SERBA DINAMIK SDN. BHD.(266724-K)
(A member of SERBA DINAMIK Group)

Troubleshooting Techniques For Rotating Equipment Course

Introduction

Rotating equipment like turbines, compressors, turboexpanders etc are very important equipment to any process plants. Normally, there are a lot of machinery problems associate to these equipment such as misalignment unbalance, fluid induces instability etc which will interrupt the smooth running and effect its efficiency, thus interrupting the production of the plant. There are various established techniques to troubleshoot this machinery problems which are accepted and established internationally and understanding and mastering such knowledge and skills will be of extreme benefits to the operating plants in ensuring a continuous flow of production by minimizing downtime upon knowing the actual problems of the respective machines.At such, this course is tailored to educate the participants on these internationally accepted troubleshooting techniques

Objectives

1. To educate participants with the latest internationally accepted techniquesto troubleshoot rotating equipment problem.
2. To familiarize participants with the variety of troubleshooting techniques with hands-on practical exercises

Who Should Attend

√ Engineers
√ Supervisors
√ Inspectors

Cancellation & Transfer

If you are unable to attend, a substitute participant is welcome to attend in your place at no additional charge. A full refund, less 10% administrative charge, will be given if cancellation is received in writing at least 14 working days prior to the course. A 50% refund and documentation will be given if cancellation is received less than 7 days prior to the course.

Venue

SDSB Training Room / Hotel

Course Instructors

Lead Instructor
Dato' Dr. Ir. Mohd Abdul Karim Abdullah

The Managing Consultant of Serba Dinamik Sdn. Bhd. (SDSB) who has acquired more than 23 years of hands-on experience in managing, supervising, lecturing and carrying out various tasks related to turbomachinery maintenance nation-wide and internationally. Among other experience but not least is as follows: -

- Conducting public and in-house training course covering topics on precision alignment and balancing, maintenance & inspection of steam turbines, compressors and pumps, predictive / preventive maintenance and turbomachinery protection system.
- Involved in field management and supervision for overhauling of steam turbines, gas turbines, reciprocating & centrifugal compressors and pumps of various made / brand.
- Executing project control function in the job planning and work scheduling to maintain the planned work and production schedule. Analyse schedule impacts resulting from design alternatives, field change and site condition encountered and revising the project schedule when necessary to incorporate any changes.
- Planning, recruiting and managing human resources for various plant shutdown & maintenance representing company management and other construction & fabrication projects.
- Miscellaneous experience on construction & fabrication for various projects under the company involving civil activities & mechanical such as checking fabrication drawings, erection drawings, interprets engineering drawings for tender proposal, recheck piping spool isometric drawings for dimensional accuracy and conformity with plans, elevations and specification.
- Involved actively and executively as a CEO of Serba Dinamik Group.
- Profesional engineer contribution
  -Mentor for the IEM Training Scheme (Mechanical discipline)
  -Personal campaign for recruitment of more graduate engineer into being active member of IEM

Asst. Instructor :
William Ng Hock Lean

i) Vibration Condition Monitoring & Diagnosis

14 years experience in the field of vibration monitoring and diagnosis. Providing condition monitoring consultancy service, system installation, vibration sensor calibration and training to various industries. The scope of work involved in establishing measurement point and parameters, collection of vibration spectra, comparing vibration spectra, fault detection plus basic diagnosis and trending on the development of faults.

- Involved in conducting sales / presentation and promotion for companies throughout Malaysia also assist in conducting training and seminars.

ii). Occupation Noise Survey and Noise Control

Has been carrying out industrial noise survey for more than 150 factories in Malaysia conforming to the Factory and machinery Noise Exposure Regulations

iii). Computerised Maintenance Management System

Experienced in training, application and implementation of computer-aided maintenance planning and control system which keeps accurate plant register, job control, inventory management, preventive maintenance task scheduling, condition monitoring and various process parameter in vibration level, downtime analysis, etc.

Amongst the major systems supplied, installed, training and implementation are:-
- Delta Switchgears Sdn Bhd, Prai
- Malayan Flour Mills Bhd, Pasir Gudang
- Malayan Flour Mills Bhd, Lumut
- Gamuda Paper Industries, Shah Alam
- Intel Technology Sdn Bhd, Penang
- Penang Seagate Industries, Penang

Amongst the different systems that he has worked in many of this installation and implementation, the most frequent ones include:
- DataStream MP2 (USA)
- DataStream Side Arm (USA)

- During working with Petronas Carigali Sdn Bhd (Sabah Operation), he had gained some knowledge on operating the SAP/R3 (MMM) software.

Kindly send your registration form and cheque or bank draft, payable to:-
Serba Dinamik Sdn. Bhd.
7-5, Pusat Dagangan UMNO Shah Alam, Lot 8, Persiaran Damai, Seksyen 11, 40100 Shah Alam, Selangor.

Registration is on receipt of payment.
Kindly ensure early booking for the limited seats to avoid any inconvenience

Content

Day 1

- **World Class Maintenance Philosophies**
  - Preventive/predictive maintenance
  - Condition Based Maintenance
  - Reliability centered maintenance
- **Rotating Equipment Classification/definition**
  - Class one machines
  - Class two machines
  - Class three machines
- **Troubleshooting Techniques**
  - Vibration technology
  - Oil Analysis
- **Infrared Thermography (Basic)**

Technique I : Vibration Technology

- **What is Vibration**
  - Sine wave • Amplitude • Frequency
- **Vibration Display**
  - Spectrum • Orbit • Waterfall • Bode
- **Vibration severity chart based on ISO 10816-1:1995**
- **Understanding vibration detection devices:**
  - Sensors:
    - >Types and operation
      - Displacement • Velocity • Accelerometer
    - > Sensor selection
      - Consideration
  - Phase selection/diagnostic sensor
    - > Defining Phase
    - > Absolute/Relative
    - > Strobelight
    - > Reference Mark
    - > 2 channel
    - > Transducer & Strobe
- **Understanding Analyzer**
  - FFT Type • Transient Data logger
- Quiz

Day 2

- **How To Find The Root Cause Of Vibration Problems.**
  - The approach : Eliminate what it's not
  - Vibration sources and interpretation of it:
    - >Unbalance
    - >Misalignment
    - >Bent Shaft
    - >Bearing defects
    - >Gear defects
    - >Cavitation
    - >Imbalance flow
    - >Oil whirl/whip
- **Hands-on Practical Training On Simulating Vibration Source And Analysis Of It -**
- **Syndicate Group Discussion On Real Case Studies**

Day 3

- **Electrical motor Analysis & Practical**

TECHNIQUE II: Oil Analysis

- **Lubrication fundamentals**
  - Oil formulation and its importance
  - Six key functions of lubricating oils
  - In depth look at additives and their functions
- **Identifying root causes with Oil Analysis**
  - Oil sampling best practices
    - >Using primary and secondary sampling points
  - Oil Analysis:
    - >Particle count.
    - >Elemental test: Element content & properties
    - >Ferrography
  - Data interpretation workshop
- **Lubrication management best practices**
- **Infrared thermography (Basic)**

Registration Form

Course Fee : RM3,000.00

☐ Yes! Please register the following participants for course
"Troubleshooting Techniques For Rotating Equipment Course"

☐ I am unable to attend but please put me on your mailing list

No.	Name (Dr/Mr/Mrs/Ms)	Designation

Approving Manager/Contact Person:
Designation:
Company Stamp: