MAESTRO CONSULTANTS

RELIABILITY, MAINTENANCE, INTEGRITY & INSPECTION ENGINEERING.

COURSE OUTLINE 2020

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TRAINING TITLE

RELIABILITY, MAINTENANCE, INTEGRITY & INSPECTION ENGINEERING.

VENUE

Dubai, UAE

DURATION

5 Days

DATES

08 - 12 November 2020

PRICE

US$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet daily.

TRAINING INTRODUCTION

Reliability Engineering has moved forward enormously in recent years and it is often difficult to keep abreast of the latest thinking and techniques. This seminar bridges that gap and presents recent, but proven, developments in Risk Management to improve safety and uptime. It will also be show how the application of fundamental reliability techniques can be used to improve equipment run-lengths. Failure rate is a key driver for improved uptime, but Mean Time to Repair is just as important. Maintainability requires equipment that is serviceable (easily repaired) and supportable (cost-effectively kept in or restored to a usable condition). Combine this with reliability (absence of failures) to significantly improve the safety and uptime of a facility.

There is a growing realization that a safe, reliable facility depends on how well we manage risk, so we begin with a discussion of quantitative and qualitative risks. Human failures are more difficult to manage, but they matter a lot, so we will address this subject in some detail. This leads us into techniques such as FMECA (Failure Modes, Effects, Criticality Analysis) and RCM (Reliability Centred Maintenance) that help plan our work and improve our equipment reliability considerably. For less critical equipment, using the REM (Review Existing Maintenance) technique is a highly effective risk management tool. In addition, the course will show how to maintain safety-critical instrumentation using the SIL (Safety Integrity Level) technique. Static equipment is given special consideration and the course will demonstrate how and where Risk-Based Inspection (RBI) should be used. You will also learn about Root .

Cause Analysis, a powerful reactive problem-solving tool that uses a systematic and structured approach to eliminate failures permanently. The course will provide a good understanding of where and how to apply the method.

Application of the risk-based methods taught in this seminar will produce a positive impact on business goals, for example:

- maintain and improve reliability and availability,
- maximise safety,
- achieve best practice maintenance, and,
- develop world class performance.

This will be an interactive, enjoyable and interesting learning experience. It will utilize a variety of methodologies including lectures and slide presentations. The seminar is structured to give you an introduction to the key Reliability, Maintainability and Risk processes with a thorough grounding in the key elements. It offers practical advice and guidance on their use, particularly as they are applied in industry. Examples and group exercises allow delegates to acquire a more detailed and practical understanding. A comprehensive Case Study will reinforce learning. Examples of actual obstacles encountered during actual studies will be highlighted. The participation of delegates will be encouraged throughout. Delegates will also have opportunity to discuss issues relevant to their workplace if they so wish.

TRAINING OBJECTIVES

- To learn how to use key Reliability, Maintainability and Risk techniques to improve profitability and safety,
- To determine where, when and why each technique should be applied,
- To find out how to implement the analysis results effectively,
- To be able to determine value added by this work,
- To learn how to get started on a Reliability Improvement Program.

The effective use of proactive and reactive risk-based methods will significantly improve the safety and uptime of your facility and this seminar will show you exactly how.

TRAINING AUDIENCE

Reliability Team, Maintenance Engineering Team, Shutdown & Campaign Team, Barge & Subsea Team. The course has also been specifically designed to be of substantial benefit to both technical and non-technical personnel employed in the activities that support the O&M sector.

TRAINING OUTLINE

- Introduction to Reliability Engineering
- Basic Reliability Theory
- Series and parallel reliability
- Reliability failure analysis and reporting
- Failure rate/MTBF
- Using statistical analysis to predict system performance
- Reliability Block Diagrams
- Maintainability Engineering
- Quantitative Risk
- Qualitative Risk
- Failure mode and effects criticality analysis (FMECA)
- Fault-tree analysis (FTA)
- Simulation Modelling
- Performance Measurement
- Human Error and its Causes
- Learning from Failures
- Performance Measurement
- Reliability Centered Maintenance
- FMECA
- Total Productive Maintenance
- Safety Integrity Levels
- Task-bundling
- Problem solving process - Root Cause Analysis
- Work execution
- Compliance
- Performance Monitoring
- Implementation
- Reporting Results
- Holding the Gains

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.