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We generally think of reliability centered maintenance (RCM) implementation as three separate activities:

- RCM analysis resulting in recommended RCM-based preventive maintenance (PM) tasks
- Carrying those RCM-based PM tasks to the plant floor (task packaging)
- Conducting the Living RCM Program to measure results and fine tune the process.

I found (much to my surprise at first) that successfully initiating and completing the first activity (analysis) was done with very little, if any, difficulty. The problems, however, with the other two activities were often extremely difficult, and sometimes catastrophic. These problems varied from site to site, but there are a handful of common topics:

Staff buy-in

Nothing new is ever successfully introduced into an operating plant, facility, or factory unless the people who are charged with the responsibility to do it are 100 percent behind it. You will obviously obtain some degree of acceptance of RCM simply by the successful completion of the analysis process on some complex plant systems. But this acceptance (buy-in) is very narrow, and, as a result, many practitioners often move on to task packaging without first obtaining a broader degree of ownership and buy-in from plant supervision and craft personnel. Without that broader acceptance, it is unlikely that any attempt to carry the RCM PM tasks to the floor will be successful. So, a carefully planned program of indoctrination and education must precede any attempt to actually do the RCM PM tasks, and the broadest possible inclusion of plant personnel in the analysis process itself should occur in order to systematically develop buy-in and ownership with the work force.

Equipment-oriented mindset

In a typical plant, we commonly find craft and supervisory leaders to be skilled and dedicated people who have spent many years of hands-on work with the equipment. In fact, their careers are focused on assuring that the equipment is always operating or available to operate if called upon. In other words, their job focus is equipment preservation. However, RCM takes a different view of what their job focus should be—namely, to assure that critical plant functions are always available when required. This is function preservation.

The shift in emphasis from equipment to function preservation frequently becomes a difficult concept to sell; yet it is the basis for all of the RCM-based PM tasks. Plant personnel need to have some grasp of the conceptual logic behind RCM, or they will have difficulty changing their old (and comfortable) ways of doing business.

New tasks, new technologies

Human beings resist change. We are comfortable with the status quo. Over the years, in comparing the content of existing PM programs versus a recommended RCM-based PM program, changes in the range of 40 to 80 percent occur. Clearly, plant staff personnel must have some appreciation of where changes of this magnitude come from and why they are very beneficial to do. But beyond that, other resistance factors enter the picture.

The RCM program will always introduce new PM tasks (it also will delete nonvalue-adding tasks). These new PM tasks will require new work orders, often completely new procedures, and perhaps also new tools and craft skills.

In a large number of cases, RCM will introduce predictive maintenance (PdM) tasks into the program. This will always require some degree of new tools and craft skills. So the shift to the RCM program is not just a buy in and function-oriented mindset; it is also a commitment to some degree of time and money to make it happen. Thus, various levels of management approval could be involved. And most certainly, a dedicated attitude among the craft personnel together with efficient resource planning is a must if successful implementation is to occur.

The first step to solving these potential problems is to recognize their existence, and then make them a part of your overall installation plan for the RCM program. You must decide up front how you will address these issues. If you wait until they are upon you, chances are that you may never proceed to place your RCM-based PM tasks on the floor where they belong. **MT**