Mechanical Seals & Gland Packing's

Training Program

Introduction:

In this 5-day course, participants will gain a strong technical and practical understanding of mechanical seals and gland packing through the exploration of design features and implications of many sealing pump systems. Participants will also be taught about centrifugal pumps types and API 610 nomenclatures. Overview of API 682 will be delivered for mechanical seal definitions types and arrangements. Participants will also gain good knowledge about the effect of rotor dynamic balancing & pump piping on mechanical seals and soft packing.

Who Should Attend?

- Mechanical Engineers, Superintendents, Supervisors, Foremen & Technicians
- Machinery Engineers, Superintendents, Supervisors, Foremen & Technicians
- Plant Engineers, Superintendents, Supervisors, Foremen & Technicians
- Maintenance Engineers, Superintendents, Supervisors, Foremen & Technicians

Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include:

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration.

Course objectives:

At the end of this course participants will be able to:

- Demonstrate a sound understanding of the fundamentals of seal selection.
- Understand environmental considerations related to seals.
- Troubleshoot seals.
- Maximize mechanical seal life.
- Explain considerations related to the materials used in seal construction.
- Understand that mechanical seal can be affected by piping system and rotor balance.

Course outline:

✓ **Introduction**

- Pump seals
- Packing
- Mechanical seals
- Seal selection process
- Packing vs. Mechanical Seals

✓ **Pump Sealing**

- Pump Seals
- Mechanical seals feature
- Pump Seals - Face Materials
- Why Pump Seals Fail?
- Specifying pump seals

✓ **Gland Packing**

- API Gland
- Gland plate construction

✓ Stuffing box

- Seal chamber design

✓ API seal standard

- ✓ Mechanical shaft seals
- ✓ Overview of API 682 and ISO 20149
- ✓ API 682 DEFINITIONS
- ✓ API 682 Summary
- ✓ API 682 Seal Categories
- ✓ Standard Seal Types & Arrangements
- ✓ Design Requirements
- ✓ **Mechanical Seals**

- Seals Classification
- Seals Application.
- Seals selection
- Seals installation
- Seals maintenance

- ✓ **Some special fluids, how to seal them**

- Dangerous fluids
- Condensate
- Hot oil
- Hot water
- Liquid slurries

- ✓ **Design, operation, and maintenance problems associated with mechanical seals**

- Mechanical seal design problems
- Start-up & operation of mechanically sealed equipment
- Reminders
- Operation problems
- Maintenance

- ✓ Trouble shooting

- ✓ Case studies

- ✓ PUMP PIPING

- ✓ Introduction

- ✓ A few things you should know about your pump's piping system

- ✓ Pitfalls of pump piping

- ✓ Pump piping arrangement

- ✓ Rotor Dynamic Balancing

- ✓ Abstract

- ✓ Why do we balance?

- ✓ Balancing is not an additional expense!

- ✓ Causes of Unbalance
- ✓ Manufacturing – Causes
- ✓ Assembly – Causes
- ✓ Installed Machines – Causes
- ✓ Other Causes
- ✓ Rotor Behavior
- ✓ Rigid & Flexible Rotors
- ✓ Balancing Theory