Portsmouth CITY COUNCIL

PORTSAFE

Civil Contingencies Unit

www.portsmouth.gov.uk

Foreword

The PORTSAFE Plan describes the off-site management structures and procedures used by responding agencies in the event of a reactor accident on board a nuclear powered vessel in Portsmouth naval base. The plan complements the operator's on-site emergency plan, PORTNUSAFE, produced by the MOD.

The plan is prepared to comply with the requirements of the Radiation (Emergency Preparedness and Public Information Regulations (REPPIR) (2001).

The Civil Contingencies Unit produces the plan on behalf of the responding agencies. An abbreviated version of the plan is available on the Portsmouth City Council website.

Amendments

Amendment number	Date of amendment	Signature
3.1	August 2010	
3.2	January 2011	
3.3	April 2013	
3.4	April 2014	

Glossary

Term or abbreviation	Explanation
Acute Trust	NHS service providers, ambulance, hospitals and mental health
Bronze	Single agency operational level of management of an incident
Cat 1 responder	Category 1 responder • Those organisations at the core of the response to most incidents (emergency services, local authorities, Environment Agency, local health organisation)
Cat 2 responder	Category 2 responder • Co-operating organisations involved in the response to an incident (Health and Safety Executive, transport and utility companies)
CBRN	Chemical, biological, radiological and nuclear
CCA	Civil Contingencies Act 2004 • Statutory framework for the delivery of civil protection
CCDC	Consultant in Communicable Disease Control
COMAH	Control of Major Accident Hazards • Legislation with reference to hazardous industrial sites
Control rooms	• CWON: Hampshire Constabulary (24/7) • Emergency Response Centre: Portsmouth City Council (as required) • Emergency Control Centre: Hampshire County Council (as required)
DEFRA	Department for Environment, Food and Rural Affairs
DEPZ	Detailed Emergency Planning Zone
DPH	Director of Public Health
EA	Environment Agency
EEPZ	Extended Emergency Planning Zone
ERLs	Emergency Reference Levels • These are the dose criteria for the implementation of emergency countermeasures in an emergency situation.

	They are specified in terms of dose to an individual, which would be averted by taking the relevant countermeasure
FSA	Food Standards Agency
Gold	Single agency strategic level of management of an incident
HSSO	Health services strategic officer
HSTO	Health services tactical officer
Health visitor	Registered nurse with training in the assessment of health needs of families, especially pre-school children
HCHC	Hampshire Community Health Care
HIOW	Hampshire and Isle of Wight • Geographical description based on police force area
HSE ONR	Health and Safety Executive, Office for Nuclear Regulation
NHS	National Health Service
Intermediate Care Team	Provides support to enable patients to be cared for in their homes
LRF	Local Resilience Forum • Principal mechanism for multi-agency co-operation between Category 1 responders
MACA	Military Aid to the Civil Authorities: consisting of following categories:
MACC	Military Aid to the Civil Communities • Assistance in an emergency
MACM	Military Aid to the Civil Ministries • Assistance in the event of industrial action
MACP	Military Assistance to the Civil Powers • Assistance to the police
MCA	Maritime and Coastguard Agency
MOD	Ministry of Defence
mSv	Milli-Sievert • International measurement of radiation dose used to show the equivalent dose absorbed in human tissue or an organ.
NHS Direct	NHS 24 hour telephone helpline
OOH	Out of hours

PHE	Public Health England
PHE Centre	Local unit of Public Health England
PHE CRCE	Specialist unit of Public Health England providing expert advice for Radiation, Chemical and Environmental Hazards
PHTO	Public Health Tactical Officer
PITS	Potassium iodate tablets
PORTSAFE	Off-site response plan dealing with accidental release of radiation from nuclear powered vessel
PORTNUSAFE	On-site MOD response plan dealing with accidental release of radiation from nuclear powered vessel
PPE	Personal protective clothing
Receiving hospital	A&E hospital designated to receive casualties from a major incident
REPPIR	Radiation (Emergency Preparedness and Public Information) Regulations
Rest Centre	Local authority centre for evacuees
RCG	Recovery Co-ordinating Group • Sub-group of SCG
SCC	Strategic Co-ordinating Centre • Multi-agency support cells to the Strategic Co-ordinating Group
SCG	Strategic Co-ordinating Group • Multi-agency group providing strategic direction in an incident
Silver	Single agency tactical level of management in an incident
SSILs	Site Specific Intervention Levels • These are radiation doses selected from the Emergency Reference Level Range at which a particular countermeasure would be implemented
STAC	Scientific and Technical Advice Cell • Sub-group of SCG
TCG	Tactical Co-ordinating Group • Multi-agency group providing tactical management of an incident

TPHC	Tactical Public Health Consultant

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Contents

Part 1
PORTSAFE policy

1.1 Introduction

The PORTSAFE Plan is a site-specific plan outlining the multi-agency response to the declaration of an off-site nuclear emergency by HM Naval Base Portsmouth. The Radiation (Emergency Preparedness) and Public Information Regulations 2001 requires the local authority for the area in which a nuclear vessel is berthed to produce an off-site nuclear emergency plan.

