

Predictive Maintenance Overview



Predictive Maintenance (PdM) differs from preventive maintenance in that it is determined by the condition of equipment rather than average or expected life statistics. It attempts to predict failure before it actually happens by monitoring equipment performance during normal operations. Analytic tools are used to identify early stage of deterioration and develop course of action to monitor more frequently or plan and schedule for repair.

An effective predictive maintenance program is all about collecting and interpreting equipment operational data correctly. In this one-day seminar you will become familiar with the benefits and the limitations of the various analytical tools used in the predictive maintenance (PdM) field. Further, you will learn how to setup and maintain an effective PDM program in your organization.



Lecture
Hands-on



DURATION
1. DAY



LIVE ONLINE TRAINING



ONSITE — IN CLASS TRAINING

WHAT THIS COURSE COVERS

- Predictive maintenance fundamentals and strategy
- Where and when to use available tools
 - Vibration analysis
 - Infrared thermography
 - Ultrasonic testing
 - Tribology
- How to start a predictive maintenance program in your organization
- How to create and establish proactive maintenance standards

WHO SHOULD TAKE THIS

- Electricians, mechanics and maintenance technicians
- HVAC technicians
- Plant & facility engineers, managers and superintendents
- Environmental health & safety personnel
- Energy management personnel

COURSE OUTCOMES

- Apply predictive maintenance fundamentals and practices to reduce operating costs and equipment down time for higher productivity and profitability
- Application of predictive maintenance techniques for monitoring equipment performance.
- Interpret data correctly to increase equipment reliability and minimize downtime.



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A DIVISION OF ECPI UNIVERSITY

COURSE AGENDA

PREDICTIVE MAINTENANCE TECHNIQUES

- Vibration monitoring
- Thermography
- Tribology
- Ultrasonics
- Visual inspection

VIBRATION MONITORING AND ANALYSIS

- Vibration analysis applications
- Vibration analysis overview
- Vibration sources
- Vibration theory
- Machine dynamics
- Data types, formats, acquisition and analysis techniques

THERMOGRAPHY

- Types of infrared instruments
- Infrared theory
- Infrared equipment and scanning procedures
- Infrared safety
- Types of infrared problems

TRIBOLOGY

- Lubricating oil analysis
- Setting up an effective program

ULTRASONICS

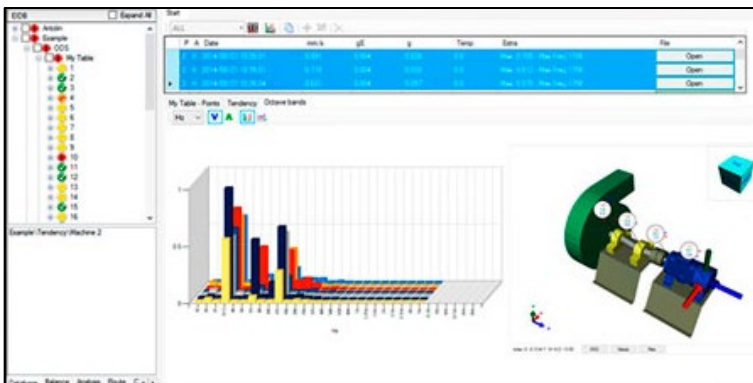
- Ultrasonic applications
- Types of ultrasonic systems
- Limitations

PARAMETERS AND ANALYSIS

- Machine-Train monitoring parameters
- Process parameters
- Operating dynamics analysis
- Failure-mode analysis

PREDICTIVE MAINTENANCE PROGRAM

- Designing and establishing a PdM Program
- Database development
- Maintaining the program



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CLIENT EQUIPMENT: HANDS-ON Field Equipment Review



Spend a half-day in your facility reviewing your equipment and predictive maintenance opportunities. This option is available for both online or on-site clients depending on your company requirements/needs.

CLIENT MUST PROVIDE

- Personal protection equipment (PPE) for all workers on site.
- A safe environment for the inspection of the current water treatment process at their own facility.
- For the online option, a video camera facilitator will be needed. NTT can provide a kit mobile use of the Zoom platform. Ask your sales rep for details.



LIVE ONLINE TRAINING EQUIPMENT



CLIENT PROVIDED COMPUTER REQUIREMENTS

- Student email address to receive access to NTT's online platform
- Internet Access through a computer (laptop or desktop)
 - 1:1 Participant minimum bandwidth requirements: 1.2 Mbps (download)
- Ability to download and view files online
- Computer with speakers, microphone and camera.
- Browser with recent updates

NTT PROVIDED STUDENT MATERIALS

- Access to NTT's online platforms:
 - Canvas for digital exercises
 - Zoom for web video conference
 - No purchase or install necessary but students will be required to test the system they will be taking the class on before the day of training.
- Hard-Copy of Texts & Industry Standards, NTT Job Aids and general consumables: notepad, pens/highlighters, tabs
- Digital-copies NTT materials including Phone Apps

