

## **Progress with the Future Nuclear Weapons Programme**

### **Submarines**

The project to build a new class of nuclear-armed submarine is closely linked to the wider nuclear-powered submarine programme. A key factor determining the timescale for the Vanguard-replacement is the construction of the Astute class. The Navy are planning to trial some components on the later Astute boats prior to their introduction on the Vanguard-replacement. They are also looking beyond the Vanguard-replacement to the Maritime Underwater Future Capability (MUFC). The current proposal is that MUFC would be nuclear-powered. MUFC would provide ongoing work for Barrow after the completion of the Vanguard-replacement. This long-term plan for a continuing fleet of nuclear-powered submarines will be used to justify expenditure on infrastructure.

The schedule for the Vanguard-replacement appears to be:

Concept Design (2007- 2009); Initial Design (2009 – 2012);  
Detailed Design (2012-2016); Build & Commission (2014-2022);  
Contractors Sea Trials (2022); In service (2024)

The Initial Gate, at the end of the concept phase, is likely to be in Autumn 2009. The Main Gate would be expected to be in 2012, between initial and detailed design. However a Parliamentary answer suggests that provision is being made for a delay in the Main Gate, up to the start of the build period, 2014.

The Navy and Rolls Royce are both keen on using a new reactor, the Next Generation Nuclear Propulsion Plant (NGNPP), for the Vanguard-replacement and MUFC. The US Department of Energy plan to begin concept studies for a new reactor for the next American ballistic-missile submarine, SSBN(X), in 2010. This is 9 years before the submarine is due to be ordered and 19 years before its in-service date. The prototype of PWR2 was built at Dounreay in the mid 1980s and was in service by 1988, 6 years before HMS Vanguard. Concept studies and design work on NGNPP are likely to be running ahead of the timescale for the submarine itself. A prototype, possibly at Dounreay, may also be envisaged.

NGNPP will use a passive cooling system. It will be argued that this is safer. However this will not result in savings in infrastructure costs. The Navy assume that PWR2 will remain in service, on the Astute class, for many decades. So safety assessments for the future infrastructure will be based not just on NGNPP but also on PWR2, which will be considered a greater hazard.

The possibility of replacing the Faslane shiplift with a dry dock has been raised. There may also be concerns about the long-term viability of the Explosives Handling Jetty at Coulport, given the high-hazard operations carried out inside it.

Fabrication of the fuel cores for future submarines will be a significant issue. The current Rolls Royce facility in Derby is due to be decommissioned in 2017-time. A substantial new facility would be required just to build the three or four cores for the Vanguard-replacement. In order to justify this expenditure the Navy are likely to emphasise that the other future submarine, MUFC, must also be nuclear.

### **Missiles**

The US Navy plan to introduce a new missile to replace Trident in 2029. Initial concept studies are being carried out for this Underwater Launched Missile System (ULMS). In November 2007 the Strategic Advisory Group was briefed in Omaha by a sub-group which had been looking at a future submarine system. This meeting did not set the basic requirements for ULMS but called for further research.

In December 2006 George Bush wrote to Tony Blair saying that any new missile system would fit in a Trident D5 launch tube. However the test-bed for ULMS will enable the US Navy to experiment with missile options which are larger and heavier than Trident D5. This suggests that the US Government have not ruled out developing a new missile which is larger than Trident.

ULMS was on the agenda at all three meetings of the US/UK Polaris Sales Agreement Working Group in 2007. The December 2006 White Paper suggests that the UK could continue to retain Trident in service throughout the life of the Vanguard-replacement submarine, ie until around 2060. However this scenario is unlikely. In 1982 the UK opted to purchase Trident D5 rather than Trident C4 because of concern that the UK would have to pay the price of sustaining a missile system which was no longer in service with the US Navy. Current plans are that Trident will not be in service with the US Navy after 2042. If the UK retains Trident then Britain will have to pay for the whole US support structure for 18 years. Deploying the new ULMS system will appear a more attractive option.

If the UK are going to pay for the new missile then the Navy are likely to argue that they should have it sooner rather than later. The suggestion in the White Paper that this decision will be deferred until the 2030s or later is unrealistic.

The US Navy are developing their new missile, ULMS, to fit in with the timescale of their new submarine, SSBN-X. Both are due to be in service in 2029. However the British submarine programme is running 5 years earlier. Design work on the British submarine is likely to start before the US Navy has set the specifications of the new missile.

