Impact of withdrawal from Euratom

LEAVING THE EUROPEAN UNION:

Background information and context

The system pressure in a light water nuclear reactor is very important to its operation and performance. The pressure can be controlled by varying the temperature inside the pressuriser, which is a large pressure vessel partly filled with water and containing 78 heaters and a water cooling spray. Only 38 heaters are required to operate at any one time to generate sufficient heat to form an adequate steam bubble and control the system pressure.

In 2010 Sizewell B power station had a problem where the seal on one of the heating elements failed. The power station shut down to effect repair work, requiring a rapid response and flexible service provision to effect the initial repair to maintain safety margins and minimise lost generation. The immediate repair was successfully concluded with input from the UK and overseas supply chains (including Areva, France and Westinghouse, USA). For additional back-up, cameras and extra sensors (e.g., strain gauges) were also installed – building up layers of defence.

In addition to the immediate plant recovery, assuring longer term performance and potential future life extensions required a phased programme of heater replacement linked to planned maintenance outage deadlines. This again included UK and French supply chains and operational experience from across the world light water reactor community working together to challenging timescales; requiring the movement of experts, materials and components across national boundaries to conduct quality assurance checks for example. The work included a French equipment manufacturer and supplier, USA ASME (American Society of Mechanical Engineers) codes and standards assessment with some research and development validation experiments carried out at the Halden test reactor in Norway.

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The international nature of the nuclear supply chain means that international cross-border trade of equipment, goods and services is required by, and ultimately benefits, all market participants.

The UK’s withdrawal from Euratom has the potential to impact the agility of the international supply chain to the detriment of the UK and EU nuclear sector. It could add bureaucracy (for example customs delays, issues due to export licensing) and/or other barriers to the movement of experts, materials and/or nuclear components or information. This would result in time and cost penalties to urgent nuclear plant recovery activities and possibly also planned maintenance outages. Note – nuclear safety is an overriding priority and would not be compromised.

In the longer term, impeded access to the international supply chain, operational experience and/or new research and development discoveries inevitably increases the risk of degrading expertise and access to knowledge and components in support of the safe, reliable operation and maintenance of nuclear power plants across the world.

KEY MESSAGES

Additional barriers to international supply chain activity will have an adverse effect on plant performance, impacting particularly recovery from unplanned outages (breakdowns) and potentially also impacting planned maintenance outages in terms of both time and cost.

Unhindered access to international operational experience is required to underpin international standards for operational safety and performance.

“Nuclear plant recovery activities need an internationally coordinated supply chain to expedite repairs and achieve a successful outcome...”

The Sizewell B Pressuriser (16m High, 2.5m Diameter)

- Relief Nozzle
- Spray Nozzle
- Menway
- Instrumentation Nozzle
- Heater Support Plate
- Surge Nozzle
- Electrical Heater (3m Long)

Area of concern