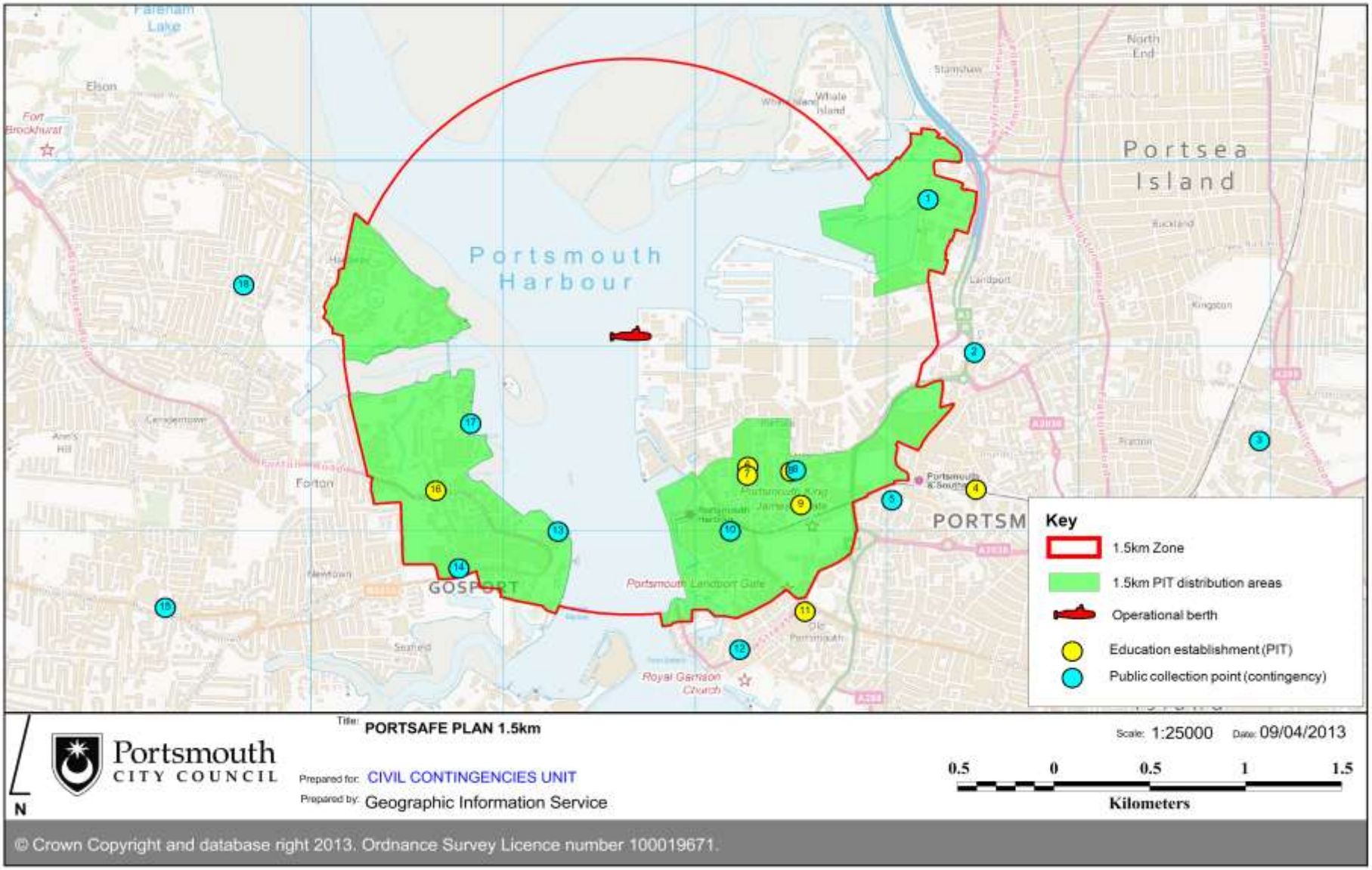
1.2 On and Off site plans

The Radiation (Emergency Preparedness) and Public Information Regulations 2001 defines on and off-site plans as:

- **On-site:** the area considered to be the operator's premises and under their control. In Portsmouth the MOD is the operator and their plan, PORTNUSAFE, covers the area within the naval base perimeter, including the approved anchorages, middle slip jetty north and north corner jetty east/west berths, and the Heritage Area of the base.

- **Off-site:** the area outside the operator's premises where detailed emergency plans are required. This is the Detailed Emergency Planning Zone (DEPZ). The PORTSAFE DEPZ has been determined by the Health and Safety Executive as 1.5km from the approved berths. Portsmouth City Council produces the off-site plan on behalf of the emergency services, neighbouring local authorities and other agencies that may be required to respond to an accident that affects the population outside the naval base.

Portsmouth City Council Civil Contingencies Unit is responsible for co-ordinating the off-site multi-agency activity in preparation for a visit by a nuclear powered vessel. Responding agencies are responsible for their individual operational preparations.


Portsmouth Harbour
Portsea Island
GOSPORT
PORTSM
Key
1.5km Zone
1.5km PIT distribution areas
Operational berth
Education establishment (PIT)
Public collection point (contingency)
Title: PORTSAFE PLAN 1.5km
Scale: 1:25000
Date: 09/04/2013
Portsmouth CITY COUNCIL
Prepared for: CIVIL CONTINGENCIES UNIT
Prepared by: Geographic Information Service
0.5 0 0.5 1 1.5
Kilometers
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1.3 Aim and objectives of the PORTSAFE plan

The **aim** of the plan is to:

- Minimise the impact on the public by outlining the off-site multi-agency preparedness, response and recovery arrangements in the event of the declaration of an off-site nuclear emergency (OSNE) in HM Naval Base Portsmouth.

The **objectives** of the plan are to:

- Describe the off-site multi-agency management structures, preparatory actions and response arrangements in the event of the declaration of an OSNE by HM Naval Base Portsmouth
- Identify the role and responsibilities of individual organizations
- Describe the immediate mitigation actions necessary to contain and limit harm to people, the environment and property
- Identify supporting plans and organisations
- Detail specimen warnings and information to the public
- Outline recovery and restoration actions.

1.4 Scope of the plan

The plan outlines the off-site preparations to receive a nuclear vessel and the response to the declaration of an off-site nuclear emergency by HM Naval Base Portsmouth.

The plan covers initial response activity and public protection measures required for the 360° area out to a distance of 1.5kms from the accident site, known as the Detailed Emergency Planning Zone (DEPZ). It is an enabling plan to ensure that the appropriate measures are in place during the initial stages of the accident. Additional actions may be required as the accident progresses that are not

contained in the plan, developed as part of the on-going risk assessment for the accident.

