Rotating Equipment Optimization & Reliability Improvement

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Prague (Czech)

UK Traininig
PARTNER



Rotating Equipment Optimization & Reliability Improvement

Ref: 20227113747 Location: Prague (Czech) Fees: 5900 GBP

Why This Course

Rotating equipment is the heart of industrial operations — from pumps and compressors to turbines and fans. Ensuring their reliability and optimal performance is critical to maintaining production efficiency, reducing downtime, and controlling maintenance costs.

Advanced Rotating Equipment Reliability Optimization is an intensive 1-week program designed for engineers, maintenance leaders, and reliability professionals seeking to master advanced techniques in equipment reliability and performance improvement. The course integrates reliability engineering principles, data-driven maintenance optimization, and continuous improvement frameworks to help participants build sustainable reliability programs that deliver measurable results.

What You'll Learn and Practice

By joining this program, you will:

- Apply advanced methodologies for optimizing rotating equipment performance.
- Implement continuous reliability improvement CRI strategies tailored to your organization.
- Analyze failure modes and develop effective, condition-based maintenance plans.
- Use reliability modeling and data analytics to make informed maintenance decisions.
- Establish performance metrics and KPIs to sustain reliability gains over time.

The Program Flow

Day 1: Fundamentals of Reliability and Equipment Performance

- Key concepts and metrics in reliability engineering.
- The strategic role of reliability in asset management.
- Assessing and benchmarking equipment performance.
- Identifying performance bottlenecks and improvement opportunities.
- Workshop: Building a reliability baseline for rotating assets.



Day 2: Reliability Modeling and Analysis

- Introduction to deterministic and probabilistic reliability models.
- System reliability modeling and simulation methods.
- Applying Markov chains and Monte Carlo simulations.
- Quantifying risk and uncertainty in maintenance decisions.
- Case studies: Modeling reliability in rotating machinery systems.

Day 3: Failure Analysis and Maintenance Strategies

- Understanding failure mechanisms, modes, and patterns.
- Performing Weibull analysis for life prediction and risk assessment.
- Conducting Failure Modes and Effects Analysis FMEA.
- Designing and optimizing preventive and predictive maintenance tasks.
- Exercise: Developing a failure analysis report for critical rotating equipment.

Day 4: Maintenance Optimization and Cost-Effectiveness

- Performing criticality analysis and risk-based maintenance planning.
- Functional failure analysis and maintenance task optimization.
- Balancing cost, risk, and reliability in maintenance decisions.
- Designing practical, cost-effective maintenance programs.
- Workshop: Creating an optimized maintenance plan using reliability data.

Day 5: Continuous Reliability Improvement CRI Implementation

- Establishing and sustaining a CRI framework.
- Selecting and tracking reliability KPIs and performance indicators.
- Conducting Root Cause Analysis RCA and corrective action planning.
- Embedding reliability culture and accountability in operations.
- Capstone: Developing a Continuous Reliability Improvement Action Plan.

Individual Impact

- Gain mastery in reliability modeling and failure analysis techniques.
- Strengthen data-driven decision-making in maintenance and asset management.
- Build confidence in implementing CRI strategies for sustained performance.
- Reduce operational risk through proactive reliability management.

Organizational Impact

- Minimize equipment downtime and enhance asset utilization.
- Reduce maintenance costs through optimized reliability programs.
- Foster a proactive reliability culture across technical teams.
- Improve overall plant safety, efficiency, and profitability.



Training Methodology

This course integrates a practical, analytical, and systems-based approach to reliability improvement, featuring:

- Case studies from real-world rotating equipment applications.
- Reliability modeling and simulation exercises.
- Hands-on failure analysis and maintenance optimization workshops.
- Group projects and scenario-based problem solving.
- Action planning for continuous reliability improvement.

Beyond the Course

Upon completion, participants will be equipped to lead reliability initiatives that drive measurable improvements in equipment uptime and lifecycle performance. They will return with a practical CRI action plan, a comprehensive reliability toolkit, and the capability to sustain long-term operational excellence.

