RELIABILITY CULTURE
To Ensure Sustainable Asset Performance
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ABSTRACT: Why don’t so many asset reliability and other asset performance improvement initiatives get implemented? What are the key obstacles we need to overcome for a successful implementation? Do we have the right people available or process in place? What does it take to create a culture to implement reliability improvement initiatives? This paper will attempt to answer some of these questions.

DEFINING CULTURE
Culture in an organization is defined as patterns of shared values & beliefs that over time produce behavioral norms adopted in solving problems. Usually, it’s a body of solutions to problems that have worked consistently and are taught to new members as the correct way to perceive, think about and feel in relation to these problems.

Changing the Culture of an organization grows out of the behavior of the people within it and in turn influences how they behave. There are several ways in which behavior can be influenced:
- Increase understanding (i.e. why change is needed)
- Goal Setting
- Praise and celebration
- Roles
- Rewards
- Procedures
- Persistence to follow-up

WHAT IS RELIABILITY CULTURE?
Can we define Reliability Culture? What does it mean if someone says that organization XYZ has a Reliability Culture? Is there a metric to measure this? It’s more of a “touchy-feely” concept that can be difficult to define and measure. We could see the impact of reliability culture in the final outcome or services provided by the organization. Reliability improves the bottom line of an organization because customer’s needs are met on time and at an affordable cost. In an organization which has a reliability culture, we could observe the following:
- Assets are reliable and available as and when needed - High UPTIME
- Assets are functioning/producing as designed
- Maintenance and operational costs are reasonable
- Plant – assets operate safely

INTRODUCTION: Assets and people (workforce) are the two key factors in providing quality products or services cost effectively. Assets need to perform and be available when we need them and the workforce needs to know what to do and how to employ those assets. To ensure that an asset performs as expected, we need to have good processes in place. A good process is a disciplined approach of doing the right things. A Standard such as ISO 9001 or new Asset Management Standard ISO 55000 can be very helpful in establishing good and effective processes. Another key ingredient is people’s knowledge of best practices. People get things done. We may have great plans and the best processes, but if we don’t have the people available with the right knowledge and skills, these plans and processes can’t be implemented effectively. Understanding of best practices in the maintenance and reliability area of asset management, such as Uptime Elements®, is essential. Developing people and empowering them to give their best is the key to defining the difference between an ordinary company and a great organization. Of course, the processes must be in place to nurture and harness the potential of human capital. Key terms to understand these challenges are listed in the sidebar on page 23.
The importance of reliability and implementing best practices are discussed at the highest level of the organization. Many organizations talk about Reliability/RCM but it's treated as "program of the month" and loses emphasis over time. Changing an existing culture of “run-to-failure” and “little attention to PM” to a sustainable reliability culture takes many years and consistent management support and resources.

In a reliability culture, PREVENTION of failures becomes an emphasis at every level of the organization. The whole workforce has to be focused on asset reliability. The workforce – operators, maintainers, engineers, etc. – think and act to ensure:
- Assets are available to produce when needed
- Assets are maintained at reasonable cost
- An optimized PM plan (RCM /CBM based) is established and maintained
- An effective facility maintenance plan –(80/20 principal) is established and applied

If an asset fails, it gets fixed quickly, the root cause is determined, and follow-on actions are taken to prevent future failures. Facility / Asset reliability analysis is performed on a regular basis to increase uptime. The workforce is trained to practice reliability based concepts, and best practices are implemented on a continuing basis.

**CHALLENGES AND SUSTAINING THE CULTURE**

Educating the workforce in reliability principles is very important in order to create a reliability culture in any organization. This education should be provided to:
- Management Team – Leadership
- Equipment Owner / Maintainer - Performer
- Asset / System Owner / Engineer – Life Cycle manager

Listed are some of the challenges we face every day in creating a proactive reliability based culture in our organizations:
- Availability of Quality Information (data)
- Work Process Documentation and Understanding
- Individual “Role” understanding and responsibilities
- Process Adherence and Discipline
- Continuing improvement of Skills of Workforce - LEARNING

**KEY TERMS**

**Asset (physical asset):** An item with a potential value that an organization owns and has a use for, to create value (income), and has the responsibility to take care of; Something that has a value to the organization - present or future. (ISO 55000)

**Asset Life Cycle Management:** A process designed based on Industry’s best practices to manage its performance/activities over the entire life of an asset, from concept - development, build/acquire, use and disposal.

**Asset Management:** A systematic process of operating, maintaining, upgrading, and disposing of assets cost-effectively; an organizational process to maximize value from an asset (s) during its life.

**Asset Management System:** A structured method to support asset management i.e. ISO 55000.

**Asset Property Management:** The effective and efficient management of personal property and fixed-assets to ensure proper records are kept of the equipment, materials, or other movable and durable property on the inventory (NPMA).

**Availability:** Asset is available when needed – its function of reliability and maintainability.

**Maintenance:** Concept of keeping an asset functional, or the new thinking – “Capacity Assurance”.

**Maintainability:** Ease of maintenance.

**Property Management (commercial):** Process of managing property that is available for lease by maintaining and handling all the day-to-day activities that are centered on the piece of real estate.

**Reliability:** Probability of success, under stated conditions, and for specific mission time.

**Reliability Centered Maintenance (RCM):** A systematic and structured process to develop an efficient and effective maintenance plan for an asset to minimize the probability of failures. The process ensures safety and mission compliance. The maximum benefit of RCM is achieved when it is performed during design phase.
To Increase capacity for or decreasing resistance to CHANGE

Maintaining Support of Management – Leadership

We need to work with the management to ensure that enough resources are committed to take care of barriers/challenges in creating a new culture. In addition, we need to do the following to sustain the proactive reliability culture:

- Continue to ask the right questions!
  - What’s the root cause of this failure?
  - What’s reliability improvement plan?
  - Are we doing the right PM?
    - Are you finding things during PM? If not, re-look at PM steps & frequency

- Get Operations involved in reliability improvement plan
  - Data indicates more than 40% problems related to Operations

- Perform assets / facility reviews – weekly/monthly/quarterly
  - High cost & lost time/downtime and corrective action plans including failure analysis

- Get early involved in asset/plant planning & design
  - Design is a major player in “Reliability” and it is cheaper to design in reliability & maintainability

- Continue to encourage the right behavior – recognize & reward

CONCLUSIONS

Many asset reliability improvement initiatives fail or don’t get implemented effectively. In many organizations, workforce/people have a poor understanding of best practices or lack of standardized processes.

It’s very difficult to change our old habits. We are accustomed to fixing things when they break. In fact, some of us enjoy doing that because it gives us a sense of accomplishment. We need to change our thinking and start being proactive. It’s important to educate the workforce, including management, in reliability principles and in implementing best practices including standards such as ISO 55000 and/or other applicable standards from other sources i.e. ASTM, ANSI etc. And don’t expect to see immediate positive results. It takes many years to build the right culture. Be persistent and results will show up in organization’s bottom line.

*Uptime Elements. Visit www.reliabilityweb.com or read/subscribe to “Uptime” magazine

BIography

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