

Introduction

The Submarine Dismantling Project (SDP) is the MOD's programme to deliver a safe, secure and environmentally responsible solution for dismantling 27 defuelled submarines. This involves recycling the bulk of the submarine and safely disposing of the remainder. The submarine's Reactor Pressure Vessel (RPV) contains Intermediate Level radioactive Waste (ILW) and must be stored for an interim period until it can be processed and sent to a proposed Geological Disposal Facility (GDF) sometime after 2040.

This Topic Summary provides information on RPV transport arrangements.

Safe Transport of Radioactive Material

The UK nuclear submarine programme has more than 50 years experience of transporting radioactive materials safely by road, rail and sea. There have been no incidents that have released, or come close to releasing, radioactive material into the environment.

Radioactive waste transport is subject to strict controls to protect people, property and the environment. The Defence Nuclear Safety Regulator (DNSR) regulates the transport of MOD radioactive material. Both DNSR and the Office for Nuclear Regulation (ONR), which regulates civil radioactive waste transport, apply regulations based on standards developed by the International Atomic Energy Agency.

The requirements for notification of proposed movements of radioactive waste are set out in the relevant regulations. Arrangements will be in place to provide 24-hour expert assistance to the emergency services in the unlikely event of an incident. The relevant authorities, including both MOD and civil safety and environmental regulators, would automatically be notified as part of the response.

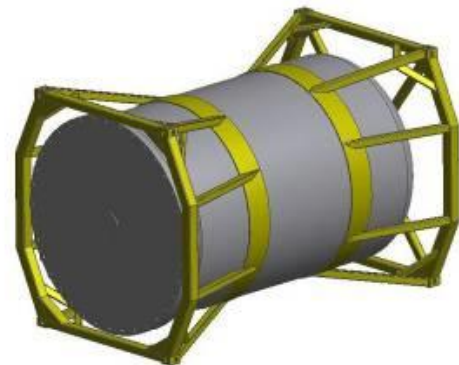
Transport Arrangements

There may be up to 3 RPV transports in the first year. Based on initial dismantling of the submarines at Rosyth and then those at Devonport, the long-term rate is expected to be around 1 a year thereafter. If there were some parallel work at Devonport and Rosyth, it could be around 2 a year for a few years.

The MOD will have responsibility for moving the RPVs to the storage site. SDP's assessments suggest that road transport has clear advantages over rail and sea alternatives and the SEA has been conducted on that basis. Formal confirmation will be required once the container design is agreed.

The RPV and container will be very heavy so transporting them will require a long-wheelbase heavy transport vehicle which spreads the load over a large number of axles. It will be longer than a typical HGV but for most RPVs it is expected to be only a little wider.

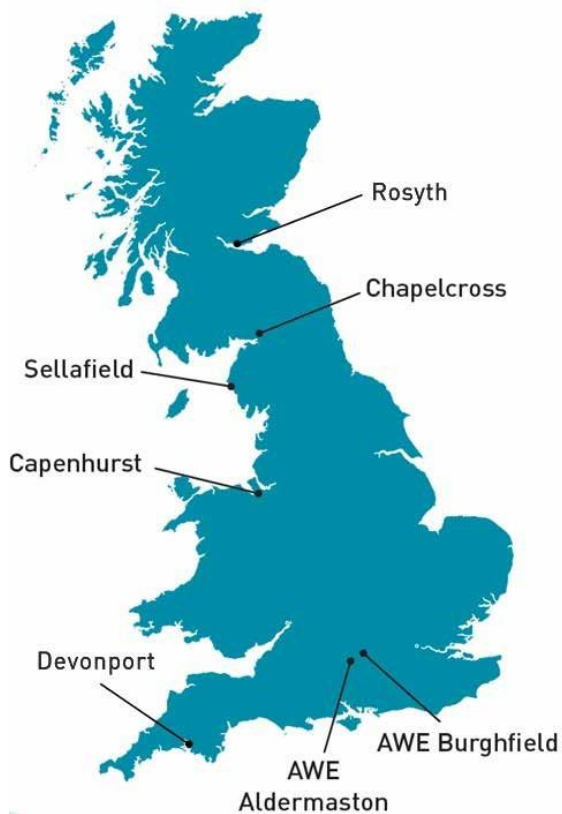
The RPV and container will be moved under the 'Abnormal Invisibile Load' Regulations and will be escorted but no main road or motorway lane closures are expected. There are more than 150,000 escorted movements every year and items of comparable size and/or weight are regularly moved on British roads.



One possible arrangement for a transport & storage container.



Transport Routes



Main routes between the two initial dismantling sites and the shortlisted storage sites would largely follow the motorways and trunk route network. The details of potential local access routes are covered in the Consultation Document and Site Factsheets. They will be confirmed for the selected site in consultation with local authorities and any potential local disruption to traffic will be assessed.

RPV Handling in Store

The RPV container is expected to arrive at the store on a low loader transport vehicle in a horizontal orientation.

The approach currently being explored for handling the RPVs in the store involves the use of a straddle carrier. Straddle Carriers are basically lifting cranes mounted on wheels often used for lifting and handling heavy loads, e.g. in steel plants, ports and marinas. Their lifting capacity can range up to many hundreds of tonnes.

The use of a straddle carrier means space is needed between individual, or groups of, stored containers to allow its body and wheels to pass between them.

Using an electric overhead travelling crane would allow the RPVs to be positioned closer to one another but it would place additional loads on the store walls which would require a more robust (and expensive) design and routine maintenance may be more difficult.

More Information

Further information and all SDP consultation documents are available at:

<https://www.gov.uk/government/publications/submarine-dismantling-project-interim-storage-of-intermediate-level-radioactive-waste>

In particular, see *Supporting Information on RPVs and RPV Store*.



Example of vehicle suitable for RPV transport

