

# Maintenance – Roadmap to Reliability

November 20 to 22, 2019 @ El Cielito Hotel, Sta. Rosa, Laguna



**Phase 1: Restoration and Addressing the Basics**



**Phase 2: Addressing Design Weaknesses**



**Phase 3: Improving the Maintenance Task through RCM**



**Phase 4: Predict Equipment Lifetime**

## Reasons why you need to attend this training

**LEARN** how to start-up and organize the Maintenance pillar and understand the most important preparations needed to improve the reliability of industry's assets and equipment.

**PROVIDE** a crystal clear direction and roadmap for maintenance on how the highest reliability of your equipment and assets in your industry

**LEARN** what support operators needs from Maintenance.

**LEARN** the details on how to integrate RCM (Reliability-Centered Maintenance) into the higher Phases/Steps of Planned Maintenance. Find out if TPM and RCM is contradict or complement to each other.

**DISCOVER** how to reduce unplanned breakdowns in your equipment and assets.

**LEARN** how to implement Planned Maintenance right the first time and avoid costly mistakes and seeing what works and not.

**LEARN** how to prepare and develop the Maintenance "MASTER PLAN".

**LEARN** what it takes to implement Planned Maintenance right the first time.

**LEARN** how your industry can save on cost on doing Maintenance

**FINALLY** ask yourself, is my plant ready for the Planned Maintenance experience?



**ENROLL NOW !**



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## Package Includes

- Morning / Afternoon meals and Lunch
- Complete Handouts on the course
- Maintenance – Roadmap to Reliability Book
- Exercises and Handouts on MRR
- Case Study on Planned Maintenance
- Certificate of completion
- MRR book (372 pages)

## Who Should Attend

- Maintenance and Reliability Managers
- TPM Office, Facilitators and Coordinators
- Facilities/Utilities Managers
- Preventive/Predictive Maintenance Group
- Reliability Engineers and Managers
- Operations and Production Managers
- Top Management and Decision Makers
- Continuous Improvement Groups
- Maintenance Staff
- Plant and Facility Engineering Staff
- Rotating Equipment Engineers
- Electrical and Mechanical Personnel
- CBM and PdM Personnel
- Maintenance and Reliability Managers
- Maintenance and Technical Support Group
- Plant Asset Managers
- People in Charge of Planning and Scheduling
- People Involved in Repairs and Troubleshooting
- Head of Maintenance Organization
- People in Charge of Safety and Environment
- Maintenance Engineers
- People Involved in Reliability and Maintenance
- Reliability Engineers
- Maintenance Supervisors

## About the Resource Speaker

Rolly, is a seasoned international reliability and maintenance consultant with 29 years of experience in the field. He had been invited in different countries and have conducted reliability and maintenance trainings in UAE, China, Thailand, Brunei, India, Malaysia, Indonesia, Nigeria, Botswana, Bangladesh and South Africa. His portfolio of maintenance trainings include Maintenance Management courses such as Total Productive Maintenance, Lubrication and Tribology, Condition-Based Maintenance, Reliability-Centered Maintenance (RCM), Root Cause Failure Analysis, Planned Maintenance, World Class Maintenance Management, The Twelve Disciplines, Oil Contamination Control, Maintenance Indices and KPI's, Maintenance Management System and much more. Rolly previously worked with Amkor Technology Philippines as a TPM Senior Engineer, an industry engaged in the manufacture of Integrated Circuit products and spear-headed their Planned Maintenance organization compose of maintenance managers and engineers. He was responsible for the dramatic reduction of unplanned breakdowns in their TPM Journey as well as RCM implementation on their Facilities Air Handling Units and as well as their sub-station equipment. Rolly is currently working as an independent reliability and maintenance consultant. Rolly had released three books on maintenance first which is World Class Maintenance Management – The 12 Disciplines, second Maintenance – Roadmap to Reliability and recently his 3rd book which is Reliability – A Shared Responsibility for Operators and Maintenance which are real life base struggles of maintenance in industries.

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## About MRR

This course covers a strategy for maintenance people to achieve a high reliability of their equipment and assets through the principles of Planned Maintenance Four Phases to Zero unplanned breakdown strategy. Phase 1 deals with Stabilizing MTBF, main activity involved here is restoration by establishing Equipment Basic Equipment Condition. Phase 2 deals with Addressing Equipment Weaknesses in Design and addressing them to prolong the lifespan of parts. 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 maintenance tasks available. This is where Reliability-Centered Maintenance can be used. Phase 4 if Planned Maintenance is about Predicting Failures through a system known as Condition-Based Maintenance and the use of Diagnostic tools to monitor condition of parts.

