

Uptime: Getting Operations' Buy-In For Reliability

Written by Bob Williamson, Contributing Editor
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This is the third installment in a series on “Developing & Deploying a Reliability Culture” that began in the January 2008 issue.

Getting an organization to the point where equipment and process reliability makes sense is essential for successful capital-intensive businesses.

Noted reliability expert Paul Barringer, of [Barringer & Associates, Inc.](#) reminds me that “The key to success with reliability lies with management and (their) adoption of a failure free environment...to preserve the process (without failure) to keep the money machine operating.” In other words, top management, senior leadership, must lead the charge for developing a true reliability-focused work culture. While this is an absolutely crucial step, it is not always an easy step for this level of management to take.

Not long ago I made my usual statement to a plant leadership group that “Equipment and process reliability is AS IMPORTANT AS quality, workplace safety, and environmental compliance.” You actually could see the management team bow up at that statement. Then team members began talking how important safety really was around their facilities: “It is our TOP priority here. Without a safe workplace we would be out of business.” And they were right.

We have to ask ourselves what happened to get these top level managers to be so insistent on workplace safety. Moreover, we also need to ask WHAT MUST HAPPEN for them to see that while safety is of utmost importance to business success, so are quality, environmental and process reliability (absence of failures). This is not a case of one or the other. It is ALL OF THE ABOVE—quality and safety and environmental and process reliability. In fact there is a natural

synergy among these four TOP priorities.

Getting plant operations' leadership and plant floor work groups to buy-in to equipment and process reliability requires some new education and some paradigm shifting. In many organizations the "we've-always-done-it-that-way" mindset prevails UNTIL there is a new no-options set of priorities and accountabilities with consequences. That's part of what makes safety and environmental so important to businesses—regulatory compliance is not an option. Outside governmental agencies WILL enforce their safety and environmental regulations. Plus, the financial impacts of non-compliance accidents and incidents appear directly on the financial balance sheet as an expense (a loss). From another perspective, safety and environmental compliance become "risks to be managed"—the more critical the risk the more it is managed.

Regulatory or voluntary compliance

Helping plant operations' leadership and plant floor work groups to buy-in to equipment and process reliability requires that we also understand the earlier voluntary transformations they had to make for the sake of competitive business success. For example, ISO 9000 ushered in internationally recognized certification standards and registration for "quality management systems." The "Big Three" U.S. automakers then followed up with their own QS 9000 standards that incorporated auto industryspecific quality systems requirements. That was followed by ISO Technical Standard 16949, an international automotive industry quality systems standard. Each of these standards included very specific requirements, criteria, audits and registration procedures that had to be met for continuing registration and as a condition for continuing supplier status.

Similarly, environmental protection has become a progressively more critical business issue over the past few decades. The U.S. government's Environmental Protection Agency (EPA) developed and promulgated ever-increasing regulations regarding pollution abatement and prevention. EPA's regulatory process was similar to the U.S. Department of Labor's previously developed Occupational Safety and Health Act/Administration (OSHA) regulations. Violations of these regulatory guidelines were punishable with fines and even imprisonment for willful neglect. Then, many businesses voluntarily pursued the new ISO 14000 standards for "environmental management" similar to the earlier quality management systems standards of ISO 9000. Likewise, ISO 14000 included very specific environmental performance requirements, criteria, audits and registration procedures that had to be met for continued registration.

Today's reality

Within ISO 9000, TS 16949 and ISO 14000, there are sub-sections that deal with criteria for

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“preventive maintenance programs for key process equipment” (TS 16949, clause 7.5.1.4, for example). But, these are small portions of the overall quality and environmental “process reliability” guidelines. While most businesses comply with governmental safety, health and environmental regulatory requirements, there are many businesses that do not pursue the voluntary standards for quality and environmental management. Sure, there are clauses and sections within the government regs that address some aspects of “maintenance” but, what “standards” or “regulatory requirements” exist for equipment and process reliability? Virtually NONE!

