

# AWE: Britain's Nuclear Weapons Factory

## PAST, PRESENT, AND POSSIBILITIES FOR THE FUTURE

A report by Nuclear Information Service  
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Executive Summary

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## ABOUT THIS REPORT

The Atomic Weapons Establishment (AWE) plays a key role in the UK's Trident nuclear weapons programme. This report describes AWE's work and examines alternatives for its future in the event of a decision to cancel the Trident programme.

AWE is currently undertaking preparatory studies to inform a decision on the replacement or refurbishment of the UK Trident warhead. Nevertheless long-standing government policy is to achieve a world without nuclear weapons, so if this aim is to be met nuclear weapons production at AWE must inevitably cease at some time in the future. The report concludes that under such circumstances the likelihood of outright closure of the Establishment is low. The prospects for a post-Trident AWE to move away from its current role to work in civil sector markets are good, and are compatible with regional economic development strategies.

The report recommends increased scrutiny of spending and programme management at AWE, and a start to work aimed at identifying the scope for using AWE's resources for civilian purposes and the opportunities for AWE presented by closure of the Trident programme.

To read the report in full please visit <http://tinyurl.com/AlternativeAWE>

## KEY POINTS

- The Atomic Weapons Establishment (AWE) plays a key role in the UK's Trident nuclear weapons programme. The UK's Trident nuclear warheads are designed, manufactured, maintained, and dismantled at the Atomic Weapons Establishment (AWE) sites at Aldermaston and Burghfield in Berkshire.
- A major investment programme is currently under way at AWE, with around £1 billion per year scheduled for spending at AWE over the remainder of this decade to ensure that the UK maintains the capability to produce nuclear weapons well into the second half of this century. To date there has been minimal Parliamentary scrutiny of this programme.

- AWE is currently working on a programme to upgrade the current UK Trident warhead to the 'Mark 4A' modified warhead, which will have increased accuracy and destructive power and an extended lifetime. Parliament has never been formally notified of the Mark 4A modification programme and the costs and timetable for the programme have never been disclosed.
- AWE is also currently conducting studies to explore options for a potential future warhead as part of the ongoing Trident replacement programme. To date at least £85 million has been spent on such studies.
- Nevertheless, the policy of successive UK governments has been to achieve a world without nuclear weapons, so it is incontrovertible that at some point in the future nuclear weapons production and maintenance at AWE must cease.
- AWE is an important national resource in terms of its scientific expertise and equipment, and is a major local employer and a significant contributor to the local economy. Fears over the impact of cancellation of the Trident programme are a natural concern for those who depend on the Establishment for their livelihoods.
- This study examines alternatives for AWE's future in the event of a possible decision to cancel the Trident programme. It concludes that the likelihood of outright closure of the Establishment is low. Decommissioning of radioactively contaminated facilities is likely to last into the 2040s / 50s, with a need to hold radioactive wastes securely at the site until at least 2070. AWE's expertise on disarmament verification and nuclear threat reduction would most likely be retained by government regardless of any decision to cease warhead production.
- The prospects for a post-Trident AWE to move away from its current role into civil sector markets are good, and are compatible with regional economic development strategies.
- The report concludes that, in the event of cancellation of the UK Trident nuclear weapons programme, jobs and economic benefits at AWE need not be lost in the short to medium term and could be conserved in the long term by putting the Establishment's assets and skills to work in pursuit of innovative new civil sector business opportunities.

## EXECUTIVE SUMMARY

Important decisions on the UK's Trident nuclear warhead – whether to replace it, and if so, what with – are on the horizon and are likely to become pressing by the end of the current decade. The Atomic Weapons Establishment (AWE) will play a crucial role in these decisions.

The first part of this study reviews the role of AWE in the UK's nuclear weapons programme and describes the programme which is underway at AWE in preparation for developing a new UK Trident warhead. The second part of the study analyzes a series of future options for work at AWE and examines the consequences of a decision to cancel the Trident replacement programme, setting out a blueprint to show how the Establishment could successfully diversify its work into the civilian sector.

AWE's recent history since the 1980s onwards has been dominated by the development, manufacture, and maintenance of the UK Trident warhead. The Establishment's current programme is focused on the maintenance and upgrade of the UK Trident warhead and the decommissioning of a small number of warheads each year to meet a Strategic Defence and Security Review commitment to reduce the size of the UK's warhead stockpile. AWE is currently working on the UK Trident Mark 4A warhead modification programme to modernise and upgrade the destructive capability of UK Trident warheads. Parliament has not been officially notified of this programme and no information on programme costs has yet been published.

