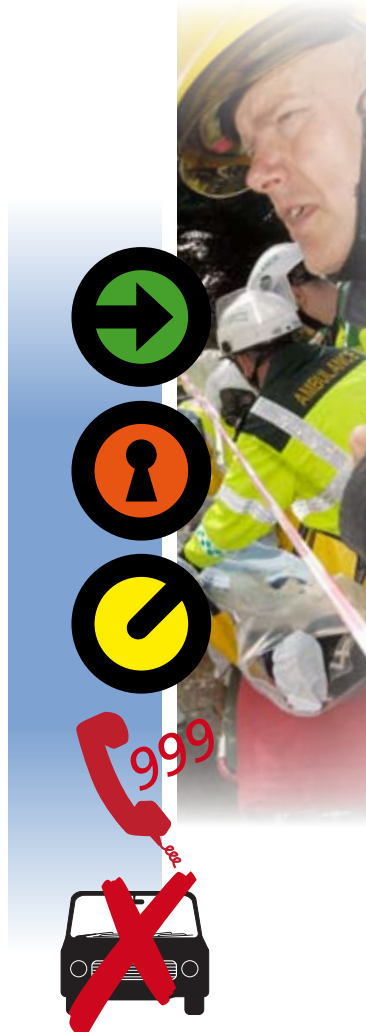




REPPIR

Radiation
Emergency
Preparedness &
Public
Information
Regulations



What to do in the event of an emergency at AWE
Please read this leaflet and then keep it somewhere you can find it



What to do in the event of an emergency at AWE



Introduction

This leaflet has been produced by AWE plc in partnership with West Berkshire Council under the Radiation Emergency Preparedness and Public Information Regulations (REPPiR). It gives advice on what to do in the unlikely event of a serious emergency at the Atomic Weapons Establishments (AWE) with the potential to affect the public. It must be stressed that the possibility of such an emergency is extremely remote as the design and operation of the Aldermaston and Burghfield sites meet the highest safety, security and environmental standards. The contents have been approved by members of the Off-Site Plan Working Group which is chaired by West Berkshire Council.

About AWE

AWE is the company that is licensed by the Nuclear Installations Inspectorate, part of the Health and Safety Executive, to operate AWE on behalf of the Ministry of Defence. AWE is responsible for maintaining

the United Kingdom's nuclear warhead stockpile. This involves research, design, manufacture, and in-service support and decommissioning of warheads. AWE also provides expertise to UK Government agencies and departments for National Nuclear Security.

Both the Aldermaston and Burghfield sites are large industrial complexes. In addition to materials normally used in industry, we also handle high explosives and radioactive substances, under carefully controlled conditions.

AWE has rigorous emergency response procedures. We regularly exercise the emergency procedures both internally and with the Local Authorities and the civil emergency services.

West Berkshire Council, along with other responding agencies, has produced an AWE Off-Site Plan for an emergency that may affect the public. Copies are held at local libraries and on the West Berkshire Council website: www.westberks.gov.uk.



Detailed Emergency Planning Zones

The Detailed Emergency Planning Zones are three kilometres from the centre of AWE Aldermaston and one and a half kilometres from the centre of AWE Burghfield. Detailed scientific calculations have shown that people in these areas might be advised to take shelter in the unlikely event of a major radiological incident that involves an off site release of radioactive material at either site.

Alerts

If there were a major radiological incident that could affect the public, people in the affected sector(s) of the Detailed Emergency Planning Zone might be advised to take shelter indoors until checks were made to ensure it is safe. You would be alerted either by:

- The AWE installed telephone alerting system. This would phone you with a pre-recorded message advising you what action to take
- An alert on the local radio or TV

Note:






If you live close to the AWE sites you may overhear site alarm signals. You should never react to these because we often sound them to test them as part of our routine emergency response exercise programme.



How to respond

In a major emergency your initial response should be to go indoors, unless directed otherwise by the emergency services.

You should stay indoors and tune into a local radio station to listen for further instructions and updates.

