Training Title

PUMPS, COMPRESSORS AND TURBINES – Operation, Maintenance and Troubleshooting Training

Training Duration

5 days

Training Venue and Date

REF ME032	Pumps, Compressors, Turbine Operation, Maintenance & Troubleshooting	5	04-08 March 2018	$4,250	Dubai, UAE

In any of the 5 star hotel. Exact venue will be informed once finalized.

Training Fees

- **4,250 US$ per participant includes Training Materials/Handouts, Tea/Coffee breaks, Refreshments and International Buffet Lunch.**

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

DESCRIPTION

This course is to provide the trainees with a strong background in the field of Advanced Rotating Equipment (Pumps, Compressors, and turbines) maintenance and troubleshooting. In addition, the trainee will have a background in Pumps, Compressors, and turbines performance and construction. The emphasis is placed on understanding the advanced and new techniques of troubleshooting and different methods of maintenance. During the course participant's discussion, comments, bringing up their own problems are welcomed and encouraged.

WHO SHOULD ATTEND

Process and Mechanical engineers & technicians who are involved with troubleshooting, selection, operation and maintenance of rotating equipment (Pumps, Compressors, turbines and other mechanical equipments). Entry level engineers, technicians all the way to senior level will benefit because of the course structure. The course targets engineers in the petrochemical, chemical, refining and power industries.

TRAINING OBJECTIVES:

•Familiarize the Attendees with different types of rotating equipment
• Learn the principles of operation of the pumps, compressors, and turbines.
•Highlight the importance of seals and bearings on rotating equipments availability
•To enable the attendees to grasp the advanced information in preventive as well as predictive maintenance of rotating equipment
•To present the advanced condition monitoring technologies stressing on vibration and oil analysis.
•Learn the troubleshooting the rotating equipment

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

The most up to date training methodology is used to present this workshop. The workshop is carefully designed to address practical style of learning and to fully engage participants. Tutorials are used through individual exercises and group discussions. These discussions provide opportunities for personal participation in simulated real situations. During these discussions the participants will discover what they might do and what they can do out of what they are learning. This process makes the training fun filled, fast-paced, challenging and empowering.

Very useful Course Materials will be given.

- **30% Lectures**
- **30% Workshops and work presentation**
- **20% Group Work& Practical Exercises**
- **20% Videos& General Discussions**

OUTLINE :-

Day 1:

Pumps:

Centrifugal Pump: Construction Performance Maintenance Troubleshooting
Positive-Displacement Pumps: Types, Performance, Troubleshooting

Compressors: Overview: Compression Methods
Positive-Displacement Compressors
Roto-Dynamic Compressors

Day 2:

Compressors:Centrifugal Maintenance and Troubleshooting
Rotary Maintenance and Troubleshooting
Turbines: Design and construction of different types of gas turbines.
Auxiliary systems: air inlet system, exhaust system, regenerators, seals.
Gas turbine Maintenance and common problems.
Gas turbine troubleshooting

Day 3:

Vibration Monitoring and Analysis:
Vibration Analysis: Application and Overview
Vibration: Sources and Theory
Machine Dynamics
Vibration Analysis Techniques

Day 4:

Machine and Lubricant Condition Monitoring

Day 5:

Rotating Equipment Seals: Types Classification Failure Troubleshooting

Case studies and discussion of problems provided by attendees.

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