



Pumps and Valves Course

Introduction

The Course will introduce delegates to the different types of pumps and valves and their associated terminology. Centrifugal and positive-displacement pumps, packing, mechanical seals and sealing systems, bearings and couplings will all be discussed. Valves for isolation and valves for control will be addressed.

Understand the system requirement and the effect of system flow rate and heads

The application of the different types of pumps, selection of different type of pumps and valves will be discussed along with their suitability for different operational duties. Operation, troubleshooting and maintenance will be discussed in simple example.

The knowledge gained in this course will:

- Enable the delegate to optimize the operation and maintenance of different types of pumps
- Enable the delegate to optimize the selection of different types of pumps and valves
- Accurately identify process flow rate and pressure requirements.
- Measure actual head and flow rate.
- Develop a system curve.
- Select a pump with high efficiency over the expected range of operating conditions.
- Specify electric motors that meet the NEMA Premium full-load efficiency standards.
- Use life cycle costing techniques to justify acquiring high efficiency pumps and designing efficient systems.
- Understanding pumping system requirement.
- How the properties of the fluids being pumped can significantly affect the choice of pump
- Give the delegate confidence to carry out failure analyses on pumps thereby avoiding repetitive failures
- Give the delegate theory of selecting the best way of maintenance
- Allow tighter control of maintenance budgets by the avoidance of unplanned equipment failures in service

Objectives

At the end of this seminar participants will:

- Have an understanding of the different types of pumps and their associated terminology
- Have understanding pumping system requirement
- Have understand properties of fluids and the effect on selecting the required equipment
- Have an understanding of Centrifugal and positive displacement pumps, packing, mechanical seals and sealing systems, bearings and couplings

- Have an understanding of different parameters affecting the operation of valves
- Have the ability to select the right type of valves for the particular application and to perform the necessary calculation.
- Have the ability to select the right valve for the particular application and to perform the necessary calculation for valve sizing
- Have the ability to evaluate system requirement and performance of equipment
- Have the ability to perform troubleshooting of systems involving valves & pumps
- Have the ability to decide on the right maintenance plan concerning different types of valves & pumps

Training

The course will be conducted along workshop principles with formal lectures, case studies and interactive worked examples. Relevant case studies will be provided to illustrate the application of each tool in an operations environment. There will be ample opportunities for discussion and sharing experiences

Personal Impact

This course will give the delegate the required level of technical knowledge and skill to achieve that personal satisfaction and ability to select the suitable type of equipment.

Who Should Attend?

- Supervisors
- Engineers
- Team Leaders
- Technicians

The course will also benefit anyone who wishes to update themselves on pump and valve operations and maintenance and selection the right equipment for optimum system performance.

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