In an Emergency	
	<p>Go In</p> <p>Go indoors as soon as you can, and follow the instructions below.</p>
	<p>Stay In</p> <p>Stay in, close and stay away from all windows and doors. Damp down or put out open fires and turn off any fans that could draw in air from the outside. If you have been outside for some time it would be a good idea to wash your face and hands or have a shower to wash off any material. Remain calm and wait for further advice.</p> <p>We know that you'll want to collect your children from school, but it might not be safe to do so. Remember that all schools have emergency plans and teachers will look after the pupils in their care.</p>
	<p>Tune In</p> <p>Tune in to a local radio station which will give you further information or instructions, including updates on schools.</p>
	<p>Don't use the phone</p> <p>Try to avoid using the phone. If you do need to, keep the call as short as possible.</p> <p>Don't phone the emergency services or AWE as they will be busy dealing with the emergency. Don't dial 999 unless you have a separate emergency.</p>
	<p>Don't Leave the Area</p> <p>Never be tempted to leave the area unless told to do so by the emergency services. You will be much safer indoors. If you are out-of-doors you are more likely to be exposed to radioactivity. If you try to leave you may block the roads for the emergency services.</p> <p>There will be no need for urgent evacuation. In the highly unlikely event that you are told to leave the area you will be sent to a Reception/Rest Centre set up by the local authority where you will be looked after and receive help and information.</p>



Local Radio Stations

Heart Berkshire	102.9 & 103.4 MHz FM
Heart FM	102.6 MHz FM
BBC Radio Berkshire	94.6, 95.4, 104.1 & 104.4 MHz FM
Newbury Sound	105.6, 107.4 MHz FM

What is NOT possible

- A Chernobyl type reactor disaster. There is no such reactor at either the Aldermaston or Burghfield sites
- A nuclear bomb type explosion. The safety systems and warhead designs cannot be overridden whatever the accident or emergency

What is the worst that could happen

A nuclear emergency could occur following a major uncontrolled fire in one of our facilities where radioactive material is being handled. In such an event radioactive particles could be carried by the wind and might affect the areas nearby. AWE has its own emergency services including a highly trained full-time Fire and Rescue Service in order to ensure the risk is kept to a minimum.



Radiation

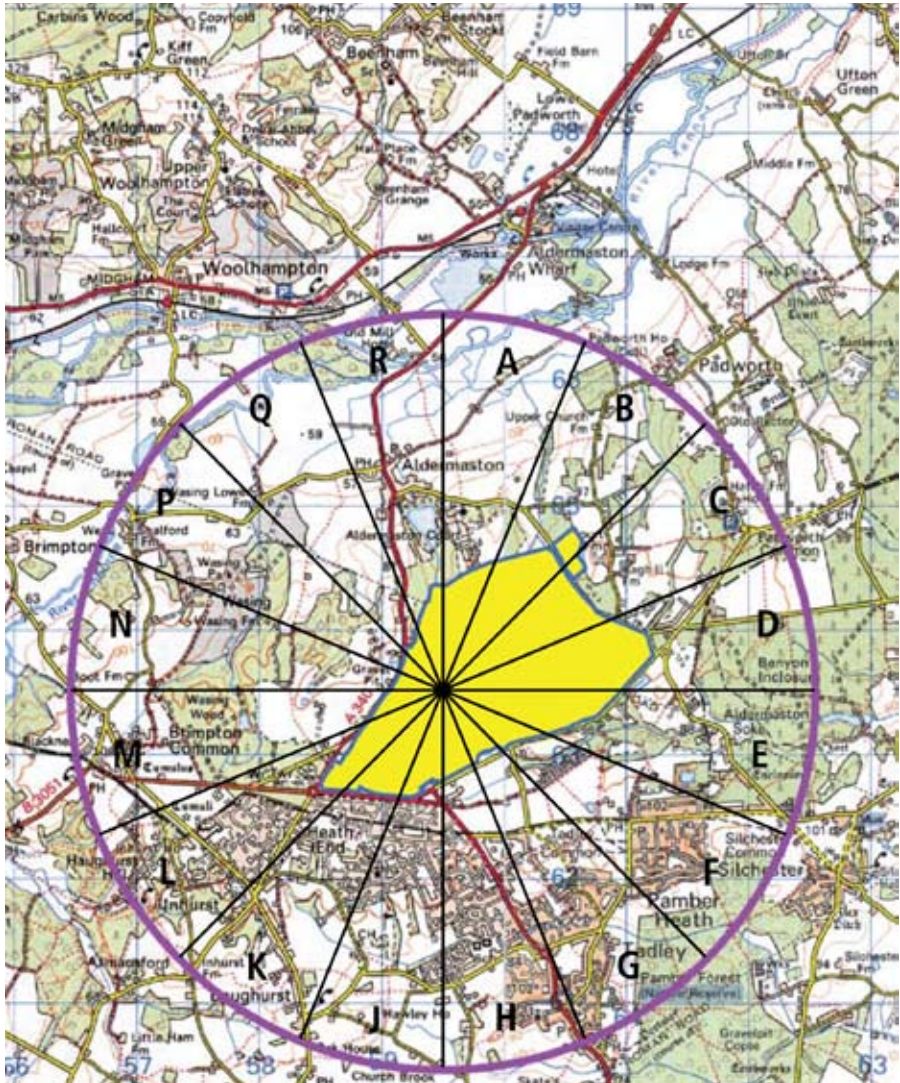
Radiation of different types is a fact of everyday life – light and heat from the sun are natural forms of radiation essential to our existence. We generate radiation using microwaves to cook, radio waves for communication, radar for navigation and X-rays for medical use. Radioactive materials also emit radiation and these materials occur naturally in our environment. The chart on page 8 gives more information on sources of radiation that we are all routinely exposed to.

