

RSA RELIABILITY & MAINTENANCE CONSULTANCY FIRM

Home Office :Block 27, Lot 10, Phase III, Golden City, Do. Dila, Sta. Rosa, Laguna

Dear Sir / Mam,

- We would like to offer your company an opportunity to uplift the technical competence of your maintenance human resource to a level of world class excellence by capturing Industries Maintenance Best Practices. These course provides an in debt details and wealth of information on Maintenance Best Practices. We are confident that these strategies are what your company needs to improve your equipment's reliability as you lower your operating cost.
- With consistent focus on output and productivity and secondary to maintenance and reliability, the latter results to frequent failures, unscheduled costly repairs & unexpected breakdowns, inevitable high cost of maintenance that calls for the adoption of a more effective maintenance strategy that is truly world class.
- Finally, it is also undisputed that among the challenges every maintenance manager face is maximizing their equipment's reliability through a traditionally, and often self-designed preventive maintenance system. ***This practice is the very reason why approach in maintenance management remain to be reactive rather that proactive.*** Truly, these courses are designed for every maintenance engineers and professionals whose mandate is to optimize their equipment's capacity and reliability at the lowest possible cost.
- It is in the foregoing light that we designed these following courses and can be made available to be conducted In-house in your plant for a wider participation of your people.

RSA Available Seminars On Maintenance Best Practices

- Lubrication Strategy - Understanding The Importance of Oil Contamination Control - (2 or 3 days)
- Reliability-Centred Maintenance for Industries - (3 days)
- Planned Maintenance - Four Phases To Zero Unplanned Breakdown Strategy - (3 days)
- Understanding Total Productive Maintenance - JIPM Approach - (3 days)
- Understanding Condition-Based Maintenance - Total Approach To Failure Prediction & Analysis - (2 or 3 days)
- Root Cause Failure Analysis for Equipment - Uncovering The Root of the Problem - (2 or 3 days)
- Understanding TPM's Autonomous Maintenance Steps 1 - 3 (Part 1) - (2 days)
- Meaningful Measure of Equipment's Performance - Understanding OEE, MTBF, MTTR, MTBA - (2 days)
- Basic Maintenance Concept - Gearing From Reactive to Proactive - (1 day)
- Maintenance Strategies Part 1 - Overview on Predictive Maintenance & Lubrication Strategy - (2 days)
- Maintenance Strategies Part 2 - Overview on RCFA and Basic Maintenance Concept - (2 days)
- Optimizing Equipment's Reliability - Gearing From Reactive To Proactive Maintenance - (3 days)
- World Class Maintenance Management - The 12 Disciplines - (3 days)
- Relationship Between Equipment Losses and Overall Equipment Effectiveness - (1 day)
- Basic Hydraulic Theory, Principles and Application - (1 day)
- Achieving Proactive Maintenance - A Culture Of Reliability - (1 day)
- Optimizing Preventive Maintenance Strategy - (2 days)

• Should you be interested for In-House training's you can reach me on the following :

- Contact Number : 049-837-07-64
- Cell Phone : 0920-924-61-63
- Email : rolaa12@yahoo.com

All the best,



Rolando S. Angeles
Reliability Consultant

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COURSE TITLE : (CODE - LUB)

Adopting Lubrication Strategy - Understanding Oil Contamination Control

COURSE OVERVIEW :

- This course covers a wealth of information on the need to implement a Lubrication Strategy in your plant. Learn why world class companies are adopting Oil Analysis, their benefits and what it can do to your plant.
- One of the problems most industries are facing is that we always end up being reactive despite our best efforts on Preventive Maintenance, frequency of unexpected failures and breakdowns always results to high cost of maintenance due to lack of an effective maintenance strategy. It is with our best intention to share with you information and resources which can be adopted by your company to minimize their lubrication cost.

