

# OBJECTIVES:

- 1. To provide the insight of why equipments breakdown.
- 2. To understand the real objectives of maintenance.
- 3. Define why equipments deteriorate.
- 4. How to use the time base schedule maintenance.
- 5. How to use the condition base predictive maintenance.
- 6. Strategize for zero unplanned equipment failures.

# WHO SHOULD ATTEND:

- a) All Maintenance
- b) PM
- c) Equipment personals technicians
- d) Supervisors
- e) Engineers
- f) Managers

### INTRODUCTION

There is a traditional attitude on the part of maintenance that all breakdowns are the same and are all equally bad. This acceptance of the status quo is now intolerable and unacceptable in maintenance. A breakdown should be viewed with an analytical eye to see what difference it Made to PQCSDM. Most failures are the result of deterioration which when left unattended, results in breakdown. As such a strong scheduled and predictive maintenance is a must if one wants to eliminate such unpredictable failures.

This program provides the required know-how for participants to understand how to implement both the time base concept and the condition Base concept of preventive maintenance.

### **OUTCOME OF THE PROGRAM:**

Participants will understand and able to structure a good equipment breakdown prevention Program.

- a) They will know what causes equipments to breakdown.
- b) What is the real objectives of PM
- c) How to select critical equipment and
- d) Systematic implementation of PM.
- e) TBM Vs CBM concepts
- f) how to develop a PdM cycle.
- g) Use of condition-based maintenance.
- h) able to practice predictive maintenance techniques.



# **COURSE CONTENT**

#### Module 1: Introduction to "maintenance"

- Definition of good maintenance.
- Why equipment need maintenance.
- Why equipments keep failing.
- Equipment cost contribution to overall manufacturing.
- Objectives of good maintenance
- 8 zero breakdown strategy.

#### Module 2: Introduction to scheduled maintenance.

- What is scheduled maintenance.
- Six life cycle of deterioration.
- Why current planned maintenance are not effective.
- 12 steps systematic planned maintenance.

#### **Module 2.1 : Getting started for schedule** planned maintenance.

- Step 1. determine the area of responsibility.
- Step 2. determine equipment criticality.
- Step 3. determine component criticality.
- Step 4. preparing necessary documents.

#### Module 2.2: Prepare the checklist and determine schedule.

- Step 5. preparing planned maintenance checklist.
- Step 6. determine planned maintenance schedule. Physical effects monitoring.

#### Module 2.3. Executing the planned maintenance.

- Step 7. training the pm technician.
- Step 8. prepare tools and replacement parts.
- Step 9. performing the pm as per schedule.
- Step 10. buy off planned maintenance activity.

#### Module 2.4: Assessing the planned maintenance effectiveness.

- Step 11. monitor and measure effectiveness using MTBF.
- Step 12. continuously improve pm effectiveness.

#### **Module 3: Predictive Maintenance.**

- Definition of predictive maintenance.
- Objectives of predictive maintenance.
- Myths about predictive maintenance.
- Why on-condition- monitoring.
- How to determine p-f curve
- what is p-f interval
- The PdM cycle.

# **Module 3.1: Predictive Maintenance Technique 1**

- Physical monitoring.
- Spc type monitoring.
- Equipment efficiency monitoring.
- Quality effect monitoring.
- Productivity efficiency monitoring.

## **Module 3.2: Predictive Maintenance Technique 2**

- Dynamic monitoring.
- Particle monitoring.
- Chemical monitoring.
- Temperature effects monitoring.
- Electrical effects monitoring.