Maintenance Errors

INTRODUCTION

- Human factors are by far the largest cause of failures and incidents in maintenance. This goes not only for branches like aviation, but also for chemicals, oil & gas, energy and transportation. Investigation shows that approximately 12% of all aviation accidents are caused by a maintenance factor. At coal-fired power stations, 56% of forced outages happen within a week after a planned or maintenance shutdown. A power distribution company reported that on average between 50 and 60% of all failures are related to a maintenance error.
- In the past, we faced serious and tragic accidents in various branches. Maintenance errors at least contributed to all of the above mentioned major accidents. Because we are heavily dependent on complex modern technologies with high speed and large power and volumes, maintenance errors can have serious consequences in terms of safety, environmental issues, downtime and costs. Considering the numbers and consequences, maintenance errors should be treated as a business risk. We cannot eliminate the risk of maintenance error completely, but we can manage it more effectively.
- This Maintenance Errors training course introduces participants to the skills and knowledge area of maintenance errors. It demonstrates why people make mistakes, not only in executing a maintenance job, but also in planning & preparing the job, in writing the maintenance manual and in engineering the asset. It shows how we could learn of maintenance errors, by analysing technical failures and incidents in a structured way. And this training seminar demonstrates how we could manage maintenance error by managing the person, the task and the team; the workplace and the organization; and by creating a safety culture.

This training course will highlight:

- The Human Error in Maintenance Phenomenom and Why it is important?
- The Fundamentals of Human Performance – Psychology meets Engineering & Maintenance
- Different Types of Human Error
- Contributing Circumstances
- Basic Methodologies to Analyse Technical Failures and Incidents
- Principles of Maintenance Error Management: person – task – team – workplace – organization and how to implement it?
- Creating a Safety Culture

OBJECTIVES

At the end of this training course, you are able to:

- Understand how significant the human factor in maintenance is
- Explain what human factors could cause maintenance errors
- Apply a structured approach to find the root cause of technical failures and incidents
- Understand the basic principles of Maintenance Error Management
- Explain how managing maintenance errors interacts with implementing a safety culture and how it supports each other
- Develop an action plan to manage maintenance errors in your own area of responsibility

ORGANISATIONAL IMPACT

The organization will:

- Have a comprehensive understanding of the impact of maintenance error on the organization (risk), the workplace, the worker and the bottom line of the company
- Learn fast how other companies are identifying and understanding the human factor in maintenance error
- Know how to manage maintenance error more effectively
- Gain insight in common pitfalls and key success factors
- Be able to apply instruments to implement maintenance error management in both short as well as long term

PERSONAL IMPACT

By attending the participants will:

- Gain understanding and practical insight of the basic concepts of human factors in maintenance error, its impact on the organisation, workplace and worker and how to manage it more effectively
- Improve their level of personal knowledge
- Add value for themselves
- Be able to plan and develop a future career

WHO SHOULD ATTEND?

This training course is suitable to a wide range of professionals, but will greatly benefit:

- All professionals involved in Maintenance, Engineering, Production and Safety
- Anyone who wishes to update themselves on the human factor in maintenance and learn how to implement maintenance error management for the benefit of their organizations

Course Outline

Introduction to Human Error in Maintenance

- We do not want to talk about it, but...
- The Significance of Human Error in Maintenance
- Relationship with Risk & Risk Management
- The Human Risk
- The Psychological Aspects of Human Error
- Human Attention
- Levels of Human Performance: Skill-based, Rule-based, Knowledge-based

Human Error – What is it?

- Different Types of Human Error in Maintenance
- How to identify them?
- Contributing Factors and Circumstances
- The Consequences of Maintenance Errors
- Case Study

How to Learn from Maintenance Errors

- Basic Methodologies to Analyse Technical Failures and Incidents
- Multiple Realities
- Subjective Views
- Effective Problem Solving
- Cause and Effect Relations
- RCA Methodologies – Application
- Apollo RCA
- Tripod
- Case Study

Maintenance Error Management

- Principles of Maintenance Error Management
- Possible measures to take:
- Person & Team
- Workplace & Task
- Organisation
- Creating a Safety Culture

Implementation Workshop

- Implementation Aspects
- Performance Management: Influencing the Behaviour of People to Gain Better Results
- Action Plan