The Critical Plant Manager

'We understand your need to effectively manage your assets'

JAHCon
Physical Asset Management Pty. Ltd.

Newsletter
March 2010

A newsletter from JAHCon Physical Asset Management Pty. Ltd. to keep our current and potential clients informed of our ongoing activities and to raise awareness of how JAHCon may be able to help your organisation meet its Asset Management needs.

This newsletter also provides a forum for sharing Asset Management ideas and experiences.

RCM Vs. PMO

PMO is often promoted by emphasising how it is 'not' RCM then going on to justify the differences as an appropriate trade-off between the cost of RCM verses the reduced depth or thoroughness of PMO. While RCM can be considered a 'zero-based' approach to Maintenance Plan development, PMO in its 'generic' form reviews existing plans making changes as necessary. This means that 'generic' PMO is best used when existing plans are already in 'reasonable' condition.

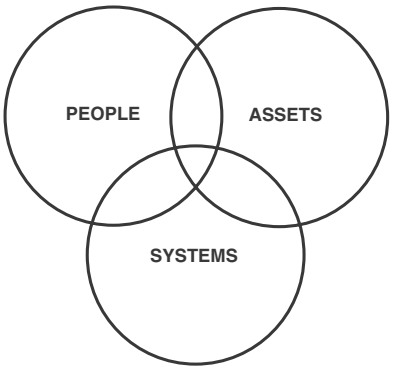
RCM on the other hand is best applied to high criticality assets especially when there are no, or poor quality plans available.

If we accept the above broad characterisations then it is best to consider RCM for new or significantly changed plant, while using PMO for periodic reviews.

Precision Maintenance

In previous articles on Precision Maintenance I've emphasised the technical aspects of this process. In particular, emphasis on tolerances for desired goals such as alignment, balancing, vibration etc. are covered in some detail in industry literature and on the web.

It is important to remember however that Precision Maintenance exists as part of a wider 'system' made up of what in broad terms may be called 'people', 'assets' and 'systems' as represented pictorially in the adjacent image. The effectiveness of our Precision Maintenance program therefore is represented by the overlap between the various components of this set of interconnected influences. For our Precision Maintenance program to be effective we must take account of the influences of these other components as well as the technical aspects.



The 'people' element influences skills, attitudes, consistency etc. The 'assets' component dictate the content and magnitude of the program by determining what actions are required and the level of precision needed to achieve the standards sought. Systems influence the organisational context in which the program is undertaken, the level of support, budgets, documentation, training programs, QA etc.

With this more 'holistic' view of Precision Maintenance it can be seen that an effective Precision Maintenance program is sustainable only if it is operated in and sustained by a 'precision organisation'. ... to be continued.

Training News

To date training discussions in this newsletter have tended to emphasise the traditional Asset Management (AM) skills such as Asset Management Fundamentals, Criticality Assessments, Planning and Scheduling, Spare Parts Management etc. However, complimentary training modules are also available through JAHCon and include Maintenance Budget Development and Management; Key Performance Indicator (KPI) Development - Implementation and Monitoring; Getting the most from your CMMS amongst others.

In addition, JAHCon offers integrated courses in specialised areas such as Paper Mill Maintenance, Maintenance Awareness courses for Water Treatment Plant operators, Mine Operator Maintenance Awareness amongst others.

Finding the best mix of core and supporting skills is an important part of raising and maintaining the skill levels and skill mix of a high quality maintenance department. Determining the most appropriate mix of skills etc. depends upon a careful Training Needs Analysis for the organisation as well as a clear understanding of asset and systems Criticality. In addition, the future development goals of the organisation have a major impact on the type and level of training that is likely to be most appropriate. Plants with limited future life are unlikely to require significant investment in training while plants with a significant life expectancy, or undergoing life extension, will benefit from more investment in targeted and timely training of maintenance and operating staff. For more details on available courses contact JAHCon at the numbers provided below.

Human Error in Design

In this edition's section on Precision Maintenance I discuss the need to see Precision Maintenance as part of a larger system. This larger system includes contributions from people and supporting functions as well as from the obvious technical influences of the asset. The influence of human factors on the outcome of a Precision Maintenance program are felt throughout the program life cycle from initial concept to implementation.

