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# Rotating Equipment Optimisation with Continuous Reliability Improvement (CRI)

16 - 27 September 202

Tbilisi (Georgia)

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course code: E6051 From: 16 - 27 September 2024 Venue: Tbilisi (Georgia) - course Fees: 4500 Euro

## The Course

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

This programme 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.

## The Goals

This seminar is an in-depth treatment of the major factors that have to be considered in order to assess and improve the reliability of machinery. It has been designed to illustrate fundamental reliability concepts without having to resort to complex mathematics. Its purpose is to bridge the gap between the rather theoretical subject of "Reliability Engineering" and day-to-day equipment maintenance practice by emphasizing the common goals of reliability and maintenance.

### *At the end of this seminar participants will be able to:*

- Apply the proven methodologies and templates which are introduced
- Focus on key areas of reliability
- Understand the nature of failure and how this affects 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

## The Process

The programme is delivered in a combination of lecture style and computer-based training. In addition, a significant amount of time is set aside for small working group activity when addressing case study problems. Extensive use is made of case study material to underline the key aspects of the course and to give the delegates exposure to current best practice.

## The Programme Content

### Day One

### *Understanding the link between Reliability and competitive advantage*

- Definition of Reliability
- Probability of failure
- Reliability metrics

- Strategic Importance of Reliability
- Assessing current performance
- Making the right strategic choices

## Day Two

### *Using reliability modelling to establish inherent reliability*

- Basic modelling building blocks
- Deterministic models
- Probabilistic models
- Markov chains
- Monte Carlo models
- Case study examples

## Day Three

### *Understanding the nature of failures in order to make the best response*

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

## Day Four

### *Optimising your failure management to ensure that maintenance is cost effective*

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

## Day Five

### *Setting up a continuous reliability improvement process in order to improve performance*

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