

PRINCIPLES OF RBI, RCA, RCM

MNE002

COURSE DESCRIPTION

This course covers knowledge and best practices to develop effective equipment reliability strategies (operation, design and maintenance) to reach the world class performance. It presents proven and readily implemented method based on equipment degradation templates for machinery, fixed, instrument, electrical and other equipment. The course also covers knowledge to reach equipment reliability, availability and reduce maintenance costs by use of proven Best Practices.

COURSE GOAL

To enhance the participants' knowledge, skills and abilities necessary to apply the proven Best Practices for different equipment as well as the basics of implementing the practices to reach reliability, availability and maintenance cost reduction targets.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Understand the reliability strategy.
- Understand failure modes.
- Understand risk based methodologies.

WHO SHOULD ATTEND

- Persons with assigned responsibilities for equipment improvements in the reliability and maintainability area.
- Managers who want to increase awareness of the payoffs of improvements managements.
- Engineers who need to know the reliability strategy as they apply to developing reliability improvement programs.
- Design engineers.
- technical specialists.
- Maintenance specialists.
- Operations technical specialists.
- Reliability specialists.
- Product/program managers.

COURSE DURATION

5 Working Days

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COURSE OUTLINES

1. Introduction

- What is reliability strategy?
- Reasons for reliability strategy.
- The reliability strategy framework.
- Reliability strategy for process plants.
- The reliability strategy philosophy.
- Equipment templates.
- Standard deterioration templates.

2. Analysis of functional systems

- The nature of failure.
- Failure mode effect & criticality analysis (FMECA).
- Applying plausible failure modes.
- Mitigating the effects of failure modes.
- Prioritizing failures.

3. Application of reliability principles to focus on systems and equipment based on criticality

- Types of failures and their consequences.
- Identifying loss for various failures.
- Prescribing the overall reliability approach and methodologies "Mix".

4. Equipment selection process to meet RAM requirements

- Operational history.
- Robustness in design.
- Maintainability.
- Life cycle cost.
- After sales service.

5. Applying RIMS principles to equipment management mean time between failures (MTBF)

- Strategies (age or random).
- Arresting deterioration.
- Performing RCA on "bad actors".
- Improving reliability by component substitution.
- Monitoring equipment condition to determine optimal overhaul/replacement.

6. **Applying best practices technology tools to ensure ongoing reliability**
 - Risk based methodologies (RBI, RCM, CBM, IPF etc.)
 - Life extension programs (residual life assessment etc.)
7. **Interdisciplinary reliability focus team organizing for reliability understanding**
 - Human factors in reliability operator driven reliability (EBC, TPM etc.)

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