The Critical Plant Manager

'We understand your need to effectively manage your assets'

JAHCon
Physical Asset Management Pty. Ltd.

Newsletter
December 2009

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.

Merry Christmas

I would like to take this opportunity to wish all our customers and newsletter readers a Merry Christmas and a Happy New Year.

Like many others, I had expected 2009 to be fairly quite following the dire economic predictions emanating from our politicians and many media outlets. Clearly someone forgot to tell those of us who were busy getting on with life that we were supposed to be downbeat in 2009.

This has been one of the busiest years since JAHCon was first established and looks to continue so at least into the first half of 2010.

Training courses were fairly quiet in the middle '09 but picked again in October and November. We already have two scheduled dates for our ever popular Planning & Scheduling courses in 2010 (see training news).

Precision Maintenance

"Precise ... exact; definite; accurate; not loose or equivocal in expression; formal..." Collins English Dictionary.

In our September '09 newsletter, I raised the issue of 'Precision Maintenance' and will expand upon this important topic over the coming issues. The reason this issue arose when it did was because of an ongoing project whereby Safety Critical Elements (SCE's) were being assessed and there was a need to ensure their effectiveness over the life of the plant. SCE's can take many forms but typically include gas detection equipment, fire fighting assets etc. The common denominator amongst SCE's is their role in preventing or mitigating the consequences of failure where this could result in the death or serious injury of one or more people.

Of major importance in the management of SCE's is the need to achieve and sustain a level of performance that will ensure it meets its design Performance Standard (PS) over the life of the plant. Typically, Critical Function Tests (CFT's) are carried out periodically to verify that the SCE continues to meet the PS's. Implicit in the use of both PS's and CFT's is the need to un-ambiguously determine if the SCE meets the PS or not. This is where the need for Precision Maintenance comes in.

When developing PS's we analyse the components of the SCE and the system in which it operates, to identify how deterioration or failures could compromise the performance of the SCE. Once these components have been identified, an acceptable range of values is determined and limiting values established. In some cases a range of values may be acceptable while in others a 'go-no-go' test may be more appropriate. It is the limits we place on the acceptable range of operating values that allows us to establish the PS. When we assess the performance of the SCE against the PS we must be able to measure its performance with sufficient resolution so as to identify actual trends in performance from underlying variability. Only then can we say whether the SCE is operating within its PS limits or not. ...to be continued.

Training News

The Introduction and Advanced Maintenance Planning and Scheduling (P&S) courses will again be held in 2010 in Kuala Lumpur, Malaysia. As before, both the Introductory and Advanced courses will be run together with participants free to choose which courses they want to attend. The Introductory course is scheduled for 18th-19th May and the 9th-10th of November. The Advanced P&S course is scheduled for the 20th-21st of May and the 11th-12th of November. These two courses will again be run under the auspices of IQPC so please contact them for bookings and confirmation of dates and venues at their web site ***www.iqpc.com***. If you have any questions about these and other courses please contact me at JAHCon.

Other courses being offered in 2010 include a hands-on P&S workshop and an Introduction and Advanced Asset Management course. The P&S workshop is designed for Planners and Supervisors and is held over two days. The workshop concentrates on the practical application of the tools covered in the Introductory and Advanced theory courses and works through up to six typical maintenance planning exercises varying from single job planning to multiple day maintenance shutdowns. In addition, two examples of major shutdown P&S are worked by the group using real industry examples. Participants are invited to bring along examples from their own organisations if they wish.

The Introduction and Advanced Asset Management courses are held over four days and the dates and venues will be announced on our website once they are finalised.

Human Error in Maintenance

I introduced the issue of human error in the last newsletter and will expand further on that theme here. The potential for human error exists throughout the asset life cycle from initial identification of a need, right through to the eventual retirement and disposal of the asset at the end of its life. Human error is especially important to the Asset Manager because of the large element of human contact in the management, operation and maintenance of modern manufacturing and process plants. The high human contact level increases the potential for the introduction of human error and eventual "high consequence" outcomes due to one or more errors aligning with other latent faults or errors. Design errors may only manifest themselves much later in the life of the plant, when one or more human errors combine with a latent fault to result in a high consequence outcome. Errors introduced at the design stage of the asset life cycle are best management by formal design reviews and design change control procedures. Errors introduced during the "operate" and "maintain" phase of the plant's life are best managed through a formal Management of Change (MOC) procedure, which is enforceable and enforced. While the MOC procedure usually applies to design changes, daily operations or maintenance errors are best managed by training and work quality control procedures, especially for high criticality equipment and systems.

