

1201 Arrow Ave.  
P. O. Box 730  
Watertown, SD 57201



**LAKE AREA**  
TECHNICAL INSTITUTE

(605) 882-5284  
1-800-657-4344  
FAX (605) 882-6299

It's your world.

**To: Boiler Operators/Maintenance Engineers/Administrators**  
**From: Steve Hauck, Corporate Education Coordinator**  
**Subject: 2018 Boiler Operations Class – Watertown, Mitchell, Aberdeen, Huron**

Lake Area Technical Institute will be offering a “**Boiler Operations**” class in  
1) Watertown - Saturday, October 6, LATI TEC Bldg., Room 514, 1201 Arrow Ave.  
2) Mitchell - Saturday, October 13, Mitchell Technology Center, 1800 E. Spruce St.  
3) Aberdeen - Saturday, November 3, LATI Bldg, 416 Production Street  
4) Huron - Saturday, December 8, Cross Roads Hotel, 100 4<sup>th</sup> St. SW

This class will cover high pressure and low pressure systems. Topics to be covered are: *define boilers and types, steam boilers and fittings, basic boiler room systems, steam and water accessories, fuel burning equipment, draft and combustion, controls, instruments, boiler water treatment, steam boiler operations and safety.* **A certificate will be issued to all those attending**, indicating your attendance and all the topics covered in the training session. (See back for schedule and detailed outline)  
**MORE IMPORTANT THAN EVER, HERE IS AN OPPORTUNITY TO SAVE ENERGY COSTS BY LEARNING HOW TO PROPERLY RUN AND MAINTAIN YOUR BOILERS.**

**Your instructor is Mr. Pat Bray.** He has over 34 years’ experience in the maintenance and operation of large electric utility steam boilers and their accessories. He is a graduate of North Dakota College of Science and Mount Marty College. Pat retired with over 24 years overseeing employee training for the Big Stone Electrical Generating Station and holds a Chief Grade A Minnesota Stationary Steam Engineering License. Pat’s a member, and past chairman of the Western Utility Training Board, an organization dedicated to training and qualifying boiler operators. You will enjoy his presentation and appreciate his knowledge. In fact, you will want his phone number for future reference.

**The cost for this class is \$129** including all study materials and meals. Please complete the registration form below and return it with your check or purchase order so we may reserve a place in the class for you. Advanced registration is expected. **CLASS LIMITED TO 15 PARTICIPANTS MAXIMUM!!**  
**Register online** at: <http://www.lakeareatech.edu/corporate-education/online-registration/> - Please list cities of choice in the Class# box. Call 1-800-657-4344 ext320 for credit card use or questions.

------(Please complete and return)-----

Boiler Class – Please **MARK** a **1<sup>st</sup>** and **2<sup>nd</sup>** choice of where you plan to attend (**class limit 15 max**):  
\_\_\_\_\_Aberdeen \_\_\_\_\_Watertown \_\_\_\_\_Huron \_\_\_\_\_Mitchell  
Company Name \_\_\_\_\_ Ph# \_\_\_\_\_  
Address \_\_\_\_\_ Zip \_\_\_\_\_  
Name/s of Attendees \_\_\_\_\_

Make Check or purchase order to: LATI/CE, PO Box 730, Watertown, SD 57201



It's your world.

**BOILER OPERATIONS & MAINTENANCE CLASS**

**Watertown – October 6**  
**LATI TEC Bldg., Rm 514**  
**1201 Arrow Ave.**

**Aberdeen – November 3**  
**LATI Bldg**  
**416 Production Street**

**Mitchell – October 13**  
**Mitchell Technology Center**  
**1800 E. Spruce St., Rm 111**  
**I-90, Exit 332, South ½ mile**

**Huron – December 8**  
**Cross Roads Hotel**  
**100 4<sup>th</sup> St. SW**

8:30 AM to 9:00 AM  
9:00 AM to 12:00 PM  
12:00 PM to 1:00 PM  
1:00 PM to 4:00 PM

**SCHEDULE**

Registration  
Session I  
Lunch (incl. w/registration)  
Session II

**OUTLINE**

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| <p>I. <b>Introduction to Boilers</b><br/>a. What is a boiler<br/>b. Define Heating Boilers<br/>c. Define Low Pressure Boilers<br/>d. Define High Pressure Boilers<br/>e. Fire Tube vs. Water Tube<br/>f. Steam Generators<br/>g. Other types<br/>h. Codes and Governing Agencies</p> <p>II. <b>Steam Boiler Fittings &amp; Accessories</b><br/>b. Safety Valves<br/>c. Water Columns<br/>d. Gauge Glass<br/>e. Try Cocks<br/>f. Alarm Whistles<br/>g. Steam Pressure Gauge<br/>h. Try-Indicators<br/>i. Siphons<br/>j. Boiler Vents<br/>k. Steam Separators<br/>l. Superheats<br/>m. Boiler Stop Valves<br/>n. Boiler Blowdown Lines</p> <p>III. <b>Basic Boiler Room Systems</b><br/>a. Steam Systems<br/>b. Feedwater Systems<br/>c. Fuel Systems Gas, Oil, Coal, Other<br/>d. Draft</p> <p>IV. <b>Steam and Water Accessories</b><br/>a. Feedwater Heaters – Open &amp; Closes<br/>b. Feed Pumps &amp; Condensate Pumps<br/>c. Economizers<br/>d. Feedwater Regulators<br/>e. Steam Traps<br/>f. Desuperheater</p> <p>V. <b>Fuel Burning Equipment</b><br/>a. Fuel Oil Burners<br/>b. Fuel Oil Accessories<br/>c. Gas<br/>d. Combination Gas/Oil Burners &amp; Coal Feed System</p> | <p>VI. <b>Draft &amp; Combustion</b><br/>a. Measuring Draft<br/>b. Manometers<br/>c. Natural Draft<br/>d. Mechanical Draft<br/>e. Air Pre-Heaters</p> <p>VII. <b>Combustion Controls</b><br/>a. The Three T's<br/>c. Flue Gas Analysis<br/>d. Clean Air Act, EPA<br/>e. Automatic Control Systems<br/>f. On/Off<br/>g. Positioning<br/>h. Metering</p> <p>VIII. <b>Instruments</b><br/>a. Pressure Gauges<br/>b. Draft Gauges<br/>c. Vacuum Gauges<br/>d. Thermometers<br/>e. Thermocouples<br/>f. Pneumercators<br/>g. Flow Meters<br/>h. Recorders<br/>i. Smoke Indicators</p> <p>IX. <b>Boiler Water Treatment</b><br/>a. Why Condition Boiler Water<br/>b. Internal Water Treatment<br/>c. External Water Treatment</p> <p>X. <b>Steam Boiler Operations and Boiler Room Safety</b><br/>a. Startup, Shift, and Shutdown Checks &amp; Procedures<br/>b. Basic Plant Safety</p> |
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