

PUMPS & COMPRESSORS: OPERATION, TROUBLESHOOTING & CONTROL

AIMS

- Be more familiar with the different types of pumps and compressors
- Be able to understand reasons behind choosing different types for different applications
- Be able to troubleshoot the problems and faults concerning these machines
- Be able to read and use the related international standards

BENEFITS

- Learns more about the problems and solutions for compressors and pumps
- Gain knowledge of parameters affecting pumps and compressors operation
- Learn methods of troubleshooting & controlling these machines

OBJECTIVES

- Upgrading the knowledge of problems and solutions for pumps and compressors
- Exercising examples of troubleshooting methods
- Highlight the importance of cavitation in pumps and stall in compressors
- Highlight the importance of seals and bearings on pumps and compressors availability

PRESENTER

Mr. Tony Vetro

Mr. Vetro is a Mechanical Engineer with almost 20 years of experience with rotating equipment. He has worked for major oil, petrochemical and engineering companies, providing solutions to design and reliability problems. Since 1998, Mr. Vetro has been a principal engineer of his own consulting companies specializing in rotating equipment and engineering project services. As a consulting engineer, he has provided engineering and field services to numerous oil & gas companies, turbo-machinery manufacturers and industrial clients.

Mr. Vetro has taught courses on turbo-machinery topics throughout Western Canada and internationally.

PROGRAM

DAY ONE

PUMPS PERFORMANCE, AND OPERATION

- Pumping methods
- Range of operation
- Pumps performance curves
- Specific speed and specific diameter
- Design operating conditions
- Parameters affecting the pump performance

DAY TWO

PUMPS CONTROL AND SELECTION

- Pump curves and piping system curves
- Capacity control
- Pumps Specifications
- Parameters affecting the pump selections

DAY THREE

CENTRIFUGAL COMPRESSORS

- Compression Methods:
- Positive displacement compressors

DAY FOUR

CENTRIFUGAL COMPRESSORS

- Performance curves
- Affinity laws
- Operation and control of centrifugal Compressors

DAY FIVE

TROUBLESHOOTING AND MAINTENANCE

- Principles of troubleshooting
- Statistics of more frequent troubles
- Mechanical seals
- Bearings
- Cavitation in pumps
- Surge in compressors
- Shaft deflection
- Off-design operating conditions