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How Plant Wellness Way Sites Get Zero Failures

Let a Plant Wellness Way EAM System-of-Reliability End Your Business Risks Forever

Abstract:

The prime role of Maintenance is to reduce operating risk. Maintenance serves a business well when its use leads to lower production costs than using other choices that could have been taken. Too many managers think that they must maintain plant and equipment. Maybe you do and maybe you don't. Maintenance is expensive and, as far as it is safe, use less costly answers. But if you do choose to do maintenance, then you ought to pick an operation's maintenance strategy mix based totally on its effectiveness in delivering the least operating costs for the least maintenance cost.

Keywords: maintenance strategy selection, operating risk reduction

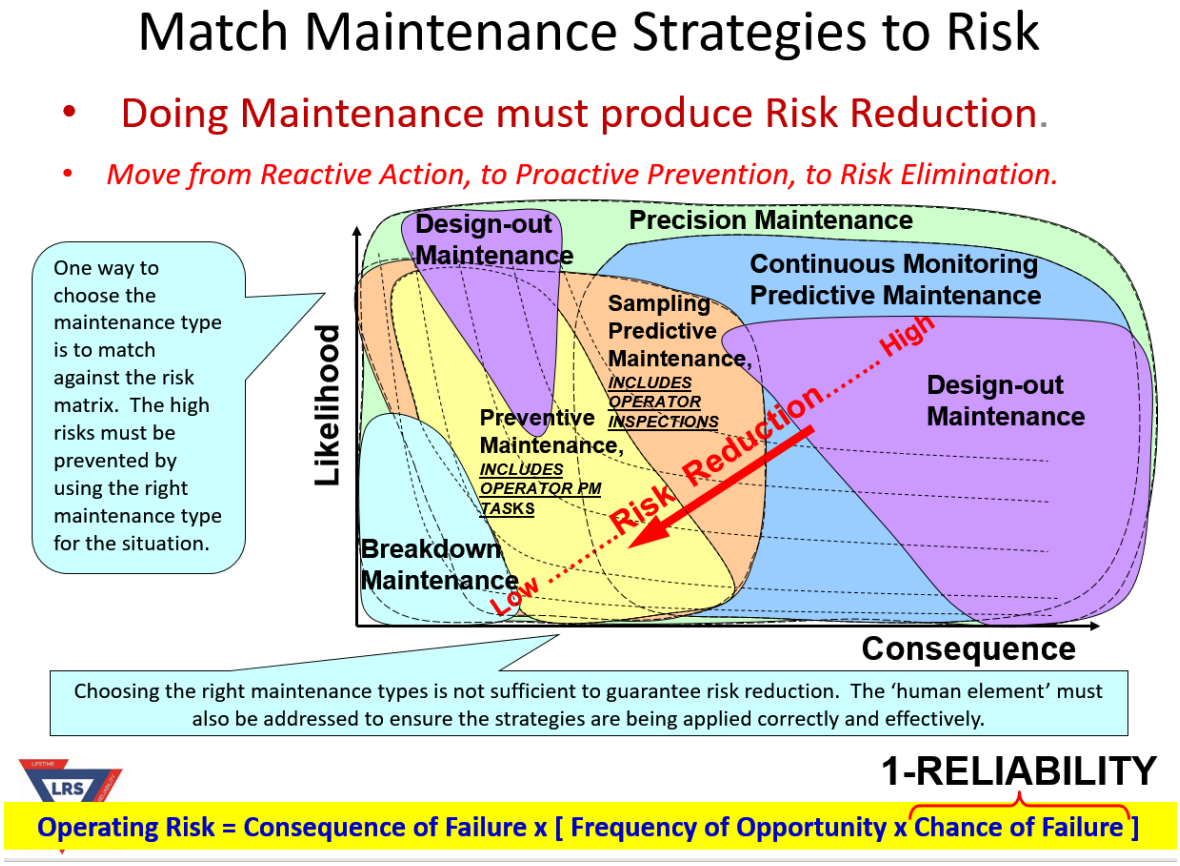

Figure 1 – Only Do Maintenance When It is the Least Cost Option to Reduce Operating Risk

Figure 1 highlights that the maintenance you do changes with the size of the operating risk you face. If you want to have low operating costs, then don't exclusively use preventive, predictive inspections, and breakdown maintenance strategies. They will not prevent high cost failures and serious production disasters. If you never want critical production problems you need to design the problems out, use precision maintenance and precision operation on the remaining equipment, and provide intelligent, continuous online monitoring of pre-failure parameters.

Figures 2 and 3 explain why using the Plant Wellness Way industrial asset management methodology can deliver zero breakdown performance and the least maintenance costs.