The plan does not include:

- The on-site response
- Procedures at the designated anchorages (although aspects of the plan may be implemented in the event of an accident)
- Details of supporting plans and procedures
- Individual organisations' operational plans and procedures

1.5 Local authority areas

The PORTSAFE DEPZ covers 3 local authority areas:

- Portsmouth City Council
- Gosport Borough Council supported by Hampshire County Council
- Hampshire County Council

If the weather conditions require the establishment of an Extended Emergency Planning Zone (EEPZ) then the following local authorities may be affected:

- Fareham Borough Council (Hampshire County Council)
- Havant Borough Council (Hampshire County Council)
- Winchester City Council (Hampshire County Council)
- Isle of Wight Council
- Chichester District Council (West Sussex County Council)
- West Sussex County Council

Each local authority is responsible for the deployment of its own response and resources within its boundaries, and providing senior representation at the PORTSAFE Tactical Co-ordinating Group (TCG) and the Strategic Co-ordinating

Group (SCG) as appropriate and in accordance with service level agreements/memorandum of understanding.

1.6 Management of the PORTSAFE response

The generic national framework for managing emergency response and recovery is detailed in the Civil Contingencies Act 2004. There are three multi-agency management tiers in the framework: Operational, Tactical and Strategic. For more details of the HIOW LRF command and control arrangements refer to the **Strategic Response Framework for Emergencies** and the **SCC Manual of Operations**.

Declaration of an OSNE triggers a major incident response and all 3 levels of management are implemented. Responding agencies will also set up their major incident rooms to coordinate internal actions.

The Operational Level

- The operational level or Bronze is the level at which the management of immediate "hands-on" work is undertaken, at the site of the incident. The multi-agency Bronze is located in **Semaphore Tower** in HM Naval base Portsmouth.

- Bronze is co-ordinated by the MOD Incident Commander. The MOD is responsible for identifying and activating alternative locations, if required.

- Off-site authorities may also establish functional Bronzes to manage specific operational activity.

The Tactical Level

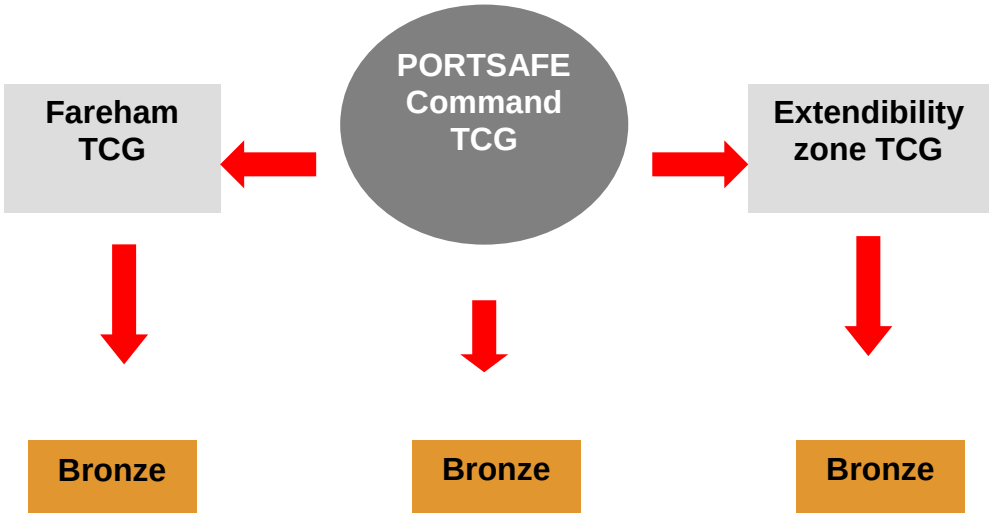
- The purpose of the tactical level is to ensure that actions taken by bronze are co-ordinated and resourced in order to achieve maximum effectiveness

and efficiency. The multi-agency Tactical Coordinating Group (TCG) will comprise the most senior officers of each agency committed within the area of operations, who will assume tactical command of the situation. The TCG will:

- Determine priorities for allocating resources
- Plan and co-ordinate how and when tasks will be undertaken
- Obtain additional resources if required
- Assess significant risks and use this to inform tasking of operational commanders
- Ensure the health and safety of the public and responders

- In the HIOW LRF area the TCG is established as a meeting of SILVER level single agency commanders. Resources and infrastructure are limited so there is no joint 'ops room' operating at the tactical level. A state board is maintained by Portsmouth City Council and Hampshire Constabulary outside the main TCG meeting room where the latest information – strategic and tactical objectives, alert level, plume map, CRIP and weather information - will be displayed.

- In other types of incidents there may be several separate geographical TCGs based on police areas. For PORTSAFE incidents the MOD scientific and health effort, including pre-installed infrastructure support, is centred on Portsmouth and cannot be replicated in other locations. The Portsmouth TCG will therefore operate as the Command TCG providing advice, guidance and co-ordination to other geographical tactical groups that may be required. Hampshire Constabulary is responsible for co-ordinating the activities of the TCG.



- PORTSAFE Command TCG is located on the second floor of the Civic Offices, Portsmouth City Council. Hampshire Constabulary is responsible for identifying and activating alternative locations, if required, and in consultation with Portsmouth City Council.

- Affected local authorities will send liaison officers to the PORTSAFE Command TCG.

- If a geographical TCG is required in **Gosport** it is generally located in Fareham Police Station. Hampshire Constabulary is responsible for identifying and activating alternative locations, if required, and in consultation with Hampshire County Council.

- Once the TCG is activated, responding agencies should monitor the weather conditions and be prepared to set up an alternative location if the wind direction is forecast to change and affect the response area.

- In the initial stages of the incident the TCG will assume the strategic function until the SCG is established.

The Strategic Level

- The purpose of the multi-agency Strategic Co-ordinating Group (SCG) is to establish the policy and strategic framework within which the other levels of response will work. Chairing the SCG will fall to the police in the response phase, and the affected local authority in the recovery phase. Government liaison will be based at the SCG. The SCG will:

    - Determine and promulgate a clear strategic aim and objectives and review them regularly
    - Establish a policy framework for the overall management of the event or situation
    - Prioritise the requirements of the tactical tier and allocate personnel and resources accordingly
    - Formulate and implement media-handling and public communication plans
    - Direct planning and operations beyond the immediate response in order to facilitate the recovery process

- Each affected local authority is represented by the Chief Executive or nominated deputy.

