

# LIEBERMAN PROCESS TROUBLESHOOTING SEMINAR

19 to 21 November 2024

(Registration key date 30 SEPTEMBER 2024)

ONLINE WEBINAR hosted by PROCENG LIMITED

## OVERVIEW



This popular PROCESS TROUBLESHOOTING SEMINAR is conducted by the internationally acknowledged expert in his trade and author of several world renowned books. The presentation is interactive and would benefit all working in the process engineering field from novice engineers to the most experienced. The full spectrum of troubleshooting methodology, practical approach as well as process fundamentals are addressed in a challenging, stimulating and enthusiastic manner. It is eye opening, challenging and inspiring!

## CONTENT

Based on actual petrochemical/oil & gas troubleshooting case studies, this 3 day webinar focusses on distillation, heat exchangers, reboilers, air coolers, condensers, fired heaters, turbines, pumps, compressors and vacuum systems.

**Distillation:** Review of Fundamentals, Tray Hydraulics, Identifying Flooded Towers, Tray Deck Plugging – Downcomer Back-up, Damaged Trays, Effects of Excessive Preheat, Control Problems, Incipient Flooding, Expanding Tower Capacity, Crude Column Fractionation, Optimizing Pumparounds, Side stream stripping Problems, Tower Pressure Drop Surveys, Tower External Temperature Surveys, Tower Bottoms Steam Stripping, Packed Tower Design and Operation, FCCU Fractionator Problems.

**Reboiling and Condensing:** Thermosyphon Reboilers, How Reboiler Problems Cause Tower Flooding, Kettle and Forced Circulation Problems, Fouling in Shell and Tube Exchangers, Effect of Sub-cooling on Condenser Efficiency, Pressure Control in Light Ends Columns, Air Fin-Fan Coolers, Vacuum System Inter-Stage Condensers.

**Fired Heaters:** Proper Use of Excess Air, Heat Balancing Convective and Radiant Sections, Draft Control, Afterburn – Causes and Cures, Air Preheaters, Preventing SO<sub>3</sub> Condensing, On-Stream Cleaning Techniques, Coke Formation Inside Tubes, Debottlenecking Heaters.

**Pumps, Turbines and Steam Jets:** Operation of Centrifugal Pumps, Mechanical Seals and Bearings, Optimum Impeller Size, Sizing Motor Drives, Troubleshooting NPSH, Steam Turbines 0 Use of Hand Valves, Surface Condensers, Vacuum Pumps, Converging – Diverging Jets, Optimising Steam Jet Performance, Pumping Viscous Fluids.

**Compressors:** Centrifugal Compressor Fundamentals, Relationship of Polytropic Head to Surge, Rotor Fouling, Measuring Compressor Efficiency, Reciprocating Compressor Fundamentals, Volumetric Compression Efficiency, Head-End Unloaders.

## PRESENTERS



*NORMAN LIEBERMAN has authored several highly acclaimed books from his career in design, debottlenecking and troubleshooting Of process equipment predominantly in the oil & gas, and petrochemical industry. He has taught in excess of 400 technical seminars on process troubleshooting with a very unique interactive style. The case studies from one of his books "A working guide to Process Equipment", co-authored with ELIZABETH LIEBERMAN forms the basis of the Lieberman Process Troubleshooting Seminar.*



## COURSE MATERIAL

The material presented comprises of case studies included in the textbook "A Working Guide to Process Equipment (Fourth Edition)" co-authored by Norman P Lieberman and Elizabeth T Lieberman, published by McGraw-Hill Education. The webinar workbook with system sketches will be e-mailed to each attendee prior to the webinar. It is advised to print the workbook in order to maximise time and concentration during the webinar.

## PRESENTATION DETAIL and COURSE FEE

Online Schedule: **Online sessions DAILY from 06:00 to 14:00 UTC** (Coordinated Universal Time)  
**Tuesday 19 November 2024 till Thursday 21 November 2024**

Course Material: Course Workbook with process sketches will be e-mailed prior to the presentation. For full benefit it is strongly recommended to PRINT the workbook before the course commences.

