Best Technology Soultions **(BTS)**

Training Program

World Class Maintenance Program

Introduction:

Being World Class means the ability to compete anywhere in the world. World Class Maintenance simply means the art and 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 will outline the 12 disciplines in order to improve equipment reliability. These disciplines are categorized into three stages, the basics, Strategies and Advance Disciplines. The candidates will learn what these disciplines are that most World Class Companies perform.

Who Should Attend?

TPM office staff, TPM facilitators, TPM managers, OE champions, Maintenance managers, engineers & planners, reliability and maintenance engineers, facilities and utilities managers, top level maintenance technicians, operations and production managers & engineers, plant engineers, design engineers, reliability engineers & technicians, operators, safety engineers, risk engineers, CMMS and spare parts personnel, safety engineers and anyone who is involved in reliability engineering strategies or methodologies.

Course Objectives:

By the end of this course delegates will be able to:

- Understand the need for an effective and World Class Maintenance Management
- Understand the importance of establishing the basics of maintenance
- Understand when to effectively use each of the different maintenance strategies
- Understand the importance of performing the basic maintenance disciplines
- Develop a Corporate Strategy for maintenance function
- Have a basic understanding on the 12 Disciplines of Maintenance Management
- Understand the real focus of a true and meaningful maintenance structure
- Learn what it takes to achieve a World Class Maintenance
- Learn the diversity of failures and how it occurs
- Understand the importance of Autonomous Maintenance
- Unfold the secrets of lubrication
- Learn why Preventive Maintenance cannot capture all equipment failures

Course Outline:

Understanding Equipment Failures

- The Truth about Machinery and Equipment
- Is It Really Possible to Eliminate Failures and Breakdowns on our Equipment?
- What Maintenance is All About?
- Common Belief on Maintenance –Does All Parts Eventually Wear Out
- Limitations of Preventive Maintenance
- Understanding What Maintenance Can and Cannot Do
- Understanding Infant Mortality
- Random and Age-Related Failures

- 6 Types of Failure Patterns
- Classification of Failures –Hidden and Evident Failures
- Types of Failures –Function Loss and Function Reduction Failures
- Occurrences of Failures –Sporadic and Chronic Failure

Changing the Culture from Reactive Maintenance to Proactive Maintenance

- Reactive and Proactive Maintenance Explained
- Flowchart of a Reactive Maintenance Environment
- Learning the Correct Paradigm on Maintenance

Understanding World Class Maintenance Management

- World Class Maintenance Management Explained
- 12 Disciplines of Maintenance
- Basics, Intermediate and Advance Discipline

Discipline 1: The Need for Training and Skills on Maintenance

- Training and Skills Assessment-Steps to improve your current training needs
- Reflections and Learning's from the first discipline

Discipline 2: Measurements and Maintenance KPI's

- Most Common Mean Time Indicators
- Understanding Mean Time Between Failure (MTBF)
- Understanding Mean Time to Failure (MTTF)
- Setting Maintenance Goals and KPI's-Reflections

Discipline 3: The Need for Autonomous Maintenance

- Why Autonomous Maintenance is Important
- Autonomous Maintenance Basic Concept
- Maintenance Guidance and Support for Autonomous Maintenance

Discipline 4: Addressing Basic Equipment Condition

- Importance of Going Back to the Basics
- Cleaning, Proper Lubrication and Tightening of Bolts
- Role of Operators in Establishing Basic Equipment Condition

Discipline 5: Addressing Basic Equipment Condition

- Preventive Maintenance Definition and Objective
- What Preventive Maintenance Activities Includes
- Feasibility of Using Preventive Maintenance for Age
- Related Failures-Survey of Top 10 Problems on Preventive Maintenance

Discipline 6: Lubrication Strategy and Management

- Function of oil and its composition, What causes oil to breakdown
- Understanding how contamination occurs
- Absolute and Nominal Filtration
- Filtration Efficiency and Beta Rating of Filters
- Oil Analysis, Testing Oil's Health and Cleanliness
- How to remove contaminants from oil

Discipline 7: Understanding Life Cycle Management (LCM)

Discipline 8: Spare Parts Management

Discipline 9: Root Cause Failure Analysis (RCFA)

Discipline 10: Reliability Strategies: Reactive, Preventive, Predictive & Proactive Maintenance

Discipline 11: Understanding Condition Based Maintenance (CBM)

Discipline 12: Computerized Maintenance Management Software (CMMS)

Applying the Twelve Disciplines of Maintenance