- The SCG is normally held at Hampshire Constabulary's training school at Netley and is supported by a Strategic Co-ordinating Centre. Hampshire Constabulary is responsible for identifying and activating alternative locations, if required.

1.7 Risk assessment

Radiation occurs naturally in the environment at a generally insignificant level. In the event of a reactor accident the levels of radiation would increase above the natural background and pose a potential hazard to the population.

The reactors in use within MOD and approved nations are designed and operated in such a way that an accident is highly unlikely. There are certain circumstances that could lead to an accident in which radiation and/or radioactive contamination would be present outside the vessel. A reactor accident that poses a potential hazard to the public will involve the release of fission products normally retained within the fuel elements in the reactor core. It is impossible for an accident in a pressurised water reactor to result in a nuclear explosion. More information is at **Annex D**.

Operational berths are cleared for operational or recreational visits only and no maintenance or repair of nuclear plant is permitted. The operational berths at Portsmouth are:

- Middle slip jetty (north)
- North corner jetty east/west berths
- 5,6 and 7 Man of War anchorages, Spithead
- C anchorage, Stokes Bay

1.8 Nuclear vessel movement

The primary hazards associated with berthing and movement operations are from collision or grounding. The following principles apply for the movement of nuclear powered vessels within HM Naval Base and port area:

- All movements are conducted in accordance with approved safety documentation and administratively endorsed by the Navy Command.
- Operationally approved by the Queens Harbour Master (QHM) and promulgated in the daily movements signal.
- Carried out with a qualified Admiralty Pilot embarked and a second admiralty pilot available at short notice in the accompanying pilot launch.
- Attended by at least two tugs, one of which must be a Nuclear Safety Tug, when transiting between Nab Tower and the berth.

- Attended by sufficient tugs to ensure safe manoeuvring and if other vessels are manoeuvring in the vicinity additional tugs to ensure the separation of all vessels.
- Carried out with adequate navigational aids available.
- Conducted within established weather and tidal criteria.
- Movements of other vessels in the vicinity of nuclear powered vessels are controlled by QHM Harbour Control to ensure minimum risk.
- Adequate security arrangements to be put in place prior to and during nuclear powered vessels' visits to Portsmouth.

1.9 Hazards

There are 2 types of hazard associated with a reactor accident:

- **Radiation hazard**. Fission products can give off direct gamma radiation that irradiates people. Protection includes reducing the time spent close to the radiation source, increasing the distance between people and the source and shielding people indoors.
- **Contamination hazard**. This occurs when people and living organisms absorb released radiation, or particles collect on surfaces. The radiation will continue to irradiate until removed, for example by washing skin or surfaces.

In general the risk of irradiation reduces according to the distance and time from the source, with the most acute affects present closest to the vessel and gradually decreasing as weather conditions and shielding from buildings disperse radioactive contamination.

Release of fission products into the atmosphere

Following an off-site nuclear emergency the main potential hazard to the public would come from the release of fission products from the fuel into the atmosphere. The ionising radiation in the particles can cause damage to cells in the human

body. This material would be carried in the wind as radioactive particles and could pose a hazard to people downwind of the accident site through:

- Direct radiation from the cloud as it passes by.
- Breathing in radioactive particles.
- Direct radiation from fission products that have been deposited on the ground or surfaces.
- Direct radiation from fission products that have been deposited on exposed skin.
- Breathing in fission products that have been deposited on surfaces and then released into the air again, for example by the wind (resuspension).
- Consuming food and drink contaminated by fission products. This includes food sold in the open air (such as market stalls) and food growing in fields, gardens and allotments. In addition, fission products deposited on the ground may be absorbed by plants and animals and eventually enter the food chain.

Release of fission products into water

There are 4 ways in which people could receive a dose of radiation following a release into water:

- Direct radiation from the water to those immersed in it or in the immediate vicinity.
- Swallowing water or breathing in spray.
- Direct radiation from fission products deposited on banks and the shoreline, including exposed shoreline at low tide.
- Contamination of marine food chains.

1.10 Reactor accident definitions

Alert	Definition
Reactor Safety Alert	An abnormal event that poses a potential threat to, or cause serious concern for, reactor plant safety. At this stage there is no threat to the public
Off-site nuclear emergency (OSNE)	A hazardous condition which requires the implementation of urgent countermeasures to protect the public in the DEPZ
OSNE qualifiers	
Radiation hazard confirmed	An Off-Site Nuclear Emergency in which a radiation hazard has been detected in the DEPZ
Release of radioactive material confirmed	An Off-Site Nuclear Emergency in which a release of radioactive material to the environment has been detected in the DEPZ

The Commanding Officer of the vessel is empowered to declare an off-site nuclear emergency on behalf of MOD. The MOD will provide immediate notification of an off-site nuclear emergency to the civilian authorities (see **Part 2**). It is envisaged that the declaration of an off-site nuclear emergency will be made on a precautionary basis in advance of a hazard occurring.

The MOD will subsequently notify the civilian authorities if there is change of condition:

- A radiation hazard confirmed
- A release of radioactive material confirmed

All pre-planned countermeasures for immediate public protection are implemented automatically in response to the declaration by the MOD of an off-site nuclear emergency.

1.11 Reactor accident planning zones

There are 5 planning zones for dealing with a reactor accident, expressed in terms of distance from the vessel:

- **Exclusion zone**
  The exclusion zone is the area, including the vessel, in which people would be at greatest risk from the hazards of an accident. Actions include controlled evacuation. The exclusion zone is located fully within the naval base and members of the public are not expected to be in this area. Management of the zone is detailed in the operator's on-site plan.