COURSE OBJECTIVE :

- Provide basic knowledge on proper lubrication and contamination control
- Understand the importance of Oil Contamination in our equipment
- Generate an awareness on our people on how oil is being contaminated and the need to analyze its contaminants
- Have an understanding on the benefits we can reap on implementing a lubrication strategy in our plant and most specially on how we can save on costs

DURATION : 2 Days

COURSE MODULES :

Module 1 : All There Is To Know About Oil

- Definition of oil
- SAE and API Properties
- Purpose and properties of oil

Module 2 : Understanding Oil Contamination

- How does oil gets contaminated ?
- How to reduce oil contamination ?
- Contamination Awareness Control
- Effects and Sources of Water Contamination

Module 3 : Total Contamination Control

- Proper Storage Room for lube oils
- Proper Oil Handling

Module 4 : Understanding Wear

- Why do mechanical components wear ?
- Understanding different types of wear

Module 5 : Understanding Filtration

- Nominal and Absolute Filtration
- Beta Rating of Filters
- By-pass filtration for engines

Module 6 : Different Oil Analysis Tests

- Level 1 : Test for Oil's Health & Cleanliness
- Level 2 : Test for Oil's Physical & Chemical Properties
- Level 3 : Wear Metal Debris Analysis Tests

Module 7 : Starting A Lubrication Strategy In Your Plant

- Step by step approach on implementing lubrication strategy

Closing Remarks

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COURSE TITLE : (CODE - CBM)

Understanding Condition-Based Maintenance - Total Approach To Failure Prediction and Analysis

COURSE OVERVIEW :

- This course shows the importance and benefits of a Condition-Based Maintenance (CBM) program. The benefits of such a program will be realized in greater equipment reliability and longevity while at the same time enhancing budgetary cost containment goals.
- Operations and Maintenance will make a sound maintenance and operating decisions based on actual equipment performance rather than relying on the old standard of Time-Based Maintenance interval or less desirable circumstances which allows us to wait for the equipment to fail.
- According to maintenance specialists, at least \$ 250 billion of parts is wasted. Bad maintenance is responsible for equipment failures, disrupted production schedules, delays in deliveries and poor production quality.

COURSE OBJECTIVE :

- Introduce the concept of CBM as part of our day to day maintenance activity
- Learn why CBM is more cost effective than conventional Preventive Maintenance
- Provide a solid foundation for people moving towards CBM strategy
- Learn the different techniques on how the condition of an equipment can be measured
- Provide a basic foundation on how to start a CBM program in your plant

DURATION : 2 Days or 3 Days

COURSE MODULES :

Module 1 : Changing the way we think about failures

- Facts about today's maintenance
- Are we accepting failures in our plant
- Defining maintenance and consequences of inadequate maintenance

Module 2 : Why Preventive Maintenance is limited ?

- Understanding the 6 failure pattern
- P-F Curve
- Why PdM is better than PM ?

Module 3 : Understanding Condition-Based Maintenance

- Maintenance belief
- CBM defined and history
- Why use Condition-Based Maintenance ?
- How is CBM related to Predictive Maintenance
- Understanding CBM as a Maintenance Strategy

Module 4 : Common CBM Techniques

- Oil Analysis Monitoring
- Infra-Red Monitoring
- Ultrasonic Monitoring
- Vibration Monitoring

Module 5 : CBM Workshop

- CBM Lessons learned

Closing Remarks

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COURSE TITLE : (CODE - RCFA)

Root Cause Failure Analysis For Equipment - Uncovering The Root Of The Problem

COURSE OVERVIEW :

- It is a common practice due to lack of time and information that equipment and system failures are often investigated at a superficial level. As a result, both operators and maintenance keep running unreliable plant which cause repeated losses and become experts at fixing rather than eliminating the failure. This seminar, allows the participants to apply several practical systematic methods for analyzing performance problems to uncover root cause that will eventually end recurring problems making us proactive
- From a Preventive Maintenance viewpoint that they will merely change or replace the part that fail and if this part always fails, we make sure that there is enough stock in the warehouse

COURSE OBJECTIVE :

- Understand the importance of Root Cause Failure Analysis as a tool in achieving Proactive environment in our workplace
- Provide an understanding on why we need to perform Root Cause Failure Analysis
- Provide an opportunity to practice Root Cause Failure Analysis on a real workplace problem
- Study the different types of wear why a component fails and how to control them

DURATION : 2 Days or 3 Days

COURSE MODULES :

Module 1 : Proactive Maintenance

- Different maintenance tasks defined
- Why proactive maintenance
- Understanding how to apply the different maintenance tasks

Module 2 : Understanding Root Cause Failure Analysis

- Physical, Human and Latent Cause of Failures
- RCFA Logic Tree Diagram
- Top reasons why RCFA fails
- Why we need to perform RCFA

Module 3 : Why do people commit mistakes ?

- Human errors defined
- Antropometric factors
- Human sensory factors
- Physiological factors
- Psychological factors
- Types of violations

Module 4 : How RCFA Analysis works ?

