Advanced Reliability Centered Maintenance (RCM) Training Course



21 - 25 Dec 2026

Boston

7500 € (Per Person)

Ref: #INM5885_113010

Course Introduction / Overview:

This course provides a comprehensive and structured approach to developing and implementing a robust Reliability Centered Maintenance (RCM) strategy. It moves beyond theoretical concepts to deliver practical, actionable knowledge for optimizing asset management and maintenance effectiveness. Participants will delve into the core principles of RCM, a systematic process used to determine the most effective maintenance approach for any physical asset in its operating context. Drawing upon the foundational work of authorities like John Moubray, author of "Reliability-Centered Maintenance," this program emphasizes a rigorous, data-driven methodology. We will explore how to conduct a complete RCM analysis, from defining system functions and identifying failure modes to selecting the most appropriate proactive maintenance tasks. BIG BEN Training Center has designed this course to empower organizations to reduce maintenance costs, improve operational availability, and enhance safety and environmental integrity. By mastering the RCM process, attendees will be equipped to create a living maintenance program that evolves with the asset's lifecycle, ensuring sustained performance and a significant return on investment. This training is essential for any professional seeking to transition from a reactive to a proactive maintenance culture.

Target Audience / This training course is suitable for:

- Reliability Engineers.
- Maintenance Managers and Supervisors.
- Maintenance Planners and Schedulers.
- Plant Managers and Operations Managers.
- Asset Management Professionals.
- Technical and Engineering Team Leaders.
- Condition Monitoring Specialists.
- Continuous Improvement and Process Excellence Leaders.
- Project Engineers involved in equipment acquisition.
- Senior Technicians and Maintenance Staff.

Target Sectors and Industries:

- Manufacturing and Industrial Production.
- Oil and Gas Exploration and Production.
- Power Generation and Utilities.
- Aerospace and Aviation.
- Pharmaceuticals and Biotechnology.
- Mining and Mineral Processing.
- Transportation and Logistics.
- Facilities Management and Real Estate.
- Government Agencies and Public Sector Utilities.
- Food and Beverage Processing.

Target Organizations Departments:

- Maintenance and Reliability Department.
- Engineering Department.
- Operations and Production Department.
- Asset Management and Integrity Department.
- Health, Safety, and Environment (HSE) Department.
- Quality Assurance and Control Department.
- Capital Projects and Procurement Department.
- Continuous Improvement and Operational Excellence Department.

Course Offerings:

By the end of this course, the participants will have able to:

- Understand the fundamental principles and history of Reliability Centered Maintenance.
- Apply the seven core questions of the RCM process as defined by SAE JA1011 standard.
- Conduct a thorough Failure Modes and Effects Analysis (FMEA) for critical assets.
- Differentiate between hidden and evident failures and their consequences.
- Evaluate failure consequences related to safety, environment, operations, and non-operational costs.
- Select the most technically feasible and cost-effective proactive maintenance tasks.
- Develop a comprehensive maintenance strategy combining condition-based, time-based, and failure-finding tasks.
- Justify maintenance decisions using a logical and defensible framework.
- Implement and sustain a living RCM program within their organization.
- Measure the effectiveness of an RCM program using key performance indicators.
- Integrate RCM principles with other reliability and asset management initiatives.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, engaging, and practical, ensuring that participants can apply the learned concepts directly to their work environment. This course moves beyond traditional lectures by incorporating a blended learning approach. A significant portion of the training is dedicated to hands-on workshops and practical exercises where participants will work on real-world case studies to conduct RCM analysis. Group discussions and brainstorming sessions are facilitated to encourage knowledge sharing and collaborative problem-solving among attendees from diverse industrial backgrounds. We utilize detailed simulations of the FMEA and task selection processes, allowing for a risk-free application of complex decision-making logic. Expert instructors provide continuous feedback and guidance throughout the sessions, ensuring a deep understanding of the material. The course structure promotes a dynamic learning environment where theoretical knowledge is immediately reinforced with practical application, empowering participants with the confidence and skills to implement an effective RCM strategy.

Course Agenda (Course Units):

Unit One: Foundations of Reliability Centered Maintenance

- Introduction to Maintenance Philosophies.
- The Evolution and History of RCM.
- Core Principles and Objectives of RCM.
- Understanding the SAE JA1011 and JA1012 Standards.
- The Role of RCM in a Comprehensive Asset Management Strategy.
- Differentiating RCM from Traditional Maintenance Approaches.
- Benefits and Potential Pitfalls of RCM Implementation.

Unit Two: The RCM Analysis Process and Failure Identification

- The Seven Basic Questions of RCM Explained.
- Step 1: Defining System Functions and Performance Standards.
- Step 2: Identifying Functional Failures.
- Step 3: Determining Potential Failure Modes.
- Techniques for Brainstorming and Identifying Failure Modes.
- The Importance of the Operating Context in RCM Analysis.
- Practical Workshop on Defining Functions and Failures.

Unit Three: Failure Consequences and Risk Assessment

- Step 4: Describing Failure Effects.
- Conducting a Failure Modes and Effects Analysis (FMEA).
- Step 5: Evaluating Failure Consequences.
- Categorizing Consequences: Safety, Environmental, Operational, and Non-Operational.
- Distinguishing Between Evident and Hidden Failures.
- Introduction to Risk Priority Numbers (RPN) and Criticality Analysis.
- Workshop on FMEA and Consequence Evaluation.

Unit Four: Proactive Maintenance Task Selection and Development

- Step 6: Selecting Proactive Maintenance Tasks.
- On-Condition (Predictive) Maintenance Tasks.
- Scheduled Restoration and Scheduled Discard (Preventive) Tasks.
- The P-F Interval and its Importance in Task Selection.
- Step 7: Identifying Default Actions and Run-to-Failure.
- Failure-Finding Tasks for Hidden Functions.
- Packaging Maintenance Tasks for Efficiency.

Unit Five: RCM Program Implementation and Sustainability

- Developing the RCM Implementation Plan.
- Gaining Management and Stakeholder Buy-in.
- Integrating RCM Findings with a Computerized Maintenance Management System (CMMS).
- Training and Skill Development for RCM Execution.
- Creating a Living RCM Program for Continuous Improvement.
- Measuring the Success of an RCM Program with KPIs.
- Auditing and Reviewing the RCM Process for Long-Term Effectiveness.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

Beyond preventing failures, how can a deeply embedded RCM culture transform an organization's approach to risk, investment, and operational excellence?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by focusing on the strategic implementation of RCM as a business improvement process, not merely a technical tool for the maintenance department. While many courses cover the theoretical seven questions of RCM, our program emphasizes the critical thinking and facilitation skills required to lead a cross-functional team through the analysis process effectively. We dedicate significant time to the "why" behind the "what," exploring the profound impact of understanding the operating context and failure consequences on business-level objectives like safety, environmental compliance, and profitability. The curriculum is built around a series of integrated case studies that evolve over the five days, allowing participants to experience the full lifecycle of an RCM analysis from initial scoping to final task packaging. This provides a practical, hands-on experience that is far more impactful than isolated exercises. Furthermore, the course addresses the common challenge of sustaining an RCM program, providing strategies for creating a "living program" that adapts to changing conditions and drives continuous improvement, ensuring the initial investment in analysis yields long-term, tangible results.