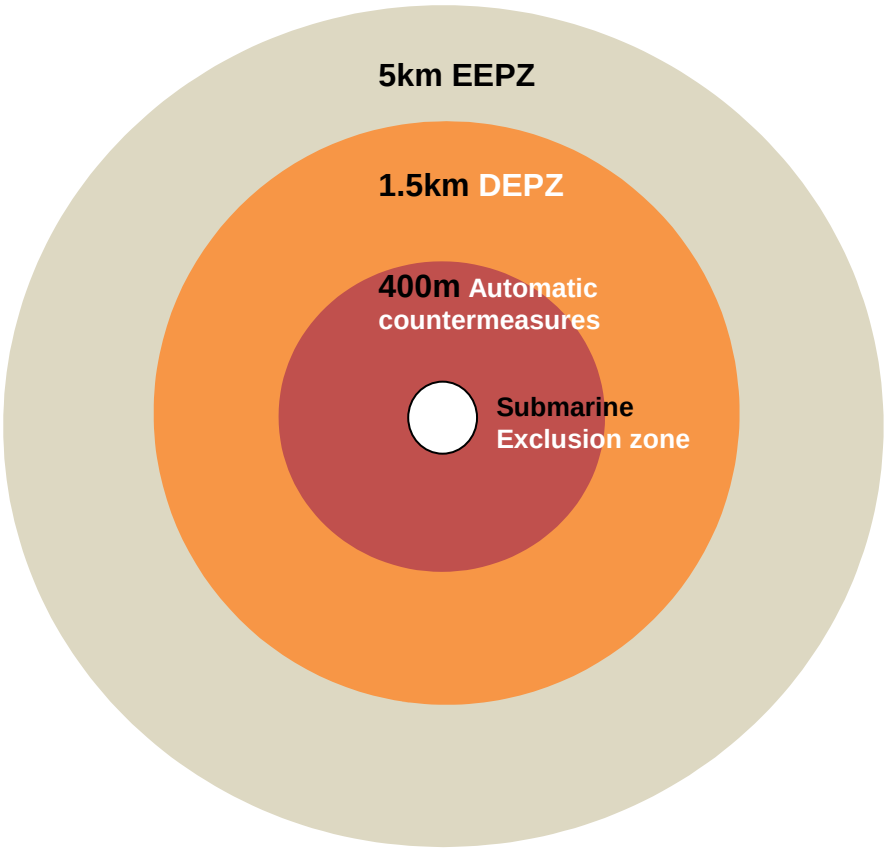
- **Automatic countermeasures zone (400m)**
  Automatic actions take place immediately on declaration of an accident to protect the workforce. These include advice to shelter. The exclusion zone is located fully within the naval base and members of the public are not expected to be in this area. Management of the zone is detailed in the operator's on-site plan.

- **Detailed Emergency Planning Zone (DEPZ)**
  In this zone pre-planned countermeasures are implemented to protect the public. The public are advised to shelter, receive PITS and evacuate if required. The zone extends to 1.5kms from the berth.

- **Extended Emergency Planning Zone (EEPZ)**
  In this zone the implementation of emergency counter-measures are only required in the event of a large release of fission products. The zone extends to 5kms from the berth.

Portsmouth City Council GIS have plotted the detailed extent of the DEPZ and EEPZ to reflect natural and logical boundaries. This eliminates potential confusion when, for example, the notional 1.5km zone line divides a street.

Figure 1: reactor accident planning zones



1.12 Planning zone actions

Zone	Distance	On site plan	Off site plan	Summary of main actions
Exclusion zone	Local decision	Yes	No	• All personnel accounted for and evacuated • Personal dosimeters issued • Exclusion zone reception centre with medical, radiation protection, monitoring and decontamination facilities
Automatic countermeasures zone	400m	Yes	No	• All non-essential personnel evacuated • Issue of PITS
DEPZ	**1.5km**	**No**	**Yes**	• **Advise public in the downwind zone to shelter indoors in order to protect against a release of radioactive material** • **Deliver PITS to the public** • **Advise public to take PITS once hazard confirmed** • **Consider evacuation plans**
EEPZ	**1.5k to 5km**	**No**	**Yes**	• **Detailed emergency plans not required** • **Extension of counter measures based on technical assessment of doses likely to be received by the public** • **Long-term monitoring of pasturage and foodstuff**

1.13 Downwind zone

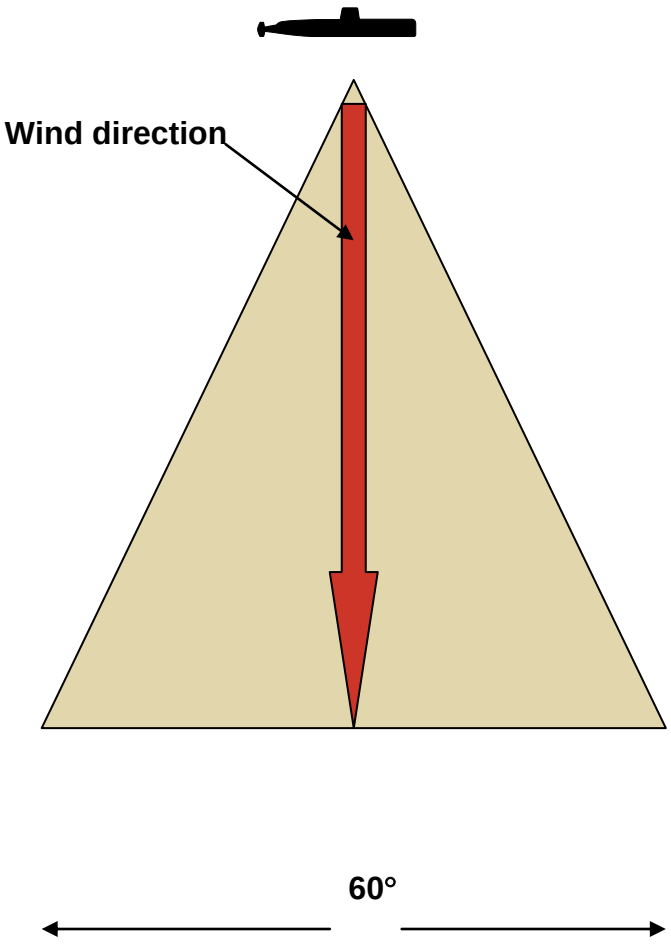
This is the area immediately downwind of the vessel where airborne radioactive material would be carried in the atmosphere. People in the downwind zone are therefore most at risk, and precautionary public protection measures to shelter and take potassium iodate tablets will apply.

