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Asset Reliability Practitioner Training & Certification ARP Category I On-Site Training

The Asset Reliability Practitioner [ARP] Category I “Plant-Wide Awareness” course is intended for everyone working within an organization who in any way influence the management, design, engineering, procurement, maintenance, or operation of an organization that involves critical rotating machinery and electrical equipment.

Plant-Wide Awareness (Track A)

Whether your organization manufactures products (appliances, automobiles, etc.) or a commodity (mining, oil & gas, etc.); provides an essential service (e.g. water, sewage, power); relies on machinery/electrical equipment (facilities, shipping), or is involved with protecting their country, this course will provide a memorable explanation of how to improve reliability and performance.

No reliability improvement initiative can be successful unless everyone is on the same page. Everyone needs to pull in the same direction. Everyone needs to share the same understanding of the issues, benefits, and remedies. And everyone must be inspired to contribute, support activities intended to improve reliability and performance, and look for opportunities to make improvements. This is the way to create the “culture of reliability”.

The course achieves this goal by utilizing animations and animated simulations that make it understandable, memorable, and interesting. Delivered by passionate industry experts, this course, with the optional exam/certification, the course will make a difference to the future of your organization.

About the ARP Training & Certification Program

Practitioners and leaders involved with the important role of improving the reliability and performance of an industrial facility should be recognized for their knowledge, experience, and contribution.

The new Mobius Institute Asset Reliability Practitioner (ARP) certification scheme will recognize the knowledge and basic experience of people at three levels; the Advocate who contributes to the initiative, the Reliability Engineer, and the Leader of the program. In addition, the certification scheme will separately recognize reliability engineers and leaders who have proven competence.

Prior experience is not required for attending the training course, but 6 months of general industrial experience is required for certification.

Course Breakdown

Understand why improvement is desired

Introduction

- Overview of reliability and performance improvement
- What causes equipment to be unreliable or perform poorly
- The relationship between reliability improvement and asset management, operational excellence, TPM, and lean strategies
- The relationship between reliability and safety

Benefits

- How does the company benefit
 - How to quantify the benefits
 - Assessing the current state and measuring the value of the gap
- How do individuals benefit

Reliability Culture

- What it means to “think reliable”
- How to contribute to the reliability and performance improvement initiative
 - How important it is that you contribute
- How you can help others to understand the benefits

Leadership

- The importance of senior management support
- The importance of leadership throughout the organization
- The difference between leadership and management (and reluctant obedience)

Strategy

- Why it is important for everyone to understand the strategy
- The importance of the mission and vision statements
- The role of the reliability steering committee
- The importance of contributing to the strategy and offering your ideas and observations

Understand while failure occurs

Understanding Failure

- Why does equipment fail?
 - Mechanical failures
 - Electrical failures
- Understanding equipment “failure patterns”
 - Does all equipment wear out with age?
 - What are “random failures”
 - Early age “infant mortality” failures
- Why is this so important?

Understand what we can all do about it

Defect Elimination

- Overview of the goals of defect elimination
- An overview of each of the main sources of defects and how to eliminate them
 - Design for reliability, maintainability,

operability, and sustainability

- Procurement for lowest life cycle costs
- Transport without damage
- Acceptance testing to reject defective equipment
- Storage to eliminate degradation
- Eliminating maintenance induced failures through precision installation, maintenance and commissioning
- Eliminating operator induced failures
- Proactive tasks that reduce the likelihood of failure and poor performance

Asset Strategy

- What is the asset reliability strategy?
- Maintenance/operation options:
 - Run-to-failure
 - Condition-based maintenance
 - Interval based maintenance
- What is involved in developing the strategy
 - The need for a master asset list
 - The need for a bill of materials
 - Asset criticality ranking
 - What it is and why it is needed
 - In brief, how it is developed
 - Maintenance strategy development techniques (in brief)
 - An overview of Preventive Maintenance Optimization [PMO]
 - An overview of Reliability Centered Maintenance [RCM]
 - An overview of Failure Modes Effects (and Criticality) Analysis [FMECA]
 - How can people share their knowledge to improve these processes

