



Ministry
of Defence

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Dear David,

You will probably now be aware that a statement has been made in the House of Commons by The Right Honourable Philip Hammond MP, Secretary of State for Defence, concerning the VULCAN NRTE site and the reactor core that is currently undergoing testing. I have attached a copy of the statement.

As the MoD's Director of Nuclear Propulsion I am supported by Commander Ken Dyke who works for me as the Naval Superintendent Vulcan; we both attach the greatest importance to being as open and transparent as possible about operations at NRTE. This is particularly so for any issues that have the potential to affect the local community. The only constraints to this openness are the normal requirements of National Security and the links between NRTE and the submarine fleet of the Royal Navy. On the issue reported today, I can assure you that the safety of NRTE remains unaffected and that our Regulators have been kept informed throughout. This issue is very much about the future long term performance of the reactor core and not about safety or increased risk (to any group).

The Dounreay Stakeholder Group has been an important means for us to communicate with the local community and I continue to value the trust and dialogue that exists between us. I realise that the effectiveness of the relationship relies on your Group's trust in MoD and on MoD being as open as we can be. I wish to provide you with my personal assurance that we have been and will continue to be open on site issues, subject only to the very real and necessary constraints of National Security. Notwithstanding this, the safety of the site, any affects on the local community, and safety of all persons remain my top priority.

Yours sincerely,

J R CORDEROY
Cdre RN

Copy:

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Mr Mike Helme (Rolls-Royce)

Mr John Hook (Rolls-Royce)

June Love (DSG Secretariat)

ORAL PARLIAMENTARY STATEMENT

NUCLEAR SUBMARINES

Mr Speaker, before I make my statement, I am sure the House will want to join me in sending condolences to the family and friends of the sapper from 32 Engineer Regiment who died while on duty in Helmand Province yesterday as a result of non-battle related injuries sustained in Camp Bastion. The incident is not believed to have involved any enemy action. The serviceman's next of kin have been informed and have requested the customary 24 hour delay before further details are released.

Mr Speaker, with permission I wish to inform the House that I have decided to refuel the nuclear reactor in HMS VANGUARD, one of the UK's four ballistic missile submarines, during its planned Deep Maintenance Period, which begins in 2015. This will be the second time VANGUARD's reactor has been refuelled since it entered service in 1993. I will explain to the House now why I have reached this decision to conduct a second refuelling.

As many honourable members will know, alongside the operational reactors on board our ballistic missile submarines, a prototype reactor of the same class has been running at the Naval Reactor Test Establishment (NRTE) at Dounreay in Scotland since 2002. Its purpose is to help us assess how the reactor cores within our submarines will perform over time. It has therefore been run for significantly longer periods and at a significantly higher intensity than those cores of the same type in our submarines, to allow us to identify early any age or use-related issues that may arise later in the lives of the operational reactor cores.

In January 2012, low levels of radioactivity were detected in the cooling water surrounding the prototype core. These low levels of radioactivity are a normal product of a nuclear reaction that takes place within the fuel, but they would not normally enter the cooling water. This water is contained within the sealed reactor circuit, and I can reassure the House that there has been no detectable radiation leak from that sealed circuit.

The independent Defence Nuclear Safety Regulator and the Scottish Environmental Protection Agency have been kept informed. When the coolant radioactivity was first detected, the reactor was shut down as a precaution. Following investigations and a

series of trials, and with the agreement of the relevant regulator, the reactor was restarted in November 2012 and is continuing to operate safely. Both radiation exposure for workers at the site and discharges from the site have remained well inside the strictly prescribed limits set by the regulators. Indeed against the International Atomic Energy Agency's measurement scale for nuclear-related events this issue is classed as Level 0, described as "below scale – no safety significance". The Naval Reactor Test Establishment is, and remains, a very safe and low risk site.

But, Mr Speaker, clearly the fact that low levels of radioactivity have been detected in the coolant water means that the reactor is not operating exactly as planned. As you would expect, we have conducted extensive investigations to seek to determine how the radioactivity has entered the cooling water. We now believe that this is due to a microscopic breach in a small area of the metal cladding that surrounds one fuel element within the core of the reactor. It is not yet clear why this breach has occurred. It may be related to the age of the reactor; it may be a function of the high intensity use to which we have subjected the test reactor; or it may be a random event. We do not yet know.