- RMS Titanic Case Study
- Real Root Cause why the RMS Titanic Sank

Module 5 : Understanding Mechanical Failures

- Understanding wear
- Different types of wear

Module 6 : RCFA Workshop

- Determine the Physical, Human and Latent Cause of a pump failure using the RCFA Logic Tree

Bonus Module : Understanding Bearing Failures

Closing Remarks

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COURSE TITLE : (CODE - PM4P)

Planned Maintenance - 4 Phases To Zero Unplanned Breakdown

COURSE OVERVIEW :

- This course covers the principles of TPM's Planned Maintenance 4 Phases to Zero Unplanned breakdown strategy.
- Phase 1 deals with Stabilizing MTBF, main activity involved here is restoration by establishing Basic Equipment Condition in our equipment.
- Phase 2 deals with Addressing Equipment's Weaknesses in Design and addressing them to prolong the lifespan of parts by analyzing their root cause
- Phase 3 and 4 of Planned Maintenance deals with developing a Maintenance Tasks Selection Diagram in order to classify which parts will fall on the different tasks at hand. Phase 4 of Planned Maintenance is about Predicting Failures through a system known as Condition-Based Maintenance and the use of Predictive Maintenance techniques to monitor equipment's condition.

COURSE OBJECTIVE :

- Provide a detailed and structured approach through the application of TPM's Planned Maintenance
- Realize the importance of establishing basic equipment condition in our equipment's
- Provide an understanding on what Planned Maintenance is and what it wants to achieve
- Learn how to implement the 4 Phases of Planned Maintenance
- Learn the 6 failure pattern and how it affects us in our day to day maintenance activities

DURATION : 3 Days

PREREQUISITE : TPM OVERVIEW

COURSE MODULES :

Module 1 : The Need To Change The Maintenance Culture

- Problems facing our industry
- Are we accepting failures in our plant ?
- Starting an improvement reliability strategy

Module 2 : Planned Maintenance Overview

- Planned Maintenance defined
- Summary of 4 Phases of Planned Maintenance
- PM Preparatory Stage
- Different Planned Maintenance versions
- Knowin MTBF and MTTR

Module 3 : Phase 0 : Preparatory Stage

- Establishing PM Vision and Mission
- Importance of Machine Ranking
- What constitute a breakdown
- Pilot Machine Selection
- Phase 0 Flow of Activities

Module 4 : Phase 1 : Stabilize MTBF

- The need to restore
- Three main activities in Phase 1
- Phase 1 Flow of Activities

Module 5 : Phase 2 : Lengthen Equipment Lifespan

- Addressing design weaknesses
- Different types of wear / deterioration
- Phase 2 Flow of Activities

Module 6 : Phase 3 : Periodically Restore Deterioration

- Preparing FMEA
- Consequences of failure
- Maintenance Algorithm

Continuation

COURSE TITLE :

Planned Maintenance - 4 Phases To Zero Unplanned Breakdown

COURSE MODULES :

Module 7 : Phase 4 : Predict Equipment Life

- CBM defined
- Other Maintenance tasks options
- Phase 3 and 4 Flow of Activities

Module 8 : Applying The 4 Phases of Planned Maintenance

- Planned Maintenance Workshop
- Phase 3 and 4 Workshop
- Planned Maintenance Actual Case Study

Closing Remarks

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COURSE TITLE : (CODE - TPM)

Total Productive Maintenance - JIPM Approach

COURSE OVERVIEW :

- In today's manufacturing industries, more and more companies are seeking ways to improved their plant's performance through the application of continuous improvement tools such as TPM. Although it originated from Japan, TPM is not culture bound but rather its principles can be applied and adopted by any culture so long as the people accept TPM as a way of life.
- TPM improves the manufacturing process through the utilization of employee involvement, empowerment and closed loop measurement of results

COURSE OBJECTIVE :

- Provide a clear picture on Total Productive Maintenance and how to successfully apply it
- Provide an overview on TPM as based from JIPM standards and consultants and not locally know how consultants
- Know what are the pitfalls of TPM and why many have failed in their implementation
- Challenge you to the JIPM PM Prize

DURATION : 2 Days or 3 Days

COURSE MODULES :

Module 1 : Introduction To TPM

- History of TPM
- TPM defined
- TPM and RCM strengths

Module 2 : TPM 12 Developmental Steps

- TPM 8 Pillars
- Goals of each TPM pillar
- Involvement of TPM will be everyone

Module 3 : TPM Pitfalls and why many have failed

- Mistakes in TPM implementation
- Top 13 reasons why TPM fails in most companies
- What TPM is not

