



Maintenance Optimization & Best Practices



Introduction:

Maintenance Best Practices are critical for every successful individual and company. Maintenance is a unique business process. To be successfully managed, it requires an approach different from other business processes. The program provides a framework for managing maintenance with options that allow decision makers to select the most successful ways to manage maintenance.

The effectiveness of maintenance practice has not improved significantly in many organizations in spite of the implementation of powerful computerized management systems. Measuring, comparing and improving maintenance practice underpins the success of the whole business process.

Who Should Attend?

Delegates should represent a wide range of personnel in the organization who are involved in, or dependent on, effective maintenance management.

These should include:

- Maintenance and Reliability Managers
- Maintenance and Reliability Supervisors
- Personnel designated as planners, or identified to become planners
- Team leaders from each Maintenance craft
- Key Operations Supervisors
- Materials Management Managers/Supervisors
- CMMS Administrator or key users
- Key Maintenance support assistants
- Other stakeholders in the Work Planning Function

Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration.

Course Objectives:

Participants attending the program will:

Identify maintenance best practice key elements for taking action on them, starting with foundations and building up to best practice that will deliver maximum business benefits

- Evaluate practices compared to those of others
- Improve the use of information and communication tools
- Improve productivity through use of better, more timely information
- Understand how world-class organizations solve common maintenance problems
- Improve consistency and reliability of asset information
- Formulate preventive and predictive maintenance strategies
- Optimize planning and scheduling resources
- Develop a proactive maintenance regime within the organization
- Carry out failure analyses thereby avoiding repetitive failures.
- Allow tighter control of maintenance budgets by the avoidance of unplanned equipment failures in service.

Course Outline:

An Overview of Maintenance Practice and Benchmarking

Introduction to Maintenance (Asset) Management

- Definitions of key terms
- Types of Maintenance - Reactive, and Proactive
- Maintenance in the Business Process
- Evolution in Maintenance Management
- The Principle of Prioritization

The Concept of Best and Worst Practice

- Why Systems Fail?
- Cases of Failures From Different Industries

- Failure Analysis and Technical Causes of Failures
- Generic Lessons Learned and Improvements

Performance Measures and Improvement

Performance Measure and Benchmarking

- Challenges of Performance Measures
- Performance Measures as a Continuous Improvement Process
- Desirable Features in Maintenance Performance Measures
- Best and Worst Practices in Performance Measures

The Overall Equipment Effectiveness as a Source of Best Practice in Maintenance

- Advantages of OEE as an Improvement Program
- Lean Maintenance through the Use of OEE
- Analysis of the Six-Big Losses
- Case Studies for OEE

Total Productive Maintenance

- TPM Principles
- Old versus New Attitudes
- Key TPM Strategies
- Implementation Plan
- Cases of TPM in Industry
- The Visual Control
- The Concept of Ask Why 5 Times
- Results of Successful TPM Implementations
- Difficulties with TPM

Benchmarking Machines Performance and Failure Analysis

Failure Analysis and Modeling

- Maintenance Work Prioritization
- Failure Modes and Effect Analysis
- Fault Tree analysis
- Risk Priority Number
- The Criticality Matrix
- Equipment Criticality Grading
- Cases from Oil and Gas Industry and others

Modeling Reliability of Systems

- Series and Parallel Systems
- The Redundancy Concept
- Types of Redundancy
- When to Use Redundancy

Benchmarking through Reliability Centered Maintenance

- RCM Background and Fundamental Principles
- Steps for RCM Implementation
- Critical Success Factors for RCM

Condition Based Maintenance

The Condition Based Approach

- What to Monitor and Where
- Condition Monitoring Systems
- Remaining Life Prediction

Vibration Monitoring

How and were to Measure Vibration

Diagnosing Faults Using Vibration

General Purpose CM – Non Destructive Testing - NDT

- Thermal Monitoring & Imaging
- Lubricant Monitoring & Wear Debris Analysis
- Ultrasonic UT

Best Practice Through Manufacturing and Maintenance Systems

MRP and ERP Systems

- What is ERP and how did it develop
- What is MRP System
- What is MRPII System
- Planning and Control
- The Bill of Materials
- Master Production Schedule.
- Scope of Decisions

Decision Analysis for Optimization of Maintenance Activities

- How to get the most of your CMMS?
- Benefits that can result from CMMS
- Optimum Decisions for Maintenance Policies
- Unmet needs in Responsive Maintenance
- Key Features of Next Generation Maintenance Systems
- How to transform Data t o Decisions
- Examples of Approaches and Case Studies