The zone is a 60° cone starting from the vessel and moving out over the accident planning zones, initially to a distance of 1.5kms for pre-planned countermeasures.

The downwind zone is plotted on a map by:

- Plotting the position of the vessel
- Plotting the wind direction
- Drawing a 60° cone from the vessel centred on the wind direction

Illustration:



1.14 Extended Emergency Planning Zone

In the event of a large release of fission products to the atmosphere it may be necessary to extend the implementation of countermeasures beyond the DEPZ. This area is called the Extended Emergency Planning Zone (EEPZ). Calculation of the extent of the EEPZ is based on guidance provided by the International Atomic Energy Agency. In line with this guidance the HSE have designated the EEPZ for the licensed berths in Portsmouth to be 5km. The EEPZ is generally a continuation of the downwind zone, unless monitoring indicates a reduced or increased area at risk. Outline planning information for the EEPZ is at **Annex H**.

1.15 Adjacent hazardous sites

There are no other REPPIR sites in the DEPZ or EEPZ. There is one MACR site in the EEPZ:

- Defence Munitions Gosport, approx 1.5 miles distance from the berth. Hampshire County Council writes the off-site plan for the installation.

The nearest COMAH sites are:

Site	Off site plan owner
Geo Speciality Chemicals UK Ltd Charleston Road, Hardly, Hythe, Hampshire, SO45 3ZG	Hampshire County Council
BP Oil Ltd, Hamble Lane, Hamble, SO31 4NR	Hampshire County Council
Esso/Exxon, Fawley Refinery, Fawley, Hampshire, SO45 1TX	Hampshire County Council
Nalco Ltd, Cadland Road, Hardley, Hythe, Hampshire, SO45 3NP	Hampshire County Council
Tradebe, Charleston Road, Hardley, Hythe, Hampshire, SO45 3NX	Hampshire County Council
Humbly Grove Energy, Alton, GU34 5SY	Hampshire County Council

1.16 Mitigation measures

Mitigation measures seek to limit the potential impact of ionising radiation by reducing exposure through the effects of time, distance and shielding. Depending on the severity of the accident and the weather conditions there may be a need to implement countermeasures downwind of the accident site.

The criteria for the implementation of emergency countermeasures are based on the principle that the countermeasure should achieve more good than harm. As all interventions pose a degree of risk, consideration of the risk to the individual is the determining factor in the decision to implement countermeasures: The guiding principles are:

- Countermeasures should be introduced to ensure that no individual suffers acute effects of radiation
- The increase in probability of the individual suffering cancer or hereditary effects from radiation exposure in the absence of countermeasures should be balanced against the detriment of the countermeasure itself

PHE CRCE has recommended dose criteria for the implementation of emergency countermeasures. These intervention levels are known as Emergency Reference Levels (ERLs) and are specified in terms of the dose to the individual, which would be averted by taking the relevant countermeasure. ERLs are specific to each countermeasure because the detriment associated with each measure is different, and are promulgated as a range between values. If doses that can be avoided by the measure are **below** the lower level for that measure, then PHE CRCE advises that the countermeasure should not be implemented as it would be unlikely to be justified. If does that could be avoided are estimated to **exceed** the upper level, then PHE CRCR would expect every effort to be made to implement the measure.

Like ERLs, Site Specific Intervention Levels (SSILs) refer to the dose that can be avoided by taking the countermeasure, and are determined for each licensed site.

The implementation of countermeasures for PORTSAFE has been agreed at the following SSILs:

- Shelter: lower ERL 3mSv
- PITs: lower ERL 30mSv where practical
- Evacuation: to be decided at time of accident

The basic methods of reducing radiation exposure – time, distance, shielding – are incorporated into **immediate public protection measures**:

- Remaining indoors with windows and doors closed to provide shelter from any radioactive cloud that may have been released
- The administration of potassium iodate tablets to prevent the uptake of radioactive iodine by the thyroid gland
- Restrictions on the use of fresh foods and dairy products to prevent the ingestion of any radioactive material
- If required, temporary relocation or evacuation from areas where radioactive material may have been deposited.

Post-response measures:

- Longer term food controls beyond the emergency response zones.
- Relocation of the public from contaminated areas to avoid long-term radiation or to allow decontamination.

1.17 Pre-planned countermeasures

There are 3 pre-planned countermeasures for immediate public protection. They are implemented automatically, in response to the declaration by the MOD of an off-site nuclear emergency:

- **Sheltering**: public in the downwind zone are advised to stay indoors with windows and doors closed
- **Issue of PITS**: pre-distributed PITS are issued to public in the downwind zone at OSNE. The decision to advise the public to take PITS is the responsibility of the STAC.
- **Contingency planning for evacuation**: temporary evacuation of the affected population

Annex A outlines the procedures for issue of PITS
Annex B contains specimen public information messages

1.18 Health and safety of responders

Occupational Health Services/Radiation Protection Advisors within each responding agency are responsible for the provision of health and safety and welfare advice to their respective personnel. Defined injuries and dangerous occurrences affecting people on- or off-site should be reported to the Health and Safety Executive under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 SI 3163 (RIDDOR).

Responders may be working long hours in difficult circumstances. Organisations are to consider:

- Appropriate rest breaks and shift patterns
- Refreshments including a hot meal
- Toilet and wash facilities
- A separate rest area away from the media and evacuees
- Monitoring arrangements for staff welfare, including the long-term impact on staff
- Requirement for PITs
- Debrief opportunities

The following organisations have considered the possible need for its staff to be subject to emergency exposures and have identified that there are no foreseeable actions that would require it. As a result the organisations have not sought the agreement of staff to undergo emergency procedures in accordance with REPPIR Section 14.