Module 4 : Implementing TPM

- Key points in TPM implementation
- What we need to accomplish in TPM

Module 5 : Equipment Losses

- Breakdown Loss
- Set-up and Adjustment Loss
- Idling and minor stoppage
- Design speed loss
- Start-up loss
- Defect and rework loss

Module 6 : Understanding OEE

- OEE defined
- Availability, performance rate & quality rate

Module 7 : JIPM Certification

- Types of JIPM Awards
- Criteria for JIPM Awards
- Steps in achieving TPM Awards

Module 8 : TPM Workshop

- Workshop on OEE
- Planned Maintenance Actual Case Study

Closing Remarks

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COURSE TITLE : (CODE - BMC)

Basic Maintenance Concept - Reactive, Preventive, Predictive and Proactive Mtce

COURSE OVERVIEW :

- This course provides an overview on the different maintenance strategies that can be adopted in your plant. Learn that the application of these strategies will depend upon the consequences of the failure itself and if the consequences of the failure is severe all efforts should be exhausted to reduce, minimize or totally eliminate the failure itself. This course also provides us an understanding on the different strategies and not only confining ourselves to Preventive & Reactive Maintenance tasks

COURSE OBJECTIVE :

- Provide an understanding on the different maintenance strategies and when to effectively apply them
- Learn that the most effective maintenance strategy is being able to apply all of them simultaneously
- Learn the limitations of Preventive Maintenance and when to effectively apply it
- Learn why doing Proactive Maintenance is the most cost effective strategy of them all

DURATION : 1 Day

PREREQUISITE : NONE

COURSE MODULES :

Module 1 : The Need To Maintain

- The need to have an effective maintenance
- Understanding the 6 Failure Patterns
- Common maintenance belief

Module 2 : Understanding Reactive Maintenance

- Run To Fail
- Redundancy or Standby applications
- When to use Reactive Maintenance

Module 3 : Understanding Preventive Maintenance

- Relationship between age and wear
- When to use Preventive Maintenance
- Limitations of Preventive Maintenance

Module 4 : Understanding Predictive Maintenance

- Condition-Based Maintenance Defined
- Understanding the P-F Curve

Module 5 : Understanding Proactive Maintenance

- Addressing the Root Cause of the problem

Module 6 : Selecting The Best Maintenance Tasks

- World Class Maintenance Structure
- Sample on when to use the different maintenance tasks
- Basic Maintenance Workshop

Closing Remarks

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COURSE TITLE : (CODE - AM1)

Understanding TPM's Autonomous Maintenance Steps 1 - 3 Activities (Part 1)

COURSE OVERVIEW :

- From the traditional thinking Operators operate their machine and Maintenance Fix it to a new concept that operators take the responsibility of taking care of their own equipment. This detailed course is a 2 part training which details the 7 Steps on How To Implement Autonomous Maintenance successfully and what it will achieve if correctly applied in their workplace. It will all start from initial cleaning by establishing Basic Equipment Condition & upgrading the skills of the operators to perform minor repairs and adjustments in their machines so that maintenance people can perform specialized tasks in their equipment's such as modifications, and diagnostics or condition-based maintenance

COURSE OBJECTIVE :

- Provide an overview and awareness on the benefits that can be derived in implementing AM Pillar
- Understand the detailed step by step approach in implementing Autonomous Maintenance Pillar
- Develop reliable manufacturing assets through the involvement of all shop floor people in a structured and detailed program
- Develop an in-house Autonomous Maintenance people that will drive the implementation of this pillar

DURATION : 2 Days

PREREQUISITE : TPM OVERVIEW

COURSE MODULES :

- Module 1 :** **Brief TPM Overview**
 - Basic Concept of TPM
 - 12 Developmental Steps
 - OEE Measurement
- Module 2 :** **Overview on Autonomous Maintenance**
 - Concept of Autonomous Maintenance
 - Establishing Basic Equipment Condition
 - Importance of Cleaning
- Module 3 :** **Step 0 : Training and Preparation**
 - PM support and guidance for Jishu-Hozen Activities
- Module 4 :** **Step 1 : Initial Cleaning**
 - Different types of abnormalities
 - Flow of activities for Step 1
- Module 5 :** **Step 2 : Address Sources of Contamination**
 - Concept of Step 2
 - Flow of activities for Step 2
- Module 6 :** **Step 3 : Preparation of Tentative AM Standards**
 - Concept of Step 3
 - Flow of activities for Step 3
- Module 7 :** **Jishu-Hozen Workshop**
- Bonus Module :** **Visual Controls**
 Basic Lubrication
- Closing Remarks**

