

## **Bradwell Nuclear Power Station Decommissioning**



The main buildings at the UK's shuttered Bradwell nuclear power plant are being sealed in a £20 million (\$31 million) 'weather envelope' while they await final dismantling.

Bradwell had two 123 MWe Magnox reactors that operated from 1962 to 2002. All nuclear fuel was removed by 2005 and in 2011 the shared turbine hall used by both reactors was demolished, leaving only the primary nuclear buildings.

These are the reactor buildings, each including a boiler house and a circulator hall, that together total about 26,000 metres squared. By 2015 these are to be sealed in the weather envelope to minimise maintenance effort until work resumes in earnest to finally clear the site - perhaps as late as the 2070s.

The long waiting period, called 'care and maintenance' or 'passive storage', allows time for residual radioactive materials to decay - even to the point when nuclear licences are no longer required. Putting off final dismantling also saves money and allows time for improved methods to

develop before the work becomes due. The strategy is known as Safestor.

The UK Nuclear Decommissioning Authority has Bradwell slated for site clearance in a timeframe between 2083 and 2092 at a total discounted cost of £596 million (\$945 million).

The power plant generated over 27 billion kWh during its 40 years of operation.

UK engineering group Mott MacDonald designed the weather envelope for Vinci Construction, which is undertaking the decommissioning work for Magnox Ltd.

The envelope is to be "a weather-tight cladding design" that includes a "passive ventilation system to reduce condensation at the site and remove the need for maintenance activities," said Mott MacDonald. The chance to reduce the amount of inspection work as well as the number of personnel on site presents a clear opportunity for saving over a potential 60-year period. Mott MacDonald engineers have performed a 3-D scan of the buildings and begun modelling conditions inside for a range of conditions.

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