The UK's participation in the US Trident D5 missile Life Extension programme would have been required whether or not the UK chose to continue with Trident beyond 2024. UK submarines take missiles from a common pool. The missiles in this pool are all part of the Life Extension programme. So Britain was obliged to participate in it. As the programme entered the production stage the US may have insisted on a clear UK commitment.

## **Warheads**

The British hydrogen bomb which was tested in 1958 was never subsequently manufactured. Instead Aldermaston produced the Red Snow warhead, which was an Anglicised version of the US Mk 28. In the late 1970s the UK developed and tested a lightweight warhead for a future submarine system. However it would appear that this never entered the production stage. Instead an Anglicised version of the US W76 design was manufactured for Trident.

The primary goal of the British nuclear weapons' programme has been to retain the "great prize" of nuclear cooperation with the US. Aldermaston does not have automatic access to the latest US designs. This has been dependent on significant development programmes being carried out in the UK.

It is likely that this continues to be the basis of the relationship today. The rebuilding of Aldermaston is primarily in order to create the capability to design and build a new warhead. However the expensive design efforts may be no more than a political gesture. If a new warhead is built it is more likely to be an Anglicised copy of the US Reliable Replacement Warhead, WR1, than a British design.

The future of the US project to build WR1 is uncertain. If the new US warhead does not go ahead then it is unlikely that AWE would be able to design and build a new warhead for the UK system. So the question of whether the UK opts to replace the Trident warhead or to keep it in service for longer will be made in the US.

The US Congress has scheduled a series of reviews of nuclear weapons policy and posture - a Congressional review in 2008, a Policy review in 2009 and a Posture review in 2010. The future of WR1, and consequently the UK programme, may not be decided until 2010.

### **Costs**

The initial £1 billion spent on redeveloping Aldermaston was under the Nuclear Warhead Capability Sustainment Programme. However in outlining the funding for AWE in the period 2008/09 – 2010/11 the MoD have said they are no longer able to distinguish money spent on this programme from other AWE costs. It is possible to estimate this. During this period £2,750 million will be spent on AWE. On the basis of previous expenditure it is possible to calculate that £1,700 million of this will be for the development programme. This is coming from the normal defence budget, at the expense of conventional forces, and not from additional money.

The MoD's argument that AWE has to be modernised, whatever the long-term plan, is misleading. If they decided to end the British nuclear weapons programme in 2024 then the development plan would be substantially curtailed. If there is no requirement for a future warhead then there is no need to unlock access to future US designs. In this scenario the very expensive research programme, including Orion and Hydrus, would be unnecessary. The current system could be sustained until 2024 and then dismantled with only a modest redevelopment of some facilities.

### **Continuing the debate**

The Defence Committee considered the rationale for nuclear forces in a report published in June 2006 and in their review of the White Paper. These inquiries identified a number of questions.

The Government have said that they wanted Britain to be a disarmament laboratory. It would not be consistent with this to close the debate over the rationale for British nuclear weapons or to limit future discussion to the technical details of a system which is projected to be in service until 2055. Consideration of an issue of this magnitude cannot be shut down after a limited public and political debate over a 6-month period in 2006/07, based on a short and heavily criticised White Paper.

Some of the key points are:

- Nuclear weapons do not have a clear role in addressing any the foreseeable major challenges to security over the next 50 years.
- Britain may be an island but its actions cannot be isolated from those of other nations. Our choice, whether to build a new nuclear weapon system on the grounds that the future is uncertain or to set an example of disarmament, will have an effect on the climate in which the nuclear-weapon issue is considered by other states.
- British nuclear forces are to remain primarily assigned to NATO. But the future place of nuclear weapons within alliance policy is not clear. So this does not provide a coherent argument for their retention.
- The justifications for nuclear weapons used during the Cold War are no longer credible.

Government tables Motion on **Trident**

"That this House supports the Government's decisions, as set out in the White Paper "The Future of the United Kingdom's Nuclear Deterrent" (Cm 6994), to take the steps necessary to maintain the UK's minimum strategic nuclear deterrent beyond the life of the existing system, and to take further steps towards meeting our disarmament responsibilities under Article VI of the Non-Proliferation Treaty"