- Portsmouth City Council
- Hampshire County Council
- Gosport Borough Council

Hampshire Constabulary

Hampshire Constabulary has identified the possible need for some of its employees to be subject to emergency exposures. In all cases of emergency exposures the service will seek advice from the police Radiation Protection Advisor. For planning purposes emergency exposure dose limits for the police are:

Exposure limit	Application
500 mGy	For life-saving intervention only. This also includes intervention to save critical infrastructure which if not attended, may yet threaten public and/or responder life
100mSv	For simple non-life-saving rescues, maintaining important plant and reducing future doses to responders and the public

Hampshire Fire and Rescue Service

Hampshire Fire and Rescue Service has identified the possible need for some of its employees to be subject to emergency exposures. Normal operational procedures will apply which allow for male fire fighters to be exposed to a limit of 20mSv total dose absorbed per incident. Female fire fighters are excluded from emergency exposure.

South Central Ambulance Service

SCAS has identified the possible need for some of its employees to be subject to emergency exposures. Dose levels are detailed in NHS Emergency Planning

Guidance *The ambulance service guidance on dealing with radiological incidents and emergencies*. In all cases of emergency exposures the trust will seek advice from the service's Radiation Protection Supervisor and the HPA Radiation Protection Advisor.

Dose reference level	Exposure limit	Application
1	1mSv	For all staff per event No staff under 18 years, no trainees and no female employee who is pregnant or breast feeding will receive emergency exposure above 1mSv
2	5mSv	For CBRN decontamination (volunteers)
3	100mSv	For life saving operations where the casualty cannot be immediately removed from the hotzone (volunteer HART personnel)
Annual dose level	20mSv	Volunteers

Issue of personal emergency equipment at naval base

Upon arrival at Unicorn Gate all Hampshire and Fire Rescue Service, SCAS and Hampshire Constabulary personnel will be issued with an 'Emergency Bag' by MOD personnel. Each personal emergency bag contains:

- 1 x personal electronic dosimeter (PED)
- 1 x thermoluminescent dosimeter (TLD)
- 2 x potassium iodate tablets (PITs)
- 1 x particulate respirator

Personnel should monitor their PEDs regularly and report readings to the control point. If the PED alarm operates, personnel should take 2 PITs tablets

immediately, don the particulate respirator (if breathing apparatus is not worn) and evacuate to the holding area.

1.19 Supporting plans

The multi-agency response to a PORTSAFE incident will be complex and extensive. It will utilise existing command and control arrangements. The main supporting plans are:

Portsmouth City Council	Emergency Response Plan Rest Centre Plan Traffic management procedures PITS distribution plan Evacuation Guidance
Hampshire Constabulary	Casualty Bureau Plan Gold Strategic Level Response AP058
Hampshire & Isle of Wight LRF	Strategic Response Framework for Emergencies SCC Manual of Guidance Emergency Communications Plan Mass Fatalities Plan Humanitarian Assistance Guidance Community Recovery Plan CBRN Protocol Plan for the establishment and operation of a Radiation Monitoring Unit
Marine	SOLFIRE
Hampshire County and Districts	Major Incident Plan Community Recovery Plan Temporary Mortuary Plan
Fareham Borough Council	Emergency Response Plan
Gosport Borough Council	Emergency Response Plan

Havant Borough Council	Emergency Response Plan
Winchester City Council	Emergency Response Plan
NHS LAT	Major Incident Plan
Solent Environment Group	Marine Pollution Contingency Plan

1.20 Finance

Charge for preparation, review and testing of the plan

REPPIR Section 12 allows the local authority (Portsmouth City Council and Hampshire County Council) to charge the operator (MOD) for performing local authority functions in relation to the preparation, review and testing of the off-site plan.

Costs must be reasonable and should not exceed the sum incurred by the local authority. The local authority can charge reasonable costs incurred in arranging the participation of the emergency services in the testing of the plan. The process requires agencies to submit their invoice to Portsmouth City Council, who submit a combined invoice to the MOD.

The local authority, subject to the agreement of MOD, will charge for the production and distribution costs of the public REPPIR leaflets. Portsmouth City Council produces the leaflets for the public information zone in Portsmouth and Gosport.

It is the policy of Portsmouth City Council, Gosport Borough Council and Hampshire County Council that staff time incurred in the preparation and review of the plan, and planning for the statutory test, is charged. Staff time incurred through participation in the statutory test is not charged. Consumable items such as refreshments at the statutory test are charged.

Response to accidents

Initial costs will fall upon responding agencies. Organisations wishing to recoup costs post-incident should seek the advice of their government department or the MOD.

Recovery and restoration

It is government policy to seek compensation or the recovery of costs in any REPPIR incident where clean up action or precautionary measures are taken to prevent or reduce the threat of pollution or contamination. The general principle is that the polluter should pay.

In PORTSAFE the operator is the MOD, or the MOD operating on behalf of a foreign government, and cost recovery mechanisms will be determined by central government. In all cases local authorities should proceed with cleanup operations on the assumption that a claim will be made or government resources will be provided.

A full and accurate record of all expenditure associated with an REPPIR incident and a clean-up action is to be kept, to substantiate claims or support formal inquiries.

Claims Procedures

The MOD will deal with claims under the principles for radiation injury and damage (including the sole and absolute liability of the operator) established by the Nuclear Installations Act 1965. The MOD is prepared to consider reasonable claims for compensation for any loss or damage, which can be shown to have been directly attributable to the incident concerned. Each claim will be considered on its merits, taking into account the full circumstances surrounding the incident. Any claim received will be dealt with as expeditiously as possible but no fixed timescale can be given.

Any person or organisation suffering injury, damage or loss directly attributable to a Reactor Accident will be entitled to claim compensation. The Department of Social Security (Supplementary Benefits Commission) is also empowered to make various loans to persons who find themselves in urgent financial need as a result of a major accident.

If radioactivity affects areas outside MOD property it will be necessary to arrange for civilians in the affected area to register so that it is possible to prove their presence in the affected area and for health monitoring.

1.21 Training and exercising

Each responding agency is responsible for its operational and role based training.

