LIEBERMAN PROCESS TROUBLESHOOTING SEMINAR

ACCREDITED as Continued Professional Development Activity (SAChE-069)

18 to 22 October 2010
(Registration key date 31 May 2010)

Riverside Sun Hotel
Vanderbijlpark, South Africa

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


**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$_3$ 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.
NORMAN LIEBERMAN is a chemical engineer with 35 years experience in process design and plant operations. He is an independent consultant specialising in oil refinery and chemical plant process problems and revamp studies.

Norman holds B.S and M.S degrees in Chemical Engineering from Copper and Purdue respectively and has taught in excess of 350 technical seminars on process troubleshooting and process equipment. He authored several highly acclaimed books:

- Troubleshooting Refinery Operations
- Troubleshooting Process Operations 4th Ed.
- Troubleshooting Natural Gas Processing
- Process Design for Reliable Operations 3rd Ed
- A Working Guide to Process Equipment (co-authored by Elizabeth Lieberman)
- Troubleshooting Process Plant Control

ELIZABETH LIEBERMAN is a chemical engineer with more than 20 years experience in the process industry. She works as a consultant in troubleshooting oil refinery and chemical plant process problems and is also experienced in ceramic processing, refractory processing and the conveying of non Newtonian fluids (slurry flow).

Elizabeth holds a Chemical Engineering BSc from the University of Wales and LRIC in chemistry. She co-authored the internationally acclaimed book “A Working Guide to Process Equipment” with Norman Lieberman, but will unfortunately not be able to participate in this 2010 presentation of the seminar.

Riverside Hotel & Conference Centre
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This excellent opportunity for Chemical Engineers in South Africa is proudly hosted by UNLOCK AND ALIGN FACILITATION CC. trading as RESOLVE, which offers the facilitative consulting services of Andries Burger (Pr. Chem. Engr. 930289). Andries has 23 years experience in the petrochemical industry including process optimisation; concept development; production planning, optimisation and scheduling; operations; maintenance and project management; personnel development, change management; coaching and mentoring. He focuses on industry collaboration in process training and development, as well as facilitative consulting services in business processes, individual counselling, coaching and mentoring as well as team dynamic and performance culture.

Refer to www.resolvekzn.co.za for more information on this or other exciting opportunities hosted and presented by RESOLVE.
A sliding scale is applied to reduce overhead cost burden per attendee as more attendees register. Cost per attendee, which excludes travel and accommodation cost, is set based on total number of registrations on 31 May 2010:
(Attendance in 2007, 2008 and 2009 was 41, 40 and 50 respectively.)

- If total number of attendees are > 36: R 20 500.00 per attendee.
- If total number of attendees are > 30: R 25 000.00 per attendee.
- If total number of attendees are > 25: R 30 000.00 per attendee.
- If total number of attendees are from 20 to 25: R 34 000.00 per attendee.
- If total number of attendees are from 15 to 19: R 40 000.00 per attendee.

*Minimum course attendance is 15.*

A late booking fee of R 2 500.00 per attendee will apply to registrations received after 31 May 2010.

**Payment:** On 01 June 2010 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.

**REGISTRATION**

Registration to attend could be done by any one of three different methods:

a) Web Registration – the preferred registration method is to complete the online registration form [http://www.resolvekzn.co.za/index.php?option=com_content&view=article&id=49&Itemid=57](http://www.resolvekzn.co.za/index.php?option=com_content&view=article&id=49&Itemid=57) available on the [www.resolvekzn.co.za](http://www.resolvekzn.co.za) web site.

b) E-mail – a scanned copy of the complete registration form could be e-mailed to andries@resolvekzn.co.za

c) Fax – a completed registration form could be faxed to +27 (0) 865 477 846

Positions are limited and will be filled on a first-come-first served basis.

**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.

Due to the popularity of this course significant late payment could result put reservation of attendance at risk. Full payment is the final guarantee of reservation.

For cancellations received before 30 July 2010, 50 % of the fees would be returned. A cancellation confirmation has to be obtained from RESOLVE by 30 July 2010 in order to qualify for the refund. For cancellations received after 30 July 2010 there would be no refund.

Since 80 % of the cost is US $ based, the right to adjust the fee at the close of registration is reserved in the event of drastic deterioration of the exchange rate. In such an event the registered parties would be offered a two week window to reconsider.

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.