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www.hpcnet.com

Course Information Letter ---- B409

BOILER DESIGN AND CONSTRUCTION B409

The Boiler Design and Construction course is designed for people preparing to install a new boiler and/or perform major upgrades to an operating boiler. This course is aimed at providing personnel with the knowledge to enable them to work with consulting engineers to select a boiler design to effectively provide the intended service. The course will acquaint them with the types and styles of boilers, construction characteristics of different boiler designs, and expected operating efficiencies.

OBJECTIVES:

At the completion of this course the participant will be able to:

1. Describe the differences in design and application of the different types of utility boilers: drum type, once-thru, supercritical, and ultra-supercritical.
2. Describe the major components that make up a utility sized boiler.
3. Explain the construction of these major components within a boiler.
4. Describe how fuel selection affects boiler design and construction.
5. From a boiler perspective, describe the advantages / disadvantages of each fuel type.
6. Describe those environmental regulations impacting boiler design and how the design accommodates these regulations.
7. Describe how a boiler might be instrumented to support performance studies.
8. Describe how boiler components are typically shipped from the OEM and how plant personnel should prepare for receiving these components.
9. Describe, in general terms, what might become a critical path for the construction of a new boiler.
10. Describe which equipment is considered to be auxiliary to each of the boiler types.
11. Describe what might be a typical sequence of events to start a new boiler.
 1. Explain the phases of water.
 2. Explain the modes of heat transfer within the boiler.
 3. State the basic thermodynamic process which occurs in a steam generator boiler.
12. Discuss the various factors which determine proper combustion in the ~~steam generator boiler~~.
 4. Describe the major components that make up a utility sized boiler.
 5. Explain the construction of these major components within a steam generator boiler.
 6. Describe practical methods to meet environmental requirements.

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COURSE OUTLINE:

- I. Fundamentals of a Boiler Design
- II. Types of Boilers
- III. Boiler Operation

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- IV. Materials used in Boiler Construction
- V. Choice of Fuel
- VI. Meeting Environmental Requirements
- VII. Boiler Component Manufacturing
- VIII. Component Shipping and Storage
- IX. Boiler Erection
- X. Boiler Auxiliary Equipment
- ~~X-XI.~~ Preparation for Startup.

COURSE DATES/LOCATION/FEE

<u>June 2-6, 2008</u>	<u>HPC Facilities in Sarasota FL, USA</u>	<u>US \$2195</u>
<u>November 10-14, 2008</u>	<u>HPC Facilities in Sarasota FL, USA</u>	<u>US \$2195</u>
<u>January 19-23, 2009</u>	<u>HPC Facilities in Sarasota FL, USA</u>	<u>US \$2395</u>
<u>June 1-5, 2009</u>	<u>HPC Facilities in Sarasota FL, USA</u>	<u>US \$2395</u>
<u>July 20-24, 2009</u>	<u>HPC Facilities in Sarasota FL, USA</u>	<u>US \$2395</u>
<u>November 9-13, 2009</u>	<u>HPC Facilities in Sarasota FL, USA</u>	<u>US \$2395</u>

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WHAT YOU WILL RECEIVE:

1. 1 copy of the textbook. It is a valuable desktop reference in addition to being able to enhance the learning process.
2. A "Certificate of Completion" with 3.2 CEUs, authorized for issue by the International Association of Continuing Education/Training.

FREQUENTLY ASKED QUESTIONS

- Will HPC Technical Services bring this course to our location for our personnel only? YES, call or email Stephen Parker, stparker@hpcnet.com for a price quotation.
- Will HPC Technical Services customize the presentation at our site to suit our particular needs? Yes.
- What is the cost for HPC Technical Service to deliver this course at our location? Well, of course that can vary, but generally speaking, if you're planning on having 6+ attend, when considering your T&L, it is to your advantage to perform the course at your plant (office). You gain from the customization and price.
- ~~Can HPC Technical Services provide "Technical Assistance" in troubleshooting vibration problems on your equipment? In providing technical assistance in balance weight location? Yes we can. Call or contact Harold Parker, hparker@hpcnet.com for our rate sheets and any further information required.~~

INSTRUCTOR (S):

Hayes, Robert

Mr. Hayes instructs HPC's Balance-of-Plant O&M courses as well as our popular "Power Plant Blackout Preparedness" course. Mr. Hayes, prior to early retirement, held several positions during his long tenure at Illinois Power: (1) Results Engineer, Results Supervisor. Mr. Hayes had responsibilities, which included equipment performance testing, and rotating machinery vibration analysis and correction. (2) Supervisor Plant Operations. Mr. Hayes had responsibilities which included startup and checkout of new equipment, supervision of four operating shifts, and coal receiving and handling group. (3) Power Plant Operations Specialist. Mr. Hayes had responsibilities, which included frequent visits to all five fossil power stations, participation in control replacement projects, participation in development and implementation of clean air compliance plans, and served as an internal consultant for fossil power generation operations. He led several technical teams that identified and recommended protective system improvements to the large generating units. He conducted root cause analysis of several major equipment failures.

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HPC TECHNICAL SERVICES
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REGISTRATION FORM

Company: _____

Plant: _____

Address: _____

City/State/Zip: _____

Telephone: _____ FAX: _____

Course Number/Title: _____

Course Dates: ____/____/____ Thru ____/____/____

Course Location: _____ Course Fee: _____

Please enroll the following individual(s) listed below:

Student #1: _____

Student #2: _____

Taking advantage of HPC's 3-4-2 Policy: Send 3, Pay for 2 when paying in advance.

Student #3: _____

Enrolled by: _____

Date: _____

METHOD OF PAYMENT

Check to Follow: _____

Check Enclosed #: _____

MC/Visa/AMEX #: _____

Expiration Date: _____ CV Code: _____

Purchase Order #: _____