## MRR 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
- Provide an understanding on what Planned Maintenance is and what it wants to achieve
- Learn how to implement the four phases of Planned Maintenance as well as understand the six failure patterns and how it affects us in our day to day maintenance activities



Maintenance – Roadmap to Reliability Master Class  
Meralco Power Academy, September 13 to 15, 2017



Maintenance – Roadmap to Reliability Master Class  
ONGC, Derhadun, India, January 29 to 31, 2018

*Very alive, energetic and informative. Lots of resources like the Rolling Stones, powerpoint. Facilitator is an expert. Application of layman's term for non technician people. There are recognition (giving chocolates) and comparison on pre and posts exams. From Maureen Tating, Human Resources, Technical Documentation Specialists, Transition Optical*

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Phase 1: Restoration and Addressing the Basics

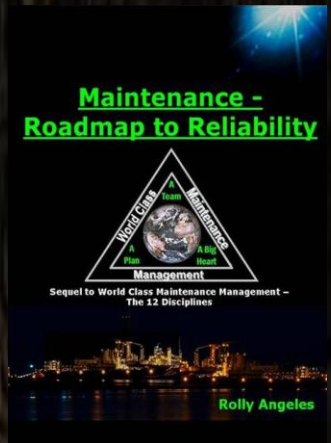
Phase 2: Addressing Design Weaknesses

Phase 3: Improving the Maintenance Task through RCM

Phase 4: Predict Equipment Lifetime

## Maintenance – Roadmap to Reliability Day 1

- 8:00 – 8:30 - Coffee and Registration
- 8:30 – 9:00 - Welcome and Introduction of resource speaker
- Take MRR Pre-post IQ Quiz
- 9:00 - 10:00 - Introduction : Changing The Maintenance Culture
- Domino Effect of Being Reactive
- Can Maintenance Really Eliminate Equipment Breakdowns and Failures
- 1000 - 1015 - Morning Break / Meals
- 1015 - 1200 - **Module 1 : Maintenance – Roadmap to Reliability Overview**
- Planned Maintenance Defined
- 4 Phases of Planned Maintenance
- The 2 sides of Failure
- The Concept of Planned Maintenance Activities
- MRR Preparatory Stage
- How Maintenance is Being Approached By Industries
- Having a Clear Concept on What Constitute a Breakdown and Not
- Knowing MTBF, MTTF and MTTR
- Understanding what MRR wants to achieve
- 1200 - 1300 - Lunch
- 1300 - 1500 - **Module 2 : Phase 0 – MRR Preparatory Stage**
- Understanding The Need for An Effective Maintenance Structure
- Establishing the Maintenance Vision and Mission
- Importance of Conducting Machine Ranking
- Developing a Master Plan for Maintenance
- MRR Phase 0 Details Step by Step Roadmap of Activities
- 1500 - 1515 - Afternoon Break / Meal
- 1500 - 1700 - **Module 3 : Phase 1 - Stabilize MTBF**
- The Need To Restore and Address the Basics on Our Equipment
- 3 Basic Activities on Planned Maintenance Phase 1
- Maintenance Guidance and Support for Operators
- Function Loss and Function Reduction Breakdown
- What Phase 1 will Achieve – 60 to 80% Reduction in Unplanned Breakdown
- Horizontal Replication of Phase 1 Activities
- Detailed Step by Step Roadmap of Activities for Phase 1
- 1700 - End of Day 1



Included in the package

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## Maintenance – Roadmap to Reliability Day 2

- 08:00 – 08:30 - Coffee and Recap of Day 1
- 0830 - 1000 - **Module 4 : MRR Phase 2 Addressing Design Weakness**
  - Concept of Phase 2 – Every Equipment Has Its Weaknesses In Design
  - How to Addressing Equipment Design Weaknesses
  - Analytical and Problem Solving Techniques for Maintenance
  - Investigating Equipment Failures Through Root Cause Failure Analysis
  - Step by Step Detailed Roadmap of Activities for Phase 2
- 1000 - 1015 - Morning Break / Meals
- 1015 - 1200 - Understanding Different Types of Wear Perform Exercise on Wear Abrasive, Adhesive, Erosive, Fatigue and Corrosive Wear
  - Understand How To Control These Types of Wear
  - Take Quiz on Different Types of Wear
  - Case Study on Phase 2
- 1200 - 1300 - Lunch
- 1300 - 1500 - **Module 5 : MRR Phase 3 Periodically Restore Deterioration**
  - Common Belief on Maintenance – Does All Parts Wear Out
  - Understanding Infant, Random and Age Related Failures
  - Understanding Reliability-Centered Maintenance
  - Preparing the RCM Information Worksheet
  - Deriving functions, functional failures, failure modes and effects
  - Completing the first part of the RCM Process
- 1500 - 1515 - Afternoon Break / Meal
- 1515 - 1700 - Hidden and Evident Failures
  - Understanding the Consequences of Failure Environmental, Safety, Operational and Non-Operational Consequences
  - Failure Consequences Exercise
- 1700 - End of Day 2



