

Waste Shaft



Waste Shaft

Manager: **Warren Jones**

Completion date: **2025**

Cost: **£260M**

Supported by: **Edmund Nuttall Ltd** (Shaft Isolation)

Completion date and cost are current estimates, subject to NDA approval

The vertical shaft was excavated in the 1950s for removal of rock during construction of an undersea effluent discharge tunnel.

It was later plugged at the bottom, allowed to fill with groundwater and authorised by the Government for disposal of radioactive waste. The largely unlined shaft is shaped like a cylinder, 4.6m across and 65m deep.

More than 11,000 disposals took place until 1977, when a chemical explosion occurred and the practice ceased.

In the 1990s, it was decided to empty the shaft and a major programme is now underway to decommission it.



Shaft isolation project

Groundwater flows into the shaft. This needs to be stopped or reduced before the waste can be emptied. Following public consultation, grouting of the rock fissures was selected to isolate the facility from the surrounding groundwater.

This involves:

- Constructing a raised working platform.
- Reinforcing the plug and section of the liquid effluent discharge tunnel.
- Drilling between 200–400 boreholes to a depth of 80 metres in a boot shape around the shaft.
- Injecting boreholes with grout under pressure to form a barrier in fissures.

The contract to isolate the shaft was awarded to Ritchies, the specialist geotechnical division of Edmund Nuttall Ltd.

Construction of the raised working platform commenced in March 2006, with isolation of the shaft expected to be completed by May 2008.

Waste retrieval

The next stage is the removal, treatment and storage of the waste. Concept designs have been developed for the waste retrieval and treatment facilities, evaluating what techniques can be utilised, and what equipment is needed and can be operated successfully to retrieve the waste.

These facilities will be used to decommission the shaft and nearby wet silo, a concrete-lined box built just beneath the surface and used for waste between 1971 and 1998.

Subject to consents, emptying the shaft and silo is scheduled to begin simultaneously in 2019.

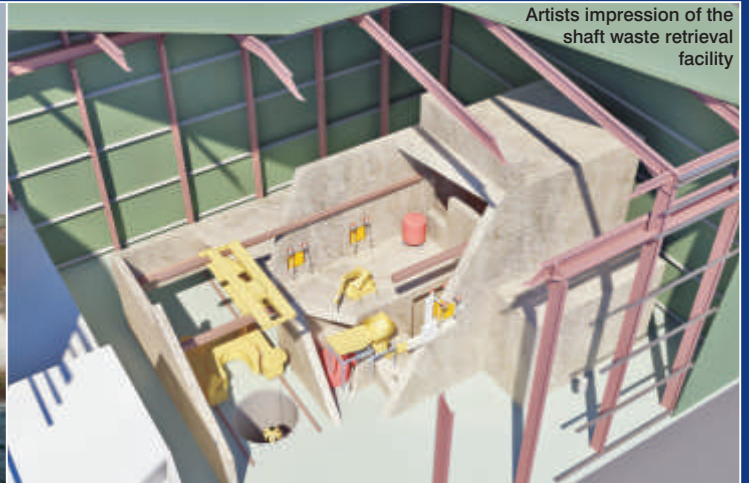
Shaft isolation work underway



The headworks constructed for the shaft isolation project



Artists impression of the shaft waste retrieval facility



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