STRATIGIC MAINTENANCE MANAGEMENT

BY: Ronald L. Hughes, The Reliability Center

Mr. Hughes, a mechanical engineer, is a member of the American Society of Mechanical Engineers (ASME) & the American Society of Training and Development (ASTD). He is currently a Senior Training and Reliability Consultant with Reliability Center, Inc. (an engineering and consulting firm). His expertise encompasses all areas of Human and Plant Reliability including the training, mentoring and facilitation of Root Cause and Opportunity Analysis efforts worldwide for client companies.

INTRODUCTION

Since maintenance costs represent a major portion of the budget associated with manufacturing (or any other capital-intensive industry), it only makes sense to view maintenance as one of the main players of the critical business strategy. After all, maintenance has a direct impact on everything that affects the overall health and welfare of the organization. Everything from the commercial risk taken, to the safety and environmental performance of the plant is represented by the maintenance management techniques employed. Therefore, a strategic maintenance strategy affects everything from plant output and product quality to the overall production cost. When viewed in this light, the maintenance strategy used can be directly equated to the overall health and profitability of any company. For these reasons, maintenance is regarded in best practice organizations, not simply as a cost to be avoided, but together with reliability engineering, as a high-leverage component of the overall business function. A sound maintenance management strategy should therefore be considered a valuable business tool used to assess equipment capability, and the continuous improvement efforts of asset performance.

The dilemma that many of us face – and mostly not of our own doing – is that we are managers in organizations which barely have sufficient resources to keep the plant working, let alone to find ways of improving reliability. When this is the case, scarce maintenance resources are rationed to meet the changing requirements of the plant and our recurring breakdowns persist in consuming what seems to be ever reducing maintenance resources. As a result, preventive maintenance suffers, which inevitably results in more breakdowns; then the vicious cycle continues.

In addition to lost productivity resulting from unplanned maintenance, the *"fix-it-quick"* mentality promotes *"band aid maintenance,"* or temporary repairs, that often exacerbates the situation. Temporary repairs take additional labor to correct or, in the worst case, fail before correction.

Often in an effort to control cost, personnel reduction programs are implemented. This inevitably results in declining morale as the fewer remaining personnel almost give up in despair from the ever-increasing workload.

Like a self-consuming virus this vicious cycle repeatedly feeds on itself. Gradually organizations and their maintenance programs become almost entirely reactive. Once the

reactive culture becomes predominant, the level of plant availability inevitably drops to the point where it stabilizes at a low level – a level where it is not breaking down because it is not running; i.e., it is not being repaired.

For many, the obvious solution is to seek to increase the numbers of maintenance personnel in order to meet the demand of downed equipment. However, this approach is not often the best. In today's economic climate, the management culture is correctly focused on cost reduction. Therefore, management's strategy often conflicts with the economic climate, so an increase to staff numbers rarely succeeds.

Today's successful Maintenance Managers are breaking out of this revolving cycle by developing strategic maintenance processes that are designed to increase the effectiveness and productivity of plant assets and human resources. A strategic maintenance management plan involves process re-engineering and increasing resource effectiveness in the following ways:

- Removing all maintenance tasks that serve no purpose or are not cost effective.
- Eliminating any duplication of effort where different groups are performing the same PM to the same equipment.
- Moving to a condition based maintenance philosophy for tasks that are intrusive or require an overhaul.
- Adding maintenance tasks to manage economically preventable failure modes that have historically been run to failure (breakdown maintenance).
- Spreading the workload between the maintenance trades and operators.

Successful Maintenance Managers are adopting such processes in a way that both systematically achieves these goals and still remains dynamic. In essence it becomes a *"living program"* strategically designed to capture the benefits of evolving technological advances and the resulting future learning on a continuing basis.

Realistically, none of these tasks can be achieved without a congruent organizational culture and continuing management support. The challenge here for management is to develop and sustain these critical elements. This is a task that in many cases proves quite difficult unless all of the stakeholders of plant performance have similar goals and work together.