Condition Monitoring & Vibration Control Of MachinesPlants

Introduction:

This training program is designed to provide valuable information on machine condition monitoring as a tool for quickly identifying and correcting the root causes of machinery problems, achieving precise operation, and improving machinery performance. Special emphasis is given to trouble shooting, data interpretation, health assessment, and maintenance decision-making.

Who Should Attend?

This training course is intended for maintenance engineering, planner, scheduler, supervisors and technician working in the field of Condition Monitoring, vibration, Preventive & predictive maintenance and for those wishing to specialize in this area, or as an update to the latest developments for those who already work in this area. Because the methods and examples are generic, personnel from all disciplines will benefit.

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

Course Objectives:

Condition Monitoring & Vibration Control of Machines Plants Course', will equip the participants to:

- Understand the basic concepts of Predictive Maintenance, Vibration Analysis, and Condition Monitoring of Machines/Equipment
- Learn the fundamentals and advantages of Predictive Maintenance
- Learn the components and methodology of vibration monitoring, including hardware items such as probes and data processing instruments, and the associated software for analysis
- Comprehend various types of condition monitoring such as metal integrity checks, rotating machine-bearing checks, condition trending using internal process parameters, and analysis of the composition of fluids at the outlet of processes, equipment, and machines (e.g., ferrography, temperature rise, pressure fluctuation, etc.)
- Appreciate the importance of, and planning around Predictive Maintenance, Vibration Analysis, and Condition Monitoring in oil, gas, and process plants, including their execution
- Grasp the Assessment of remainder life and preparation for repair/ replacement/ maintenance
- Understand some non-destructive testing techniques, aiding in condition monitoring and predictive maintenance

Course Outline:

Principles and Introduction

- Introduction to condition monitoring
- Overview the role of condition monitoring
- Data Collection
- Instruments and Aids for Condition Monitoring and Troubleshooting
- Types of measurement - Accuracy and Considerations

Inspection

- Temperature Measurements
- Visual Inspections
- Leak/Crack/Thickness Detection and Measurement
- Rotating Equipment Condition Monitoring Tools
- Fluid Monitoring/Contamination Control
- Using Alignment Tools

Vibration Measurement and analysis

- Vibration of rotating machinery
- Vibration Measurement and Analysis
- Rolling element bearings.
- Static and dynamic balancing.
- Gearbox vibration.

Other Monitoring Techniques

- Thermal monitoring.
- Lubricant monitoring.
- Ultrasonic monitoring techniques
- Machinery Diagnostics
- Fault Diagnosis for a range of machine types

Condition Monitoring

- International Standards for Condition Monitoring
- Maintenance decision making based on condition monitoring
- Machine life cycles.
- Trend monitoring.
- Computer application in machine condition monitoring