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## Maintenance – Roadmap to Reliability Day 3

- 0800 - 1000
  - Recap of Day 2
  - Understanding the Different Maintenance Tasks
  - Preventive Maintenance
  - Survey on Top Ten Problems on Preventive Maintenance
  - **Module 6 : PM Phase 4 Predict Equipment Lifetime**
  - Understanding the Concept of Predictive Maintenance
  - P-F Curve Explained
  - Integrating RCM into the TPM Planned Maintenance Structure
  - Understanding the Different Maintenance Tasks Available
  - Understanding the Maintenance Algorithm or Decision Diagram
  - Deriving the Maintenance Tasks for Equipment
  - Completing the final part of the RCM process
  - Phase 3 and 4 Roadmap of Activities
- 1000 - 1015
  - Morning Break / Meals
- 1015 - 1200
  - Understanding Reactive, Preventive, Predictive and Proactive Maintenance
  - **MRR WORKSHOP 1 Workshop on Maintenance Tasks**
- 1200 - 1300
  - Lunch
- 1300 - 1400
  - **MRR WORKSHOP 2 : Planned Maintenance Board Game**
- 1500 - 1515
  - Afternoon Break / Meal
- 1515 - 1600
  - Actual Case Study: JIPM Planned Maintenance Success Story
- 1600 - 1630
  - Take Post Quiz on MRR
  - Check Pre-Post Quiz on MRR
- 1630 - 1700
  - Starting an Improvement Reliability
  - Awarding of Certificates
  - Summary and Closing
- 1700
  - End of Seminar



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## MRR Testimonies and Feedback:

Very alive, energetic and informative. Lots of resources like the Rolling Stones, powerpoints. Facilitator is an expert. Application of layman's term for non technician people. There are recognition (giving chocolates) and comparison on pre and posts exams. From Maureen Tating, Human Resources, Technical Documentation Specialists, Transition Optical

The speaker catches the audience attention. He shows confidence and very knowledgeable of the topic. From Adrian Gamboa, Senior Control Engineer, Transition Optical

Has a very good presentation by the use of visual aids and illustrations. Discussed clearly the context of each subject/topic. Relates the topic based on actual experience. Catches the audience attention through jokes that are related to the topic. From Jeffrey Gawat, Technology Engineering Technician, Transition Optical

This will assist Botash to always remember that operators and engineering must stop blaming each other whenever a major breakdown occur and should work together to improve the lifetime of the assets. From Gabedi Abofilwe, Senior Planning, Engineering

Good course content, training aids, technical knowledge, instructor effectiveness were excellent. It does not teach you about work environment only but how to approach life. From Norma Moeketsi, Maintenance Planner, Engineering Reliability, Botash Ash


Very relevant with our situation. This training will help a lot if we change. Operators becoming engineering partners instead of being customers. From Madeswi, P.P. Engineering, Botswana Ash


Review of basic concept to successful maintenance. Sharing of facilitators personal experience, setting up the program and final results achieved after many years of implementation. Emphasis placed on ownership of maintenance activities by engineering/maintenance and operations. View that the two are partners as opposed to customers service provider relationship. From Godfrey Nilala, Superintendent Wellfield, Botswana Ash

The trainer is very relevant to the operation. It can improve the business results if implemented well by the organization. The objectives were very clear. Visual aids helps better understanding. It promotes lot of interaction and helps the team to have a common understanding of the subject. It is more practical. From Modise Meera, Divisional Engineer, Botswana Ash

A very course aimed at providing the necessary skills in developing and maintain world class maintenance strategy. Could be the only solution for organization in very competitive market with a high maintenance costs life Botswana Ash. From Thabane Malasa. Divisional Engineer

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## MRR Testimonies and Feedback:

In depth understanding about how to reduce reactive maintenance and lessen breakdowns and increase cost savings. It taught us that to improve, it takes planning and understanding what you have in place that change does not happen overnight. The instructor is knowledgeable in the subject it will work best for us if he reviews our progress within short intervals. From Hance Bale, Maintenance Specialists, Botswana Ash

