



# Starting a Planned Maintenance Program on a Shoestring

By Matt Adams, P.E.

Day-to-day work in the trades can be exciting! For some, the day goes by in a whirlwind as they chase service requests and unplanned failures. Nothing makes an eight-hour day seem like 30 minutes the way “putting out fires” does. Sometimes the customers make it seem more professional than it really is. They are truly grateful when someone is sent to help them with their problem.

Unfortunately, this gratitude is not necessarily a result of our stellar response record, but more a recognition that the maintenance department seems spread too thin and the customer is happy that someone got there as soon as they did! This “conditioning” of our customers does not serve them or our maintenance department. I exaggerate the point to ask one of the most repeated questions in APPA. How can we convert our reactive maintenance operations to a planned and predictable operation? In addition, how can we do this with little or no additional resources?

## A NEW PERSPECTIVE

It seems reasonable to assume that if a department is short on resources and in a full-blown reactive mode, moving to a more planned work schedule is impossible without an infusion of staff and materials. However, a participant to the APPA Leadership Academy said recently to the Track III participants, “If you don’t believe we can change anything with what we have to work with, why

even bother to come to these events?” I say amen to that! There is always a new idea or practice that we just have haven’t learned about yet, or tried. Perhaps it’s merely a new perspective. This new perspective is where we will start for this exercise.

If you have a computerized maintenance management system, a simple report or pie chart showing the major types of service requests occurring each month or annually is needed. If this is not available, anecdotal information gathered from reviewing the hard copy records or even the results of interviews with the trade staff. In other words, we need to know what the slices of the pie look like for everything we do each year (e.g. 20% of labor for hot-and-cold calls, 15% for lighting issues, etc.)

For some, seeing the results of this analysis of annual workload can be informative. To others it reinforces what they already knew. Nevertheless, this report illustrates the expenditure of working hours of our most valuable asset, the trade staff. To better manage this resource we must begin to analyze, measure, and redirect this asset. To start this, we use the tool that is

used over and over again in this process, which is the Pareto’s Law (otherwise known as the 80/20 rule.) What are the 20 percent of activities in each trade that require 80 percent of the resources? While not specifically 80/20, there are typically easy trends to identify.

For example, the HVAC show might spend 50 percent of their time on hot-and-cold calls. Pick one or two large trenches each trade. This is where the new perspective starts. Total the hours



and/or cost for hot-and-cold calls per year. Now start with a modest goal for initial and continuous improvement. By modest I mean that this kind of change will be slow and incremental, but will manifest itself with the return on better investment of the HVAC trade resource over time.

As such, a goal of 5 percent of hot-and-cold time is reasonable. You can state it as “during 2014 the HVAC shop with redirect 5 percent of 2013 H/C hours to planned activities, 1 percent in the each of the first three quarters and 2 percent in the fourth.” Redirecting trade hours takes the same kind of discipline required for personal savings. In other words, we must save first and spend later.

The initial 1 percent of activities redirected must be designed and scheduled from the onset. That is to say, for this to work, actionable plans are ready to redirect 1 percent of the H/C resources in the quarter, while at the same time, redirecting those resources to planned maintenance activities that pay the highest return on investment toward our long-term goal of creating a planned maintenance program from an unplanned operation.

#### A NEW APPROACH

Now let's look at the new perspective. The team meets to try and find ways to free up 1 percent now and 5 percent overall for the year. Keeping mind that small improvements matter, we might start by just analyzing Monday mornings. For most of us this is prime time for hot-and-cold service calls.

Here are some examples of changes but there are many more known and yet to be discovered:

- Appoint one building coordinator for each facility and train this person on the long-term program goal of PM. Have only this person receive hot and cold calls on Monday morning and rationalize them. That is to say, it is known that some are not actually mechanical but people issues. This person can learn to read the thermo-

stat and even be provided additional thermometers to share. Only calls that are clearly a mechanical issue are forwarded to the work control desk but combined into one request for the morning/facility. In this way, one trip is required and it has been initially vetted by our new, semi-first responder, the building coordinator.

- It is known that many customers are satisfied when they simply get a response of some kind to their complaint. However, on Monday mornings, our HVAC technicians

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were running all over campus to make these H/C calls be “heard.” To save on that resource we could find an apprentice, or other less costly resource, to preemptively visit each densely populated facility each Monday morning. This person walks the facility, floor by floor, and communicates with the building coordinators as well as staff in areas that often have hot-and-cold complaints. The idea here is to make the customers feel heard while not spending valuable HVAC technician resources going to and from the buildings all morning. However, if there is a “real” mechanical issue, this preemptive first responder is trained to direct urgent requests to the work control center.

- Concurrently with the implementation of our trade labor conservation measures, are the redirection of that same labor to activities that move each trade shop closer to the goal of PM. During the initial quarter at least

one a hopefully more, PM activities are scheduled diligently and not missed. Great care must be used to rationalize the selection of these activities. While it is known that PM will extend the life of building systems, the emphasis early in this transition places more weight on reliability and prediction. Keeping with the HVAC example, we would consider the following critical thinking or redirected PM activities.

- Conduct analysis to discover those HVAC systems that are poor design, advanced gain, or heavy use such that planned maintenance will help to further redirect resources from “unplanned” to “planned.” Preventive inspections and basic predictive testing provide a high rate of return for most systems. Furthermore, research has shown that preventive maintenance executed within the initial two years of system increases long-term reliability and performance of a new installation.
- PM inspections are designed to find work. The frequency and design of inspections must be adjusted so that work is created valued much more than the cost of the actual inspections—at least 3 to 1. If this is not the case, the wrong systems are being inspected or they are being inspected too frequently. Redirect this resource.

#### IT WORKS

The critical analysis of redirecting trade labor resources into initially improved reliability of systems and eventually life-cycle extension is a process that works. It is based on the reality that no significant resources area available to begin a planned maintenance program but we must have one. Therefore, we have to aggressively scrutinize how current resources are spent, and find new and clever ways to save and redirect them. 💰

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