Pump Technology Pump Overhauling

Introduction:

Pumps provide flow of water, fuel, oil, slurries, wastes, and treatment chemicals very reliably. Proper design, selection, testing and commissioning require a thorough understanding of pumps technology. This training course provides the skills and knowledge of the design, selection, testing of pumps. Topics include types of pumps, construction and operation, losses in valves and pipes, cavitation and water hammer, seals and backing, troubleshooting and inspection, and standard symbols. Emphasis shall be laid on topics relevant to advanced aspects and practical knowledge of testing, operation, characteristic curves and selecting the appropriate pumps and how different parameters can affect pumps operating conditions. Characteristics and operating charts and curves will be stressed.

Who Should Attend?

This program is directed towards engineers, supervisors, team leaders and Professionals in maintenance, engineering and production. The program will also benefit anyone who wishes to update themselves on pump technology, judge the suitability of different types of pumps for their needs, and learn how to operate and maintain them for the benefit of their organizations.

Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Course Objectives:

After participating in this course, you will be able to:

- Be aware of the performance characteristics of positive displacement and centrifugal pumps
- Understand the operational and maintenance aspects of various pumps
- Become familiar with the components of positive displacement and centrifugal pumps
- Appreciate the influence of fluid sources and attached piping

Course Outline:

Day 1

- Introduction
- Classifications of pumps
- Centrifugal pump

Day 2

- Positive displacement pump
- Rotary Pumps
- Propeller pump
- Metering pumps
- Diaphragm pumps
- Scroll and Gear types

Day3

- Losses in pumps and pumping system
- Characteristic curves and pump selection
- Net Positive Suction Head (NPSH)
- Cavitations
- Pump Wear Rings and Balance Lines
- Multi-Stage Pumps

Day 4

- Conventional Packing Glands
- Seals and Mechanical Seals
- Seal Failure Mechanisms
- Maintenance and Repair of Mechanical Seals
- Bearings
- Bearings failure modes and how to extend life
- Bearing maintenance and troubleshooting

Day 5

- Lubrication characteristics and cooling systems
- Couplings
- Alignment
- Planned Maintenance - Predictive and Preventive
- Reliability based maintenance