

# **Pacific Section of TAPPI & U. S. Department of Energy**

Steam System Improvement Workshop  
Shilo Inn Hotel  
Portland Airport

Thursday, March 10, 2005

## **Optimize your Steam Systems and Reduce Energy Costs**

The Steam System Improvement Workshop is designed for end-users - at the energy manager, steam system supervisor, engineer and operations level - who have steam system responsibilities in industrial and institutional plants. This one-day workshop covers the operation of typical steam systems and discusses methods of system efficiency improvement:

Steam Generation Efficiency - obtaining optimum generation efficiency in the boiler.  
Effectiveness of Using Resources - the basic concepts of fuel selection, combined heat and power systems, steam end-users and opportunities associated with steam system balancing and steam.

Steam Distribution System Losses - steam leaks, heat transfer loss through insulation and condensate loss.

This workshop introduces major steam opportunity assessment tools developed and used by Best Practices Steam.

Prior to the workshop, participants are requested to complete the Steam System Scoping Tool (SSST) for their facility to maximize the application of the workshop to bring value and savings to their workplace. The workshop also introduces the Steam System Assessment Tool (SSAT), which is used during workshop examples and case studies. The workshop also introduces the 3E-Plus insulation appraisal software, with examples to with several examples and are requested to complete.

Instructor: Mr. Papar is a Registered Professional Engineer (ME) and a Certified Energy Manager, DOE Qualified Steam System Specialist and a Certified Insulation Appraiser with more than 10 years Industrial Energy infrastructure experience and Best Practices for Energy Asset Management.

Text: "Steam System Survey Guide", a technical reference document developed by Best Practices Steam.

## Workshop Agenda

8:00 am Continental Breakfast - Courtesy of U.S. DOE

8:30 am - 12:00 pm Morning Session  
Introduction: The boiler and steam system  
The Steam System Scoping Tool  
Overview and Results  
Definitions and Measurements  
Shell Loss  
Blowdown Loss  
Stack Losses  
Boiler Analysis Case Studies

12:00 pm - 1:00 pm Lunch

1:00 pm - 4:30 pm Afternoon Session  
Resource Utilization Effectiveness  
Fuel Selection  
Backpressure Turbine Operation  
Condensing Turbine Operation  
Combustion Turbine Introduction  
Distribution System Management  
Steam Leaks  
Steam Traps  
Insulation  
Condensate Recovery

Workshop Registration Fee (includes continental breakfast and lunch and all workshop materials)

\$150 before February 25

\$175 after February 25

No refunds after March 4

Registration by mail, fax, or e-mail to:

Joan Wedryk

Lanxess Corporation

4808 NE 141st Avenue

Vancouver WA 98682

Fax: 360-882-8299 (secure home location)

e-mail: joan.wedryk@lanxess.com

Payment by check, credit card or cash.

Checks should be payable to Pacific Section of TAPPI.

Credit card payments (Visa, MasterCard, or American Express) must have form completed with expiration date and billing address. Faxes are secure.

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Please register me for the Steam Systems Assessment Workshop:

Name \_\_\_\_\_

Company \_\_\_\_\_

Bill Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ FAX \_\_\_\_\_

e-mail address \_\_\_\_\_

Indicate Payment by: Check \_\_\_\_\_ Credit Card \_\_\_\_\_ Cash \_\_\_\_\_

Check: Mail enclosed \_\_\_\_\_ Mail to follow \_\_\_\_\_ On-site \_\_\_\_\_

Credit Card: VISA \_\_\_\_\_ MC \_\_\_\_\_ AmEx \_\_\_\_\_

Cardholder name \_\_\_\_\_

Credit Card Number \_\_\_\_\_

Expiration date \_\_\_\_\_

Billing Address \_\_\_\_\_

City State Zip \_\_\_\_\_