Possible health risks

Most of the hazard from an emergency involving the release of radioactive material at AWE would come from alpha radiation. Alpha radiation cannot penetrate the outer layer of the human skin, a single sheet of paper, a pane of glass much less a wall. Alpha radiation could only cause a low risk of long-term health effect if the material was breathed in or swallowed; for example on contaminated food.

There would be no immediate health effect caused by a release of radioactive material on members of the public following a serious incident at AWE. Staying indoors with the doors and windows closed would remove almost all the risk.

Detailed Emergency Planning Zone for Aldermaston



This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. ICG 100015347 2010

Detailed Emergency Planning Zone for Burghfield





Comparative scale of UK doses and limits in *mSv and their effects

0.001	Average annual dose in the UK from the Chernobyl disaster
0.004	Average annual dose from past nuclear weapons testing
0.01	Average dose from a flight from the UK to Spain
0.01	Highest annual dose to the public from AWE operations
0.02	Single chest X-ray
0.3	Maximum annual dose allowed from a single nuclear site
0.4	Average annual dose from all medical radiation
1	Average annual dose from naturally occurring Radon in homes
2	Average total annual dose from natural radiation
5	Trigger level under REPPiR for sheltering action downwind
8	Average annual dose from all sources of radiation in Cornwall
10	Action level for naturally occurring Radon in homes
20	Annual legal worker dose limit
500	Threshold for nausea and reduction in white blood cells
4000	50% survival
6000	Early death

*mSv stands for milli-Sievert. This is a unit of measurement of radiation dose.



Radiation and radioactivity

Radiation is energy in the form of waves or particles. We are exposed to radiation all the time mostly from natural sources. It is all around us – in the air, the earth, the water, our food, cosmic-rays from space; even our bodies contain naturally-occurring radioactivity.

As well as naturally-occurring radioactivity, other forms are generated in industry and medicine etc. Radiation falls into two main categories – “ionising” and “non-ionising” radiation.

Microwaves for cooking, radio waves for phones, radar for navigation, are examples of non-ionising radiation.

Medical X-rays, cosmic rays from the sun and substances containing radioactive materials such as granite, are examples of sources of ionising radiation.

Ionising radiation is a form of radiation which deposits some of its energy in a certain way as it passes through matter. It can be harmful to the human body in large amounts because it can damage individual cells, which can result in damage to organs or cause long term medical effects.

Ionising radiation has the same effect whether it comes from natural sources or not. Normally people get their greatest exposure to radiation from naturally-occurring radioactive materials such as Radon gas. Radon comes from the decay of uranium that is present in rocks and soils. We breathe in Radon every day and it accounts for about 50% of our annual radiation exposure.



