RF-1

Reliability Fundamentals

Equipment Reliability Awareness Training

The **Reliability Awareness** course is intended for maintenance and operational personnel involved in the planning, supervision and management of maintenance work activities.

The course explains the basics of why equipment does not often reach its design or service life and challenges some long-held beliefs of how and why equipment fails.

It is necessary that everyone understands the core principals that will set the organisation on the path to reduce maintenance costs and improve reliability and performance or operational assets.

The course is run over **one day.**

There is no exam or certification.

It is designed for in-house training in groups of 8 - 20 participants.

Key Topics are:

- Introduction - why is reliability important
- Reliability & Failure Theory – why do things fail?
- The 6 main sources of equipment unreliability
- Asset Maintenance Strategies
- Condition Monitoring Technologies & their application
- Maintenance Work Management

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Course Content

1. **Introduction - why is reliability important?**

- The case for Reliability – what are the benefits of improved reliability?
- Is it worth the effort to make changes?
- Quantifying the benefit to the business.

2. **Reliability & Failure Theory**

- Why do failures occur
- When do things fail – the theory & research on when equipment is most likely to fail
- Understanding the PF interval (the time to functionally fail)

3. **The 6 main sources of unreliability**

- Original Design
- Purchasing and Condition of Spares
- Maintenance Installation Practices
- External Repairers quality of work
- Operational factors
- Lubrication & Contamination

4. **Asset Maintenance Strategy**

- Asset Criticality Review – identifying what is most critical
- Planned Preventive Maintenance (PM) and Run to Fail (RTF) strategies
- Condition based Maintenance (CBM) – maintain equipment based on condition, not time.
- Operator Asset Care - how operations can be part of the reliability improvement process

5. **Condition Monitoring Technologies & their application**

- Ultrasound
- Thermal Imaging
- Oil Analysis
- Vibration Analysis
- Motion Amplification
- Electrical Testing

6. **Maintenance Work Management**

- Maintenance work management – the process of efficient work planning
- The key roles needed for maintenance and reliability improvements.

7. **Summary**

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