

## **Using PdM Technology to Improve Uptime**

Las Vegas, Nevada | Wed, Mar 7 - Thurs, Mar 8, 2018

This 2-day class jointly hosted by TestOil and Condition Monitoring Services Inc, focuses on the benefits of a well-rounded predictive maintenance program. By utilizing the correct monitoring tools on a routine basis, catastrophic breakdowns can be avoided or minimized. We will introduce the various technologies available, how they work best, and challenges faced when implementing a PdM practice at your facility.

### **Course Outline**

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#### **PREDICTIVE MAINTENANCE FUNDAMENTALS**

This content focuses on the benefits of a well-rounded predictive maintenance program. By utilizing the correct monitoring tools on a routine basis, catastrophic breakdowns can be avoided or minimized. We will introduce the various technologies available, how they work best, and challenges faced when implementing a PdM practice at your facility.

##### **Predictive Maintenance (PdM) Overview**

- What are the components of a predictive maintenance program?
- Examples of successful PdM programs, as well as why programs fail.
- Determine the best technology to apply, and how they all complement one other.
- How to build a PdM program that will survive budgetary and personnel changes within your organization.

##### **Vibration Analysis**

- What is it, and why does it work so well?
- What are the best applications and limits of the technology?
- How to get the best value from vibration programs. Why are spectrums and waveforms used for analysis instead of overall vibration values?

##### **Infrared**

- Overview of infrared technology
- Examples of most common electrical and mechanical applications
- How to choose the best camera

##### **Motor Circuit Testing Energized and De-energized**

- Conventional testing vs. motor circuit analysis what is the difference?
- How does motor circuit analysis work?
- Online energized Electrical Signature Analysis – what is the value?
- How to implement a PdM based motor circuit testing program

### **Ultrasound Monitoring**

- How does ultrasound detection work?
- Mechanical applications
- Electrical applications

### **Balancing and Alignment**

- What is unbalance and why do we care?
- Alignment procedures
- Corrective steps

## **OIL ANALYSIS FUNDAMENTALS**

Choosing a comprehensive training program will strengthen skills and bring employees up to a higher level of competency. The benefits can range from filling in gaps of knowledge to simply ensuring a consistent message is heard by all. This content was designed for all levels of personnel involved in the oil analysis program and is ideal for PdM Technicians, Plant Managers, Reliability Engineers, Reliability Technicians & Service Technicians.

### **Managing a Successful Program**

- Why have a lubricant analysis program?
- Who is part of the team?
- What machines will be sampled?
- When does the program begin?
- Where are the pitfalls?
- How is the program performing?

### **Fluid Analysis Overview**

- All Routine and Advanced Tests:
  - Principle
  - Limitations
  - Interferences
- Results from all tests:
  - Common cause
  - Exceptions
  - Pitfalls

### **Maintenance Strategies**

- Maintenance Strategies
  - Reactive
  - Preventive
  - Predictive
  - Proactive
  - Reliability-Centered
- Probability of Failure
  - Early (Infant Mortality)
  - Constant (Random)
  - Wear Out (Time & Condition Dependent)