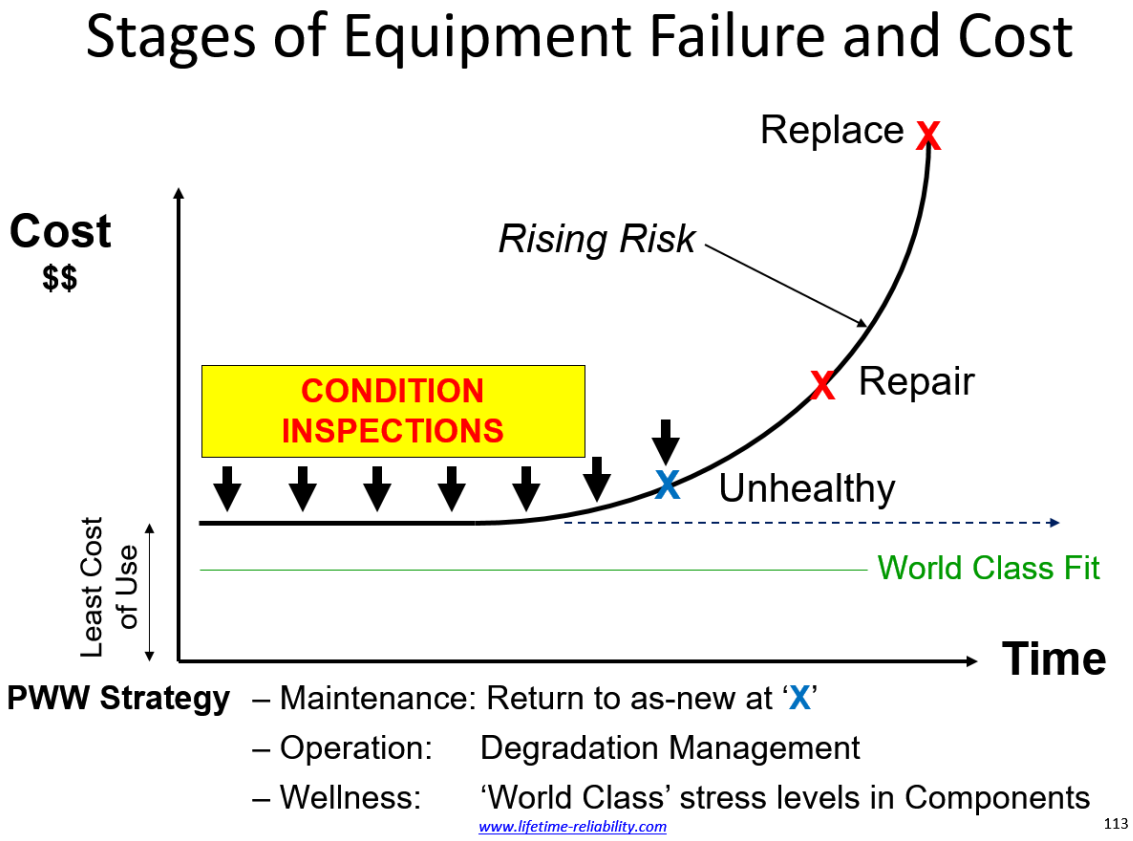

Figure 2 – The Maintenance Intervention Point Has Big Operating Cost Consequences

