The Asset Reliability Practitioner [ARP] Category III "RELIABILITY PROGRAM LEADER" course is intended for those who have taken the lead role in the reliability and performance improvement program. Great responsibility comes with this great opportunity, and the aim of this course is to set you up for success.

Detailed topic list:

INTRODUCTION
- A review of the goals of this course
- The big picture of reliability and performance improvement
  - A truly holistic approach
  - The relationship between asset reliability and business performance (and regulatory compliance)
  - Asset management and ISO 55000
- A review of the challenges you will face
- A review of common implementation strategies
  - A review of the strategy we will follow in this course
  - A summary of common strategies that have proven to be unsuccessful

OVERVIEW OF THE IMPLEMENTATION STRATEGY
- Establishing the value of the initiative
- Establishing key measures and metrics
- Gaining site and senior management support
- Developing the reliability culture
- Getting started with pilot projects
- Establishing the team and developing the plan
- Developing the asset reliability strategy
- Breaking out of the reactive maintenance cycle
- Establishing work and spares management
- Establishing the condition monitoring program
- Instituting precision and proactive maintenance
- Operator driven reliability
- Continuous improvement and constant communication

ESTABLISHING THE VALUE OF THE INITIATIVE
- Understanding the goals of the business via a business process review [BPR]
  - Understanding the goals, constraints, risks, and the opportunities that enable the business to succeed
  - Understanding the hierarchy of the organization and how decisions are made

- Assessing the current state
  - Auditing the current practices and attitudes
  - Identifying strengths and weaknesses
- Establishing the value of reliability and performance improvement to your organization
  - Measuring the gap in relation to the goals established via the BPR
  - Benchmarking against industry best practices or "best day" results
- Developing the business case
  - Understanding key financial concepts
    - Time value of money
    - A review of payback period, ROI, NPR, IRR, RONA, EVA
  - Developing the case

ESTABLISHING CORPORATE-WIDE SUPPORT
- The critical importance of establishing and maintaining a "culture of reliability"
  - The need for senior management support and leadership
  - The need for everyone to be on-board and understand how they benefit
  - The need for everyone to understand, buy-in, and contribute to the process
- Leadership
  - The need for strong leadership
  - Leadership vs management
  - What people want from their jobs
- A review of various culture change approaches
- The key elements of culture change
  - Why do people resist change
  - How to enable people to want to change
    - The power of contribution and motivation
    - Identifying how every employee benefits

ESTABLISHING CORPORATE-WIDE SUPPORT *cont'd*
- Understanding common personalities
  - Those who will enthusiastically lead
  - Those who will actively resist
  - The fence sitters
  - And those will say the right things and do the wrong things
- Understanding human psychology
  - Motivation and demotivation
  - Human strengths and weakness
    - Cognitive bias (including peer group pressure) and how to deal with it
    - Human error
    - Memory and reality
- Gaining the support of site management
  - Plant, maintenance, operations/production, safety/health/environment, HR, union management
- Gaining the support of senior management
  - The business case
- Innovating techniques to gain support and active contribution
- Incorporating culture change into the strategy
  - A strong training plan
    - Skills assessment
    - Technical, skills, and awareness training and certification
  - A strong communication plan
    - Communicating/selling the wins (and fails) and benefits
    - Communicating asset criticality and health status
    - Communication between maintenance and operations/production
    - Ensuring constant communication in relation to all aspects of the initiative

SUPPORTING INFORMATION MANAGEMENT AND KEY MEASURES & METRICS
- Establishing key performance indicators KPIs
  - To measure and communicate performance
  - To monitor progress
- Establishing and maintaining core asset data and processes
  - A plant-wide master asset list [MAL] or equipment register