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COURSE TITLE : (CODE - RCM)

Reliability-Centred Maintenance For Industries

COURSE OVERVIEW :

- This course covers the principles of RCM which is a process used to determine the maintenance requirement of any physical asset in its present operating context
- It entails us by asking seven questions about our asset or system that is being maintained
 - 1) What are the functions and associated performance standards of the asset in its present operating context ?
 - 2) In what ways does it fail to fulfill its functions ?
 - 3) What causes each functional failure ?
 - 4) What happens when each functional failure occurs ?
 - 5) In what ways does each failure matters ?
 - 6) What can be done to predict or prevent the failure ?
 - 7) What should be done if a suitable proactive tasks cannot be found ?

COURSE OBJECTIVE :

- Provide a deeper understand on what it takes for our maintenance to be most effective and efficient
- Realize that maintenance tasks will be based from the consequences of the failure itself
- Know when to use the different maintenance tasks at hand with the aid of a decision diagram
- Learn the 6 failure pattern and how it affects us in our day to day maintenance activities

DURATION : 3 Days

PREREQUISITE : NONE

COURSE MODULES :

Module 1 : Changing the maintenance culture

- Problems facing our industry
- Domino effect of being reactive
- Structured maintenance system

Module 2 : Introduction to RCM

- Maintenance defined and belief
- RCM evolution in the Airline Industry
- 6 Failure Patterns
- Proactive Maintenance
- Brief history of RCM
- Strengths of RCM and TPM
- Benefits of RCM

Module 3 : RCM Information Worksheet

- Preparing Functions
- Functional Failures
- Failure Modes
- Failure Effects
- Exercise on Functions
- Exercise on RCM Information Worksheet

Module 4 : Failure Consequences

- Hidden and Evident Failures
- Safety and Environmental Consequences
- Operational Consequences
- Non-Operational Consequences
- Exercise on Hidden and Evident Failures
- Exercise on Consequences of Failures

Continuation

COURSE TITLE :

Reliability-Centred Maintenance For Industries

COURSE MODULES :

Module 5 : Different Maintenance Tasks Defined

- Preventive Maintenance Tasks
- Condition Base Tasks
- Functionality Checks
- Run to fail
- Redesign / Modification

Module 6 : RCM Decision Worksheet

- Decision Worksheet / Algorithm
- Maintenance Tasks Selection Diagram
- Applying the different maintenance tasks
- When not to use OER
- Tips on conducting the analysis
- Maintenance Maxims

Module 7 : RCM Workshop Part 1

Module 8 : RCM Workshop Part 2

Closing Remarks

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COURSE TITLE : (CODE - MMP)

Meaning Measures of Equipment's Performance - Understanding OEE, MTBF, MTBA, MTTR and Weibull Analysis

COURSE OVERVIEW :

- As maintenance professionals we know the importance of maintenance to our organization goals and objectives. The difficulty is in translating the overall company strategy to a meaningful measure of performance. The old saying that "if you can't measure it, you can't manage it " is as true for performance as for anything else. Much of what is meant by performance often appears to be unmeasurable. It's OK looking at how things happened after the event & traditional measures can do this. What a manager needs is a much more dynamic, real time view of performance as it happens. People are central to this and qualities like motivation, confidence, leadership & perception are what's needed to be understood. Getting quantifiable results and dependable measurements is crucial if resource & time are to be used to good effect.

