Advanced Practical Centrifugal Pump

Introduction:

The over-riding aim of the pump and system training course is to reduce the costs associate with owning and running pumps. Organizations spend millions running and repairing pumps. Nine out of ten pumps fails early. If we can improve reliability we can reduce the cost of owning pumps considerably. Power is a major cost for any organization. If we can reduce the amount of power required to run our pumps, we can reduce the cost of owning them considerably.

This course will give attendees the ability to improve pump reliability and reduce power consumption and therefore make a huge difference to the organization's profitability.

Who Should Attend?

This course is very relevant of technical engineers and professionals who handle and are responsible for their organizations' pumps and systems; as well as the overall smooth operations and processes of their organizations' plants and machineries.

These include, but not limiting to:

- Maintenance & Operation Engineers
- Pump Application Engineers
- Pump Sales Engineers
- Project & Construction Engineers
- Plant Engineers
- Process Engineers & Designers
- Engineering Consultants

Course Objectives:

- Understand how the system controls the pump
- Learn how to read a pump curve and how pumps really operate
- Learn how the flowrate impacts on pump reliability – what is the reliable operating range
- Design better systems and select better pumps, leading to improved reliability
- Avoid operational problems that lead to pump failures
- Understand what cavitation is, why it occurs and how to avoid it
- Know how pumps should be installed and commissioned – avoid those common commissioning failures
- Learn why pumps vibrate and why seals and bearings fail

Course Outline:

Day 1

- Introduction
- Pump Operating Principle
- Systems Design / Pump Selection

Day 2

- Controlling the Flowrate
- Liquid Properties and Pump Performance
- Calculating Pump Perfomance for Speed or Impeller Diameter Changes
- Operating More Than One Pump in a System

Day 3

- Nett Positive Suction Head and Cavitat
- Sealing Options
- Pump Mechanical Construction Options
- Mechanical Construction vs Reliability

Day 4

- Flowrate vs Reliability
- Pumps for Low NPSHA Applications
- The Oil Industry Standard – API 610
- Purchasing Reliable Pumps

Day 5

- Installation and Commissioning
- Pump Maintenance
- Monitoring and Instrumentation
- Troubleshooting Problems
- Internal Wear and Loss of Performance
- End Summary and Discussion