

# Boiler Efficiency Institute

P.O. Box 2255  
Auburn, AL 36831-2255

# \$lashing Your Utility Bill

For Industrial, Commercial, And Institutional Facilities

## 2, TWO-DAY WORKSHOPS ON HVAC PLANT IMPROVEMENT

Visit our Web Sites at [www.boilerinstitute.com](http://www.boilerinstitute.com) & [www.govsafetysolutions.com](http://www.govsafetysolutions.com).

### Two Ways to Register:

- BY PHONE:** Register by telephone by calling:  
**(334) 821-3095**  
Give us the name, company address, and telephone number of each registrant.
- BY FAX:** Complete the registration form including all necessary information and transmit your completed registration to the following FAX number:  
**(334) 887-3757**

Whichever method you select, you will receive a confirmation of registration by fax and mail.

### 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.

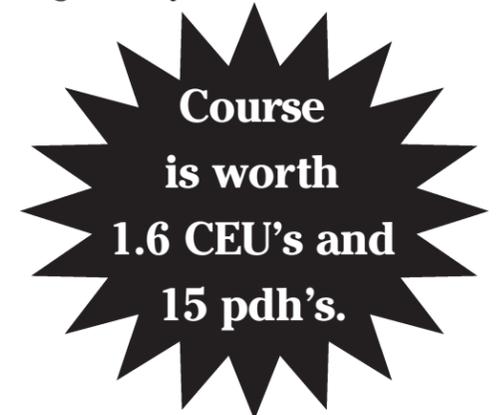
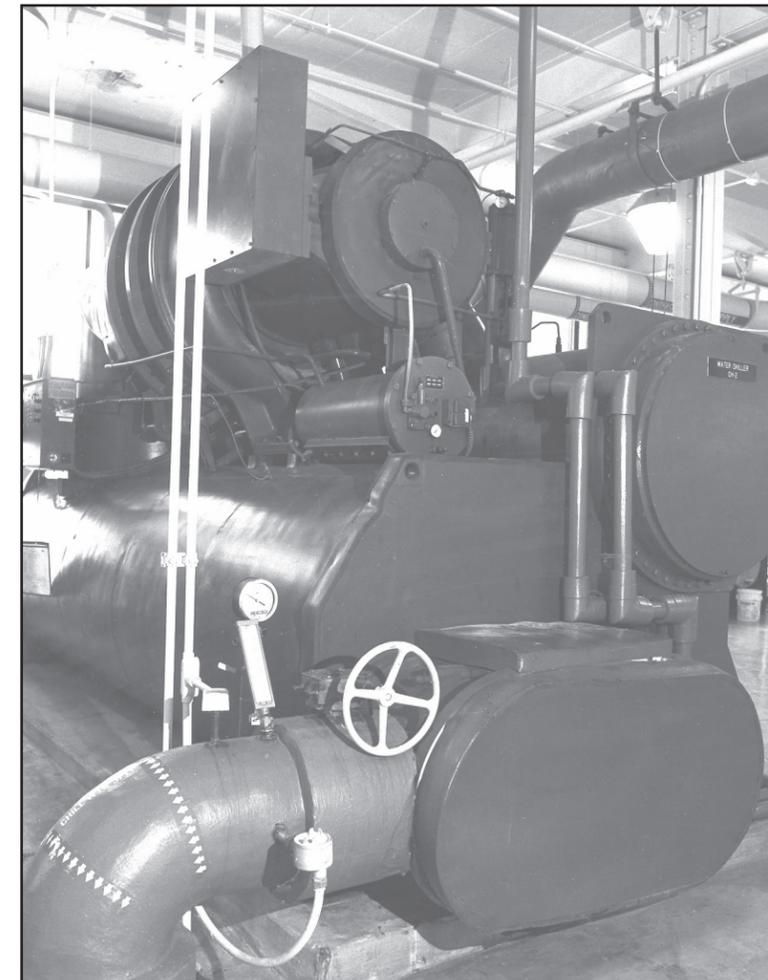
Participants will be registered as received in BEI offices in Auburn, Alabama. Class size is limited to 30 people per program. You must receive a confirmation number from the Boiler Efficiency Institute to attend. Registration will be considered complete upon payment.

### Seminar Hours

Plan to arrive at 7:45 a.m. on the first day of the seminar for sign-in and on-site registration. Seminar hours are 8:00 a.m. to 4:00 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. You can substitute another person in your place by phone or FAX as described herein.



Program  
Sponsored  
by the

SC ENERGY OFFICE



SC BUDGET AND CONTROL BOARD

### REGISTRATION FORM - \$lashing Your Utility Bill

#### HVAC Plant Improvement

- Greenville, August 8-9  
 Columbia, August 14-15

Check location of your choice.

