

# Instructors

Tom Burch, Ph.D., P.E.

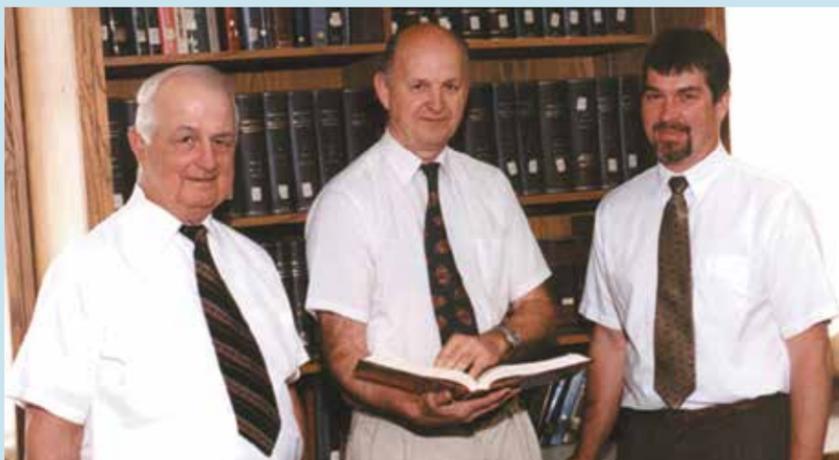
Adjunct Professor of Mechanical Engineering, Auburn University

David Dyer, Ph.D., P.E.

Professor of Mechanical Engineering, Auburn University

Glenn Maples, Ph.D., P.E.

Professor of Chemical Engineering, Auburn University



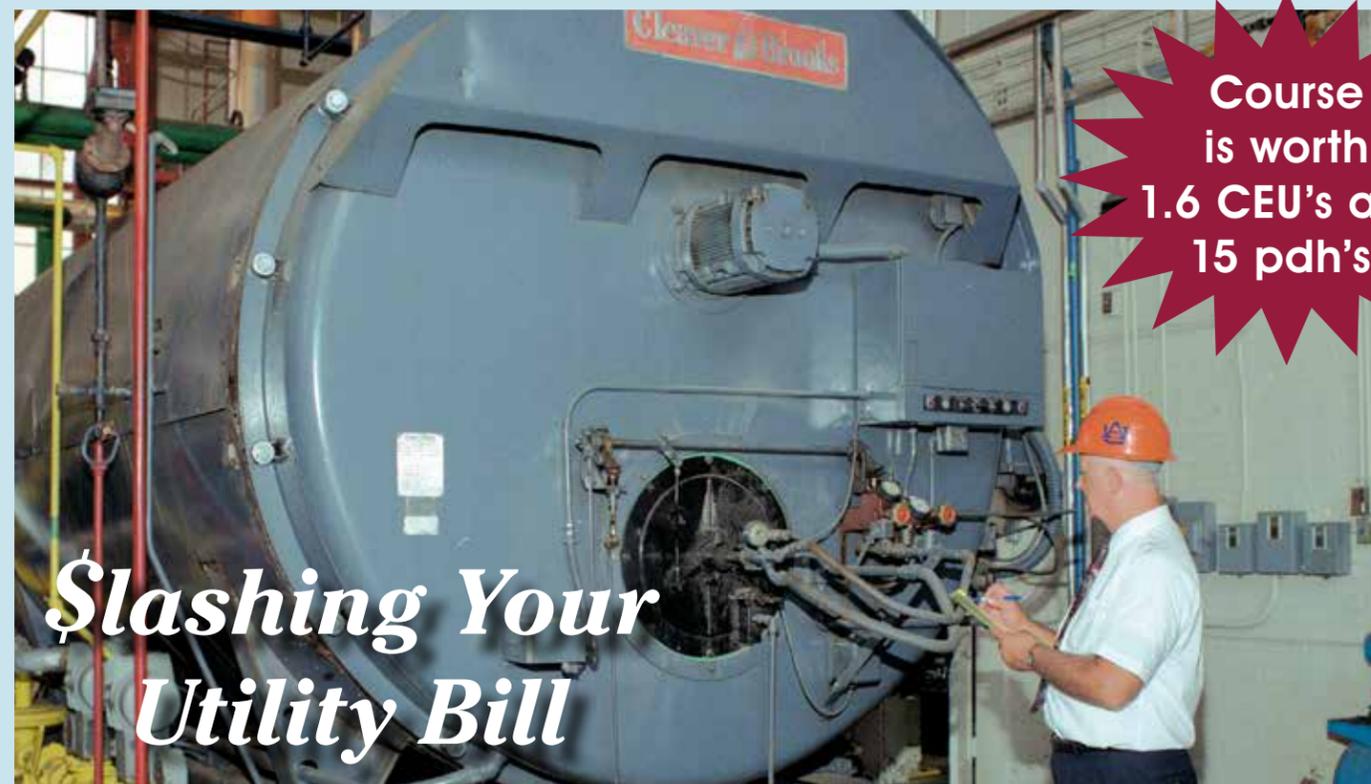
**T**he instructors have a combined total of over 100 years of experience with facilities in operation, design, testing and trouble-shooting. They have written twelve practical books detailing this experience, as well as numerous technical papers and reports. They have presented more than 500 workshops 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.

# The Boiler Efficiency Institute Presents Two-Day Workshops on Steam Plant Improvement

For Industrial, Commercial and Institutional Facilities



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

## Slashing Your Utility Bill

**April 21-22, 2015 • Columbia, SC**

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

**April 29-30, 2015 • Greenville, SC**

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

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



## REGISTRATION FORM

April 21-22, 2015  
Columbia, SC

April 29-30, 2015  
Greenville, SC

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

\*Checks Payable to  
BOILER EFFICIENCY INSTITUTE

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

Credit Card:  MasterCard    Visa    AmEx      Expiration Date: \_\_\_\_\_

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Visit our web site at: [www.boilerinstitute.com](http://www.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 payback heat recovery and cogeneration projects.

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

## 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.

## Program Support

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

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

## Other Offerings...

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

## 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.

# 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 an 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

**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](mailto: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](mailto: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.

### 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 stating they earned 1.6 CEU's and 15 pdh's. 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 course without penalty.

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