Management of human errors is especially important in the management of Safety Critical Elements as they can easily render these important assets and systems ineffective.

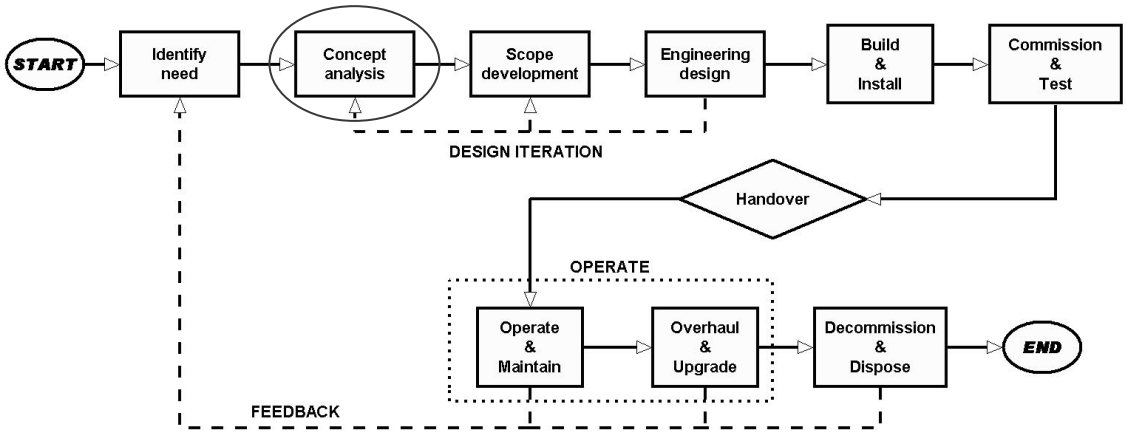
The Asset Management Cycle - 'Concept analysis'

Once the need for a new asset, or the upgrading of an existing asset, has been identified and has some level of support, it is necessary to determine the broad operating parameters that the asset will need to meet. This phase of the Asset Management (AM) cycle is called 'Concept Analysis' and focuses upon 'what' the need is and 'how' it might be achieved. This phase concentrates on broad concepts and possible solutions rather than specific outcomes. Several 'concept solutions' may be developed at this stage and carried forward until increased understanding or additional information excludes one or more. Errors, or an incomplete understanding of the true 'needs' can lead to poorly designed plant which fails to meet the long term needs of the organisation or may operate at higher cost than otherwise achievable.

It is vital to clearly identify all of the requirements to be met by the proposed asset and to translate these requirements into clearly stated tasks or functions. In addition, quantitative statements of production rates, product quality, Reliability, Availability, operating hours etc. must be part of this analysis if it is to support the latter phases of the AM cycle. Only by carefully assessing the needs of the organisation can the most effective asset selection be made that will meet these needs at lowest cost. This can be one of the most problematic aspects of the Asset Management (AM) cycle, as failure to properly determine the real operational needs of the organisation can lead to poor asset selection and failure to meet the business needs when in service. The Concept Analysis phase must be sufficiently rigorous to ensure that all important considerations are accounted for. These should include as a minimum.

- The short and medium term market demand.
- The necessary product quality requirements.
- The availability of suitable staff, either new or existing.
- The likely future budget allocations available.
- The short and medium term cost of capital.
- The transitional costs and market impact.

Traditionally the operations department determines what is needed and the engineering (or projects) department sources, builds, commissions and hands over the project according to the design scope provided by operations. In recent years, the need to optimise the engineering design of options presented by suppliers have become more important as the focus is increasingly on the whole of life cost. This has led to ever more sophisticated Concept Analysis and project management including simulation and RAMS modelling. ...to be continued.



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