Best Technology Soultions **(BTS)**

Training Program

Zero Breakdown Maintenance Program

Introduction:

Zero Breakdown Maintenance is built on three key premises. The first is that equipment will only work properly if its parts work properly. The better the condition of the parts, the better and longer the equipment will run. The second premise is that people use plant and equipment. The better the people interact with the plant and equipment, the better and longer the equipment will run. The third premise is that you are using the plant and equipment to build a business. The better the plant and equipment operate; the stronger and more competitive is your business. Successful Zero Breakdown Maintenance involves developing systems and skills that ensure the people and parts always work well together for the benefit of the business. Zero Breakdown Maintenance focuses on ensuring equipment parts are always in good health so your machines are always reliable. Throughout this course, you will learn to do the right maintenance rightly and do not have any repairs.

Who Should Attend?

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.

Course Objectives:

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

- Understand how you create reliable equipment
- Know the right systems that deliver zero breakdown maintenance
- Know what practices to introduce into your operation to achieve zero breakdowns
- Identify where to target your efforts in preventing breakdowns
- Develop an operations-wide strategy to eliminate defects that cause failures

Course Outline:

Limitations of Machines and Materials

- Understand How Machines are Designed and the Limits They Must Live Within
- Strength of Materials Limitations, The Degradation Cycle, The Overload Cycle

Determining the Reliability of Parts

- What is Reliability? Drawing the Reliability Curve
- Failure Rate Variation
- 'Reading' Failure Curve Shapes

Reliability of Complex Parts

- Modelling Reliability of Complex Parts
- Reliability Mathematics in 'Random Failure' Zone
- Failure Rate and Reliability Curves

- The Odds of a Part Surviving For Longer

Reliability Prediction

- Weibull Curves for Failure Prediction
- Maintenance Strategies for Parts and Components
- Reliability of Series Systems, Reliability of Parallel Systems

Reliability of Machines

- Reliability of Machines in Series Process
- Improving the Reliability of Machines
- Meeting The Reliability Challenge
- Modelling Machine Reliability

Instilling Reliability Principles into Maintenance

- Best Practice Reliability Engineering Application
- Quality Function Deployment
- Failure Mode and Effects Analysis
- Crow–AMSAA Reliability Growth Plotting

Introduction to Profit Centered Maintenance

- Turning Maintenance into a Profit Centre
- Develop a Plan to Reach Mastery
- Turn Objectives into Systematic Activities
- Elements of a Good Management System
- Strategic Business Importance of Reliability

Maintenance Strategy Choices

- Maintenance Strategies for Risk Reduction
- Maintenance Strategy Selection
- Move from Reactive

Selecting Maintenance to Deliver Reliability

- Equipment Reliability Strategies
- Precision Operation Extends Productive Life
- Failure Prediction Mathematics
- Implications of Reliability on Maintenance
- Strategies for Reliability Improvement

Maintenance: Risk Management Strategy

- Base Maintenance on Operating Risk Matrix
- Match Maintenance and Operating Practices to Equipment Criticality
- Condition Monitoring to Optimise Availability
- Determine Component-Based PM Frequency
- Benefits of Failure Elimination

Improving Maintenance & Reliability Results

- Root Cause Failure Analysis (RCFA)
- How RCFA Contributes To Improvement
- Risk Identification and Removal Worksheets
- Improving Reliability by Setting Maintenance KPIs and Measuring Outcomes

Maximum Life Cycle Profit Maintenance

- When You Design a Plant You are Designing a Business
- Design and Operating Cost Totally Optimised Risk (DOCTOR)
- Eliminate Defects to Prevent Problems
- Defects and Failures True Costs
- Benefits of Reducing Operating Risk

Managing Risk in Your Business and Operations

Precision Maintenance & Precision Practices for Failure-Free Operation

Getting Operators to Drive Equipment Reliability

Modernize, Systematize & Standardize Your Maintenance Processes