Radiation dose

The amount of radiation a person is exposed to (radiation dose) is measured in units called milli-Sieverts (mSv). The average annual radiation dose from all sources of radiation in the United Kingdom is about 2.6 milli-Sieverts.

In parts of Cornwall, where there is more naturally occurring radioactive Radon gas coming from the uranium in the granite rocks, the annual dose is 7.8 mSv. Around AWE Aldermaston and AWE Burghfield, where the soil is mostly chalk and clay, the total annual dose including from our operations – is lower than the national average at around 2.2 mSv a year.

About 85% of our annual radiation dose is naturally-occurring. About 14% comes from medical sources such as x-rays. The fall-out from past nuclear weapons tests around the world and incidents such as Chernobyl accounts for about 0.2% and authorised discharges from the whole nuclear industry (including AWE) totals much less than 0.1%.

In the United Kingdom the average member of the public gets 5,500 times as much radiation from natural sources as they do from the entire nuclear industry put together.



Questions answered

Q *If a major emergency did happen at AWE how you would know who is at risk from radioactivity?*

A *Specialist computer modellers would use scientific calculations taking into account such things as the wind and weather. The results would be used to identify who is at risk. AWE would alert the public via the telephone alerting system and local radio. After the public had been alerted we would confirm the calculations by using scientific instruments to monitor the environment.*

Q *What about the elderly and infirm in the sheltering zone?*

A *Local authorities supported by the Primary Care Trust will continue to care for the elderly, disabled and vulnerable groups in the area. Their work would be co-ordinated by local authorities with support from the emergency services.*

Q *What will happen to people coming home if their home is in the sheltering area?*

A *Anyone returning to the sheltering area would be sent by the police to reception/ rest centres where they will be looked after and get help and information.*

Q *What about pets?*

A *Keep all pets indoors that have not been outside at the time of the emergency; those that have been outside could be kept in a separate room or building.*

Q *What advice will be given to farmers and growers?*

A *Advice will be given by the Food Standards Agency on the consumption, sale and marketing of food within a defined area. The Department for Environment, Food and Rural Affairs (DEFRA) would give advice to farmers about animals that are left outdoors.*



Summary

- Q** *How will I know when the situation has returned to normal?*
- A** *Notification of the "All-Clear" would be given by the police using local radio and TV.*
- Q** *Will I have to take "anti-radiation" tablets?*
- A** *Potassium iodate tablets are effective in emergencies involving the release of radioactive iodine from a nuclear power reactor accident. AWE does not have a nuclear power reactor and so you would not need to take such tablets.*
- Q** *Will the water be safe to drink?*
- A** *One of the first things the Environment Agency is required to do during the initial stages of an incident is to advise the Drinking Water Inspectorate and water abstractors on water quality. In most cases the answer to this question will be "yes" as there will often be sufficient storage of uncontaminated water, and water companies are likely to abstract from a safe supply of water if an existing supply is suspected to be contaminated.*

AWE has operated safely for over 60 years and we intend to maintain this record of Safe, Secure and Clean operation. It is right that we have plans that can be followed in the event of an emergency. It is also important that you know what to do to keep yourself and your loved-ones safe in the unlikely event of a major nuclear emergency at AWE. This information leaflet is intended as a short guide to these plans. The details of the emergency plans are in the "Atomic Weapons Establishments Off-Site Contingency Arrangements" which can be found in local libraries or on the West Berkshire website www.westberks.gov.uk.

You can find out more about AWE by visiting our website at www.awe.co.uk.

Thank you for reading this leaflet.
Please keep it handy.

Please read this leaflet and
then keep it somewhere
you can find it





AWE is a Government Owned Contractor Operated organisation. AWE is operated by a joint venture of Jacobs Engineering, Lockheed Martin and Serco.

AWE is the trading name of AWE plc. Registered in England and Wales. Registration no. 02763902. Registered office: Aldermaston, Reading, Berkshire, RG7 4PR.

For further information about AWE, contact AWE Public Affairs Manager on 0118 985 6416 or community@awe.co.uk
AWE Aldermaston, Reading, Berkshire, RG7 4PR.

Issued May 2010

© British Crown Owned Copyright 2010/MOD