Designers must take into account the impact of their decisions on the need for increased levels of Precision Maintenance. Different design decisions require differing degrees of precision maintenance ranging form basic skills and techniques to highly complex, skill-critical activities. The need for precision maintenance can be felt in routine maintenance activities or at overhauls and refurbishments and the skills needed may not be available in-house, or in some cases may not be available anywhere. Failure to meet the Precision needs of the activity can mean the equipment may never return to full capacity, or in extreme cases may never be returned to service.

Design decisions that incorporate unusual or 'exotic' technology or techniques can lead to unnecessary high precision requirements resulting in increased difficulty of repair and increased cost.

Design decisions must be weighted carefully before being made as they are generally impossible to reverse later. In effect, design decisions when poorly made are 'errors' like any other.

The Asset Management Cycle - 'Concept analysis' (continued)

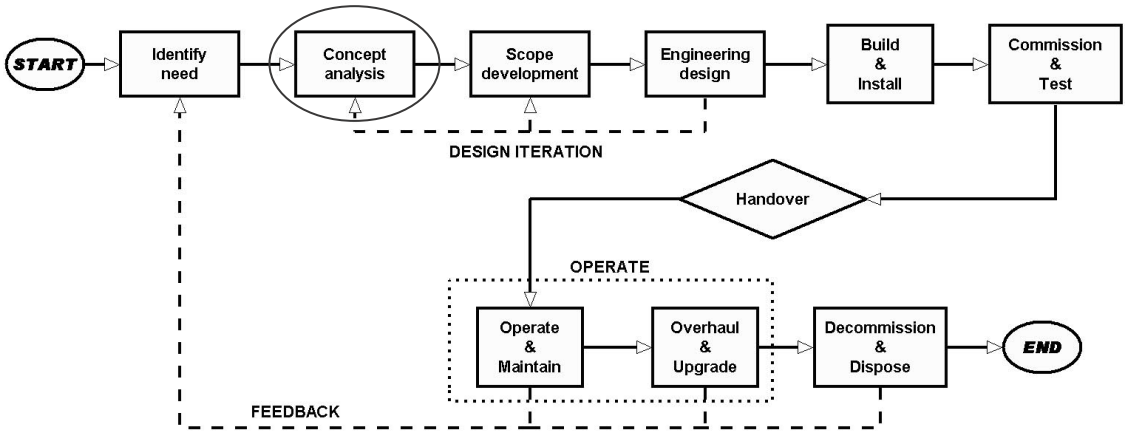
Most major companies have in-house project and developed systems with the degree of project management undertaken in-house varying between organisations and between projects within the same organisation. The decision to deploy more or less complex assessment systems is usually based on some threshold project cost with projects expected to cost over this threshold being subjected to a more rigorous assessment process. Projects costing less than the threshold are usually managed using less sophisticated systems simply because the assessment process itself can add substantially to the cost of the project and smaller projects are unable to sustain this cost burden.

The complexity of the analysis undertaken will also depend to some extent on the specific project. Complex projects having a hierarchy of levels where higher level functions are provided by multiple lower levels will attract more detailed analysis. Where subsystems are required to provide power, transport, heat etc. these will need to be specified quantitatively and managed in detail for the overall project to be successful. The ability to correctly identify sub-functional levels allows the analyst to identify suitable technical solutions, conflicts, risks. These all impact the projects ability to meet the needs of the organisation over the project life cycle. Broadly speaking the operating parameters can be considered to fall into one of two broad groups.

1. Asset requirements or desirable functions.
2. Constraints or limitation imposed by the operating context.

Asset requirements include the functions and options the asset is expected to provide under normal operating conditions. These must be clearly linked to realistic estimates of near term and medium term market demand rather than nice-to-have items. Failure to identify future demand as well as inaccurate weighting of competing issues can lead to poor operating scope definition and consequently poor asset selection and implementation. Similarly changes during the project phase can lead to project cost escalation and budget over runs.

Constraints are those issues that impact on the decision process but which of themselves are not primary operating functions. These may include local environmental considerations, the cost of capital, technological limitations, support systems etc. Consideration of constraints is important because they limit what can be realised from existing designs and can mean that the achievable outcomes in one context may not be realised in another.



... to be continued.

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