Rotating Equipment Controls And Operation

Introduction:

This course will introduce delegates to different types of pumps, compressors, turbines and associated equipment, such as bearings, seals, filters, separators, etc. The focus in the course will be on the start-up and operation of these machines and their optimal maintenance, diagnostics and troubleshooting techniques.

Likewise, efficient and trouble-free operation of pumps, compressors and turbines will be discussed in depth along with their ability to control the main operational parameters and will include emphasis on physical principles and clear technical reasoning.

The course will feature:

- Principles of pump, compressor and turbine start up and operation
- Best practices for maintenance and repair
- Measurement and control of performance of these machines
- Inspection and diagnosing the root cause of problems

- Troubleshooting techniques for operational problems of pumps, compressors and turbines

Who Should Attend?

This course is designed to benefit all levels of Technical Personnel in the oil and gas industry as well as in chemical and process industries but will greatly benefit:

- Technical Personnel in charge of production
- Maintenance and Operation Engineers
- Operators
- Supervisors
- Engineering Managers

How will this be Presented?

This course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. This includes lecture with active delegate participation including discussions and workshops. Real life problems and case studies will be worked out and discussed.

Through an active participation in the group work and class discussions, the delegates will be a lot of opportunity to increase their experience and knowledge of techniques available for equipment troubleshooting.

What are the Goals?

By the end of this course delegates will be able to:

- Understand different types of pumps, compressors and turbines.
- Operate pumps, compressors and turbines close to the design efficiency.
- Monitor pump compressor and turbine reliability and availability and cost effectiveness
- Select the best operation and maintenance strategy
- Troubleshoot pump, compressor and turbine problems

Course Outline:

Day One: Compression Principles

- Principles of Compression
- Ranges of Application
- Centrifugal Compressors
- Reciprocating Compressors
- Rotary Compressors
- Workshop: Examples and Solutions

Day Two: Compressors: Elements and Technical Characteristics

- Centrifugal Compressors
- Axial Compressors
- Compressor Packages
- Reciprocating Compressors
- Rotary Compressors
- Workshop: Examples and Solutions

Day Three: Pumps: Elements and Technical Characteristics

- Types of Fluids and Range of Application
- Centrifugal pumps:
- Axial Pumps
- Reciprocating Pumps
- Rotary Pumps
- Workshop: Examples and Solutions

Day Four: Start up and Operation of Compressors and Pumps

- Centrifugal and Axial Compressors
- Reciprocating and Rotary Compressors

- Centrifugal and Axial Pumps
- Reciprocating and Rotary Pumps
- Workshop: Examples and Solutions

Day Five: Maintenance and Troubleshooting of Rotating Equipment

- Centrifugal and Axial Compressors
- Reciprocating and Rotary Compressors
- Centrifugal and Axial Pumps
- Reciprocating and Rotary Pumps
- Course Summary and Review