

Boiler Efficiency Institute
 P.O. Box 2255
 Auburn, AL 36831-2255

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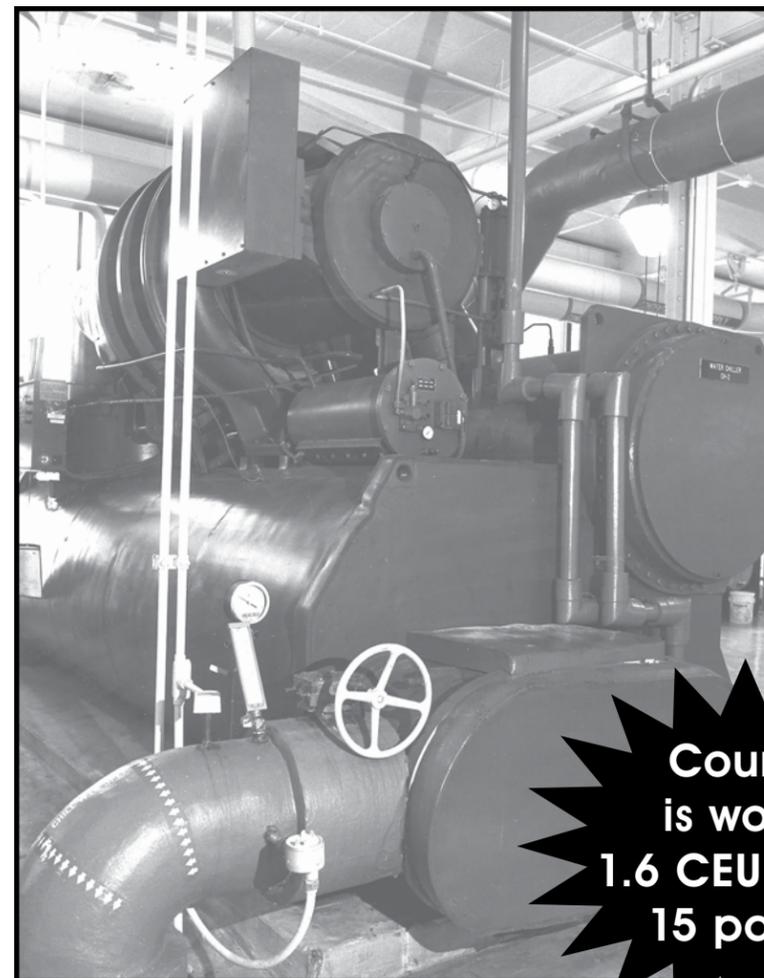
Slashing Your Utility Bill

The Boiler Efficiency Institute Presents 2, Two-Day Workshops on **HVAC Plant Improvement** For Industrial, Commercial and Institutional Facilities

**Course
 is worth
 1.6 CEU's and
 15 pdh's.**

Register TODAY for these upcoming course dates:
September 16-17, 2014 • Greenville, SC
September 24-25, 2014 • Columbia, SC

The Boiler Efficiency Institute Presents
 2, Two-Day Workshops on
HVAC Plant Improvement



September 16-17, 2014

Embassy Suites Greenville Golf
 Resort & Conference Center
 670 Verdae Boulevard
 Greenville, SC 29607
 (864) 676-9090

September 24-25, 2014

Holiday Inn & Suites
 8105 Two Notch Road
 Columbia, SC 29223
 (803) 736-5600

REGISTRATION by phone: (334) 821-3095
by fax: (334) 887-3757 or
email: melanie@boilerinstitute.com

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 15 pdh's.**

Program Sponsored by the
SC ENERGY OFFICE



SC BUDGET AND CONTROL BOARD

Presented by: Boiler Efficiency Institute
 P.O. Box 2255 • Auburn, AL 36831-2255

Visit our web sites at: www.boilerinstitute.com
 & www.govsafetysolutions.com

REGISTRATION FORM: Slashing Your Utility Bill

HVAC Plant Improvement

- September 16-17, 2014**
Greenville, SC
- September 24-25, 2014**
Columbia, SC

Check location of your choice.

