

## Review of a Wet Waste Strategy

### Project Overview

The Client was carrying out a review of the planned strategy for the retrieval and treatment of residual sludge and resin inventories at an ageing reactor site with a view to reducing cost and programme. Higher than expected costs and programme durations at the site were seen as having significant implications for the entire reactor fleet and therefore a review of the baseline methods was seen as critical. As part of this review, DBD was contracted to assist the Client team in optioneering on a number of work streams covering retrieval and treatment / conditioning methods for the residual sludge and resin inventories. The work streams were:

- ✚ Value engineering of current baseline
- ✚ 'Minimalist' conditioning of as retrieved wastes
- ✚ Review and revision of current baseline approach

### Scope of Work

- ✚ Optioneering support to Wet Waste Strategy (WWS) project
- ✚ To use a robust optioneering process that ensures auditability and transparency and is acceptable to the Regulators and other Stakeholders
- ✚ To ensure that the output from all three work streams can be compared and evaluated on a common basis, despite potentially being at very different levels of design maturity
- ✚ To ensure that a common approach is taken by all three work streams in developing and evaluating options and that output from these work streams is presented in a consistent way
- ✚ To facilitate the exchange of information between the three work streams to arrive at the "optimum" integrated strategy and avoid sub-optimal solutions

### DBD Deliverables

DBD lead and applied the DBD D<sub>2</sub>O optioneering process to the Client's three main work streams and their sub-streams to ensure that a consistent and rigorous approach was applied across the WWS. DBD then prepared and issued an overarching report which brought together the outputs of the work streams into a single document. DBD's scope of work was expanded to include preparation of a Best Practicable Environmental Option (BPEO) paper covering the work undertaken for use in engagement with the Environmental Agency.

### The Results

A 'blue sky' optioneering study showed that no viable alternatives were available for the basic methods to be employed and that effort should be concentrated on refining the technologies to be used.

The planned, bespoke deployment arm was replaced in the baseline approach by readily available equipment chosen from a list of alternatives. Agreement in principle was reached with Radioactive Waste Management Directorate (RWMD) on the processing and encapsulation of organic resin wastes.

In addition, a number of treatment options for the residual resins were examined and an option was identified and chosen using existing equipment on site. This option was shown to offer a number of operational, cost and programme advantages to other treatment options.

#### Client Benefits

- ✚ A consistent approach was applied across multiple work fronts on the WWS project
- ✚ The conclusions reached were based on rigorous and transparent methods
- ✚ Agreement was reached on a number of changes to the previous baseline, offering cost and programme savings
- ✚ Increased confidence in viability of the process as a whole