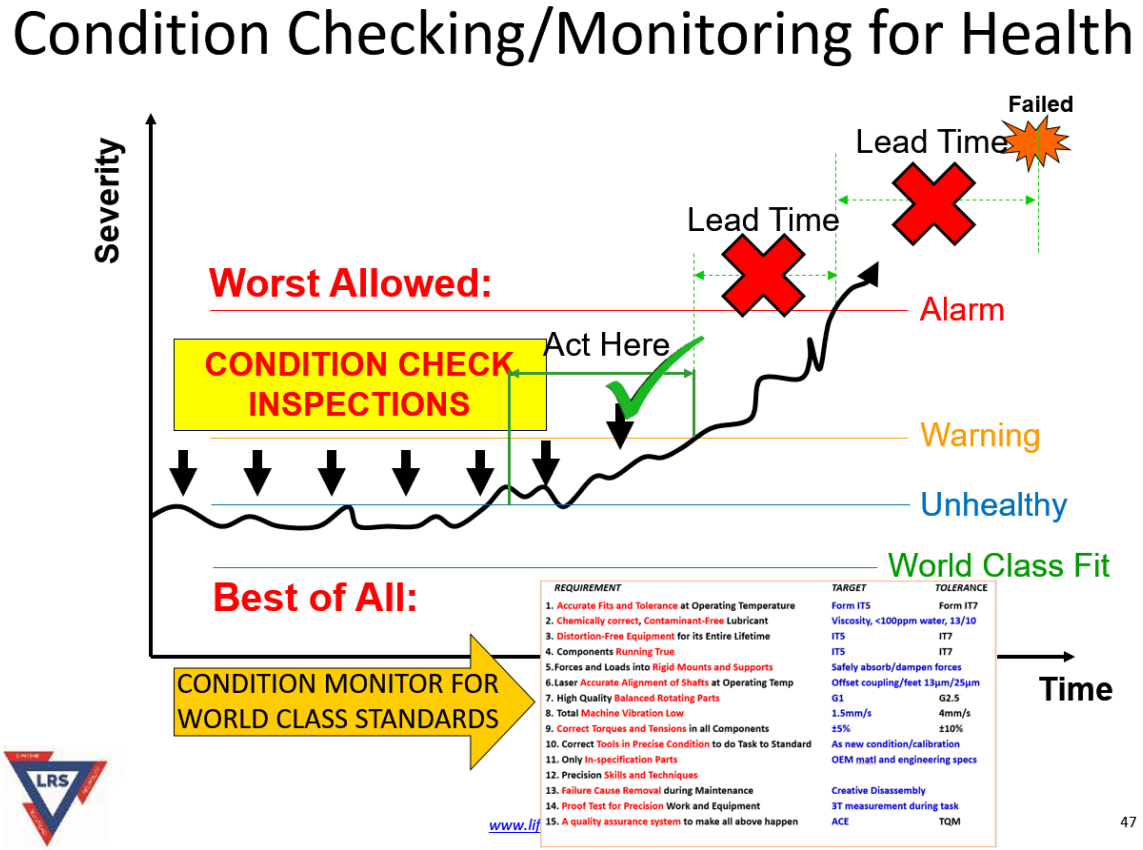

Figure 3 – You Get 4 Chances Before a Failure at a Plant Wellness Way Site

The maintenance strategy you adopt dictates the intervention point at which you administer the maintenance correction. Breakdown maintenance awaits a total failure. Preventive Maintenance is renewal before failure. Predictive Maintenance requires initiation of a sure failure, followed by its correction. A Plant Wellness Way EAM site looks for early warning signs of changing health.

A common practice in industry is to set a maximum value for an equipment condition parameter(s) that correlates to an impending equipment failure. This is the equivalent of setting the "Alarm" point in Figure 3. You use a sampling predictive maintenance (PdM) technique to check the condition of a parameter(s) against its worst allowed state. When the point is reached it is necessary to initiate maintenance intervention to prevent a sure failure. The lead time to failure is unforgiving in such a situation. If the equipment is over stressed during the "waiting for repair" period, you get a breakdown—the most expensive type of maintenance.

To reduce the risk of failure caused by using only an alarm point, sites introduce a "Warning" value. Now you have more lead time to do the maintenance. But human nature being what it is, a warning level is just a warning. Typically, because the condition is not yet bad enough to justify taking action sooner, Production will wait until the alarm is reached before scheduling corrective maintenance. A planned corrective repair is far less expensive than an unplanned breakdown repair, but it's still a production interruption and a production cost that should never had occurred.

PdM allows, in fact it requires, equipment to degrade until corrective maintenance is necessary. A decision to negate the importance of warnings ensures that, from time to time, you'll judge the operating risk wrongly. That will produce an occasional breakdown before the repair can be done, even when you are using the best condition monitoring methods and practices. Maintenance costs are always higher than they need to be with a predictive maintenance strategy.

A Plant Wellness Way EAM strategy is different and comes into action at the lowest cost point of the curve in Figure 2. Instead of waiting to be sure you will have a failure, the Plant Wellness Way is to return the equipment back to a healthy condition well before serious degradation begins. Even more than that, the Plant Wellness Way gets you to set a world class condition quality standard(s) so you can immediately see how poorly your current state of equipment health is when compared to how fit and well it could be.

A Plant Wellness Way EAM System-of-Reliability site gets least cost maintenance and utmost uptime because it makes you keep your operating assets fit and healthy. With early correction and four warnings to fix its problems, it's almost impossible at a Plant Wellness site to have equipment failures. Zero breakdowns and low cost production are the natural state of affairs when your company, your management, and your people adopt the Plant Wellness Way mindset and practices.

The entire Plant Wellness Way EAM methodology is explained in the *Industrial and Manufacturing Wellness* book. The hardcover book is available from the publisher's website: https://books.industrialpress.com/9780831135904/industrial-and-manufacturing-wellness/ the ebook version is at https://ebooks.industrialpress.com/product/industrial-manufacturing-wellness.

The book is also at Amazon Books: https://www.amazon.com/Industrial-Manufacturing-Wellness-Mike-Sondalini/dp/0831135905/.

All the best health to you, and to your plant,

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