When you Google for “Quality audits,” “...certification,” “...checklists” you’ll find millions of sources, including ISO 9000 and TS 16949. Google for “Environmental audits,” “...certification,” “...checklists” and you will find hundreds of thousands hits, including ISO 14000. However, Googling for “Equipment reliability audit,” “...certification,” “...checklists” generates just seven sources, and only for “equipment reliability audits”—nothing like the nationally and internationally recognized safety, quality, or environmental standards. The sad reality? Equipment and process reliability are NOT perceived as important to business as are safety, quality and environmental issues. Yet, doing business with unreliable processes can be very expensive, time-consuming, frustrating and, at times, even disastrous.

Achieving buy-in

What really happened over the years that made quality, safety and environmental so important to companies? Do you suppose it was the public image, employee revolts, customer complaints, regulatory fines and sanctions or business reputation and recognition? Sure, all that had an awful lot to do with it. So did the high costs associated with workplace accidents, environmental incidents, customer complaints and lost market share! Businesses could measure the costs associated with each of these situations. They tracked and trended the occurrences and costs, then did something about the causes. It was almost a no-brainer.

So, what about equipment and process reliability? In the absence of obvious regulatory compliance pressures, we have to focus on the costs associated with unreliable equipment and processes.

The cost of unreliability

Almost 20 years ago, several of us in the Total Productive Maintenance (TPM) and Reliability-Centered Maintenance (RCM) consulting fields started talking about the “cost of failures” and the “cost of unreliable equipment.” We asked, “Do you know, or can you find out what an hour of downtime costs the business?”

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If you dig enough, if you ask the right people in production and accounting, you might be able to answer that question. Once you have it, you also have the foundation for a paradigm-shifting business case for improving reliability—more production in less time, higher process efficiencies, better utilizations, higher return on net assets, better on-time deliveries, uninterrupted flows and lower costs. The more compelling the business case for reliable equipment and processes, the more operations leaders and plant floor work groups will understand why RELIABILITY is so important to competitive business success.

Try the following approach. Begin by asking the question “What does an hour of downtime cost the business?” Look at your critical processes first. Take recent incidents of unplanned downtime that stopped a critical process and “dollar-ize it” in terms of lost production, lost revenue, lost profits, late deliveries, expedited processing, etc. Lost time never can be made up. It’s lost forever. Sure, you can work overtime to catch up, but that’s paying double to produce the same amount—a false economy. Think about it this way: What would an hour of downtime cost a NASCAR team? Could the team quantify the impact of such downtime on the business? You bet! Could they ever make it up? No way!

Focused improvement

Focus on the critical processes, the critical few. These processes, for example, can be a chilled water system, a production line, steam system, a complex multi-station machine, a material handling system, a dust collection bag-house or a wastewater treatment system. Next, target the weakest links within those processes. Determine the root causes of the problems and eliminate them. Develop the “reliability business case” for making these critical processes problem-free, one equipment component at a time.

Synergy...

The whole is greater than the sum of the parts. That says it all. Here are the options: We can champion a Safety Program, a Quality program, an Environmental Program and/or a Maintenance & Reliability Program with the appropriate departments taking the lead to fulfill management expectations. Yet, the real sustainable breakthroughs happen when we put them all together with an equal emphasis. That’s synergy!

Workplace safety...

Ron Moore, author of the book *Making Common Sense Common Practice*, made the statistical observation that workplace injuries increase as equipment breakdowns increase. The opposite occurs, too. The more reliable the plant, the fewer accidents and injuries you can expect.

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Clearly, there is a direct correlation between accidents and equipment reliability.

Quality and yield...

Many of us also have observed that the more reliable the manufacturing processes, the higher first-pass quality yields, the less waste and rework.

Environmental...

The more reliable the environmental equipment and processes the fewer incidents.

Maintenance...

The reduction of “reactive maintenance” work because of more reliable processes makes more time available for planned, preventive, predictive and proactive maintenance work. What a powerful business model for process reliability— capital-intensive business processes doing what they are supposed to do, first time, every time!

Getting operations' and plant floor leadership buy-in for reliability is a joint effort, a partnership whether the maintenance group takes the first step or the operations group does. Reliable processes produce revenue. Cost effective reliable processes produce wealth. **MT**

References

1. Moore, Ron, Making Common Sense Common Practice: Models for Manufacturing Excellence, 2002, Butterworth- Heinemann, Woburn, MA.