

TCE  
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tce DECOMMISSIONING



# Cash in the attic?

Now is the time to assess your idled plants for hidden value and increasing liabilities, says **Richard Vann**

**I**N 2009 the media was awash with news of chemical plants closures. Now, four years after the global economic downturn really started to impact trade, many sites around the world still lie idle. This poses a somewhat new decommissioning challenge for the sector. Let's consider the current landscape and the 'cash in the attic' exercise that site owners and operators could undertake, to make the safest, most cost-efficient and environmentally-sound decisions for the future.

## mounting pressures

When economic pressures began to mount and the effects of globalisation became ever-apparent, chemical processing, like most areas of manufacturing, changed - probably forever. Some organisations withdrew from certain markets completely. Others survived by rationalising operations or selling facilities and businesses to companies who could

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produce more competitively in locations that were once regarded as the 'third world'.

Europe, with its high operating costs, ageing assets, and remoteness from end-user markets was hit particularly hard, and RVA's own research and market intelligence predicts that at least 14 plants will close across Europe by 2015. But geographical location was not the only contributing factor. For instance, PVC and VCM manufacturers worldwide - from Wales to the Far East - rationalised their production due to an overcapacity of bulk commodity chemical products. The recession was far-reaching.

Of course an overhaul did not solely occur in chemical production. Paper manufacturers worldwide dissolved when the market shrunk drastically thanks to the digital era. Elsewhere many European gas terminals became fully or partially redundant as offshore reserves depleted, refining reached over-capacity, and stringent environmental legislation prohibited exploration into less conventional gas feedstocks being championed in the US and Canada.

As trade worsened, numerous assets were idled worldwide. At the time of closure, the priority for many chemical processors was to stop haemorrhaging money, so the consequence was a swift site exit. Extreme caution was typically exercised over seemingly 'unnecessary' spend, and a large number of firms opted to invest in basic care and maintenance at most.

## Scientific approach for complex salvage exercise

**A scientific approach was adopted for the clearance of a redundant polymer production facility in Finland.**

Production ceased at the plant following the operator's decision to consolidate its activity and focus on alternative worldwide manufacturing. However, the site clearance was not a straightforward exercise. The decision was taken to dismantle many major redundant plant items for recycling, however some external and internal elements of the production area were cherry-picked by a new company that wanted to store and distribute chemicals from this site. The safety, protection and integrity of these valuable assets therefore had to be ensured.

Such assets included large storage vessels in a tank farm only metres from the live demolition area, and a two-storey building with two process areas separated by a large warehouse. Vessel removal took place in both process areas, but a significant number of reactors were also retained.

Due to the commodity value of scrap metal it was crucially acknowledged that revenues could be generated from plant recycling and the sale of unwanted elements of the facility, thus supporting the operator's commercial decision to exit the site and concentrate on operations elsewhere.

## TCE April 2013



### Potential of old chemical site unlocked

The 25-acre site of a former chemical works in the UK was brought back to life following the creation of a bespoke and closely-controlled engineering strategy. The property development company that acquired the site realised the significant community benefits that could be achieved from unlocking the potential of this redundant plant.

The decommissioning, decontamination, isolation and demolition of process plant, tankfarms, storage facilities, laboratories and offices – many of late 1940s origin and some that had laid idled for around 20 years – allowed the chemical production facility to be transformed into a mixed-use site.

Many of the chemicals once produced on the site – to aid the manufacturing of antioxidants, sunscreen agents, and agrochemicals for example – were of a hazardous nature. The decontamination process required to bring the plant to a 'known state' in readiness for demolition was therefore strictly regulated to prevent avoidable operative and third-party exposure.

The redundant chemical site was full of legacy hazards and unknowns. The decommissioning scheme took a heavily-contaminated site that was of no value at all – it was in fact a liability – and transformed it into a high-value piece of clean land that was ripe for redevelopment.

But now, as organisations emerge from the global recession, it's time to revisit these redundant plants and make responsible decisions for the future. Many chemical firms will still be experiencing significant financial strain; worse still some will be squandering much-needed funds on the ongoing maintenance of plants that will never be restarted. An industrial 'cash in the attic' exercise (ie finding hidden value in items long-since forgotten about) could change all this, especially if this ongoing drain of funds can be halted.

#### liability or money-maker?

It is important now to be realistic. Some companies will have planned to resurrect their plant once economic pressures ease; however in reality experience tells us that a very small percentage will have been adequately mothballed, preserved and maintained for restart. Even those that were carefully decommissioned and isolated would require extensive inspection, validation, testing and significant investment to get them back up and running efficiently and safely, assuming personnel with the required knowledge were still available.

Other firms will have hoped to create an income stream from the eventual sale of redundant assets, but the question is whether or not their plants, in the post-recession climate, are anything but liabilities.

The present-day task is for chemical organisations to assess their redundant asset portfolios, remove continued liability and exposure to corporate risk, and where possible, recover any value from idled plants. One thing is for certain, very few will be in the same state they were left in three or four years ago.