COURSE OBJECTIVE :

- Understand the need to measure equipment's performance and the different maintenance key performance indicators
- Learn to sell performance measurement as a tool for improvement
- Learn to use meaningful measures to support equipment reliability
- Determine the right measures for your industry

DURATION : 1 Day / 2 Days

PREREQUISITE : NONE

COURSE MODULES :

- **MODULE 1 : Why Measure Performance ?**
- **MODULE 2 : Understanding Equipment Losses**
 - Breakdown Losses
 - Set-up and Conversion Losses
 - Idling and Minor Stoppages
 - Design Speed Losses
 - Start-Up Losses
 - Defect and Rework Losses
- **MODULE 3 : Understanding Overall Equipment Effectiveness (OEE)**
 - Components of OEE and relationship between equipment losses
 - How to compute OEE
 - Workshop on OEE
- **MODULE 4 : Maintenance Mean Time Indicators**
- **MODULE 5 : Understanding MTBF and Failure Rate**
 - How to compute MTBF
 - When to use MTBF
- **MODULE 6 : Understanding MTTR**
 - How to compute MTTR
- **MODULE 7 : Understanding MTBA**
 - Steps for getting MTBA Snapshots
 - Case Study on MTBA
- **Closing Remarks**

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COURSE TITLE : (CODE - OER)

Optimizing Equipment Reliability - Gearing From Reactive to Proactive Maintenance

COURSE OVERVIEW :

- OER is a method for improving the effectiveness of current maintenance programs and strategies. It starts with the existing maintenance program used within the plant. Working in cross-functional teams from the shop floor, the team identifies what type of duplication exists within their own environment and what elements of the current maintenance program are useful and what are inappropriate. OER team establishes the most efficient & effective method for managing the maintenance of the asset.

COURSE OBJECTIVE :

- Provide a deeper understanding on what it takes for our maintenance to be most effective
- Realize that the best maintenance tasks will always be based on the consequences of the failure it is meant to prevent
- Compare the 2 approaches of RCM and OER and learn why OER will be much faster to implement with the same results as RCM
- Learn how to improve our current structure of Preventive Maintenance System
- Learn the 6 failure patterns and how it affects us in our day to day maintenance activities

DURATION : 3 Days

COURSE MODULES :

- **MODULE 1 : Introduction - Changing The Maintenance Belief**
 - Domino Effect Of Being Reactive
 - Understanding The 6 Failure Patterns
- **MODULE 2 : Understanding The Different Maintenance Tasks**
 - Reactive, Preventive, Predictive and Proactive Maintenance
 - Workshop On The Different Maintenance Tasks
- **MODULE 3 : Using The Different Maintenance Tasks**
 - Sample Case Study : Ball Bearing
- **MODULE 4 : Understanding The Consequences Of Failure**
 - Hidden and Evident Failures
 - Environmental and Safety Consequences
 - Plant Shutdown Consequences
 - Operational and Non-Operation Consequences
 - Exercises on Consequences
- **MODULE 5 : Deriving The RCM Information Worksheet**
 - RCM FMEA - Information Worksheet
- **MODULE 6 : Step by Step Approach On OER**
 - OER Information Worksheet
 - OER Decision Worksheet
- **MODULE 7 : Benefits of OER**
- **MODULE 8 : Principles of Equipment's Reliability**
- **Closing Remarks**

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COURSE TITLE : (CODE - WCM)

NEW

World Class Maintenance Management - The 12 Disciplines

COURSE OVERVIEW :

- Being World Class means the ability to compete anywhere in the world. World Class Maintenance Management simply means the art & science of managing maintenance resources performed by best in class industries from around the world. But in most industries, the question is often raised, is it really possible to control maintenance or the pressure over maintenance is controlling us.
- This course provides a discussion on how failure occurs in 3 zones and why most of our efforts on maintenance only addresses one zone which is the wear out failures. This course also covers the 12 Discipline in order to improve equipment's reliability. These 12 Disciplines are categorized into 3, The Basics, The Strategies & Advance Discipline. Learn what these disciplines are that most World Class Companies perform.

COURSE OBJECTIVE :

- Understand the need for an effective and World Class Maintenance Management Structure
- Understand when to effectively use each of the different maintenance strategies in order to fully improve equipment's reliability
- Provide a basic understanding on the 12 Disciplines of Maintenance Management
- Understand the real focus of a true and meaningful maintenance management structure

COURSE MODULES : Duration 3 Days

Day 1 -

• MODULE 1 : Understanding Equipment Failures

- The Truth About Equipment Failures
- Three Type Of Failure Zones - Infant, Random and Wear Out
- Understanding The 6 Failure Patterns

• MODULE 2 : Changing Our Maintenance Culture From Reactive To Proactive

- Breaking The Reactive Chain Of Mind

• MODULE 3 : Understanding World Class Maintenance Management

- Maintenance Management Defined
- Introduction To The Disciplines

• MODULE 4 : Maintenance Management Basic Discipline

- Discipline 1 : Establishing Training Skills and Education
- Discipline 2 : Autonomous Maintenance
- Discipline 3 : Addressing Basic Equipment Condition
- Discipline 4 : Measuring Performance Indicators and KPI's
- Discipline 5 : Developing A Preventive Maintenance Strategy

