

Preventative Maintenance - What Is All The Fuss?

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If you have watched television in the past few years, you might recognize the following credit card slogan. The cost of overtime labor, \$350; the cost of back up generator fuel, \$186; the cost to pull, rebuild, and reinstall 125 HP motor, \$ 4,465.00; the cost of a little preventative maintenance.... PRICELESS!

Last year in our department the topic of preventative maintenance, or lack there of, reared its ugly head. The problem is not that our system doesn't do preventative maintenance, in fact we have an ever improving preventative maintenance plan. The problem we ran into, and I believe many small communities run into, is that we haven't taken the time to develop a comprehensive *preventative maintenance (pm) schedule*.

Friday morning I got a call from my water operator, "The booster pump at our main well has kicked out, and I think the motor may have burned up". We started the process by contacting our trusted emergency service provider. Within hours we had the motor being pulled and taken in to be rewound. Upon deeper examination, it was found that the cause of our grief was not the motor, but a seized bearing which created enough force to bend the shaft. Could all of this have been averted with a little preventative maintenance?

Allow me to define preventive maintenance as, the act of maintaining property or equipment with the goal of averting unanticipated or premature wear and failure, and in our situation an unplanned shutdown.

To make this concept of preventative maintenance work, a person or organization must take it a step further and create a *pm schedule*: the program that identifies preventative maintenance needs, assigns each need an interval, and then prioritizes maintenance needs in a systematic format. When developing a *pm schedule* the following are some questions that should be asked:

- What equipment needs preventative maintenance?

- How frequently does the O&M manual suggest maintenance be done?
- Does experience suggest preventative maintenance should be done more frequently?
- What equipment and materials are necessary to do the needed maintenance?
- Are there good times during the year for planned shutdowns?
- Are there times when employee work loads would facilitate maintenance?
- Should a piece of equipment be replaced or have a replacement time frame?
- What employee training is needed to perform preventative maintenance?
- Has money been set aside in the budget to perform the necessary maintenance?

The answers to these questions will get your organization off to a good start toward developing a *pm schedule* tailored to your system's needs.

A *pm schedule* can be as complex as a computer program that generates a daily list of maintenance to be performed on a particular piece of equipment, or as simple as a calendar on the wall with maintenance needs to be accomplished that month. When maintenance is completed, it is logged and the next scheduled maintenance is identified and placed in the *pm schedule*.

To be effective, a *pm schedule* must be written down. A written document has a couple of advantages. First, it becomes transferable from one employee to the next. Because a large number of our operators are nearing the retirement age, the need for this information to be transferable becomes even more important. If you fall into the "almost out of here" category, have you done your part to leave your successor documents like a *pm schedule*? Secondly, a written *pm schedule* serves as a reminder of all that needs to be done, so important, or not so important, maintenance is not forgotten. Finally, a written schedule makes preventative maintenance more efficient and effective. The employee performing service is able to move through the list of to do's, and depending on your *pm schedule*, may know what equipment, tools and materials will be needed to perform the preventative maintenance. When a *pm schedule* is in place the end result is equipment that lasts longer, with fewer

component failures, and less frequent unplanned shutdowns.

As a result of our system's unplanned and unnecessary shutdown, we began creating *pm schedules* for each of our facilities and other groupings, such as small equipment and vehicles. We refer to the manufactures' O&M manuals and our experience with specific equipment to create our maintenance schedules. When an employee performs the necessary preventative maintenance, they are given a checklist that identifies specific equipment, what maintenance should be done, and necessary materials to perform the maintenance. The maintenance checklist has a place for comments for the supervisor to review and for the next employee performing preventative maintenance to refer to.

In today's competitive market, both the public and private sector are being forced to do more with less. Downsizing, outsourcing, and more efficient budgets affect every market in our economy. We are expected to get the most out of the equipment we have. As providers of a service, as well as a product, we must continue to look for ways to maximize the resources we have. A *pm schedule* is the first step in that direction.

Does your organization have a *pm schedule*? If so, do you need to review, update, or improve it? If you don't, is it time to start putting a *pm schedule* together? Unexpected emergency shutdowns will always be a part of our industry, but we have the ability to limit the frequency of these events through preventative maintenance. Is there a costly unplanned shutdown looming in your future? Can it be avoided with a little preventative maintenance? Remember, "The cost of a little preventative maintenance... PRICELESS!