



BASIC STEAM HEATING PRINCIPLES OF OPERATION AND BASIC TROUBLESHOOTING SEMINAR

Sponsored by Frank P. Langley Co., Inc.

Presented by Roy Ahlgren

Monday September 19, 2011 - Amherst, NY
Wednesday September 21, 2011 - Rochester, NY
8:00 A.M. - 4:00 P.M.

1. **STEAM HEATING SYSTEM TERMS, COMPONENTS AND OPERATION**
 - A. One and Two Pipe Systems
 - B. Gravity Return, Pumped Return and Vacuum Systems
 - C. System Troubleshooting Example
2. **STEAM HEATING BOILERS**
 - A. General Features, Near Boiler Piping
 - B. Pressure and Water Level Control
 - C. Boiler Controls: Operation, Installation and Maintenance
 - ❖ Low Water Fuel Cut Off; Float and Probe Type
 - ❖ Feeders: Electrical and Mechanical
 - ❖ Pump Controls
3. **TEMPERATURE REGULATORS: OPERATION, INSTALLATION AND MAINTENANCE**
 - A. Self Contained
 - B. Pilot Operated
 - C. Example: Heating Domestic Water with Steam
4. **STEAM HEATING SYSTEM TRAPS**
 - A. Description and Operation
 - B. Installation, Testing and Repair
 - C. Steam Trap Selection Example
5. **STEAM HEATING SYSTEM PUMPING EQUIPMENT**
 - A. Centrifugal Pumps: NPSH, Head and Flow
 - B. Receivers and Controls
 - C. Condensate and Vacuum Units
 - D. Boiler Feed Units
 - E. Pump Troubleshooting

ATTENDEES REQUIRING CEU WILL RECEIVE .7 CEU CREDITS

WHO SHOULD ATTEND

Anyone who needs an increased knowledge of commercial hot water heating systems such as;

- | | |
|--------------------|-------------------------|
| ➤ Contractors | ➤ Project Managers |
| ➤ Design Engineers | ➤ Maintenance Personnel |
| ➤ Estimators | ➤ Facility Engineers |

Class Instructor:

Roy Ahlgren - Former Director of ITT Fluid Handling's Training & Education Department, is a graduate of the U.S. Naval Academy with a degree in Naval Science, and the Illinois Institute of Technology, with a Master's Degree in Management. Roy was a Navy Training Specialist and served as Executive Officer of the Recruit Training Command, "boot camp," at Great Lakes and NROTC unit at Northwestern University prior to joining ITT. Roy is now retired from ITT Bell & Gossett "Little Red Schoolhouse" in Morton Grove, Illinois where he taught from 1985 - 2008. He is a past Chairman of the ASHRAE Technical Committee on Hydronic and Steam Systems and Equipment and is active in the Chicago Chapter of ASPE and the Chicago Area Runner's Association. Roy has written many articles for ASHRAE and ASPE magazines.

REGISTER NOW! SEATING IS LIMITED!
FOR MORE INFORMATION CALL US (716) 691-7575
OR VISIT OUR WEBSITE AT WWW.FPLCO.COM
FRANK P. LANGLEY CO., INC.

REGISTRATION WILL BEGIN @ 7:30 AM

COMPANY _____

STREET ADDRESS _____

CITY, STATE, ZIP _____

TELEPHONE _____

E-MAIL ADDRESS _____

(NEEDED FOR CONFIRMATION)

SEMINAR LOCATION

(Amherst or Rochester)

ATTENDEES

1) _____

2) _____

3) _____

4) _____

5) _____

PLEASE INDICATE THE LOCATION OF THE SEMINAR YOU WOULD LIKE TO ATTEND:

- Mon. Sept. 19 Classics V - 2425 Niagara Falls Blvd., Amherst, NY 14228
- Wed. Sept. 21 Burgundy Basin - 1361 Marsh Road, Pittsford, NY 14534

REGISTRATION FEE \$100.00 PER ATTENDEE

PAYMENT MUST BE MADE BY September 12th

If paying by check, please make payable to:

FRANK P. LANGLEY CO., INC.

MAIL TO:

219 CREEKSIDE DRIVE

AMHERST, NEW YORK 14228

PHONE: 716-691-7575 FAX: 716-691-7347

REGISTRATION FEE INCLUDES: CONTINENTAL BREAKFAST, LUNCH, REFRESHMENTS AND REFERENCE MATERIAL.

- I HAVE ENCLOSED A CHECK FOR \$ _____
- Charge to Visa MasterCard American Express

Name on Credit Card **(Please Type or Print)** _____

Billing Zip Code _____

Card No. _____

Expiration Date _____

3 Digit Security Code _____