

What you should do if there is a **NUCLEAR EMERGENCY** at the **Devonport Site**

July 2011



Important Nuclear Safety Advice

- You should read this booklet carefully.
- The advice is summarised on the back page, you should tear off this page and hang it on your notice board or by your front door, so you can find it easily.
- The advice is explained fully on pages 4-7 of this booklet.

These questions will be answered:

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Why do I need this booklet?

You have been given this booklet because you live in the public information zone around the **Devonport Site**.

'**Devonport Site**' means the areas at Devonport owned by Ministry of Defence and Devonport Royal Dockyard Limited (DRDL). It includes the Dockyard Port of Plymouth.

If there is a nuclear emergency, people could be exposed to gamma radiation (like x-rays) and to beta radiation. In some circumstances radioactive material could escape from the Devonport Site and affect areas close to, or downwind of it. This booklet tells you what to do in the very unlikely event that this happens.

If necessary, the Police will co-ordinate an emergency response plan to protect people. There is no risk of an 'atom bomb' type explosion.

In a nuclear emergency, you could be exposed to radiation by:

- Breathing in contaminated air
- Touching contaminated surfaces
- Eating or drinking contaminated food or water
- Direct exposure to radiation

As radiation passes through the body it can damage or kill cells. The risk of an effect from exposure to radiation (e.g. an increased risk of cancer) increases with radiation dose. Only big radiation doses can cause radiation sickness.

If you take the advice given in this booklet, you will reduce the effects of exposure to radiation.

Radioactivity, limits and hazards are explained further on pages 8-10.

How will I know if there is a nuclear emergency?

The Naval Base siren will give the emergency signal - a rising and falling wailing note. The 'All Clear' signal will be given by sounding the siren on a steady note for at least a minute.

The siren is tested on a Monday morning at 11.30am.

The siren is sounded to warn people on the Devonport Site that there is a nuclear emergency. The siren may also be heard off-site in nearby areas. You may also hear that there is a nuclear emergency via announcements on television or radio, or the Informer Emergency Notification System (see page 11 for more details).

Why should I follow the advice?

- 1 You should go indoors and stay there. This is because levels of radiation could be higher outside.**

Staying inside is the most important safety advice.

You should stay inside because levels of radiation will probably be higher outside.

Also keep your pets indoors to stop them bringing in radioactive material from outside.

If you are away from home when there is a nuclear emergency, then go into the nearest building.



- 2 You should close all windows and doors.**

You should close doors and windows to stop radioactive material from outside coming inside.



3 You should put out fires and boilers and you should shut off air conditioning units.

Fans, air conditioning units, boilers, gas fires and heating systems draw in air from outside. You should switch off these things (and damp down open fires) to stop radioactive material from outside coming inside.

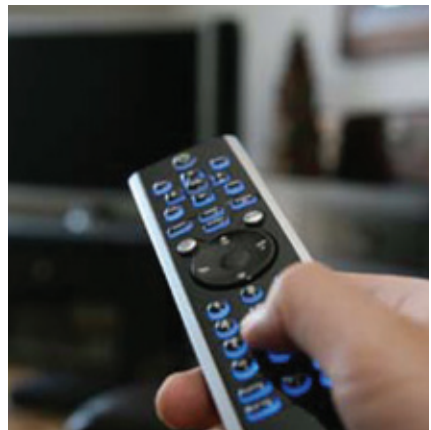
4 You should listen to local TV and radio for more instructions.

During a nuclear accident more advice will be given out regularly on local TV and radio:

TV	Radio	
BBC 1	Radio Plymouth	FM 106.7
ITV	Heart	FM 97.0 & 96.6
	BBC Radio Devon	FM 103.4 & 95.7
	BBC Radio Cornwall	FM 95.2 & 103.9
	Pirate FM	Devon (FM102.2) Cornwall (FM102.8)

Announcements will be made about:

- The care of children at school
- Your food and water supply
- The delivery of Potassium Iodate tablets
- Care of farm animals and pets



5 You should not make mobile or land line phone calls.

You should not make mobile or land line phone calls because the phone system could become overloaded. If this happens the emergency services will not be able to contact each other.



6 You should not leave the area.

You should not leave the area because roads may become gridlocked and the emergency services will not be able to get through to do their job. It is very unlikely that an evacuation of the area will be needed. If there is any need for an evacuation, details will be given on local TV and radio. They will tell you what to do and when.

7 You should take Potassium Iodate tablets ONLY if you are told to do so.

You might hear an announcement on the TV or radio telling you to take Potassium Iodate tablets. These tablets help to protect the thyroid from harmful effects of radioactive iodine. It is very unlikely that radioactive iodine would be released into the air. However, if this happened then staff from the Devonport Site would come and give the tablets to people in the downwind sectors. This will happen within a few hours of an emergency. You would also get advice on how and when to take them.



You should make sure that everyone in your house knows what to do if there is a nuclear emergency.

What about food and drink?

It is unlikely that tap water will be affected. It is also unlikely that food or drink in your house that is covered or sealed will be affected. If foodstuffs do get contaminated they will be unfit to use. You will be told if this is the case by announcements on local TV and radio. Advice will also be given to farmers, fishermen and other food producers.

How will children be cared for at school?

