



Reliability-Centered Maintenance (RCM)



# Reliability-Centered Maintenance (RCM)

## Introduction:

RCM training course where you learn to prevent equipment problems, select correct maintenance strategy for equipment, make use of maintenance history to improve your operation, and implement strategies and plans well. RCM isn't just a "maintenance" improvement process - it is a STRATEGIC weapon. It addresses the whole issue of how we "fly and fight" and eliminates problems of operating and maintaining weapons systems. This online course is a great introduction to the RCM process. RCM applies to any industry that requires safe, reliable, and cost-effective performance from their physical assets including, but are not limited to Defense, Aerospace, Maritime, Transportation, Manufacturing, Pharmaceutical, Food Processing, Chemical Processing, Petroleum, Mining, Facilities, Agriculture, Alternative Energy, Energy Distribution, and Power Generation. RCM is overall strategy helps stakeholders work on the right asset, with the right strategy, at the right time, by the right resource, at the least cost. RCM allows management to make important decision on the proper action to take and the components to focus their efforts on while reducing costs and remaining competitive. This intensive course will cover fundamentals of RCM and implementation by following the processes and employing the tools available. The course is intended for all Engineering, Maintenance, and Reliability personnel who are involved with any aspect of the Corporations' Preventive Maintenance Program PM Program. The goal of this course is to present the student with the knowledge to understand, learn, establish, and implement a Modern Day World Class RCM Program.

## Targeted Groups:

- Reliability Engineers
- Corporate and Government leaders
- Middle Managers
- Maintenance Managers
- Production and Plant Leadership
- Maintenance Technicians & Operators
- Logisticians
- Design & Systems Engineers
- OEMs
- Tech Reps
- In-service Engineers

## Course Objectives:

- Understanding of processes required to implement and manage a Reliability Centered Maintenance Program
- Ability to provide analysis and action plans as a result of systematic evaluation of the maintenance program
- Audit your operational and maintenance performance to identify improvement opportunities
- Design optimum maintenance strategies for in-the-field plant and equipment
- Make proper use of RCM results to deliver the higher maintenance performance that your management want
- Identify a clear approach to reliability improvement for both fixed plant and moving equipment
- Select applicable technologies for Condition Monitoring and Predictive Maintenance
- Appreciate how to use failure data and industry failure databases and standards
- Introduce reliability growth principles on new, existing, or old equipment
- Make sound risk-based decisions and spares holding selection
- Address failure modes with the correct selection of primary and secondary maintenance actions

## **Course Outline:**

### **Unit 1: Introduction**

- What is maintenance?
- Why maintain?
- Traditional maintenance methods
- History of RCM
- Definitions
- What are the 7 questions of RCM?

### **Unit 2: RCM Programme Activities**

- RCM review groups
- The RCM facilitator
- Implementation strategies
- Getting started

### **Unit 3: Foundation knowledge and actions**

- Failures types, frequencies, physics, early detection.
- External interfaces safety, environmental, supply
- Availability
- Cost benefit analysis
- Functional analysis

### **Unit 4: Defining the Problem and Gathering Information**

- Defining functions and desired performance standards
- Defining failure functional failures
- Establishing the root causes of failure failure modes
- What happens when failures occur failure effects

### **Unit 5: Failure Mode and Effects Analysis**

- Physical FMEA
- Functional FMEA

## **Unit 6: Risk Management**

- The components of risk
- Measuring risk
- Protective and warning devices which are not fail-safe
- Failures which threaten safety or the environment
- Failures which affect production/operations
- Failures which only entail the direct cost of repair

## **Unit 7: Managing the RCM process**

- Maintenance Schedule
- Tasking
- Implementation

## **Unit 8: In-Service Systems**

- In Service Maintenance Organisations ISMO