Work Management

- The benefits of work management
- The basic flow of proper work management
- How people can contribute to improving the work requests, work orders, and work process
 - Accurate reporting of failures and work outcomes
- The opportunity to improve work efficiency (or “wrench time”)
- How planning can minimize time/costs with shutdowns and outages
- The role of the computerized maintenance management system [CMMS] or enterprise asset management [EAM] system

Spares Management

- The financial and work management benefit of efficient spares management
- Caring for spares
- How people can contribute to the spares management process

Precision And Proactive Work

- What is precision and the importance of

precision work

- The basics of precision shaft and belt alignment, soft foot correction, fastening, machine balancing, and other common mechanical and electrical tasks
- The importance of developing and following written procedures
- The importance of precision installation, such as bearings, seals, gears, belts, pumps, electrical equipment, and other equipment
- The importance of commissioning
- The importance of taking proactive steps to avoid future problems, including precision lubrication, resonance correction, power quality control, and keeping equipment and workplaces clean and organized

Condition Monitoring

- Overview of CM principles for mechanical and electrical equipment
- The relationship between CM and planning/scheduling and operations
- A detailed overview of:
 - Vibration analysis
 - Ultrasound
 - Oil analysis
 - Wear particle analysis
 - Electric motor testing
 - Infrared analysis
 - Non Destructive Testing [NDT]
 - Process/performance monitoring
 - Visual inspections
- The future of CM and predictive analytics

Breaking Out Of Reactive Maintenance

- An overview of the challenges
- The importance of focusing on breaking out of the reactive maintenance cycle
- Suggested techniques

Continuous Improvement

- The principle of and importance of continuous improvement, Kaizen, PDCA, and Lean
- The need to reassess business conditions and what is critical
- Utilizing metrics to measure and improve performance
 - Benchmarking against industry and the facilities “best day”
 - The importance of establishing the right KPIs
 - Suggested metrics and KPIs and the most effective use of KPIs
- The importance of accurate data collection
- The importance of constant communication
- Root cause (failure) analysis [RCA and RCFA]
 - The importance of conducting RCA/RCFA
 - The importance of making the improvements
 - How to perform RCA/RCFA
- The need for on-going education, skills, and awareness training



The Asset Reliability Practitioner (ARP) certification scheme follows the independent format of the time-tested ISO certification programs, such as ISO 18436, and it follows the guidelines defined under ISO/IEC 17024 – the same process followed by the independently accredited Mobius Institute Board of Certification [MIBoC] certification scheme that has already certified tens of thousands of men and women from over 170 countries.

Reliability Training

Yellotec offers a full complement training courses in Condition Monitoring disciplines as well product and Reliability Engineering specific courses. Courses offered are either presented under license from International Certification Bodies or are in accordance with ISO requirements.

All Courses Offered By Yellotec

Infrared Thermography (IRT)
IRT Basics, Level 1, Level 2 and Level 3

Vibration Analysis (Mobius)
Category 1, 2 and 3

Field Lubricant Analysis
Noria Level 1, 2 and 3

Machinery Lubrication
Noria Level 1 and 2

Oil Analysis Series
Level 1, 2 and 3

Ultrasound
Level 1 and 2

Asset Reliability Practitioner Training
Category 1 and 2

Shaft Alignment

Gearbox Maintenance

Failure Analysis

Condition Monitoring for Engineers

Private Courses

All our public training courses can also be conducted as an in-house private courses. If you have 12 or more people attending, consider the benefits of an in-house session conducted in the privacy and conveniences of your facilities or a meeting site of your choice. Please contact us so that we can understand your requirements, explore the benefits and make it happen.

About Yellotec

Yellotec is a reliability solutions specialists that provide complete solutions for the implementation and management of Condition Based Maintenance.

We stand proud in the belief that all failures are preventable.

We provide service, product and training solutions through the application of the following technologies:

- Vibration Analysis
- Oil Analysis
- Infrared Thermography
- Laser Alignment & Balancing
- Structural and Air borne Ultrasound
- Failure Analysis
- Fluid Management
- Conveyor Monitoring
- Electric Motor Testing