



—TRAINING—
GALVESTON, TEXAS
APRIL 30 – MAY 1, 2012 \$1075

PUMP BASICS TRAINING

This course provides participants with the knowledge and skills needed to understand the basics of pumps, pumping systems and mechanical seals. The course curriculum is centered on pump and mechanical seal design, operation, and maintenance. Concepts and theory are taught in a classroom setting and then reinforced with hands-on exercises with the static displays.

AUDIENCE

Facility personnel that require basic understanding of centrifugal pumps, pumping systems hydraulics and mechanical seals are encouraged to attend this class. Specifically, millwrights, mechanics, machinery technicians and maintenance supervisors, as well as experienced operators, will benefit from this training.

Participants should have direct involvement or responsibility for pump and mechanical seal, installation, operation, troubleshooting or maintenance.

WHAT YOU WILL LEARN

Upon completion of this course, the participant will be able to:

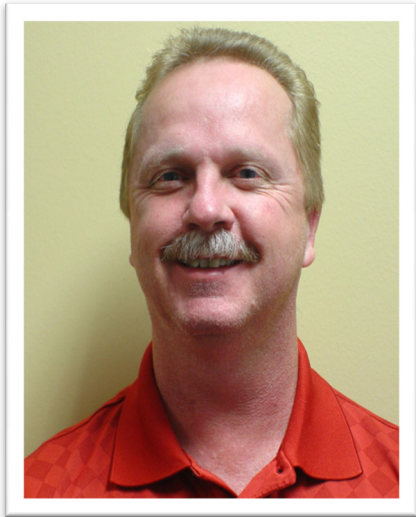
- Identify and describe basic centrifugal pump design
- Identify and describe the basics of pumping system hydraulics
- Identify classic cavitation, recirculation and Net Positive Suction Head (NPSH)
- Describe acceptable and preferred regions of pump operation including minimum flow
- Describe impeller design as it relates to specific speed and suction specific speed
- Describe pump and system interaction
- Identify and describe centrifugal pump types and design
- Describe pump bearing types and lubrication
- Identify and describe basic seal configurations
- Describe how a mechanical seal operates
- Describe the limitations of single mechanical seals
- Identify and describe common API/ANSI Piping Plans

PREREQUISITES

Basic hands-on skills and some experience with rotating equipment. Basic math skills are helpful.

YOUR INSTRUCTOR

David Langehennig joined Flowserve as an FPD Sales Engineer in 2008 after serving as a Machinist Maintenance Supervisor at Valero Refining, in Port Arthur, Texas. His experience in manufacturing has enabled him to look beyond the current equipment failure, and recognize manufacturing defects that can contribute to failures.



David began his career in the Petrochemical Industry, as a Machinist with Exxon in Baytown, Texas in 1979, after receiving his Bureau of Apprenticeship Certification; David was a Training Instructor for the Machinist Department for Exxon from 1990 through 1993.

In 1993 David started a Machine shop, specializing in Production Machining and repair machining of rotating equipment. David was instrumental in developing and implementing a Machining and Quality Control Program for Pump Component Manufacturing. David sold his Machining and Manufacturing Shop to an established Pump Manufacturer in the Northwest in 2000.

David started working for Valero Refining in 2003 where he used his skills in repair and manufacturing of rotating equipment to help diagnose and resolve system, equipment, and educational issues, increasing reliability and MTBR for his areas.

In March 2010, he joined the Flowserve Educational Services Group as a Training Specialist where he plans on using his 30+ years in industry, sales and service to contribute to the development of new training material and learning experiences for Flowserve employees and customers.

COMPREHENSIVE TRAINING SCHEDULE

The schedule shows how your course fits in with the exhibition, discussion groups, workshops and other classes offered at this venue this week.

Galveston April 30 - May 4

| <i>Monday</i> | <i>Tuesday</i> | <i>Wednesday</i> | <i>Thursday</i> | <i>Friday</i> |
|----------------------------------|--|--|-----------------|-----------------|
| <i>Training</i> | | <i>Conference (Seminar)</i> | | |
| FCCU Operations Fundamentals | | Coking & CatCracking Safety and Reliability Seminar | | |
| Advanced Coker Process | | Presentations | Presentations | Breakout Groups |
| Coker Fundamentals | | | | |
| Pumps Basics | | Breakout Groups | Demonstrations | |
| | Steam Fundamentals | | | |
| | Exhibition starts Tuesday at 5:00pm, ends Thursday at 7:00pm | | | |
| Sulfur Recovery and Claus Plants | | Sulfur Optimization, Simulators, Tailgas and Engineering | | |

Revised January 24

HOTEL

Moody Gardens Hotel
7 Hope Boulevard
Galveston, Texas 77554
Phone (409) 741-8484
Toll Free (888) 388-8484
Hotel Website: www.MoodyGardensHotel.com

COURSE INFORMATION

April 30 – May 1, 2012
Class starts at 8:00am and will finish at 5:00pm.
The program includes lunch and coffee/cookie breaks. Attendees also receive a class manual that can serve as a valuable office reference. Dress is casual for all seminars.

PAYMENT AND CANCELLATIONS

Course Fee: Early \$1075 (Ends March 26) ~ Regular \$1175.

Payment: Due prior to the start of the training by Visa, Master Card, American Express, wire transfer or corporate check. Training fees will be charged to your credit card at the time of registration unless other arrangements have been made. Make checks payable to "RefiningCommunity.com".

Refund Policy: Fees are fully refundable until April 9 (about three weeks before the event), after which a \$200 fee will be charged for cancellations. Registering for this course prior to April 9 will help maximize the probability that the course will proceed as planned. Cancellations after April 23 (1 week before class until 24 hours before class) are charged a 50% fee. All other cancellations and no-shows are non-refundable. Substitutions are allowed. All cancellations and transfers need to be submitted in writing, by email or by fax.

For more information on Refining Community policies please contact us.

CONTACT US

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