Attendance Fee: £ 1 100 (excluding VAT) per attendee and £ 1 000 for IChemE members

Registration: Strictly before 30 September 2024. (NO CANCELLATION AFTER 30 SEPTEMBER 2024)

Invoices will be issued in October 2024 for full payment before course commences.

Payment could be made by EFT or Credit Card payment via PayPal with an additional transaction fee.

## REGISTRATION

A MS-Word registration form can be obtained from the 'Scheduled Events' page of the *RESOLVE* web page at [www.proceng.co.uk](http://www.proceng.co.uk). Complete the required input fields and then e-mail the form to [andries@proceng.co.uk](mailto:andries@proceng.co.uk). Positions are limited and will be filled on a first-come-first served basis.

**Order and Payment:** On 1 October 2024 or thereafter upon registration an invoice would be sent to the nominated contact for payment by electronic transfer within 30 days. Late payment could result in put attendance reservation of attendance at jeopardy.

## RESERVATIONS:

Due to the popularity of this course early registration is advised as available places would be allocated according to sequence in which registrations are received.

Late payment could put reservation of attendance at risk. Full payment is the final guarantee of reservation.

For cancellations received after 30 September 2024 there would be no refund and the full attendance fee would be due. For cancellations received before 30 September 2024 there would be no payment due.

If you registered and are unable to attend the event you may substitute at any time. Such substitution and name changes must be communicated to *RESOLVE* by e-mail.

Presentation of the seminar is subject to a minimum of 15 attendees confirmed by 30 September 2024; the programme could be subject to change at the discretion of Norman Lieberman or *RESOLVE* and in the event of illness the date or presenter could be altered.

## HOST

This excellent opportunity for development of Process Engineers is proudly enabled and hosted by *ProcEng Limited*, established by Andries Burger to offer and share practically oriented Process Engineering and related experience and knowledge.

Andries Burger, residing in South Africa is a professional chemical engineer with 35 years' experience in the petrochemical industry including process optimisation; concept development; production optimisation and scheduling; operation; maintenance and project management; personnel development, change management; coaching and mentoring.



In collaboration with other professionals (like Norman Lieberman and Cilliers Kruger) *ProcEng* focusses on transfer of experience and Engineering Practices. Refer to [www.proceng.co.uk](http://www.proceng.co.uk) for more information.

## 2024 LIEBERMAN PROCESS TROUBLESHOOTING WEBINAR

19 to 21 November 2024 06:00 to 14:00 UCT ONLINE WEBINAR hosted by PROCENG LIMITED

Download and complete registration form and e-mail to [andries@resolvekzn.co.za](mailto:andries@resolvekzn.co.za)

Find herewith a request for the following reservation for the above training course:

**REGISTRAR DETAIL:**

Name: [ ] e-mail: [ ] Tel: [ ]

**INVOICE DETAIL:**

Company Name: [ ] VAT Nr. [ ] Quotation Required? (Yes / No): [ ]

Company Invoice Address: [ ] Order Nr. [ ]

Invoice Contact Name: [ ] Invoice Contact e-mail: [ ] Invoice Contact Tel: [ ]

**ATTENDEE DETAILS:**

	Name	Surname	e-mail	IChemE Nr	Course Material
1					Webinar Workbook will be e-mailed to participants.  To maximise concentration in the webinar, it is strongly suggested to PRINT the workbook prior to the Workshop.
2					
3					
4					
5					
6					
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8					
9					
10					

**Course Fee:**

Attendance fee is set at GBP 1 100 per attendee (GBP 1 000 for IChemE members) and a minimum of 20 attendees is required for the presentation to proceed. The maximum attendance is set at 35 to maintain good interaction.

**Payment:** On 1 October 2024 or thereafter upon registration an invoice would be sent to the nominated contact for payment by electronic transfer within 30 days. Late payment could put attendance reservation at risk.

**Reservations:** If you registered and are unable to attend the event you may substitute at any time. Such substitution and name changes must be communicated to RESOLVE by e-mail. No refund for cancellation after 30 September 2024. Presentation is subject to minimum requirement of 15 attendees registered by 30 September 2024. The programme could be subject to change at the discretion of Norman Lieberman or RESOLVE and in the event of illness the date or presenter could be altered. Refer to course brochure for other rights reserved.