*Checks Payable to
 BOILER EFFICIENCY INSTITUTE

Fee: \$25 Check Enclosed* Bill P.O. No. _____

Credit Card: MasterCard Visa AmEx Expiration Date: _____

Card No. _____

Signature _____

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

E-mail _____

Phone _____ FAX _____

Proven Methods

...To Reduce HVAC Costs with
a Minimum of Up-Front Expenditure

A must source of practical information for both technical and non-technical personnel:

- Plant and facility personnel
- mechanical equipment operators
- building owners/managers
- consulting engineers
- equipment/chemical vendors
- utility managers
- production managers
- A&E personnel

Program Objective

The objective is to develop the participant's ability to recognize cost-saving measures in HVAC equipment/operation and then to implement the right changes to effect these savings. Measures to be explored include low up-front-cost O&M procedures and fast payback equipment modification projects.

Additional objectives include showing the participants the latest on measurement instrumentation/techniques for measuring and improving HVAC efficiency.

An additional objective is to update participants on the status of existing and new refrigerants including handling, recovery and the purchase/retrofit of new equipment.

Background

The Boiler Efficiency Institute (BEI) has presented several hundred practical workshops on plant operation improvement for reducing costs over the last 30 years.

The rising cost of fuel is forcing renewed emphasis on efficiency. Unfortunately, many managers are not exploring energy savings opportunities because of the perception that up front costs are too high. BEI has updated its course for 2014 to come in line with these new economic requirements. This course will show the participants how to recognize operation and maintenance changes that require little up front cost and then what changes to make.

The team has no vested interest in any product. All information will be presented from an objective viewpoint based on the experience and expertise of the lecturers. We feel that this is an important advantage over "free" programs presented by vendors.

Program Support

The South Carolina Energy Office has contracted with BEI to provide training in HVAC efficiency at two, two-day workshops; Columbia and Greenville. The course fee is normally \$795, but due to support of the Energy Office, these programs are offered at a reduced rate of \$25 to residents of South Carolina.

The number of participants is limited in each program. (See next page for registration details).

Instructors: Glenn Maples, Ph.D., P.E. {Professor of Chemical Engineering, Auburn University}
David Dyer, Ph.D., P.E. {Professor of Mechanical Engineering, Auburn University}
Tom Burch, Ph.D., P.E. {Adjunct Professor of Mechanical Engineering, Auburn University}

The instructors have a combined total of over 100 years of experience with facilities in operation, design, testing and trouble-shooting. They have written twelve practical books detailing this experience, as well as numerous technical papers and reports. They have presented more than 500 workshops concerned with reducing facility operating costs. During this period, they have gained extensive, hands-on experience in evaluating money-saving opportunities at hundreds of facilities.

The instructors are known for their teaching style which combines a sound technical presentation in an enjoyable and easy-to-understand approach. The program will appeal strongly to all persons involved with facilities regardless of their educational and experience background.

RESOURCE MATERIALS

Each participant will be provided a textbook which will serve as a valuable resource guide after attending the course. This book contains numerous charts, illustrations, and background writing to make boiler plant savings easy to master. THE VALUE OF THIS TEXTBOOK IS \$25 IF BOUGHT SEPARATELY FROM BEI.

Workshop Outline

FIRST DAY

8:00 REGISTRATION

8:15 WELCOME & INTRODUCTION OF INSTITUTE STAFF

OVERVIEW OF PROGRAM

- Reducing Maintenance Cost
- Reducing Operating Cost
- Meeting Comfort Requirements
- Meeting Air Quality Standards

9:00 REFRIGERANT STATUS

- Environmental Effects
- Phase Out of Conventional Refrigerants
- New Refrigerants/Equipment
- Recovery, Handling, Storage of Refrigerants

10:00 BREAK

10:15 DESCRIPTION OF HVAC GENERATING SYSTEMS

(Operation/Advantages/Disadvantages)

- Generating Equipment
- Absorption chillers
- Thermal storage
- Centrifugal chillers
- Boilers
- Roof-Top units
- Cooling towers
- Evaporative cooling

