and reduce distillation cost.

WHO SHOULD ATTEND

Engineering and supervisory personnel who are involved in:

- Operating
- Troubleshooting
- De-bottlenecking
- Designing
- Starting up of distillation processes

YOU WILL LEARN HOW TO

- Troubleshoot a distillation column and determine what may cause poor performance
- Evaluate existing column performance and develop new designs
- Avoid common causes of capacity bottlenecks, tray damage, downcomer unsealing problems, packed tower distributor malfunctions and many other operating difficulties
- De-bottleneck a column to improve capacity and/or separation
- Control and operate a distillation column
- Validate your tower simulation and choose an appropriate VLE calculation method

CASE STUDIES

- Case studies will be scattered throughout, brought in to illustrate the principles

AFTER-HOURS INFORMAL SESSION

- This optional session, which will be held following the program on day one, is an opportunity to discuss items that are not on the formal program and take longer to discuss.
- Participants are encouraged to bring materials in a form that can be projected on the screen so that everyone in the audience can view and discuss.
- Participants are also encouraged to bring with them backup material (tray and tower drawings, gamma scans), as often innocent-looking details turn to be major issues.

Event Information

LOCATION

- South Shore Harbour Resort and Conference Center
- 2500 South Shore Boulevard, League City, Texas 77573
- Phone: 281-344-1000

TIMING

- Start Date: Monday, March 9, 2026
- End Date: Wednesday, March 11, 2026
- Start Time: 8:00 AM CST
- End Time: 5:00 PM CST (+ Informal Evening Session on Day 1)

PRICING

- Early Registration Fee: $1,999 (ends January 31, 2026)
- Regular Registration Fee: $2,399
- Group Discount: Automatic 10% off for 3 or more individuals from the same company site

REGISTRATION

- Register and pay by following the link on the first page
- Pay online by credit card
- To pay by cash, check, or money order, please reach out to events@kisterseminars.com

ACCOMMODATIONS

- Rooms at South Shore Harbour Resort have been reserved at a special discounted rate for event participants. Availability is on a first-come, first-served basis, so we encourage early booking. Information on how to access these rates will be included in the confirmation email.

INCLUDED FEATURES

Included with course registration are:

- A full-color, 800+ page program manual
- Distillation Operation Textbook
- Distillation Diagnostics Textbook
- Perry's Chemical Engineers' Handbook - Section 14 (Distillation)
- One Informal Evening Session with seminar leader for participant questions
- Light breakfast, snacks, and beverages each day
- Catered hot lunch served each day
- One evening catered dinner with opportunity to exchange ideas with other participants and discuss special questions with the seminar leader
- Access to discounted hotel accommodations

REFUND POLICY

- If you need to cancel your registration, a full refund will be issued for cancellations made 30 days or more before the program start date.
- Cancellations received within 30 days of the program are subject to a $200 service fee. To ensure fairness to all participants, those who cancel within seven days of the program - or who do not attend - are responsible for the full registration fee.
- If you're unable to attend, you may substitute another participant at no additional charge. Substitutions are accepted at any time.

Course Program: Day 1

AVOIDING FRACTIONATION PITFALLS

- Vapor-liquid equilibrium (VLE): key concepts and simulation traps. Should we believe the simulation?
- Issues with close-boilers and non-idealities: why do some heavy components go up while the simulation thinks they go down.
- Chemical reactions in towers and how to test for them.
- VLE data: to trust or not to trust?
- Multi-component distillation: composition profiles, sidedraws, accumulation, cycling problems. Things to watch out for.

TROUBLESHOOTING DISTILLATION SIMULATIONS

- Does your simulation reflect the real world? How poor simulation leads to incorrect problem diagnosis. What validation checks are needed? How far should we go?
- Temperature profiles: application for simulation validation and for identifying a second liquid phase.
- Sensitivity analysis and graphics for simulation troubleshooting: useful hints.

TRAY HYDRAULICS & LIMITS

- Visualization of vapor-liquid dispersions on trays, flooding, entrainment, weeping, dumping.
- Flood mechanisms: jet (entrainment), system limit, downcomer backup, downcomer choke. Which one is likely to limit your tower capacity?
- Common tray types: sieve, moving valve, fixed valve, sheds: pros and cons. Which works well in fouling applications?
- Small holes, valves: benefits and traps.
- Hole area: can too much lead to troubleshooting assignments?
- Flood: what causes it, what affects it, and how it is predicted. Are the predictions reliable?
- Tray efficiency: how reliable are simulation predictions, scaleup? Can efficiency be enhanced by tray modification?

