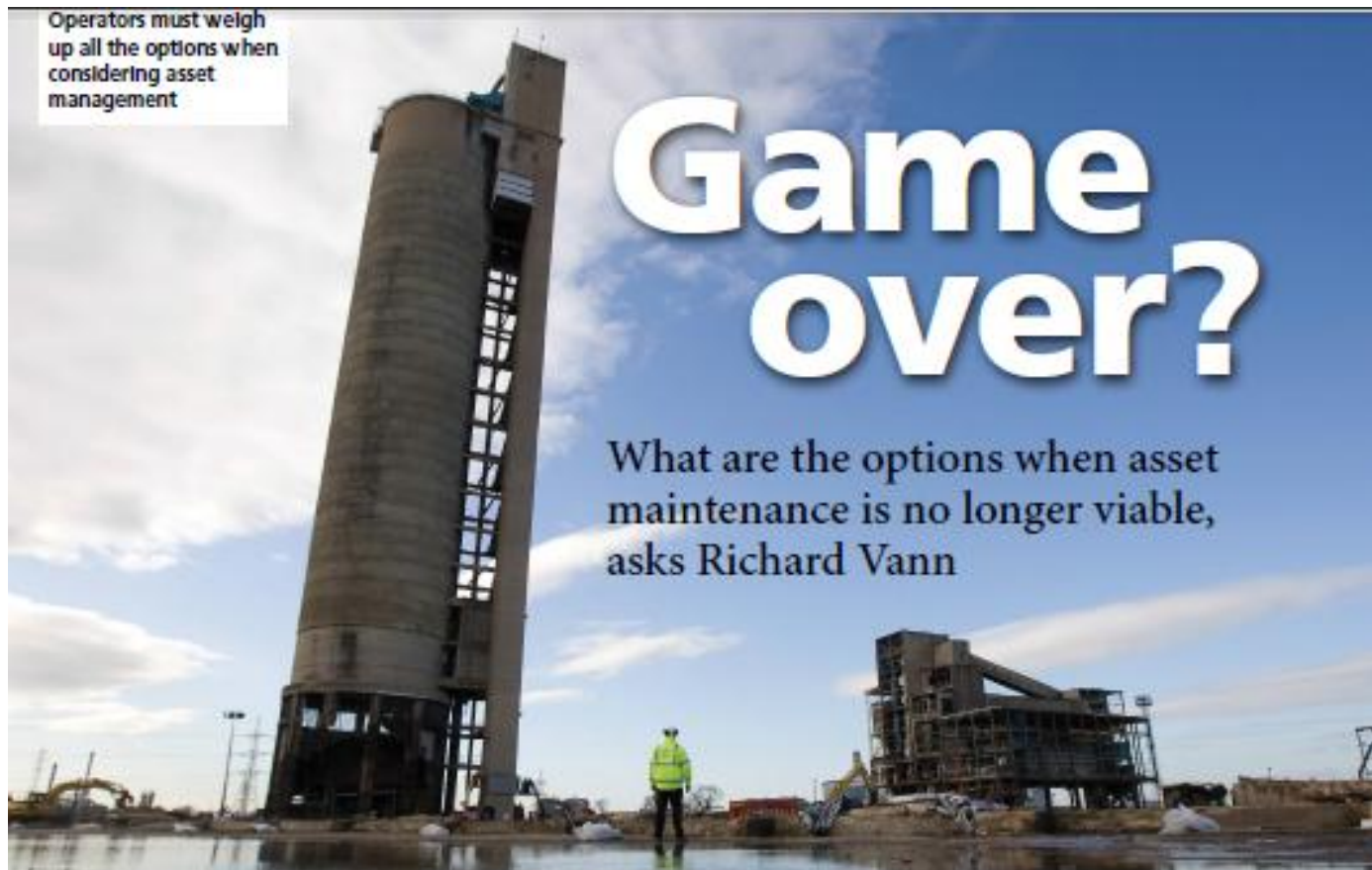


Process Engineering
September 2013

Operators must weigh up all the options when considering asset management

Game over?

What are the options when asset maintenance is no longer viable, asks Richard Vann



Unprecedented pressures have been placed on chemical, petrochemical, pharmaceutical and manufacturing companies across the globe, and unfortunately very few have proven recession-resistant.

Some have consolidated their activities in a bid to work smarter from a smaller number of locations, whilst others have mothballed, rationalised or permanently closed down their sites.

The challenge for plant owners, managers and engineers is how to proceed with the safe and cost-effective management of their redundant assets, while minimising any environmental impact.

Operators often assume that there are limited options when closing a facility and many simply ask a local contractor for a 'demolition' price, before deciding whether to proceed with the exercise or not.

Naturally, plant owners wish to avoid abortive or non-essential spend, yet delaying projects that are deemed unaffordable is not always the most appropriate solution.