11:00 WAYS TO REDUCE HVAC GENERATING COSTS

- Heat Recovery
- Reduce Scale & Corrosion
- Improve Characteristics of Working Fluid
- Load Management
- Select Optimum Prime Mover/Fuel
- Reduce Electrical Cost
- Power factor correction
- Demand charges
- Metering
- Variable speed drives
- High efficiency motors
- Improve Turbine Performance
- Fouling
- Back pressure
- Throttle control
- Raise Chilled Water Temperature
- Control Chilled Water Flow Rate
- Improve Cooling Tower Performance

12:00 LUNCH

1:00 WAYS TO REDUCE HVAC GENERATING COSTS (Cont'd)

2:30 BREAK

2:45 WAYS TO REDUCE HVAC GENERATING COSTS (Cont'd)

4:00 ADJOURN

SECOND DAY

8:00 DESCRIPTION OF HVAC DISTRIBUTION SYSTEMS

- Distribution Systems
- Single zone
- Variable air volume
- Thermal reheat
- Fan coil
- Multizone
- Others
- Dual duct
- Control Systems
- Conventional
- EMS
- OAM/TC

8:30 WAYS TO REDUCE HVAC DISTRIBUTION COSTS

- Control Outside Air
- Control Ventilation
- Insulate
- Balance Air Handling Systems
- Reduce End Use
- External load reduction
- Night-time set back
- Thermal storage
- Recirculation of internal heating/cooling
- Avoid Simultaneous Heating/Cooling
- Others

10:00 BREAK

10:15 DEMONSTRATION OF ACTUAL FACILITY

(Participants will have a hands-on opportunity to see various instruments and measuring techniques used at an actual facility to evaluate and improve system performance.)

- Instrumentation
- Water and Air Quality
- Maintenance

12:00 LUNCH

1:00 WATER QUALITY

- Chilled Water
- Condenser Water
- Boiler Water/Steam

1:45 MEASURING AND SOLVING INDOOR AIR QUALITY (IAQ) PROBLEMS

- Identifying Indoor Air Quality Problems
- Eliminating Indoor Air Quality Problems
- Complying with new ASHRAE Ventilation

2:30 BREAK

2:45 MEASUREMENT OF HVAC SYSTEM PERFORMANCE

- Load and Efficiency
- Cooling towers
- Motors
- Fans
- Chillers
- Pumps
- Heat exchangers

3:30 BALANCING

- Water Side and Air Side
- Instrumentation
- Techniques for Balancing Efficiently

4:00 ADJOURN

PROGRAM DIRECTOR: Melanie W. Knause, Boiler Efficiency Institute
P.O. Box 2255 • Auburn, AL 36831-2255 • Phone (334) 821-3095
FAX (334) 887-3757 • e-mail melanie@boilerinstitute.com

Four Ways To Register:

1. Mail: Registration Form to Program Director, B.E.I., P.O. Box 2255, Auburn, AL 36831-2255.
2. By Phone: (334) 821-3095.
3. By FAX: (334) 887-3757.
4. By e-mail: Send all the information requested in the registration form including the course location to melanie@boilerinstitute.com.

Whichever method you select, you will receive a confirmation of registration by email, phone, fax, or mail if your registration is received at least one week prior to the course date. Please call or email in your registration if the course will take place in one week or less.

Costs

Course materials and break refreshments will be provided. Lodging and meals are not included. A certificate of participation is presented to each participant. Proceedings are not published. Participants will be registered as received in BEI offices in Auburn, Alabama. Class size is limited to 30 people per program. You must receive a confirmation number from the Boiler Efficiency Institute to attend. Registration will be considered complete upon payment.

Hotel Reservations/Seminar Location

Seminar participants are responsible for making their own hotel reservations. Make your hotel reservations early to assure availability of space.

Seminar Hours

Plan to arrive at 7:45 a.m. on the first day of the seminar for sign-in and onsite registration. Seminar hours are 8:00 a.m. to 5:00 p.m.

Cancellation, Substitution and Transfer Policy

Since enrollment is limited, please notify BEI if you wish to cancel. This will allow persons on the waiting list an opportunity to attend. Your can substitute another person in your place by phone or FAX as described herein.