TRAINING TITLE

LUBE OIL SYSTEM DESIGN & TROUBLESHOOTING

Training Duration

5 days

Training Venue and Dates

Ref. No. ME098	**Lube oil system design & troubleshooting**	**5**	**17th-21st Feb 25'**	**$5,500**	**Dubai, UAE**

In any of the 4 or 5-star hotels. The exact venue will be informed later.

Training Fees

- **$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch**

Training Certificate

Define Management Consultants Certificate of course completion will be issued to all attendees.

Course description

The proper selection and use of lubricants, as well as the care and operation of lubricating systems, is an essential part of any power plant maintenance program. Any piece of equipment with moving parts depends on some type of lubricant to reduce friction and wear and to extend its life. To choose an appropriate lubricant for a particular application and to maintain the lubricant's effectiveness, a basic understanding of lubrication theory and the characteristics of lubricants can be very beneficial.

This course will discuss lubrication fundamentals, lubricant characteristics, additives, maintenance of lubrication systems, and the selection of lubricants for common power plant equipment

Lube oil analysis provides the foundational skillset for applying best lubrication practices and product knowledge. Through Lube oil analysis, students can move away from the "old school" methods of vague, non-specific lubrication procedures and implement an excellent lubrication program in any industrial workplace.

Lube oil analysis students gain much more than pointers on lubricating a machine – they learn proven industry methods for selecting, storing, filtering and testing lubricants to boost reliability and generate lasting results in machine efficiency/maintenance. They also gain better understanding of oil analysis, so they can align their efforts with those of maintenance professionals or oil analysis experts.

Course objective

The participant will learn how to do the following :

- **Oil Analysis Fundamentals**
- **Oil Sampling – Best Practices**
- **Factors which contribute to lubricant failure / contamination**
- **Understanding of oil analysis results**

The course include the following

1. **Fundamentals of lubrication**
2. **Overview of oil lubrication methods and devices for Gas Turbines, Compressors & Pumps**
3. **Oil Analysis Fundamentals**
4. **Oil Sampling – Best Practices**
5. **Know the factors which contribute to lubricant failure / contamination**
6. **Poor Lubrication related Equipment Reliability issues.**
7. **Understanding additives, base oils and grease Thickeners**
8. **Understanding of oil analysis results**
9. **Proactive & Preventive measures to avoid oil contamination**

Who should attend?

1. Engineer, Mechanical Maintenance
2. Senior Eng, Mech Ineeranical Maintenance
3. Technician, Mechanical Maintenance

Course outlines

DAY 1

1. **Introduction**
2. **Fundamentals of Lubrication**
    - **2.1 Fluid Film Lubrication**
    - **2.2 Elastohydrodynamic Lubrication**
    - **2.3 Boundary Lubrication**

DAY 2

3. Lubricant Characteristics

- **3.1 Oil**
- **3.2 Grease**

4. Lubricant Additives

- **4.1 Surface Protective Additives**
- **4.2 Performance Enhancing Additives**
- **4.3 Lubricant Protective Additives**
- **4.4 Additive Depletion**
- **4.4 Additive Depletion**

DAY 3

5. Maintenance of Lubrication Systems

- **5.1 Oil Lubricated Systems**
- **5.2 Grease Lubricated Systems**

6. Lubricant Storage and Handling

- **6.1 Safety**
- **6.2 Oil**
- **6.3 Grease.**

DAY 4

7. Lubricant Selection

- **7.1 Lubricant Standards**
- **7.2 Turbine Oil**
- **7.3 Hydraulic Systems**
- **7.4 Hydraulic Governor Systems**
- **7.5 Wicket Gates, Radial Gates, and Butterfly Valve**
- **7.6 Gears**
- **7.7 Wire Rope**
- **7.8 Environmentally Acceptable Lubricant**

DAY 5

8. Lubricant Analysis

- **Viscosity**
- **Contamination**
- **Fuel Dilution**
- **Solids Content**

- **Fuel Soot**
- **Oxidation**
- **Nitration**
- **Total Acid Number (TAN)**
- **Total Base Number (TBN)**
- **Particle Count**
- **Spectrographic Analysis**
- **Wear Particle Analysis**
  - **Types of Wear**
  - **Ferrography**

Note: The Course Manual will contain the Handouts as reference book as well as the Presentation Slides which will be used during the Course and supported by the Handouts.