BEARINGS & BEARING FAILURE ANALYSIS (REF:OTSBFA001)

Course Objectives

To gain a detailed understanding of bearing types and design.

Course Description

The course covers bearing types and design and also discusses lubricant as used with bearings and lubricant analysis. Further the course will cover the reasons for bearing failure, bearing failure analysis and detecting/preventing the causes of bearing failure.

Who Should Attend

This course is aimed at Mechanical Engineers/Technicians who will be involved in the maintenance of rotating equipment and that require an understanding of bearing technologies and processes. Engineers requiring an understanding of bearing repair techniques would also benefit from attending this course.

Pre-Requisites

All Attendees should have a sound power generation background.

Course Outcome

At the end of this course you will be able to analyse bearing failures.

Day 1

Introduction
Basic concepts of Tribology
Bearing surfaces in machines
Basic principles of bearing selection
Practical consideration in bearing selection
Wear mechanisms and methods of wear reductions
Plain bearing materials
Lubricant selection
Plain Bearings
Fluid film bearings
Plain thrust bearings
Self contained bearings
Journal bearings for rotating machines
Bearing influence on rotor dynamics
Process fluid lubricated bearings
Journal bearings for reciprocating machines
Rubbing bearing design and material selection
Plain bearing failure investigation

Day 2

Rolling Bearings
Types of rolling bearings and their contact conditions
Nomenclature and load carrying capacity of rolling bearings
Selection of rolling bearings
Installation and sealing of rolling bearings
Lubrication of rolling bearings
Rolling bearing failure investigation

Day 3

Lubricants and Lubrication Systems
Lubricants in services
Selection of lubrication systems
Specification of large oil systems
Lubricant cleanliness in circulation systems
Fire and explosion hazards with mineral oils
Problems & Failure Studies
Repair of service damage and manufacturing errors
Analysis of individual failures
Weibull analysis of multiple failures

Course Review and Feedback

Technical Training Solutions
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