Day 2 -

• MODULE 5 : Maintenance Management Strategies

- Discipline 6 : Spare Parts Management Strategy
- Discipline 7 : Life Cycle Management Strategy
- Discipline 8 : Lubrication Strategy
- Discipline 9 : Root Cause Failure Analysis
- Discipline 10 : Reliability Improvement Strategies

Day 3 -

• MODULE 6 : Advance and Specialized Discipline

- Discipline 11 : Condition-Based Maintenance
- Discipline 12 : Adopting Computerized Maintenance Management Software

• MODULE 7 : Applying The Disciplines

• MODULE 8 : Learning's & Principles of Equipment's Reliability

• Closing Remarks

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COURSE TITLE : (CODE - OEE)

Relationship Between Equipment Losses and Overall Equipment Effectiveness

COURSE OVERVIEW :

• This training is designed to show that Total Productive Maintenance (TPM) goes far beyond traditional maintenance boundaries to attack equipment-related waste, including: breakdown, set-up and conversion, design speed losses, minor stoppages, start-up losses, tooling changes, defects and reworks. Participants are provided a method to proactively maintain machines and equipment at their peak and optimum condition by understanding how to effectively deal with these equipment losses

COURSE OBJECTIVE :

- Understand Equipment Losses and its major components including how to relate these losses to OEE
- Gather and analyze Overall Equipment Effectiveness (OEE) data to determine equipment constraints
- Identify the six major equipment-related losses and how to minimize them in order to increase OEE
- Understand how to deal with these individual equipment losses and the best maintenance indices to track them

COURSE MODULES : 1 Day

• MODULE 1 : Breakdown Loss

- How to distinguish a breakdown or failure
- MTBF and MTTR to measure breakdown loss
- Understanding Primary and Secondary failures
- How to reduce breakdown loss
- Lessons about failures

• MODULE 2 : Set-Up and Conversion Loss

- Set-up and conversion defined
- Shigeo Shingo on reducing set-up time

• MODULE 3 : Start-Up Losses

- Start-up failure defined
- Understanding Infant Mortality and Random Failures
- How PM affects start-up losses
- How to reduce start-up losses

• MODULE 4: Idling and Minor Stoppages

- Understanding chokotei
- Best TPM Pillar to reduce Minor Stoppages
- MTBA Snapshot for Minor Stoppages

• MODULE 5 : Design Speed Loss

- Design Speed Loss define
- How to improve design speed loss

• MODULE 6 : Defect and Rework Losses

- Understanding Chronic Defect Structure
- Best Analytical tool to address chronic defects

• MODULE 7 : Understanding Overall Equipment Effectiveness

- Components of OEE and relationship between equipment losses
- How to compute OEE

• Closing

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COURSE TITLE : (CODE - PRO)

Understanding Proactive Maintenance – A Culture Of Reliability

COURSE OVERVIEW :

- This course will provide the participants a basic understanding why a typical industry remains reactive despite their best efforts on Preventive Maintenance and top of the line softwares. Understanding that being proactive starts by acquiring the right knowledge on reliability and best practices and that achieving a state of proactiveness starts by changing the way we think about failures. This 1 day course will allow us to understand a deeper structure about how failure occurs in three patterns and if PM can catch them all.

COURSE OBJECTIVE :

- Provide a basic understanding why industry remains reactive despite best efforts on Preventive Maintenance
- Understand the feasibility of when to use or not to use Preventive Maintenance
- Understand how failure occurs in three patterns, Infant Mortality, Random and Age-related failures
- Understand what Proactive Maintenance is all about and if it is the right choice all the time

COURSE MODULES : 1 Day

• MODULE 1 : The Truth About Equipment Failures

- What industry is reactive ?
- What maintenance can do after all

• MODULE 2 : Understanding The Feasibility of Preventive Maintenance

- Does all parts really wear out ?
- Why Preventive Maintenance will not capture all failures
- Understanding the three types of failures
- Reason why industry is reactive

• MODULE 3 : Understanding Proactive Maintenance

- Proactive Maintenance defined
- Achieving a culture of reliability in your plant

• MODULE 4: Lessons on Reliability

- Reflecting on the 12 Principles of Reliability

• Closing