Machinery Lubrication – level 1

Fundamental of Machinery Lubrication and Oil Analysis

Course Outline

In accordance with ISO 18436-4 –Category level 1

Maintenance Strategies
- Why machine fail
- The impact of poor maintenance on company profits
- Role of effective lubrication in failure avoidance
- Fundamental aspects of reliability-Centered Maintenance (RCM)
- Aspects of Conditioned-Based Maintenance (CBM)

Lubrication Theory
- Fundamental of tribology
- Functions of a lubricant
- Lubrication regimes
- Hydrodynamic
- Elesto-hydrodynamic
- Boundary

Lubrication Fundamentals -Lube oil
- Base-oils
- Additive and their functions
- Oil lubricant physical ,chemical and performance properties and etc.

Lubrication Fundamentals -Grease
- How grease is made
- Thickener types
- Grease physical ,chemical and performance properties and etc.
- NLGI classification

Lubrication Fundamental - Classification
- Viscosity (ISO /SAE)
- Grease NLGI
- Base Oil type selection
- Engine (API /ILSAC)
- API Gear oil
- AGMA Gear
- Hydraulic fluids

Solid Lubrication
- Type of Solid Lubrication
- Advantages and disadvantages of the common solid lubricants

Lubricant Selection
- Viscosity selection
- Base oil type selection
- Additive system selection
- Machine specific lubricant requirement ; hydraulic systems, Rolling element bearing, Journal bearing, Reciprocating engines , Gearing and gearboxes
- Application and environment related adjustments

Lubricant Application -Principle
- Effective use of manual delivery techniques
- Automatic delivery systems
- Distributed delivery systems
- Automated lubricators
- Maintenance of automated lubrication systems

Lubricant Storage ,Handling and Management
- Lubricant receiving procedures
- Proper storage and inventory management
- Lubricant storage containers
- Proper storage of grease guns and other lube application devices
- Maintenance of automatic grease systems
- Health and safety assurance

Oil Drains Flushing and Reservoir Management
- How to optimize and extend oil change interval
- Interval v.s. conditioned oil change intervals
- Best Practice for oil change
- How to know when to perform a flush

Oil Analysis -Fundamental
- Listen to your oil
- What oil analysis can tell you
- The right oil analysis program
- Three categories of oil analysis

Oil Sampling
- Objectives of lube oil sampling
- Sampling Method
- Managing interferences
- Bottle Cleanliness and management
- Flushing
- Machine condition appropriate for sampling

Lubricant Heath Analysis and Monitoring -level 1
- Lubricant failure mechanism
- Oxidative degradation
- Thermal degradation
- Additive depletion
- Fluid properties test method and measurement units

Lubricant contamination and control -level 1
- Particle contamination
- Moisture /Water contamination
- Filtration and separation
- Filter rating
- Filtration systems

Wear Debris Monitoring and Analysis -level 1
- Common machine wear mechanisms

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วัน และ สถานที่อบรม ปี 2555

- **27- 30 มีนาคม**
- **17- 20 กรกฎาคม**
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