Plant maintenance is a shared responsibility between operators and maintenance personnel. Operations and maintenance people must be friends at work towards the same goal. Lubrication is very important to prolong the lifespan of equipment. Management must commit as well as give support to the workforce. From Ezekiel Sondani, Foreman, Botswana Ash

Got a very clear understanding about PM. Presentation is very good and easy to understand. Materials got from the trainer is very useful and helpful for further procedure to start PM. This training is helpful to me to start my PM with confidence and much more clarity towards my objectives. From Sathveer Potlupi, PIPAVAV, Gujarat, India

It is very much noticeable that Mr. Rolly Angeles had gone through the basic maintenance experience and had given his heart to his job. He knows the subject deeply. From Gopal Chunhun. PIPAVAV, Gujarat India

I am very inspired to my duty and role about maintenance. This is a very good training about maintenance and about the maintenance people. From Piyush Adroja, PIPAVAV, Gujarat, India

Trainer was very knowledgeable, majority of the members, almost all from maintenance team have attended. One thing sure is about the training is all maintenance people will sing the same song or at least will know the song which we are talking or explaining about. From Sri Balaji, PIPAVAV, Gujarat, India

With a good knowledge contents, it was really new things that I've learned. As a G.E.T. it was my first training within my first month, I didn't know how it was practically, but still I understood most of the things that Mr Rolly learned. But the main things are the forms that you have provided us. From Anand Mehta, PIPAVAV, Gujarat,

This training is able to show the path that how we can implement TPM in our organization in an effective manner. We also enjoy the whole training due to Mr. Rolly's friendly nature and deep knowledge about the training source. From Ajeet Singh, PIPAVAV, Gujarat, India

• Good points about this training are all inspiring videos, all examples given by Rolly, way of presentation, reality about maintenance, all the sheet, forms on MTBF, how to implement Planned Maintenance in our plant. Also respect about maintenance and its people and also give inspiration and increase the moral of maintenance people. Thanks, I get this opportunity in my life. From Mihir Upadhyay, Gujarat, India

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## Training Investment Costs:

- 1 Delegate: Php 31,000.00 + 12% VAT
  - 2 Delegates: Php 58,000.00 + 12% VAT
  - 3 Delegates: Php 85,000.00 + 12% VAT
  - 4 Delegates: Php 115,000.00 + 12% VAT
  - 5 Delegates: Php 140,000.00 + 12% VAT
- + 1 delegate free

Kindly provide document if your industry in NON-VAT

## Payment Procedure and Policy:

- Payment can only be accepted through cash or check basis. For payments in check kindly pay to RSA Reliability and Maintenance Consultancy Firm. Kindly complete the name of the firm on the check.
- An Official Receipt will be provided after issuance of complete payment for this event.
- Payment should be done during registration, kindly advise the delegates to carry with them the payment for this training. To avoid future problems on our part. No payment, No entry policy would be enforced on this seminar workshop.
- 2% service tax will be deducted provided industry joining the event to provide BIR form 2307 together with the payment

## How To Register for this Event:

Step 1: Send us an email on the following:

- Full Name of Delegates: (FN, MI, LN)
- Position or Designation / Department
- Name of Industry
- Type of Industry
- How is payment to be made Cash or Check
- Is your industry VAT or NON-VAT

Step 2: Once we have confirmed the names of those you will send, we will provide a confirmation email.

## Cancellation, Postponement Policy

- For delegates who will not complete the duration of the training seminar and workshop, RSA Reliability and Maintenance Consultancy Firm will offer no refunds regarding this matter, certificates of attendance will only be provided to those delegates that will complete the three day seminar and workshop
- In the event that the seminar will be cancelled as a result of unforeseen events such as Acts of God or other uncontrolled reasons, RSA Reliability and Maintenance Consultancy Firm shall assume no liability whatsoever in the event this seminar and workshop be cancelled, postponed, move or rescheduled due to this fortuitous and unforeseen event.
- In case of a low turn out of delegates for this event, RSA Reliability and Maintenance Consultancy Firm reserves the right to move or cancel the event. An email will be sent to concerned parties regarding the cancellation or movement.
- In the event you would like to cancel your participation in this seminar, kindly send us an email one week before the event is due. If you have made an advance payment and your delegates did not attend and have not informed us one week before the event, you will be charged with the full amount of the training fee.
- In case the delegate register for this event will not make it on this event, kindly notify us by email the changes in the name of the delegates.

## 100% Money Back Guarantee



- If for any reasons you were not happy or satisfied with the outcome of the training. Our small firm offers you **Unconditional 100% Payment Back** and you keep the WCM Book and all the materials provided during the training provided payment had been received during the registration period.

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