#### investigative work

The aim with any project is to conduct investigative work to truly understand the present condition and future options for the assets. More and more chemical firms worldwide are looking to the future and the time is right to make rational safety, commercial and environmental decisions that in the last four years may not have been a priority (when adjustment and survival was the more likely focus).

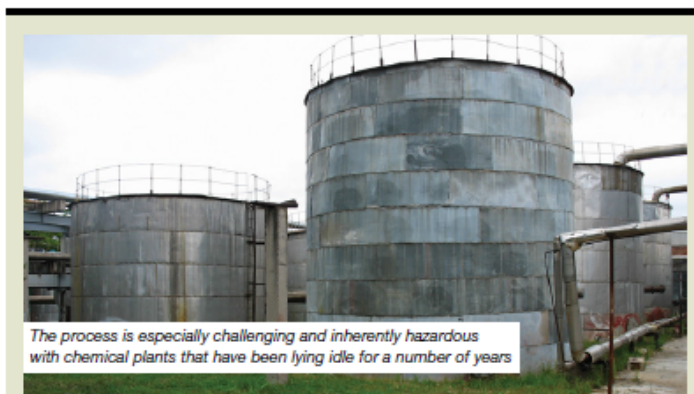
Specialist decommissioning, structural, process and chemical engineers can help make these informed judgements by assessing factors including the processes that were actioned when closing the plant; the quantity and location of residual materials; validation documentation; drawings; metallurgy and exotic material content; contamination levels; permit surrenders; anticipated ongoing maintenance costs; and external influences such as global marketplace conditions and the commodity value of scrap.

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### Decommissioning considerations

The number of variables associated with the potential decommissioning of redundant assets make it challenging. Some factors to look out for include:

- possible build-up of materials that could create atmospheres with explosive properties;
- deterioration of walkways and staircases that could present access difficulties. Indeed in countries where security is not as vigilant, vandalism and theft could have already made re-approaching plant dangerous;
- lack of plant-specific knowledge, perhaps if personnel have moved on. There may only be a small handful of people, for example, that recall a tank loss of containment decades ago, but this detailed insight is invaluable when bringing plant to a 'known state';
- corrosion under insulation (CUI), caused for instance when condensation forms between insulation and a pipe's outer surface, corroding the metal to a point that can result in structural failure; and
- 'dropped objects' such as small fittings, brackets, pipes, handrails and walkways that fall away due to corrosion. Asset owners often say they will care for the plant whilst closed but in reality when it comes to spending money on non-productive assets, this expenditure is often deemed unnecessary. Dropped objects could, however, kill people who re-enter the plant or could damage adjacent plant or services.

**The longer a plant is left in its shuttered state, the greater the inevitable cost to responsibly deal with it... care, maintenance and testing costs will grow, and safety and security risks may become unmanageable.**

Using this level of plant-specific detail, chemical operators can then decide whether it is safer and more commercially beneficial to try to restart the plant, attempt to sell it, leave it in its current state with the continuing associated cost, or dismantle it for scrap. If required, decommissioning, isolation, decontamination and asset recovery strategies can then be developed and project finances planned accordingly.

### asset vs liability

Every project varies, so it is impossible to say what is the best-fit scenario for a chemical plant that is currently idling. Some may contain highly valuable catalysts that could generate a significant income stream, whereas others, for example if unstable, may have inherent complications that in the longer term could pose great risk.

But plant closure standards vary from company to company - some will have

simply turned off the kit, implemented redundancies and walked away. Others will have completed this exercise to a higher benchmark by testing the equipment prior to shutdown; draining hazardous fluids; checking insulation; removing bulk inventory, especially if something could solidify; preserving vessels perhaps with nitrogen blankets; implementing periodic regimes such as turning rotating plant; documenting remaining residues; and completing plant records.

The importance of these arduous preservation tasks is generally more accepted in Europe, perhaps because operating regimes are somewhat stricter. In some less-disciplined countries there is typically not the same appreciation, technical expertise or obligation to look after the plant.

### challenges to overcome

The number of variables associated with the potential decommissioning of redundant assets, particularly chemical plants that have been lying idle for a number of years, means that the process is especially challenging and inherently hazardous. It is important to be equipped with as much plant-specific information as possible so as not to compromise project safety, the environment or a company's commercial position. See box (left) for some factors to consider.

### checking the finances

It is understandable when reviewing redundant assets and considering a decommissioning exercise, to be concerned about the demands placed on corporate, human and financial resources. However a deteriorating plant is nothing but an ongoing liability. The longer a plant is left in its shuttered state, the greater the inevitable cost to responsibly deal with it, and not just because of inflation. As a structure becomes more distressed with age, fixtures, fittings and equipment will deteriorate and for example, asbestos contamination will increase. Care, maintenance and testing costs will grow, and safety and security risks may become unmanageable.

Some dismantling projects can be significantly cash positive, but it is naive to assume all redundant assets will generate an impressive income stream. At the very least though, the works will mitigate the otherwise growing costs and liabilities highlighted above.

Now is the time to be proactive, and also realistic. Some chemical companies will have cash in the attic, but some will have skeletons too that need to be properly and respectfully laid to rest. **tce**

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