- A bill of materials [BOM]
- A change management process
- Establishing and maintaining the asset criticality ranking [ACR]
  - The basic principle
  - Supporting the development process involving all key stakeholders
  - The value of the ACR in prioritizing and justifying projects and investment
- Establishing and supporting other key measures
  - The need for accurate failure data recording
  - The need for Pareto analysis
  - The application of reliability block diagrams and availability estimation
  - The application of failure data analysis, including Weibull analysis
- Establishing and maintaining a condition monitoring program
  - The value of condition and performance monitoring data
  - How to get started
  - Working with contractors
  - A brief overview of the key mechanical and electrical techniques
- Establishing and maintaining a CMMS or EAM system
- Taking advantage of predictive analytics and the IIoT
  - Current developments
  - How it fits within the strategy

DEFECT ELIMINATION
- Lifecycle costing
  - Assessing the total cost of ownership (lifecycle costs)
  - The financial benefit of reducing the total cost of ownership
- Capital project management
  - Making decisions to reduce the total cost of ownership
  - Project management principles
    - Set goals and milestones
    - Set budgets and manage costs
    - Define how you will measure/document progress
    - Report your progress
    - RASCI
- The design process
  - The importance of designing for reliability, maintainability, operability, and sustainability

DEFECT ELIMINATION *cont'd*

- o The economic justification and how to support the process
- The procurement process
    - o Ensuring lifecycle costs are prioritized over purchase costs
    - o Establishing goals and specifications accordingly
    - o Avoiding counterfeit products
- The transportation process
    - o Understanding and avoiding the risks
- Acceptance testing
    - o Supporting and driving the acceptance testing initiative
- The role of operations/production
    - o Ensuring the standard operator procedures [SOPs] are developed, followed, and constantly improved
    - o Enlisting operators in the reliability and performance improvement process [ODR]
- Developing the asset strategy
    - o An overview of the goals/outcomes
    - o A quick review of failure patterns and strategy outcomes: run-to-failure, CBM, PM, hidden-failure-finding, and re-design
    - o A review of common approaches and defining the leadership role
        - Preventive maintenance optimization [PMO]
        - Reliability centered maintenance [RCM
        - Failure modes and effects analysis [FMEA/FMECA]
        - Utilizing operators: ODR and operator care
        - How to support these initiatives and keeping them focused
        - How to involve people from across the organization
        - Avoiding reinvention of the wheel
- Understanding the role of work and spares/material management
    - o Cost reduction and efficiency
    - o A detailed review of the optimized work management process
    - o A detailed review of optimized spares and material management
- Precision installation and maintenance

- o Understanding why mechanical and electrical equipment fails
- o Ensuring the work procedures are developed, followed, and constantly improved
- o A very brief overview of precision alignment, balancing, fastening, and other techniques
- o Ensuring commissioning procedures are developed, followed, and constantly improved
- Proactive maintenance
    - o Ensuring that proactive opportunities to reduce failures are identified and followed
    - o A very brief overview of precision lubrication, cleaning/organizing/5S, inspections
- The role of root cause (failure) analysis RCA/RCFA
    - o Establishing guidelines
    - o Providing tools and training

MANAGING A MULTI-SITE PROGRAM

- Unifying the strategy, philosophy, terminology, and training/certification across all sites
- Ensuring the key learnings are shared across all sites
- Monitoring and communicating progress
- Options: parallel or sequential implementation

OVERCOMING COMMON CHALLENGES

- Breaking out of reactive maintenance
- Getting caught in the analysis paralysis trap
- Maintaining momentum
- Losing key people – contingency/succession planning
- Working with consultants
- Keeping a focus on reliability culture

CONTINUOUS IMPROVEMENT

- The need to continuously measure, communicate, and improve
- Utilize benchmarking, auditing, and KPIs to re-assess the current state and set new priorities
- Utilize root cause (failure) analysis RCFA/RCA to identify new opportunities for improvement
- The need for on-going training, refresher training, and skills assessment

Preditec
GRUPO ÁLAVA

Edificio Antalia, Albasanz 16, 28037 Madrid
915 679 700 | preditec.com | info@preditec.com
MADRID · BARCELONA · ZARAGOZA · LISBOA · DALLAS · MIAMI · LOS ANGELES · LIMA

www.mobiusinstitute.com

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