

## Instructors

- Tom Burch, Ph.D., P.E.** Adjunct Professor of Mechanical Engineering, Auburn University  
**David Dyer, Ph.D., P.E.** Professor and Chair of Mechanical Engineering, Auburn University  
**Glenn Maples, Ph.D., P.E.** Professor of Chemical 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. 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.

# The Boiler Efficiency Institute Presents 2, Two-Day Workshops on STEAM PLANT IMPROVEMENT

For Industrial, Commercial and Institutional Facilities



Program Sponsored by the  
 SC ENERGY OFFICE  
**B & C B**  
 SC BUDGET AND CONTROL BOARD

REGISTRATION FORM

- October 29-30, 2013  
Columbia, SC
- November 19-20, 2013  
Greenville, SC

For more information,  
contact Tom Hudkins at the  
South Carolina Energy Office.  
803/737-8285  
thudkins@energy.sc.gov

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

Visit our web site at: [www.boilerinstitute.com](http://www.boilerinstitute.com)

**October 29-30, 2013 • Columbia, SC**

Holiday Inn & Suites  
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PRESENTED BY:  
Boiler Efficiency Institute  
P.O. Box 2255  
Auburn, AL 36831-2255

**November 19-20, 2013 • Greenville, SC**

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REGISTRATION by phone: (334) 821-3095 • fax: (334) 887-3757 • email: [melanie@boilerinstitute.com](mailto:melanie@boilerinstitute.com)

# Proven Methods

## ...To Reduce Steam Plant 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 a steam plant and then to implement the necessary changes to realize these savings. The measures to be explored include low up-front cost, O&M procedures, fast pay-back heat recovery and cogeneration projects.

Additional objectives include showing participants the latest measurement instrumentation/techniques, safety equipment/testing, cleaning, storage, etc.

### RESOURCE MATERIALS

Each participant will be provided two textbooks which will serve as valuable resource guides after attending the course. These books of more than 450 combined pages contain numerous charts, illustrations, and background writing to make boiler plant savings easy to master. **THESE TEXTBOOKS ARE \$35 IF BOUGHT SEPARATELY FROM B.E.I.**

## Background

The Boiler Efficiency Institute (BEI) has presented several hundred practical workshops on plant operation improvement for reducing costs over the last 25 years. Instructors spend as much time in boiler rooms as in classrooms.

Even in today's robust economy, savings from improving equipment performance offer exceptional opportunities to improve the bottom line. 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 2013 to address 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. Additionally, heat recovery and cogeneration techniques yielding fast paybacks will be explained so that the participants know what methods are applicable and how to implement these methods.

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.

## Other Offerings...

B.E.I. offers on-site workshops specifically tailored to your needs. Consulting is also available.

## Workshop Outline

### **FIRST DAY** (Begin at 8 a.m.)

#### REGISTRATION

#### WELCOME

#### OVERVIEW OF PROGRAMS

Background and Scope  
Economics of Energy

#### BOILER TYPES

Firetube and Watertube  
Hot Water Generator  
Electric  
Steam Generators  
Gas Turbines and Diesels/Waste Heat Boilers

#### COMBUSTION CONTROLS

Types  
Adjustment Techniques  
Automatic Trim/Variable Speed Drives

#### REDUCING COSTS VIA OPERATIONS/ MAINTENANCE

Tune burner/combustion controls  
Optimize fuel-firing conditions  
Choose correct fuel  
Keep fireside and waterside clean  
Optimize blowdown  
Reduce radiation and purge losses in oversized boilers  
Optimize steam pressure  
Optimize boiler loading  
Optimize fuel atomization  
Maintain traps  
Eliminate condensate losses  
Optimize deaerator performance

#### REDUCING COSTS VIA HEAT RECOVERY

Conventional Economizer  
Direct Contact Heat Recovery  
Air Preheat  
Blowdown  
Boiler Room Heat  
Vent Condenser

#### REDUCING COSTS VIA COGENERATION

Steam Turbine Cogeneration  
Diesel and Gas Turbine Cogeneration

### **SECOND DAY**

#### WATER QUALITY PROGRAM

Properties  
Problems and Water Treatment  
Determining Types and Amounts of Treatment

#### MEASUREMENT

Boiler and Combustion Efficiency  
Trap Condition  
Makeup and Blowdown Rates  
Others

### FIELD TESTING OF STEAM PLANT

The class will be taken to operating boiler plant for demonstration of:

- Combustion Testing
  - Water Testing
  - Steam System Testing
  - Energy Auditing
- (Test site will be near classroom—bus transportation provided.)

### SUMMARY OF FIELD DEMONSTRATION

Calculation of efficiencies, energy savings, economics

### MAINTENANCE AND OPERATION

- Reference Data
- Computerized Maintenance System
- Preventative Maintenance
- Record/Data Keeping
- Safety Requirements/Testing
- Communication
- Cleaning
- Storage

### **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: 1-800-669-6948 (Registration Hotline).
3. By FAX: (334) 887-3757.
4. By e-mail: Send all the information requested in the registration form below, including the course location and date of course to the following e-mail address: [melanie@boilerinstitute.com](mailto:melanie@boilerinstitute.com).

Whichever method you select, you will receive a confirmation of registration by mail and FAX if your registration is received at least two weeks prior to the course date. Please call or FAX in your registration if the course will take place in two weeks or less.

If time does not permit you to register in advance, you may register on site; however, you must call us to confirm that space is available.

### **Registration Fee**

Registration fee is \$25 and includes registration, two textbooks, program materials, and beverage breaks. Lodging and meals are not included. A Certificate of Participation is presented to each registrant. Proceedings are not published.

### **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**

If you are unable to attend the course for which you have registered, you can substitute another person in your place, or transfer your registration to another date or another course without penalty. We can provide a listing of other courses and dates available.

Cancellations must be made two business days before the program for a full refund.