AWE NUCLEAR SECURITY TECHNOLOGIES

At the end of 2024, we held public drop-ins at six venues across our area to tell you more about what we do, highlight some of the unique technology behind our fences, and share our plans to update our infrastructure.

We had lots of interesting conversations with those who came to the events. While many were aware of our role in nuclear defence, there were some common misconceptions about the work we do.

Below are some of the most frequent questions we heard, along with our answers. We hope you find them helpful...

IS IT TRUE YOU MAKE BOMBS ON SITE?

We are the only organisation in the UK that designs, manufacturers and maintains nuclear warheads. A nuclear warhead is an explosive device that derives its energy from a nuclear reaction.

DO YOU TEST THE WARHEADS?

No, we do not test the warheads. We carry out simulations and test the components to ensure they are operating as they should. In 1996, the UK committed to not conduct nuclear weapon test explosions. Instead, AWE has developed capabilities in modelling and non-nuclear testing to ensure safety and efficacy are maintained. We use unique and advanced technologies, from purpose-built lasers to some of the most powerful supercomputers in the UK.

DO YOU HAVE A RED BUTTON TO PRESS TO SET OFF 'THE BOMB'?

We do not have a red button to press. We are tasked to deliver the warheads to the Royal Navy. AWE takes no part in any decisions about the use of nuclear weapons. That decision falls to the Ministry of Defence, policymakers and Ministers of State.

IS THERE A CHANCE A WARHEAD COULD DETONATE AT ALDERMASTON?

Contrary to common belief, it is not fully configured to be detonated as a nuclear device until all the components come together – and this does not happen at AWE Aldermaston or Burghfield.

HOW DANGEROUS ARE THE RADIATION LEVELS AROUND AWE FOR RESIDENTS?

AWE sets an annual limit of 3 millisieverts (mSv) for its [nuclear] workers. The maximum direct dose at the Aldermaston site boundary for 2023 was below this limit – 0.003 mSv – demonstrating the safety system AWE uses work.

Just by living in the UK, you will receive an annual dose of 2.7 mSv. If you live in Devon or Cornwall, this increases to 6.9 mSv. Also:

- Each transatlantic flight gives you 0.08 mSv
- A chest x-ray gives you 0.014 mSv
- A dental x-ray gives you 0.005 mSv
- A CT scan of the head gives you 1.4 mSv

DO YOU HAVE UNDERGROUND TUNNELS THAT LEAD TO TADLEY AND BEYOND?

These underground tunnels do not exist.

DO YOU HAVE A NUCLEAR REACTOR ON SITE?

We have no operational nuclear reactors on site. There have been operational reactors on site, and these are either fully decommissioned or defueled and awaiting decommissioning.

ISN'T THERE THE RISK OF A MAJOR ACCIDENT INVOLVING THE UK'S NUCLEAR WEAPONS THAT COULD DO REAL DAMAGE TO PEOPLE AND THE ENVIRONMENT?

The UK takes the safety and security of its nuclear materials extremely seriously. All aspects of the defence nuclear industry, including the storage and maintenance of our nuclear weapons, and managing waste, are subject to very strict licensing and regulatory requirements.

Safety and security are at the heart of everything we do. We are independently regulated and are required to comply with a significant number of laws and regulations, including having appropriate designs for nuclear plant and equipment, trained and suitably experienced staff, and managing nuclear waste safely and effectively.

Our regulators include the Office for Nuclear Regulation (ONR), Defence Fire Risk Management Organisation, Defence Nuclear Safety Regulator (DNSR), Defence Nuclear Security Regulator (DefNucSyR), and the Environment Agency.

The UK's nuclear weapons are designed with built-in features that make them safe until they may need to be used, and we minimise our impact on the environment wherever possible.

These protections mean the risk of a serious accident happening is extremely low, but even so, we have regularly tested plans in place to counter and respond to all conceivable incidents, no matter how unlikely they may be.