Those projects will inevitably have to be tackled at a later date and in most cases at an overall increased cost due to continuing liabilities such as hazardous material containment, security provisions, regulatory compliance fees, care and maintenance costs, plus the burden of unavoidable overheads such as local authority building rates.

Other companies may initially try to sell its plant



“Operators often assume that there are limited options when closing a facility and many simply ask a local contractor for a 'demolition' price.

Richard Vann

in-situ in an attempt to pursue a relatively 'pain free' site exit and where possible protect employees' jobs. But in truth this course of action may not result in the highest possible commercial outcome, and if a buyer is not found processing firms may struggle to know what to do next.

Difficulties lie in making well-founded decisions about the future, especially at a time when pressures are mounting or there are gaps in knowledge. Specialist tools such as feasibility studies therefore play a crucial role in the development of safe yet commercially sound redundant asset management plans.

The concept of the feasibility study is not new. For decades it has been regarded as a useful investigative exercise that generates reliable site and plant-specific data from which informed decisions can be made. But its application is rapidly becoming widespread, predominantly due to its ability to present previously unexplored solutions for even the most complex of plant closure projects.

Drawing upon in-house and specialist external engineering experience, sector knowledge and commercial awareness, feasibility studies provide an unbiased, clear and realistic view as to the true liability or indeed opportunity of a decommissioning and demolition project. The studies consider environment, health and safety implications along with commercial and financial factors associated

Process Engineering September 2013



with the given site and current marketplace. This means assessing achievable costs; potential hazards and risks; the status of the supply chain and waste management obligations.

Ultimately feasibility studies provide sufficient data and confidence to pursue one of several different approaches to ending a process plant's life (see box).

By assessing every risk and exploring every opportunity plant owners can soon reach the point from which value-adding business decisions can be made. Indeed some engineering solutions can be the difference between a project being sanctioned or shelved.

▲ Companies may initially try to sell its plant in-situ in an attempt to pursue a relatively 'pain free' site exit

Leaders in cast iron technology Saint-Gobain PAM UK, for example, had initially thought that the cost to deplant and demolish its former Central Melting Plant and adjacent Hallam plant in Ilkeston would be excessive and prohibitive. Yet having ceased production in 2006 the mothballed heavy industrial plant posed a number of ongoing security and safety issues, therefore a series of feasibility studies was carried out to investigate and cost the different solutions available to Saint-Gobain.

A number of opportunities were identified and it became apparent that the safest and most financially gainful solution was complete clearance of the site, which would generate sufficient funds from scrap materials to cover project costs and actually be cash generative.

Every project is different so there is no such thing as a 'one size fits all' approach. The goal should always be to maximise return on assets where possible and safe to do so, but factors such as plant age, former processes, recovery cost, market forces and commercial competition will all form part of the decision as to what should and shouldn't be salvaged.

It all comes back to the same thing - knowledge is power. Therefore informed and considered project strategies that involve the right people with the right engineering skillset and experience will help to ensure a safe, fully-integrated and professional approach, not to mention legislative compliance.

The careful involvement of plant engineers that have operated and maintained assets throughout their working life is in most cases a positive move. Effective decommissioning is underpinned by a thorough preparatory and planning process whereby the plant, procedures, and decontamination and isolation details are comprehensively documented on an ongoing basis so that everything is accounted for, and the plant can be brought to the required 'known state'. No-one will know this plant-specific information better than the people that have been running it. ■

► Richard Vann is managing director of RVA Group, an engineering consultancy providing management services for large scale, high hazard and complex decommissioning, decontamination, dismantling and demolition projects. Vann is also past president of the Institute of Demolition Engineers (IDE) and the Institute of Explosives Engineers (IExpE).

► THE END OF AN ERA

Ending a process plant's life

The options available when it comes to disposing of a redundant process plant are:

- The dismantling of plant for re-sale, re-erection and operation elsewhere, as was the strategy for a 4,500 tonne ammonia plant, carefully removed from GrowHow UK's former fertiliser production site in Severnside, near Bristol.
- The demolition of plant, where it is often possible to generate an income stream as a consequence of scrap value. For example, following the closure of INEOS ChlorVinyls' site in Barry, the PVC manufacturing specialists handed the site back to the landlord as flat slab. A feasibility study indicated that plant demolition and dismantling could generate an income from the sale of the process equipment and metallic arisings including high-value exotic alloys. Not only do demolition schemes mitigate ongoing levels of liability, but in some cases projects can be self-funding or even cash-positive;
- The mothballing of plant whereby the plant lies idle, perhaps until market conditions pick up. This should not be misconstrued as an easy option, however, because even plant that has been extensively isolated and preserved may still experience deterioration, and the cost to maintain the site's condition and security will inevitably rise over time;
- Or, a combination of the options above, with detail as to how, in what sequence and over what period of time the project should be pursued and with what safety management plan in place.