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Sarasota, FL 34243 USA
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www.hpcnet.com

Course Information Letter ---- M305

VALVE, COMPRESSOR, FAN, HEAT EXCHANGER & PUMP MAINTENANCE

M305

Are you involved in, or responsible for, maintaining this equipment at your plant? If yes, this course may be for you, or your direct reports. The course is instructed by an instructional staff that have about 30-years (each) of hands-on experience as well as significant experience in successfully presenting this information.

- Plant maintenance technicians have to deal with a vast variety of equipment. To properly maintain compressors, fans, pumps, and other balance of plant equipment, the maintenance technician needs to better understand the operation of this equipment. Gain this knowledge in this course offering.
- Heat exchangers are an important part of all systems. In a steam plant today there are a number of large heat exchangers and many different types. In this seminar the individual will learn the operation, classification, and troubleshooting of various heat exchangers.
- Compressed air systems are a vital part of plant operation. Station air, control air, and compressed air for tools are a needed on a daily basis. This seminar will help the maintenance technician to better understand the compressors and the entire air system.
- Pumps are utilized in every system in a plant. To better understand troubleshooting of a pump the mechanic needs to know the theory of pump operation. This seminar will familiarize the maintenance technician pump theory, construction, and operation.
- Valve identification and maintenance Is very important in maintaining plant operations.
- Savings can be found in understanding the proper installation of packing and gasket materials.

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

1. List the different types of compressors commonly found in industrial applications.
2. Describe the major components found in the listed compressors.
3. Describe operating principles of the listed compressors.
4. Demonstrate the knowledge required to troubleshoot compressor operational problems.
5. List the different types of fans found in industrial applications.
6. Describe the major components found in the listed fans.
7. Describe operating principles of the listed fans.
8. Demonstrate the knowledge required to troubleshoot fan operational problems.
9. List the different types of heat exchangers found in industrial applications.
10. Describe the major components found in the listed heat exchangers.
11. Describe operating principles of the listed heat exchangers.
12. Demonstrate the knowledge required to troubleshoot heat exchanger operational problems.
13. List the different types of pumps found in industrial applications.
14. Describe the major components found in the listed pumps.
15. Describe operating principles of the listed pumps.
16. Demonstrate the knowledge required to troubleshoot pump operational problems.
17. Identify various valves and explain the function of each.
18. Describe the proper means of installing packing in valves.
19. Explain the operation of mechanical seals.
20. Explain the importance of relief and safety valves.

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OUTLINE:

Day 1 – Valves, Packing, Gaskets, & Seals

- Valve Construction
- Valve Identification
- Valve Maintenance
- Packing, Gaskets, and Seals

Day 2 - Compressors and Fans

- Compressor Operating Principles
- Compressor Types
- Compressor Components
- Air Systems
- Compressor Troubleshooting
- Fan Types and Characteristics
- Fan Troubleshooting

Day 3 - Heat Exchangers

- Principles of Operation
- Heat Exchanger Function
- Types and Classifications
- Locating and Repairing Leaks

Day 4&5 - Pumps

- Pump Identification and Classification
- Pump Theory
- Pump Maintenance
- Pump Troubleshooting

WHAT YOU WILL RECEIVE:

1. 1 copy of HPC Technical Services' textbook, Maintaining Mechanical Systems
2. A "Certificate of Completion" with 2.9 CEUs, authorized by the International Association of Continuing Education and Training.

COURSE DATES/LOCATION/FEE:

For current dates / locations / prices, please see HPC's website, www.hpcnet.com.

FREQUENTLY ASKED QUESTIONS

- Will HPC Technical Services bring this course to our location for our personnel only? YES, call or e-mail Don Billings, dbillings@hpcnet.com for a price quotation.
- Will HPC Technical Services customize the presentation at our site to suit our particular needs? Yes.
- Is HPC Technical Services' textbook available for purchase as a reference document? Coming Soon
- 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 conducting functional checkouts or troubleshooting problems? Yes we can. Call or contact Harold Parker, hparker@hpcnet.com for our rate sheets and any further information required.

POWER PLANT MAINTENANCE CERTIFICATION:

This course is a requirement for Power Plant Maintenance Certification. Those who attend this course are automatically qualified to take HPC Technical Services' Certification Examination. This examination is offered at no additional expense to the participant. An 80% passing grade is required. The examination length will not exceed 2-hours. Those who complete this examination will receive a revised "certificate of completion" that recognizes this accomplishment along with two-copies of a "To Whom It May Concern" letter that states their accomplishment. (Two copies are provided, one for the participants' employer and one for the participants' personal file.)

Consult HPC's website, www.hpcnet.com, for details on this certification program.

INSTRUCTOR(S):

Course Dates/Prices/Locations subject to change without notice
Revised 21 September 2009
All Prices are US Dollars, except when specifically noted
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Dan Anderson is the primary instructor for this course. Dan started his career in the US Navy as a Boiler Technician. After his discharge Dan was a civilian instructor for the US Navy at Great Lakes Naval Training Center. While there Dan instructed Navy personnel in the four-phase steam cycle including balance of plant equipment. In 1990 Dan returned to Minnesota and received his Minnesota State Chief A Engineers license. After a few years in the position as Chief Boiler Engineer For Green Giant Co. and Maintenance Manager for Minnesota Energy, Dan went to work for Hutchinson Utilities Commission in Hutchinson, Minnesota. His position there was Operator 1. His operational responsibilities included GE LM 6000 Combined Cycle, GE Frame 5 Simple Cycle, and a GE Frame 3 Combined Cycle. He also had operations of 6 Diesel Engines for power production. Dan joined HPC Technical Services, June 2001. His main area of instruction is Gas Turbine/Combine Cycle Fundamental, Steam Turbine/Generator Fundamentals, Mechanical Maintenance Courses, and The Boiler Training. Dan currently holds a Chief A Engineers License for Minnesota, A Chief NIULPE Certificate, NIULPE Instructor and Examiners Certificate, Chief ASOPE Certificate, and is a Member of ASME.

Ray Militello has approximately 30-years experience maintaining steam turbine generator equipment. He has worked as a Field Representative for GE Installation & Service Department, was employed as a Supervisor - Maintenance and Maintenance Planning with Southern California Edison Company. Ray also worked as Manager, Maintenance Training Services with HPC Technical Services for 4-years before deciding to become independent. Now Ray instructs specific turbine maintenance courses for HPC, depending upon availability. He has been instructing HPC's Steam Turbine Overhaul course for the last 6-years. Ray resides in Bradenton FL.

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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: _____ E-mail: _____

Student #2: _____ E-mail: _____

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

Student #3: _____ E-mail: _____

Enrolled by: _____ E-mail: _____

Date: _____

METHOD OF PAYMENT

☐ Check to Follow: _____

☐ Check Enclosed #: _____

☐ MC/Visa/AMEX #: _____

Expiration Date: _____ CV Code: _____

☐ Purchase Order #: _____

PLEASE ADVISE HOW YOU INITIALLY FOUND OUT ABOUT THIS COURSE:

☐ Website Search ☐ Familiar with HPC

☐ Fax Advertisement ☐ HPC Newsletter

☐ Magazine Advertisement ☐ Other: _____

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