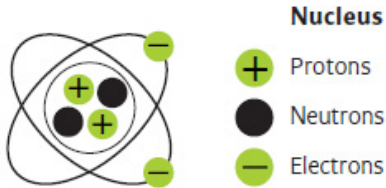
Children at school will be kept inside to protect them from radiation. Windows and doors will be closed and heating and air-conditioning units will be shut down. Children will be given Potassium Iodate tablets, from the school's supply, if needed.

Do not risk exposing yourself or your children to higher levels of radiation by going outside to collect them. You should tune in to local TV and radio to find out about the care and return of children at school.



Radioactivity and radiation

- Everything is made up of tiny building blocks called atoms.
- Each atom is made up of:
Electrons which orbit around a Nucleus.
This contains Protons and Neutrons.



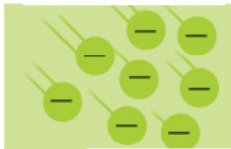
- Some atoms are unstable. They can become stable by getting rid of some of their protons, neutrons and electrons. They are termed radioactive and give off radiation.
- There are 3 types of radiation: Alpha radiation, Beta radiation and Gamma radiation.

Alpha radiation



Heavy positively charged particles, each made up of 2 protons and 2 neutrons.

Beta radiation



High speed electrons (negatively charged).

Gamma radiation



Similar to X-Rays. They penetrate further.

- You cannot be contaminated with radiation, but you can become contaminated if you come into contact with radioactive materials.
- The effect remains with you until you are “decontaminated” ie the contamination is removed.

How radiation could affect your body



The DNA helix

- Radiation can cause changes to molecules and tissue in the body. It can also change or affect DNA, the molecule which contains the information used to control our growth and development.
- This can lead to biological effects such as cell changes. It is possible that these changes may not show up until some time after exposure to radiation.
- Different types of radiation can cause different effects and some parts of the body are more sensitive to radiation than others.
- Studies have shown that the risk of an effect from exposure to radiation increases with the radiation dose.

Radiation measurement - quantities and units

- The unit by which the amount of radioactivity is measured is the Becquerel.
- 1becquerel (1 Bq) - 1 atomic disintegration per second.
- The effect of ionising radiation on the body is measured in sieverts.
- The sievert (Sv) is the unit of radiation dose.
- The sievert is a large quantity so often the term millisievert or microsievert is used.

- 1 millisievert (1mSv) = 1/1000 Sv
- 1 microsievert (1 μ Sv) = 1/1000,000 Sv

For comparison 1 millisievert is less than half the average annual dose from natural radiation in the UK. 1 microsievert is approximately equal to a tenth of the dose incurred during a flight from the UK to Spain.

Hazards from a nuclear emergency

In the unlikely event of a nuclear emergency you could be exposed to radiation by:

- Inhaling radioactive contaminated air and gases.
- Having contact with contaminated surfaces.
- Eating or drinking contaminated food or water (ingestion).
- Direct exposure to radiation.



1 Inhalation



2 Contaminated surfaces



3 Ingestion



4 Direct exposure

- Countermeasures to protect against these hazards are shown on pages 4-7.

Who has produced this information?

This booklet has been produced by the Ministry of Defence and Devonport Royal Dockyard Limited (DRDL) in consultation with Plymouth City Council and Cornwall Council.

It has been prepared in accordance with the Radiation Emergency Preparedness and Public Information Regulations 2001 (REPIR). REPIR requires that the Ministry of Defence and DRDL, as the Devonport on-site operators, have emergency plans in place. They must also provide prior information to people who live or work in the area surrounding the Devonport Site who may be affected by a nuclear emergency. The term 'nuclear emergency' is the same as 'radiation emergency', defined in REPIR 2001. The term 'nuclear emergency' is used in this booklet.

Where can I get more information?

The off-site emergency plan for the area around the Devonport Site is called the **Devonport Off-Site Emergency Plan** (DOSEP). This plan is drawn up by Plymouth City Council as the lead local authority. The plan gives details of the roles to be played by the Ministry of Defence, DRDL, the emergency services, and the other local civil authorities in the event of a nuclear emergency. If you would like to find out more about DOSEP there is a copy in your library and on the Plymouth City Council website.

The Informer Emergency Notification System is a free warning and informing service which has been introduced

for residents and businesses close to the Devonport Site to notify them in the very unlikely event of a nuclear emergency. Registration is via the Plymouth City Council or Cornwall Council websites.

You can get more information on radiation and the **Devonport site** from:

The Captain Base Safety
Business Support Team
Howard Block,
Building B 128,
HM Naval Base, Devonport,
PLYMOUTH PL2 2BG

Telephone: 01752 557235

This information is available in other languages and formats.
Telephone: 01752 307723

Summary Advice

If there is a nuclear emergency, a wailing siren will go off to warn people on the Devonport Site. You may also hear that there is a nuclear emergency via announcements on television or radio, or the Informer Emergency Notification System (see page 11 for more details). Please stay calm and follow this advice:

- You should go indoors and stay there
- You should close all windows and doors
- You should put out fires and boilers and you should shut off air conditioning units
- You should listen to local TV and radio for more instructions

TV	Radio	
BBC 1	Radio Plymouth	FM 106.7
ITV	Heart	FM 97.0 & 96.6
	BBC Radio Devon	FM 103.4 & 95.7
	BBC Radio Cornwall	FM 95.2 & 103.9
	Pirate FM	Devon (FM102.2) Cornwall (FM102.8)

- You should not make mobile or land line phone calls
- You should not leave the area
- You should take Potassium Iodate tablets **if** you are told to

