Troubleshooting Process Operations

A 3-Day Seminar with Zoom option

Sponsored by:

Institute for Industry-Education Collaboration
McNEESE STATE UNIVERSITY

When:

May 17 – 19, 2022

8:00 am – 5:10 pm

ABOUT THE COURSE

Norman and Elizabeth Lieberman's **Troubleshooting Process Operations** seminar has been presented to over 21,000 attendees since 1983. The material presented in this seminar focuses on the Liebermans' book *A Working Guide to Process Equipment* (McGraw-Hill) and Norm's book *Troubleshooting Process Operations* (PennWell) and is based on their ongoing personal troubleshooting experiences in refineries and petrochemical plants. This interactive seminar is intended for experienced plant operators and process engineers. Plan to answer and ask questions. Individual process problems can be discussed after class each day.

COURSE DELIVERY

Troubleshooting Process Operations is a 3-day seminar with the option to attend via **Zoom**. Norman and Elizabeth Lieberman will conduct the seminar from the McNeese campus. Participants will have the option to attend the seminar from their work or home office. Light breakfast fare and lunch will be provided at no additional cost.

WHO SHOULD ATTEND

Experienced plant operators and process engineers.

ABOUT THE SPEAKERS

Norm Lieberman is a chemical engineer with over 56 years of experience in process design and plant supervision. He troubleshoots oil refinery and chemical plant process problems and prepares revamp designs. In 2018, Norm was Hydrocarbon Processing Lifetime Achievement Award recipient.

Norman has taught more than 1020 technical seminars on process equipment and has authored eleven books, which include: *Troubleshooting Process Operations*, *Troubleshooting Natural Gas Processing*, *Process Design for Reliable Operations*, and *Process Equipment Malfunctions*. To learn more about his books, visit website **www.lieberman-eng.com**.

Elizabeth Lieberman is a chemical engineer with more than two decades of experience in the process industries. Currently working as a consultant troubleshooting oil refinery and chemical plant process problems, she also

has experience in ceramic clay processing, refractories processing, and the conveying of non-Newtonian fluids (slurry flow).

She holds a Chemical Engineering BSc from the University of Wales (Swansea College), and LRIC in chemistry and is the co-author of the book *A Working Guide to Process Equipment* (McGraw-Hill).

PROGRAM SCHEDULE

DAY ONE

- Purpose of Trays and Reflux
- Effect of Pressure on Fractionation
- Heat Balance - Effect of Pumparounds
- Damaged Trays
- Incipient Flood
- Fouling and Corrosion
- Steam Stripping
- Side Stream Draw-off Problems
- Causes of Unstable Operations
- Troubleshooting Using Temperature and Pressure Profiles
- Vacuum Distillation
- Packed Columns

DAY TWO

- Thermosyphon Reboilers
- Kettle and Forced Circulation Reboilers
- How Reboiler Problems Cause Tower Flooding
- Shell and Tube Heat Exchangers
- Condensers
- Air Coolers
- Vacuum Surface Condensers
- Vacuum Systems
- Natural Draft Heaters
- Coke Formation in Heater Tubes

DAY THREE

- Operation of Centrifugal Pumps
- Optimum Impeller Size
- Motor Drives - Amp Loading
- Troubleshooting NPSH
- Steam Turbines - Use of Hand Valves
- Surface Condensers
- Centrifugal Compressors
- Surge and How to Prevent It
- Rotor fouling
- Vacuum Pumps

AGENDA

7:30 AM - 8:00 AM	SIGN IN (at McNeese; Zoom setup at work/home)
8:00 AM - 9:10 AM	Session 1
9:30 AM - 10:40 AM	Session 2
11:00 AM - 12:10 PM	Session 3
12:10 PM - 1:00 PM	Lunch
1:00 PM - 2:10 PM	Session 4
2:30 PM - 3:40 PM	Session 5
4:00 PM - 5:10 PM	Session 6

20-minute breaks will be given between sessions.

COURSE LOCATION

Southwest Louisiana Entrepreneurial and Economic Development (SEED) Center located at 4310 Ryan Street in Lake Charles. The SEED Center is across the street from the McNeese main campus.

REGISTRATION

- In-person cost: $2,499; Zoom cost: $2,349
- 2.4 CEUs and 24 PDHs awarded to participants
- Register online (scan QR code or copy and paste link below) and pay with Visa, MasterCard, Discover, or Purchase Order
  https://reg.learningstream.com/reg/event_page.aspx?ek=0089-0004 0388d01676574142a555c6e0f4a125ee
- To register and pay any other way, please contact Amanda Hext, 337.562.4592, ahext@mcneese.edu
- Billing and receiving address:

McNeese State University
Institute for Industry-Education Collaboration
Box 91834
Lake Charles, LA 70609