On current plans the Dounreay Test Reactor will start to be decommissioned in 2015. We are confident the reactor can be operated safely until that date. We may decide to bring forward decommissioning if it will allow us to better understand the causes of this breach by examination of the reactor core.

Mr Speaker, this occurrence does not present any safety risk. It does, however, potentially present additional risks to future submarine availability. Consequently, I have had to consider carefully the implications for both the VANGUARD Class and the ASTUTE Class submarines, which use the same design of reactor core.

We constantly monitor our submarine reactors. We have never detected a similar occurrence to that found in the prototype reactor. And we are confident that if one did occur, we would detect it straight away.

But we now have to consider the possibility, however remote, that the useful operating life of this particular design of core may not be as long as previously expected. As a result, I have decided that, as a precautionary measure, we should refuel HMS VANGUARD, the oldest SSBN, and the one with the "highest mileage", as it were, on her reactor, when she enters her scheduled Deep Maintenance Period in 2015. This is the responsible option:

replacing the core on a precautionary basis at the next arising opportunity, rather than waiting to see if the core needs to be replaced at a later date, which would mean returning VANGUARD for a period of unscheduled deep maintenance, potentially putting at risk the resilience of our ballistic missile submarine operations.

The refuelling will increase our confidence that VANGUARD will be able to operate effectively and safely until the planned fleet of Successor submarines begins to be delivered from 2028. The refuelling will be conducted within the currently planned dry dock maintenance period for VANGUARD, which starts in late 2015 and will last for around 3½ years, and is therefore expected to have no impact on deterrent operations. The additional cost of refuelling VANGUARD is estimated to be around £120 Million over the next six years.

A decision on whether to refuel the next oldest submarine, HMS VICTORIOUS, when she enters her next planned deep maintenance period, does not need to be made until 2018. It will be informed by further analysis of the data from the naval reactor at Dounreay and examination of the core after the reactor is decommissioned. I have decided that, in the meantime, and again on a precautionary basis, we will take the steps necessary to keep open the option of refuelling VICTORIOUS. This will include investment at Devonport and at the reactor plant at Raynesway in Derby to preserve our ability to conduct nuclear refuelling into the future. The total cost of this investment is still being scoped but is expected to be of the order of £150M.

These costs, perhaps £270 Million in total, will be met from existing provision for financial risk in the submarine programme budget. They represent substantially less than 10% of that risk provision and will not impact on the more than £4 billion of contingency that we are holding in the overall Defence equipment plan.

The implications for the ASTUTE Class will be the subject of further analysis, particularly once we have had the opportunity to examine the core from Dounreay. But, as the ASTUTES are only now entering service and thus their cores have seen far less operation, a decision on whether or not to refuel any of them will not be needed for many years to come.

Mr Speaker, these decisions do not affect our plans for the Successor submarine that will replace the VANGUARD class. Refuelling HMS VANGUARD does not enable us to further extend the overall life of the submarine, which is limited by a number of factors other than the age of the reactor. Nor do they have any implications for our confidence in the reactor we are developing for the Successor submarine, which is based on a completely different design.

Finally, the House will wish to understand that our naval reactor cores are a highly specialised, UK bespoke maritime design and there is no read across from this occurrence to the performance of the naval reactors operated by other countries, nor indeed reactors operating in the UK civil nuclear sector.

Mr Speaker, the safety of the UK's naval nuclear reactor at the test establishment at Dounreay and on our submarines is of critical importance to us, as is the maintenance of Continuous at Sea Deterrence. That is why I have taken the decision to apply the precautionary principle, even though there is no evidence at this stage that the problem detected with the Test Reactor is likely to present in the operational reactors. We will continue to work with the independent military and civil regulators to ensure the continuing safety of nuclear operations at Dounreay, Devonport, Faslane and at sea. The Government is committed to maintaining our nuclear deterrent as the ultimate guarantee of the UK's sovereignty and freedom of action against threats of nuclear aggression, wherever they may come from. Our submarine-based, Continuous at Sea deterrent remains the most capable and cost-effective way of doing that. The decisions I have announced today are responsible and precautionary and will assure our ability safely to maintain the UK's nuclear deterrent into the future. I commend this statement to the House.