

# Excellence in Maintenance and Reliability Management

## INTRODUCTION

- Achieving excellence in maintenance and reliability is the aim of every organisation that depends on its physical assets to achieve business objectives. Lower profit margins have made reducing maintenance costs imperative to the survival of many organisations. The overall cost of asset ownership is closely tied to the outcomes of reliability, durability and longevity of physical assets. This training course is about developing and implementing the strategy and tactics that deliver the outcomes we need.
- This Excellence in Maintenance and Reliability Management training course starts with the key aspects that lay the foundations and cornerstones of an effective maintenance function. It introduces reliability strategies such as FMECA, TPM, RCM and RCFA to highlight their costs and benefits. The Excellence in Maintenance and Reliability Management training course will then demonstrate how these strategies are used to derive the different maintenance tactics of predictive, preventive, detective and repair-after-failure maintenance tactics.
- An in-depth analysis of risk-based processes such as Reliability-Centered Maintenance, the principles of Risked Based Maintenance and Totally Productive Maintenance; as well as a unique, practical application of the methodologies to demonstrate how they can be applied in the real world; are integral components of this training course.

Participants will develop the following competencies:

- Asset Functional Analysis
- Failure Forecasting Risk Assessment
- Maintenance Strategy and Tactics Development
- Root Cause of Failure Analysis
- Reliability Improvement Project Facilitation

## PROGRAMME OBJECTIVES

- Compare their current maintenance strategies to industry best practice
- Understand the benefits and costs of alternative maintenance strategies
- Define maintenance strategies for a specific system using a decision support process and tools
- Analyse failures and determine the root causes using the tools and templates provided
- Implement reliability improvement methodologies correctly
- Prepare maintenance schedules and procedures for implementation

## WHO SHOULD ATTEND?

Delegates should represent members of the organisation that play a leadership, management and supervisory role in the operation and maintenance of the company's physical assets, including:

- Reliability Engineers
- Maintenance Planners
- Maintenance Supervisors
- Maintenance Engineers
- Operations and Process Team Leaders

## TRAINING METHODOLOGY

- This Excellence in Maintenance and Reliability Management training course is a combination of instructor lead topic areas and class discussions. Interactive discussions broaden perspectives and clarify areas of uncertainty. Practical exercises are used extensively to build confidence and the ability to apply what has been learned at the workplace. Questions and active participation in the sessions is encouraged to eliminate reduce any uncertainty.

## PROGRAMME SUMMARY

- This training course delivers all the methodologies that are essential for progressing an organisation's maintenance and reliability management to the excellence level. Although the methodologies are sound and have been around for many years, it is the application and implementation that usually goes wrong. This is an opportunity to learn from an expert how to implement the methodologies correctly and avoid the high cost of pitfalls and recriminations that that follow from poorly conceived attempts.

## PROGRAM OUTLINE

### Introduction to Maintenance and Reliability Management

- The cost and risk of equipment failure
- Pillars of excellence in maintenance
- Best practice reliability and maintenance processes
- Overview of FMECA, TPM, RCM, RBI and RCFA

### Establish Framework for Reliability

- Build a competent team to drive reliability in each area
- Asset identification, classification and criticality grading
- Define asset performance and efficiency standards
- Anticipate the physical causes of failure and degradation
- Anticipate the human causes

## Failure Management Strategy Development

- Risk-based approaches to failure management
- Select proactive maintenance tactics on the basis of costs and risks
- Preventive maintenance tasks and intervals
- Predictive maintenance tasks and intervals
- Failure detection and function testing tasks and intervals
- Human error reduction through equipment, procedural and skill upgrades
- Repair-after-failure strategies
- Practical application and open discussion sessions of case study

## Failure Management Strategy Implementation

- Aggressive defect reporting to feed the backlog
- Plan for quality, time and safety
- Budget for spare parts and make stocking decisions
- Schedule maintenance to minimise operational downtime
- Use appropriate metrics to drive defect elimination
- Practical application and open discussion sessions

## Root Cause of Failure Analysis

- Failure reporting analysis and corrective action system requirements
- Use failure data and Pareto analysis identify and stratify improvement opportunities
- Types of evidence, preservation and use
- Organise the RCFA and apply the process
- Practical RCFA case study using a MS Excel based tool