Course Program: Day 2

TROUBLESHOOTING TRAY TOWERS

- Flooding and foaming symptoms: high dP's, reduced bottoms, temperature profiles, others. Which can be trusted?
- Liquid and vapor sensitivity field tests: identifying the likely flood mechanism.
- dP plots: getting the most of your plant data to detect floods, find their locations, and diagnose their root causes.
- Gamma scans: application for diagnosing flood, missing and damaged trays, foaming, and downcomer flooding.
- How to combine gamma scans with process checks to get the most out of the scans and avoid misinterpretation: the four keys to success
- Downcomer unsealing and tray dryout: when could they affect your tower and how prevented.

PACKINGS HYDRAULICS LIMITS

- Random and structured packing generations: how much improvement do the "best and latest" offer over their predecessors?
- Which packings do better in fouling or polymerizing environments?
- Visualization of normal and flooded packing operation.
- Rules of thumb for flood pressure drop and packing efficiency. Are efficiencies derived from scaleup or theoretical models reliable?
- Simulation hydraulic calculation: to trust or not to trust?

TROUBLESHOOTING PACKED TOWERS

- Why is good distribution critical for packed towers
- Common distributor types: which one handles fouling better?
- Grid gamma scanning for detecting maldistribution, damage, distributor malfunction, distributor and collector overflows.
- Distributor, collector, and parting box overflows: DEATH for packed beds. How to diagnose and how to avoid.
- Some do's and don'ts for distributors. Can poor distributor feeding bottleneck towers?
- Temperature surveys: application for simulation and maldistribution checks. How to conduct, what to avoid, and the hidden secrets they reveal.
- Neutron backscatter and CAT scans: what can they reveal that regular gamma scans cannot.

DEBOTTLENECKING

- State-of-the-art trays & packings: strengths and weaknesses.
- Factors that favor trays and factors that favor packings.
- The pressure drop bonanza: why packings win in non-fouling vacuum services, in compressor suction and in the path of a fan.
- Pitfalls unique to structured packings: high pressure application, oxidation, shutdown fires.
- High-capacity trays (e.g. Superfrac®, VG Plus®, MD®, Hi-Fi®): principles, tricks, and traps. Do they really give 30% more capacity than conventionals?

Course Program: Day 3

DISTILLATION CONTROL

- Assembling control loops into an overall scheme: what works, what causes instability, and what impairs efficiency.
- The 3 most common causes of control assembly failure: no material balance control, fighting between temperature controllers, and level control on a small stream. Tips for avoiding problems.
- Best temperature control location: is there a reliable method that can find it?
- Reboiler, condenser, and pressure controls: which loops work and which misbehave.
- How dead pockets in vapor overhead lines interfere with controls.
- Flooded condenser controls: what are their pitfalls.
- Understanding hot vapor bypasses: why some work while others don't.
- Can controlling the coolant be troublesome?
- Circumventing pressure control problems: good and bad practices.
- Can a reboiler control system induce hammering, fouling, leaks, or waste energy? What cures have been successful?
- Control systems that did not work.

IDENTIFYING AND REMOVING POTENTIAL TOWER MALFUNCTIONS

- What malfunctions should troubleshooters look for? Do the malfunctions repeat themselves? How can these malfunctions be alleviated?
- Points of transition (feeds, side draws, tower base): why these are some of the most severe tower bottlenecks.
- Drawing sketches (to scale) to troubleshoot these internals: you need a sketch, not an expert.
- High tower base levels: how they induce premature flood, tray/packing damage, tower overfills, and how to prevent.
- Common instrument issues at the tower base: what to watch out for.
- Tray/packing damage: pressure surges due to water entering a tower full of hot oil or insoluble organics, other sources of tray damage and ways to avoid them.
- Examining operation charts: what happened first?
- Accumulator trays: do's, don'ts, and how they bottleneck fractionators.
- Common accumulator tray problems: overflow, hydraulic gradients, liquid bypassing.
- Choking of sidedraw rundown lines and tower internal pipes: how they restrict fractionator capacity. Self-venting flow and other cures.
- Kettle reboilers and once-through thermosiphon reboilers: why are they common causes of bottlenecks.