



Centrifugal Pump & Fluid Sealing Device Reliability Training School

June 17 – 19, 2009

*Courtyard by Marriott Downtown
Grand Rapids, Michigan*

About the Program

Centrifugal pumps are a critical component in the process of most industrial based manufacturing facilities. The reliability of this equipment is an integral part of sustaining and assuring manufacturing results at the lowest cost. This Reliability School will include informative discussion and “hands on” training for all makes and models.

- Centrifugal pumps: High speed, High Pressure Pumps (Boiler Feed),
- Vertical Turbine (Condensate, Circulating Water Pumps),
- Split Case Horizontal
- End Suction Centrifugal

The training program will provide the tools, techniques, and best practices, which have been used in conjunction with improved reliability initiatives in manufacturing, more commonly known as Preventative Maintenance Programs.

By working toward continuous improvement through the implementation of “best available” technologies in materials of construction, fluid sealing devices, bearings, bearing protection, documented bottom line savings can be recognized. The ability to step away from the “parts replacement” process will document bottom line savings in excess of millions of dollars, related directly to maintenance costs of equipment operation.

Who Should Attend

- Maintenance Superintendents, Planners
- Operations Manager, Engineering Personnel
- Tradesmen
- Maintenance Engineers
- Plant Engineers
- Project Engineers
- Operators
- Procurement Professionals



Program Outline

Wednesday, June 17, 2009- Basic Pump and Seal Trouble Shooting Class
Conducted by Bill McNally

Continental Breakfast - 7:00 AM

Buffet Lunch- 12:00

8:00 AM – 5:00 PM

Basic Pump and Seal Trouble Shooting Class

- Centrifugal vs. Positive Displacement Pumps and their application
- How pumps achieve their design purpose
- Bearing failures
- Cavitation
- Cutwater wear
- Cutwater repair
- Diffuser fin wear
- How to check thrust bearing retention and what to do about it
- How to be sure the impeller is centered in a double ended pump
- How to check concentricity of wear rings, install them properly, measure proper clearance
- How to adjust the impeller
- Mechanical seals
- Environmental controls

Thursday, June 18, 2009

Continental Breakfast - 7:00 AM

Bus departs for workshop at 7:45 AM

8:00 AM – 11:30 AM

Hands-On Technical Training Workshops- Dubric Ind will host a “Hands-On” Training Workshop that will consist of four stations where attendees will have the opportunity to perform inspection, failure analysis, learn the importance of two plane dynamic balancing versus single plane balancing, as well as mechanical seal rebuilding.

- Balance – live demonstration
- High Energy Pumps – visual inspection of disassembled units
- Vertical Turbine Pumps – visual inspection of disassembled units
- Hands On Mechanical Seal Rebuilding

Bus departs back to hotel at 11:45 AM

Lunch 12:00 PM

Review and Questions from Morning Workshop

1:00 PM – 5:00 PM

Reliability Roundtable Discussion - Participants from a variety of industry will attend. Power Generation, Steel Manufacturing, Waste Water, and Pharmaceutical

Dinner - 6:30 PM- For attendees, spouses and guests

Bill McNally as Guest Speaker- Hosted by Dubric, Ind. Mr. Bill McNally sharing his stories and experiences on the First US Atomic Submarine the “**Nautilus**”.

Friday, June 19, 2009- Rod Fannon will conduct an Advanced Pump School with a focus on high energy, high pressure Power Industry pumps per the topics described below.

Continental Breakfast - 7:00 AM

8:00 AM – 5:00 PM

Buffet Lunch included

Advanced Pump School: Boiler Feed, Condensate, and Circulating Water Pumps

- Basic High energy pump design – high pressure Boiler Feed Pumps and low pressure Circulating Water Pumps
- Basic hydraulics / flow paths
- Materials used in centrifugal pumps
- Installation procedures for low and high energy pumps
- Calculating and performing alignment - mechanical and thermal offsets
- Couplings
- Repair procedures
- Pump operating guidelines
- Sealing devices - breakdown bushings, floating rings, packing
- Recirculation
- Vertical pumps
- Bearings and lubrication
- Basic pump calculations
- Pump operating guidelines

Closing Summary, Questions, Adjourn

Educators and Presenters

Mr. Bill McNally – with over **58 years** of experience, Bill is recognized worldwide as one of the foremost authorities in the field of Rotating Equipment. Bill is the founder of the McNally Institute and authored the Centrifugal Pump & Mechanical Seal Reference Manual. Visit Bill's website @ www.mcnallyinstitute.com

Mr. Rod Fannon – with over **35 years** of experience in high energy pump engineering and the development of technical and upgraded repair procedures, Rod is recognized nationwide as one of the foremost authorities in the Power industry.

Mr. Bob Boelens – with over **28 years** of experience in centrifugal pump trouble shooting and root cause failure analysis, Bob will provide practical approaches to identifying and correcting the weak links in pumps that will improve the reliability and increase the service life.

Registration Fees in US Dollars

Dinner on Thursday, June 18th, is included with your registration

Basic School with Hands-On Technical Workshops and Roundtable Discussion (two day attendance with dinner): **\$800.00** per person

Advanced School with Hands-On Technical Workshop and Roundtable Discussion (two day attendance with dinner): **\$800.00** per person

Basic & Advanced Schools with Hands-On Technical Workshop and Roundtable Discussion (three day attendance with dinner): **\$900.00** per person

Hotel Accommodations

A block of rooms has been reserved at the Courtyard by Marriott Downtown Grand Rapids. **Please call the Courtyard at 1-616-242-6000 or 800-321-2211 by May 15, 2009 to secure the Dubric discount** rate of US \$114.00 per night for single / double occupancy.

Be sure to mention that you are part of the Pump & Seal Reliability Training School sponsored by Dubric Industries.

Company Discount

Three or more individuals from the same facility attending the program will receive a 10% discount per person.

Cancellation

If you must cancel, please contact us at 1-800-848-0022 and a refund will be issued. Cancellations received less than one week prior to event are nonrefundable.

Grand Rapids Information

For information on Grand Rapids, go to www.visitgrandrapids.org

REGISTRATION FORM:

**Centrifugal Pump and Fluid Sealing Device Reliability Training School
June 17 – 19, 2009**

**Courtyard by Marriott Downtown
11 Monroe, N.W., Grand Rapids, Michigan 49503
616-242-6000 or 800-321-2211**

Personal Information

Name _____

Title _____

Company _____

Business Address _____

City _____ State _____ Zip Code _____

Phone _____ Fax _____

E-mail _____

Guest or Spouse _____

Payment & Attendance Information:

___ Basic 2-day School - \$800.00 ___ Advanced 2-day School - \$800.00

___ Basic & Advanced 3-day School - \$900.00

(3 or more individuals from the same facility attending the program will receive a 10% discount per person.)

Arrival Date _____

Check: Please make payable to Dubric Industries, PO Box 43, Comstock Park, MI 49321

Purchase Order Number: _____

Credit Card: VISA _____ MC _____ AMEX _____

Credit Card Number: _____

Exp. Date (required) _____ **Security Code (found on back of card)** _____

Authorized Signature: _____

Mail: Dubric Industries, PO Box 43, Comstock Park, MI 49321

www.dubric.com

Dubric Phone Number: 1-800-848-0022 or 616-784-6355 Fax Number: 616-784-3459

e-mail: rkelly@dubric.com