

## So you think you have the right Maintenance Program?

Written by Al Weber, Ivara Corp.  
Friday, 01 July 2005 19:31

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Many organizations feel that if they can move from reactive to preventive maintenance they are headed on the right path, and that this in turn means they are on the road to proactive maintenance. However, as has been demonstrated by many studies, in excess of 80 percent of all failures are random. Therefore, time-based preventive maintenance (PM) programs will not be effective because you will, in most cases, be doing too much work too soon or too little work too late.

Over the past few decades, the demands placed on maintenance have been changing. In leading companies today maintenance is no longer viewed as a cost center, but rather is expected to contribute to the strategic goals of the company. In today's ongoing environment of wanting maintenance to do more with less, it becomes ever more critical for the maintenance organization to define as accurately as possible the right work to be doing at the right time.

In world class organizations, the maintenance program breakdown is benchmarked as follows: Too little too late—15 percent; too much too soon—5 percent; the right work at the right time—80 percent.

However, the typical industry averages today are: Too little too late—60 percent; too much too soon—20 percent; the right work at the right time—20 percent.

**Too little too late: Deviation Work.** This type of environment is largely reactive as a result of financial and personnel cutbacks. Consequently, work is not being completed as planned. Emergencies take place regularly and much of Maintainers' and Operators' time is spent in a fire-fighting mode repairing failed equipment.

**Too much too soon: Nonvalue-Added.** This type of situation results when too many nonvalue-added tasks are performed and a majority of workers' time is spent on jobs that are not well timed or essential to the operation of the plant. Every structured maintenance program includes some degree of PM; however, most failure is random.

When equipment is in a stable state, performing time-based maintenance tasks risks disrupting a well-running, stable system and can actually create unanticipated problems. Moreover, PM is

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costly and does not ensure you will detect the cause of a problem prior to it occurring, thus not prevent failure from taking place.

**The right work at the right time: Base Work.** The proper process is in place to identify the appropriate maintenance program using a combination of work identification methodologies. The goal is to identify and mitigate problems before they arise.

So where are you in the overall scheme of things?

To help you critique where you want to be, it is important to understand that in a world class program you are going to have some preventive, predictive, and run-to-failure (reactive) maintenance tasks.

Methodologies to help you understand the optimal maintenance program for your assets begin with work identification methodologies such as maintenance task analysis (MTA) and reliability centered maintenance (RCM), which force the participants to understand the operating context of the equipment and then to define what the most appropriate maintenance program should be. Prior to starting work identification, it is very important to go through a detailed criticality and risk assessment to determine the 15-20 percent of assets that require the greatest attention in the early stages of the program.

The balance should eventually, at a minimum, have MTA applied to those assets that do not require RCM. The rationale behind using two complementary work identification methodologies is for practical reasons—typically RCM is more resource intensive, hence more lengthy and costly, and therefore applied only to the assets/ equipment that are of highest consequence, criticality, and risk.

MTA is an extremely cost effective and practical way to develop reliability programs for equipment. With MTA, you can build and implement basic, technically-sound reliability programs for all plant assets in the shortest timeframe possible.

In today's world it is essential that we strive to optimize every maintenance dollar our organizations spend. Thus we all have a significant responsibility to insure that the best maintenance programs possible are put in place. It should be recognized also that this is an

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ongoing activity, not one that will be completed a week from Monday. With this in mind, we all need to appreciate that the results will be realized incrementally over time. Enjoy the journey! **M**  
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