



Rotating Equipment Optimization with
Continuous Reliability Improvement
(CRI)



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Introduction

Benchmarking studies on various oil refineries around the world have shown that rotating equipment accounts for more than 20% of all maintenance and inspection costs. Also, rotating equipment is often at crucial nodes of the process and is frequently critical to production. Therefore, a failure would lead to unacceptable downtime costs.

This rotating equipment and continuous reliability improvement CRI program aims to provide delegates with a comprehensive understanding of how to use a combined predictive and preventive maintenance approach coupled with proper failure monitoring to achieve maximum reliability and performance from rotating equipment.

What is Continuous Reliability Improvement CRI?

Continuous Reliability Improvement, or CRI, refers to an ongoing process of enhancing the dependability and performance of equipment with a focus on minimizing downtime and extending the equipment lifecycle. The CRI approach integrates various reliability improvements and maintenance strategies to improve system reliability steadily over time.

Those seeking to solidify their proficiency in the maintenance and reliability of rotating equipment can further their credentials through a rotating equipment certification course. This rotating equipment and continuous reliability improvement CRI course delves into the basics of rotating equipment, focusing on critical practices for maintaining rotating equipment and enhancing overall equipment reliability.

Targeted Groups

- Operation, Technical Production, and Service Professionals.
- Technical Professionals are responsible for the maintenance and repair of equipment.
- Professionals involved in inspection and reliability.
- Technical Professionals dealing with risk assessment and integrity analysis.
- Technicians are dealing with regulating and metering and other measurements.

Course Objectives

At the end of this rotating equipment and continuous reliability improvement CRI course, the participants will be able to:

- Apply the proven methodologies and templates that are introduced.
- Focus on critical areas of reliability.
- Understand the nature of failure and how this affects the performance of rotating equipment.
- Make the right maintenance choices for strategic equipment.
- Reduce the impact of plant downtime.
- Unlock the true potential of all of their people.

Targeted Competencies

By the end of this rotating equipment and continuous reliability improvement CRI course, the target competencies will be able to:

- Main types of equipment failure mechanisms.
- Maintenance methodologies and economic aspects.
- Spare parts handling and storage modeling.
- Risk assessment and management.
- Equipment inspection and fitness for service analysis.

Course Content

Unit 1: Understanding The Link Between Reliability and Competitive Advantage

- Definition of reliability.
- Probability of failure.
- Reliability metrics.
- The strategic importance of reliability.
- Assessing current performance.
- Making the right strategic choices.

Unit 2: Using Reliability Modeling to Establish Inherent Reliability

- Basic modeling building blocks.
- Deterministic models.
- Probabilistic models.
- Markov chains.
- Monte Carlo models.

Unit 3: Understanding The Nature of Failures to Make The Best Response

- Origins of failure.
- Failure types.
- Six common patterns.
- Analyzing failure patterns.
- Weibull analysis.
- Maintenance tasks.

Unit 4: Optimizing Your Failure Management to Ensure That Maintenance is Cost-Effective

- Risk assessment and criticality.
- Equipment functions.
- Functional failures.
- Failure modes and effects analysis.
- Failure consequences.
- Maintenance task selection.
- Producing a practical maintenance plan.

Unit 5: Setting Up a Continuous Reliability Improvement Process to Improve Performance

- Assessing the improvement potential versus the costs.
- Obtaining senior management support.
- Establishing the project framework.
- Technical aspects.
- Human considerations.
- Likely results.