

Case Study 12

Sizewell B Application for a Dry Fuel Store

Updated December 2022

1: Outcome

On 22 July, 2011, the Minister for Energy granted approval for the construction of a dry fuel store for spent fuel at Sizewell B nuclear power station, Suffolk.

2: Benefit

The storage in casks in a new building will provide safe and robust protection for managing spent fuel pending construction of a national geological disposal facility. On-site storage removes the need for transportation of the waste to another site for storage, reducing road traffic and minimising potential risks.

3: Mitigation

A mitigation package comprising an initial payment of £120K and annual payments of £20K for the subsequent 60 year or until the store is decommissioned was set up under an S106 Agreement. British Energy accepted Suffolk County Council's argument that construction of the store would delay site restoration and release of part of the site. Monies will be managed by a Funding Group set up by British Energy, Suffolk County Council and Suffolk Coastal District Council in consultation with the Suffolk Coast and Heaths Unit. Funds will be used to improve the amenity and accessibility of the Area of Outstanding Natural Beauty in which Sizewell is located. The contribution will be reviewed every 5 years against the Consumer Price Index to ensure value is not eroded.

4: Background

Sizewell B is currently expected to operate until 2035. Every 18 months the reactors are shutdown and refuelled. The spent fuel removed from the reactors is hot and highly radioactive. The current storage method is to place the spent fuel in a water filled deep storage tank called a 'pond'. The water acts both as an effective radiation barrier and cooling mechanism. Under present operating conditions it is anticipated that existing pond capacity would be reached in 2015.

For the longer term, Government policy is for higher activity wastes to be disposed of in a Geological Disposal Facility¹. The process for selecting a site is

¹ <https://www.gov.uk/government/collections/geological-disposal-facility-gdf-for-high-activity-radioactive-waste>

in the very early stages, and it is unlikely that a site will be open to take waste until before 2040.

New storage arrangements for the spent fuel from Sizewell B are therefore needed for the interim period.

5: Process

In February 2010, British Energy submitted a request for a deemed granting of planning permission for a Spent Fuel Dry Store at Sizewell B to the Department for Energy and Climate Change (DECC) under the Electricity Act 1989 Section 36.

The application followed a special study commissioned by British Energy to review available technologies for managing spent fuel. The study followed the BPEO (Best Practicable Environmental Option) process. An exercise was undertaken to identify available technologies for the management of Sizewell B's spent nuclear fuel. This involved reviewing available worldwide operational experience, suppliers' data, commercial data and other literature on the management of spent fuel. 17 specific options were identified through this review together with a number of non-mature technologies. The options were screened against critical requirements and project delivery and results tested for robustness. Stakeholder engagement included an exhibition and two workshops.

The study identified dry storage in casks as the most suitable option for spent fuel from Sizewell B. It included a range of sensitivity tests that showed this preference to be robust.

6: Local authority involvement

Officers from Suffolk County Council and Suffolk Coastal District Council participated in the optioneering workshops and both councils responded to the DECC consultation on the application. A Report was submitted to the Cabinet of Suffolk County Council in May 2010 recommending that the Council make no objections to the application subject to a small number of conditions, including the establishment of a mitigation package.

7: Next steps

Construction of the spent fuel dry store commenced in 2012 and was completed in 2016².

Information sources:

1. British Energy Options Study (no longer available online)
2. British Energy Application for Consent (no longer available online)
3. For a full list of documents submitted see the British Energy website (no longer available online)
4. East Anglian Daily Times, [article by Jonathan Barnes](#), 23 July 2011³
5. Suffolk County Council Report to Cabinet (no longer available online)

² <https://www.world-nuclear-news.org/Articles/EDF-Energy-completes-dry-fuel-store-at- Sizewell-B>

³ [Sizewell: Campaigners' dismay at nuclear decision | East Anglian Daily Times \(eadt.co.uk\)](#)