FUNDAMENTALS OF RELIABILITY-BASED MAINTENANCE
Course Duration: Two Days

Course overview
Across all sectors of engineering, the design of systems and equipment is becoming more complex. This has resulted in an increased need for effective maintenance strategies to analyse and predict future reliability performance of infrastructure, facilities and assets.

This two-day course will introduce fundamental reliability engineering concepts, the characteristics of functional failure and standardised maintenance strategies, and how to identify and apply the most suitable strategies.

Upon completion, participants will be able to use basic maintenance and reliability principles to analyse and predict future reliability performance of operating assets and develop appropriate maintenance strategies for practical application within the workplace.

Target audience
This course is designed for anyone involved in maintenance and reliability engineering tasks with a basic understanding of asset management and operations. It will be particularly useful for reliability, process, maintenance, and facility engineers as well as asset management professionals and maintenance supervisors.

Course benefits
Participants will develop skills and knowledge to immediately apply in the workplace and contribute to plant performance optimisation:
- Analyse and predict future reliability performance
- Develop and apply appropriate maintenance strategies
- Discuss and resolve maintenance and reliability issues
- Apply Reliability Centred Maintenance (RCM) & Failure Modes Effects and Criticality Analysis (FMECA) principles to improve performance

Learning outcomes
- Understand basic reliability engineering principles to develop maintenance strategies
- Understand equipment failures and failure characteristics
- Develop appropriate maintenance strategies/activities that will improve Reliability and Availability
- Understand the advantages of condition-based maintenance techniques and their application
- Understand how and when to use the FMECA and RCM analysis processes

Course topics

Day one - introduction to reliability-based maintenance concepts
- Reliability, availability and maintainability fundamentals
- Understanding of failure patterns
- Preventative, predictive and reactive maintenance concepts
- Failure modes: effect causes and analysis
- Standardised maintenance strategies and how they are applied
- Maintenance strategy identification and development

Day two - understanding reliability-based maintenance fundamentals
- Condition monitoring benefits and values
- Risk-based inspection principles (RBI)
- Reliability centred maintenance (RCM)
- RCM: The 7 basic questions
- Determining potential failure intervals (P-F Intervals)
- Reliability-based maintenance process and implementation

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