Check Enclosed - Fee: \$25 (Checks Payable to Boiler Efficiency Institute)  
 Bill P.O. No. \_\_\_\_\_  
Credit Card:  MasterCard  Visa  Am. Express Expiration Date: \_\_\_\_\_  
Card No. \_\_\_\_\_ Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
E-mail \_\_\_\_\_  
Phone \_\_\_\_\_ FAX \_\_\_\_\_

### LOCATIONS:

August 8-9, 2012  
Crowne Plaza Hotel  
1-385 & Roper Mountain Road  
851 Congaree Road  
Greenville, SC 29607  
864 297 6300

August 14-15, 2012  
Comfort Suites-Harbison  
750 Saturn Parkway  
Columbia, SC 29212  
803 407 4444

Presented by:  
Boiler Efficiency Institute  
P.O. Box 2255  
Auburn, AL 36831-2255  
Registration  
Phone (334) 821-3095  
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# 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 consultants

## 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.

### 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.

## BACKGROUND

The Boiler Efficiency Institute (BEI) has presented several hundred practical workshops on plant operation improvement for reducing costs over the last 25 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 2012 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 back page for registration details).

## INSTRUCTORS

- Glen 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.** Chief Engineer, Boiler Efficiency Institute

The instructors have a combined total of over 100 years of experience with facilities in operation, design, testing and trouble-shooting. They have written ten 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. They also hold three patents and have several patents pending on equipment to reduce facility operating costs.

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.

## WORKSHOP OUTLINE

### FIRST DAY

A.M.			
8:00	<b>REGISTRATION</b>		
8:15	<b>WELCOME INTRODUCTION OF INSTITUTE STAFF</b>		
	<b>OVERVIEW OF PROGRAM</b> Reducing Maintenance Cost Reducing Operating Cost Meeting Comfort Requirements Meeting Air Quality Standards		
9:00	<b>REFRIGERANT STATUS</b> • Environmental Effects • Phase Out of Conventional Refrigerants • New Refrigerants/Equipment • Recovery, Handling, Storage of Refrigerants		
10:00	Break		
10:15	<b>DESCRIPTION OF HVAC GENERATING SYSTEMS</b> (Operation/Advantages/Disadvantages) • Generating Equipment —Absorption chillers      —Thermal storage —Centrifugal chillers     —Boilers —Roof-Top units          —Cooling towers —Evaporative cooling		
11:00	<b>WAYS TO REDUCE HVAC GENERATING COSTS</b> • 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 —Variable speed drives     —High efficiency motors —Metering • Improve Turbine Performance —Fouling —Back pressure —Throttle control • Raise Chilled Water Temperature • Control Chilled Water Flow Rate • Improve Cooling Tower Performance		
12:00	Lunch		
P.M.			
1:00	<b>WAYS TO REDUCE HVAC GENERATING COSTS (Cont'd)</b>		
2:30	Break		
2:45	<b>WAYS TO REDUCE HVAC GENERATING COSTS (Cont'd)</b>		
4:00	Adjourn		

### SECOND DAY

A.M.			
8:00	<b>DESCRIPTION OF HVAC DISTRIBUTION SYSTEMS</b> • Distribution Systems —Single zone                —Variable air volume —Thermal reheat          —Fan coil —Multizone                 —Others —Dual duct		

			• Control Systems —Conventional —EMS —OAM/TC
8:30	<b>WAYS TO REDUCE HVAC DISTRIBUTION COSTS</b> • Control Outside Air • Control Ventilation • Insulate • Balance Air Handling Systems • Reduce End Use —External load reduction —Night-time set back —Recirculation of internal heating/cooling —Thermal Storage • Avoid Simultaneous Heating/Cooling • Others		
10:00	Break		
10:15	<b>DEMONSTRATION OF ACTUAL FACILITY</b> (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		
P.M.			
1:00	<b>WATER QUALITY</b> • Chilled Water • Condenser Water • Boiler Water/Steam		
1:45	<b>MEASURING AND SOLVING INDOOR AIR QUALITY (IAQ) PROBLEMS</b> • Identifying indoor air quality problems • Eliminating indoor air quality problems • Complying with new ASHRAE Ventilation		
2:30	Break		
2:45	<b>MEASUREMENT OF HVAC SYSTEM PERFORMANCE</b> • Load and Efficiency —Cooling towers        —Motors —Fans                    —Chillers —Pumps                  —Heat Exchangers		
2:45	<b>BALANCING</b> • Water Side and Air Side • Techniques For Balancing Efficiently • Instrumentation		
4:00	Adjourn		

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