

Quality and Continuous Improvement – First Generation Magnox Storage Pond (FGMSP)

The use of continuous improvement has long been associated with manufacturing organisations such as car producers. This approach is fairly new to the NDA group businesses and one of the main reasons for not adopting it before now has been a lack of recognition that a manufacturing approach would be beneficial. What is helping gain traction is the realisation that each of our businesses needs to be able to deliver products, as do manufacturing companies, whether that is quantities of waste for interim storage or demolition of facilities and clean-up of land. There are significant benefits from applying these techniques.

A collaborative approach to continuous improvement is being implemented across the NDA group. This has identified various levels of continuous improvement implementation, maturity and many different standards. In order to effectively manage implementation, experience from other sectors has helped define the priority improvement areas:

- ensuring that strategic objectives are cascaded at all levels in increasing detail throughout our businesses
- associated performance targets are clearly defined and applied on a daily, weekly and monthly basis
- a strategy is embedded to align capability in order to address gaps identified between actual performance and targets
- establish an expectation to expose and close performance gaps at all levels, in all departments.

Sellafield Limited has realigned itself to the approach described above, created a strategy, adopted a One NDA continuous improvement model, implemented a roadmap and created and started to deliver accredited industry good practice training to embed its strategy into the organisation. In addition, a baseline assessment tool to understand the maturity of continuous improvement across the organisation is now in use.

A good practice approach within the First Generation Magnox Storage Pond (FGMSP) shows how continuous improvement can improve performance. The mission delivery outcome to retrieve all Intermediate Level Waste (ILW) from FGMSP by the required end date (S031) has been cascaded through all levels of the team focussed on FGMSP using a range of appropriate measures and targets.

What this means in FGMSP is that the objective of removing all the sludge and pond contents has been converted to a reduction in the metre cubed (m³) of contents per year to meet the currently planned completion date. Figure 14 shows the required annual sludge removal and the cumulative lifetime cost of doing so, which is used to track performance.

The information on how much sludge has been removed can also be used to show the impact that more or less than planned sludge removal has on the estimated cost. In this example, each year the project is extended an additional sum of approximately £60 million would be needed showing how important it is to prevent timescales extending into the future.

In cascading the decommissioning objective, the annual target is broken down into a weekly plan within which daily throughput (beat rate i.e. two sludge batches a day) is identified and incorporated in a Master Production Schedule. Linking the annual target number of sludge removed to achieve the m3 retrieval targets allows individuals to clearly understand how they contribute to mission delivery and become involved in solving any problems to achieve the throughput and then record any changes to the way they work in operations, maintenance, engineering, commercial or people issues within their Quality Management System (QMS).

Visualisation and reviewing performance against targets not just for quantities of material but for safety, quality, cost and skills availability on a weekly basis allows gaps in performance to be exposed immediately and then closed by embedding improved capability in the workforce to problem solve systematically. Any learning can then be recorded and used in a continuously improving QMS.

This approach is now accepted as good practice at all levels within FGMS.

Adopting this approach has contributed to 2019/20 delivery where all sludge targeted for removal was achieved against its most stretching target, increasing confidence that all of the sludge will be removed by 2026.