



FROM YOUR PARTNER IN ENERGY EDUCATION

BEST GLOBAL PRACTICES
Meaningful Measures
of Equipment Performance

Understanding MTBF, MTTF, MTBA, MTTR, OEE and Failure Rate



EXPERT TRAINER
ROLLY ANGELES

December 5 to 6, 2017 | The Lighthouse, Lopez Building
Meralco Compound, Ortigas Center, Brgy. Ugong, Pasig City, Philippines

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COURSE OVERVIEW

In today's fast-paced world and the emergence of disruptive technologies, talking in numbers through real-time and dynamic performance measurement is already a necessity to ensure survival of any company or organization. In terms of equipment, knowing how to properly use the different methods of performance measurement, and understanding the causes of equipment failures in real-time will provide more insight to every maintenance professional in further improving the operation efficiency of your company.

LEARNING OBJECTIVES

At the end of the 2day program, the participants will be able to:

- Discuss the need and importance of measuring equipment performance
- Apply performance measurement as a tool for improvement
- Employ meaningful measures of performance to improve equipment reliability
- Determine the right measures of performance for their industry
- State the types of equipment losses and its individual relationship on Overall Equipment Effectiveness

WHO SHOULD ATTEND

- Maintenance, Facilities and Utilities Managers
- Preventive and Predictive Maintenance Groups
- Reliability Engineers and Managers
- Operations and Production Managers
- Continuous Improvement Groups
- CMMS and Spare Parts Group



Meralco Power Academy (MPA) is a premier training and energy education provider that leverages on MERALCO's 114 years of industry experience, expertise and network. Its array of technical programs lend industry practitioners a competitive edge through top of the line learning solutions which are delivered in a variety of methods. MPA provides the learning platforms and coalitions for leaders, decision makers, managers and advocates by facilitating technical exchanges on global innovations and technologies on power and energy.



EXPERT COURSE TRAINER ROLLY ANGELES

Rolly Angeles is a seasoned international reliability and maintenance consultant with 28 years of solid experience in the field. He has conducted reliability and maintenance training programs in United Arab Emirates, India, Malaysia, Indonesia, Nigeria, Bangladesh and South Africa.

A former TPM Senior Engineer at Amkor Technology Phils, he now carries a portfolio of reliability & maintenance training programs that include Maintenance Management courses on TPM, Lubrication, Tribology, Condition-Based Maintenance, RCM, RCFA, Planned Maintenance, World Class Maintenance Management, The 12 Disciplines, Maintenance KPI's and Indices, Oil Contamination Control, TPM Planned Maintenance and Autonomous Maintenance and many more.

WHAT FORMER PARTICIPANTS SAY ABOUT THIS COURSE

"We were able to understand more the very basic structure of OEE which I'm sure that will help us a lot in determining different factors affecting our equipment and its performance"
Ryan Alinsod, EE, Sunpower Corp

"The training is so much interesting. It will really benefit every maintenance personnel. Thank you so much to Mr. Rolly Angeles for giving his time and effort to share his knowledge related to the maintenance and sustaining the efficiency and effectiveness of machine/equipment"
Michael Ballesteros, Equipment Technician, Sunpower Corporation

"I have learned the different means of getting the overall effectiveness of the equipment and how to improve its availability thru the different methods of analysis regarding breakdowns and losses"
Eulemar Poyaoan, Sunpower



COURSE OUTLINE

Meaningful Measures of Equipment Performance

DAY 1

COURSE INTRODUCTION

Module 1: Why We Need to Measure Performance?

- Understanding the Need and Importance of Measuring Performance

Module 2: Understanding Equipment Losses

- Breakdown Loss
- Function Loss and Reduction
- Design Speed Loss
- Start-Up Loss
- Idling and Minor Stoppages
- Defect and Rework Loss
- Set-up and Adjustment Loss

Module 3: Understanding OEE

- Components of OEE
- Variations in Calculation
- Limitations of OEE
- Workshop on OEE

Module 4: Mean Time Indicators

- Reliability Defined

Module 5: Understanding MTBF

- What Constitute a breakdown
- How to compute MTBF
- Limitations of MTBF
- Difference between MTTF and MTBF
- Understanding Failure Rate

Module 6: Understanding MTTR

- How to compute MTTR
- Limitations of MTTR

Module 7: Understanding MTBA

- Taking MTBA Snapshot Steps
- Case Study: CLF Planned
- Maintenance Case Study on MTBA (Mean Time Between Assists)

Module 8: Overview on Weibull Analysis

- Principles of Weibull Analysis

Workshop on Indices

Post and Final Test

Awarding of Certificates

SEMINAR RATES

Covers daily lunch, snacks and course materials

REGULAR RATE
PhP19,000 net
Per Participant
VAT inclusive

YES! I am interested in attending Meralco Power Academy's MEANINGFUL MEASURES OF EQUIPMENT PERFORMANCE Course!

I am sorry but I won't be able to attend. You may send me materials on your upcoming events.

PAYMENT METHODS AND TERMS

1. Payments may be deposited to:

Account Name: Meralco Power Foundation Inc.

BDO Savings Account No 4630-2297-12 (Meralco Branch)

Please email a copy of your deposit slip to astibayan@meralco.com.ph or power.academy@meralco.com.ph

2. We shall send you a confirmation of your enrollment upon receipt of the accomplished registration form.

3. Cancellations made 7 days before the program shall be non-refundable.

4. For any concerns, please contact Angie Tibayan at 1622-6758, mobile: 0999-881-3762, email: astibayan@meralco.com.ph

REGISTRATION FORM

COMPANY DETAILS

Company Name	<input type="text"/>
Company's TIN Number	<input type="text"/>
Office Address (Billing Address)	<input type="text"/>
Contact Person	<input type="text"/>
Email Address	<input type="text"/>
Contact Number	<input type="text"/>

PARTICIPANT'S DETAILS

Name	<input type="text"/>
Nickname (for the name tag)	<input type="text"/>
Designation	<input type="text"/>
Email Address	<input type="text"/>
Contact Number	<input type="text"/>
Dietary Restrictions	<input type="text"/>