A major investment programme is currently under way at the AWE sites at Aldermaston and Burghfield in Berkshire, with around £1 billion per year scheduled for spending over the remainder of this decade to deliver the Mark 4A programme, build new research and production infrastructure, and ensure that the UK maintains the capability to produce nuclear weapons well into the second half of this century. This programme is reported to have been subject to delays and cost over-runs. AWE is also co-operating with the French government on warhead research under the terms of the UK-France 'Teutates' Treaty which was agreed in 2010, and continues to undertake long-standing research work in collaboration with US nuclear weapons laboratories under the terms of the 1958 US-UK Mutual Defense Agreement.

AWE is currently undertaking preparatory studies to inform a decision on the replacement or refurbishment of the UK Trident warhead, likely to be made sometime towards the end of this Parliament. Nevertheless, the policy

of successive UK governments has been to achieve a world without nuclear weapons, so if this aim is to be met it is incontrovertible that at some point in the future nuclear weapons production and maintenance at AWE must cease.

AWE's future is closely linked to the future of the Trident programme, which raises questions about what might happen to the Establishment in the event of a future decision to cancel the Trident programme. AWE currently employs 4920 people directly and a further 890 contractors and is said to contribute £475 million annually to the local economy, so fears over the impact of cancellation of the Trident programme are a natural concern for those who depend on the Establishment for their livelihoods.

Options for the future for AWE can be summarised as:

- **Business as usual:** work continues as currently intended on the Trident warhead programme and development of a replacement Trident warhead.
- **'AWE lite':** The Trident programme is downgraded but not cancelled, and AWE diversifies its work into new security related and nuclear fields.
- **A 'post nuclear' AWE:** The Trident programme is cancelled and AWE undergoes a transition to a commercially focused innovation and technology centre.
- **Wind down:** The Trident programme is cancelled and work at AWE is wound down.

The report argues that outright closure of AWE is highly unlikely, given the range of unique national scientific and engineering assets which are located at its sites. Even if such a decision is made by a future government the dismantling of the existing warhead stockpile is expected to take at least four years, guaranteeing work over the short to medium term. Decommissioning of radioactively contaminated facilities is likely to last into the 2040s / 50s, with a need to hold radioactive wastes securely at the site until at least 2070. Work at AWE on disarmament verification and nuclear forensics might be expected to continue regardless of the future of the Trident programme.

The report examines the prospects for converting AWE to a set of commercially viable business enterprises which are able to compete in civil sector markets. This objective is compatible with the aims of the regional Strategic Economic Plan prepared by the Thames Valley Berkshire Local Economic Partnership, which seeks to increase technological innovation in

the area. The Strategic Economic Plan notes AWE's interest in exploring potential commercial applications, and anticipates that dialogue with AWE will take place to explore the long term potential for developing a Science Park facility at Aldermaston or Burghfield. AWE is well placed to co-operate on innovative new work through association with the Universities of Reading, Oxford, and Surrey, which are located relatively close by. In due course it would be possible to establish a series of new business entities reflecting AWE's areas of expertise, for example high energy physics, materials science, and manufacturing and production, offering services such as research, consultancy, and product development.

The former nuclear research site at Harwell and the former Chemical and Biological Defence Establishment at Porton Down, responsible for government research on chemical and biological weapons, provide models for the future trajectory of AWE. Both sites have been successfully converted to commercially viable enterprises undertaking a diverse range of work, with a core remaining within the government sector to manage legacy issues and undertake research and maintain expertise required by government.

Achieving such a transformation would not, of course, be without risk and would require support from government in the form of changes to defence and economic policies and funding and advice from a new national Defence Diversification Agency. It would also require participation of trade unions and staff at AWE and constructive engagement from AWE Management Ltd (the commercial consortium which runs AWE), the Ministry of Defence, and local authorities.

The main conclusion of the study is that, given adequate preparation and financial resources, detrimental consequences for workers at AWE and local communities could be largely avoided if a future government closes the Trident programme. However, this is dependent upon a willingness to engage with the issues, and on starting work early to plan and prepare for a transition away from nuclear weapons-related work. To deliver the transition a partnership approach is needed involving the employer, AWE personnel and their trade unions, central government, and local authorities.

The reality is that, at present none of these parties are engaged. All are assuming that the Trident programme will continue indefinitely and that AWE will continue to have a role in the development and manufacturing of nuclear weapons. This report therefore aims to start the process of engagement and begin the preparation for an alternative future.

Download the report in full from <http://tinyurl.com/AlternativeAWE>

Nuclear Information Service is a not-for-profit, non-government information service which works to promote public awareness and foster debate on the risks and costs of the UK's military nuclear programme.

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**#AltAWE**

**nuclear  
information  
service**

***nuclearinfo.org***

***office@nuclearinfo.org***

**0118 327 4935**

**Nuclear Information Service**

35-39 London Street

Reading

Berkshire

RG1 4PS



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