All aspects of the off site nuclear emergency plan produced under REPPIR are required to be tested at least once over a 3 year period. Testing is based on accident scenarios identified from the operator's Safety Report as being reasonably foreseeable. The testing should aim to give an indication of the conditions that may exist on and off the site in the event of an emergency and should examine the adequacy and effectiveness of emergency plans.

Training, exercising and testing of the PORTSAFE Plan is a modular programme conducted over the 3-year cycle. Portsmouth City Council is responsible for co-ordinating the test of the off-site plan in conjunction with organisations that have a role in the plan. MOD supports the test cycle with the production of a scenario and exercise material, in conjunction with the civil authorities.

The HSE test series is called **GOLDEN FOX** and comprises 3 elements of demonstration:

- **GOLDEN FOX:** command and control at operational, tactical and strategic levels
- **CHUBBY CUB:** distribution of potassium iodate tablets
- **SWIFT VIXEN:** call out notification test

1.22 Debriefs

Exercises

The requirement for exercise debriefs will be published in the exercise operational order. In general each participating cell or team will hold an immediate hot debrief, identifying areas for improvement and areas which went well. HSE/DNSR will provide a hot debrief at the conclusion of the test followed by a formal report.

Responding agencies are to capture lessons learned on an organisational basis and progress internal issues. Portsmouth City Council will facilitate a formal multi-agency debrief.

Accidents

It is likely that a number of formal government inquiries will be established following a REPPIR incident, with their own reporting procedures.

In addition to any formal inquiry, the following reporting arrangements for capturing the sequence of events, decision-making and lessons learned apply:

- Responding agencies should capture lessons learned on an organisational basis and progress internal issues.
- Local authorities may wish to commission scrutiny panels to consider the effectiveness of their response.
- The affected local authority will co-ordinate the production of a post-accident report and submit it to the Hampshire and Isle of Wight Local Resilience Forum.

1.23 PORTSAFE Radiation Emergency Planning Group

The role of the PREPG is to deliver the off-site planning, preparation and response in the event of a nuclear reactor accident in HM Naval Base Portsmouth. The responsibilities of the group are:

- To inform the public on the potential risks of radiation hazards involved in operating nuclear powered vessels.
- To produce and review the off-site nuclear emergency plan (PORTSAFE) for Portsmouth and South East Hampshire.
- To provide an effective emergency response organisation in the event of an off-site nuclear emergency.

The following organisations are represented on the group:

Civil Authorities

- Portsmouth City Council
- Gosport Borough Council
- Hampshire County Council
- Hampshire Constabulary
- Hampshire Fire and Rescue Service
- South Central NHS Ambulance Service
- Environment Agency
- Public Health England
- NHS Commissioning Board Local Area Team

Naval/MOD (N) Representatives

- Naval Base Commander Portsmouth (or his representative)
- Dstl Radiological Protection Services
- Public Relations, HMNB Portsmouth

1.24 Plan approval

The Civil Contingencies Unit, Portsmouth City Council, produces the PORTSAFE Plan on behalf of the Portsmouth Radiation Emergency Planning Group and the Hampshire and IOW Local Resilience Forum. Authority to issue the plan has been delegated to the Civil Contingencies Manager.

1.25 Plan review

The Civil Contingencies Unit, Portsmouth City Council, will revise the plan as follows:

- When a new risk assessment indicates the plan is out of date or a new risk identified
- When lessons learnt from accidents, experience or exercise indicates the plan is out of date
- When a restructure (organisational or changes to other responders) or other changes to the organisation e.g. technical indicates the plan is out of date
- Every 3 years in accordance with REPPIR

1.26 Plan distribution and storage

A copy of the full plan is held by each organisation on the distribution list. The plan (minus contact and operational details) is published on the Portsmouth City Council website.

Part 2
Preparation, callout and response

2.1 Preparatory actions for visits of nuclear powered vessels

MOD

- Notify Portsmouth City Council Civil Contingencies Unit of a visit at least 24 hours before.

- Issue PITS tablets to Portsmouth City Council Civil Contingencies Unit for pre-distribution to selected centres, schools, nurseries and educational establishments.

Portsmouth City Council Civil Contingencies Unit

- Notify external agencies of visit dates, who will implement appropriate arrangements for their organisations:

Hampshire Constabulary	HQ emergency planners
Hampshire County Council (for Gosport Borough Council)	Head of Emergency Planning
	Emergency Planning Duty Officer
	Director of Public Health
South Central Ambulance Service	Head of Emergency Planning
Hampshire Fire and Rescue Service	HQ Contingency Planning Officer
	Group Manager Portsmouth
NHS LAT	Head of EPPR
Health and Safety Executive Office of Nuclear Regulation	Principal site inspector

- Notify internal officers of visit dates:

    - Corporate Communications
    - Duty Executive and City Contact Officers for the period of the visit
    - Director of Public Health
    - Head of Community Safety
    - Chief Executive

- Distribute PITS to selected centres, schools, nurseries and educational establishments (see **Annex A**).

- Test the direct telephone line between Conference Room A, Civic Offices, and the Incident Commanders Cell, HM Naval Base.

2.2 Standby arrangements during visits of nuclear powered vessels

HM Naval Base Portsmouth and local MOD Nuclear Emergency Response Organisation will be at an alert state of readiness throughout the visit, from arrival of the vessel at Nab Tower inbound until passing Nab Tower outbound. Details are contained in the MOD's on-site plan, PORTNUSAFE.

The MOD Nuclear Emergency Response Organisation will be at 1 hours notice to respond to a nuclear emergency on a visiting vessel and provide support to the civilian authorities if required. Details are contained in the MOD's on-site plan, PORTNUSAFE.

Local civilian responder organisations will maintain their normal state of readiness.

2.3 Notification of an off-site nuclear emergency to external agencies

- In the event of an off-site nuclear emergency the Commanding Officer of the vessel will declare an Off-Site Nuclear Emergency to Harbour Control, Queen's Harbour Master.

- Harbour Control will inform the Ministry of Defence Police at Unicorn Gate that an off-site nuclear emergency has occurred.

- The Ministry of Defence Police will inform Hampshire Constabulary Force Control Room that an off-site nuclear emergency has been declared. The message format will be:

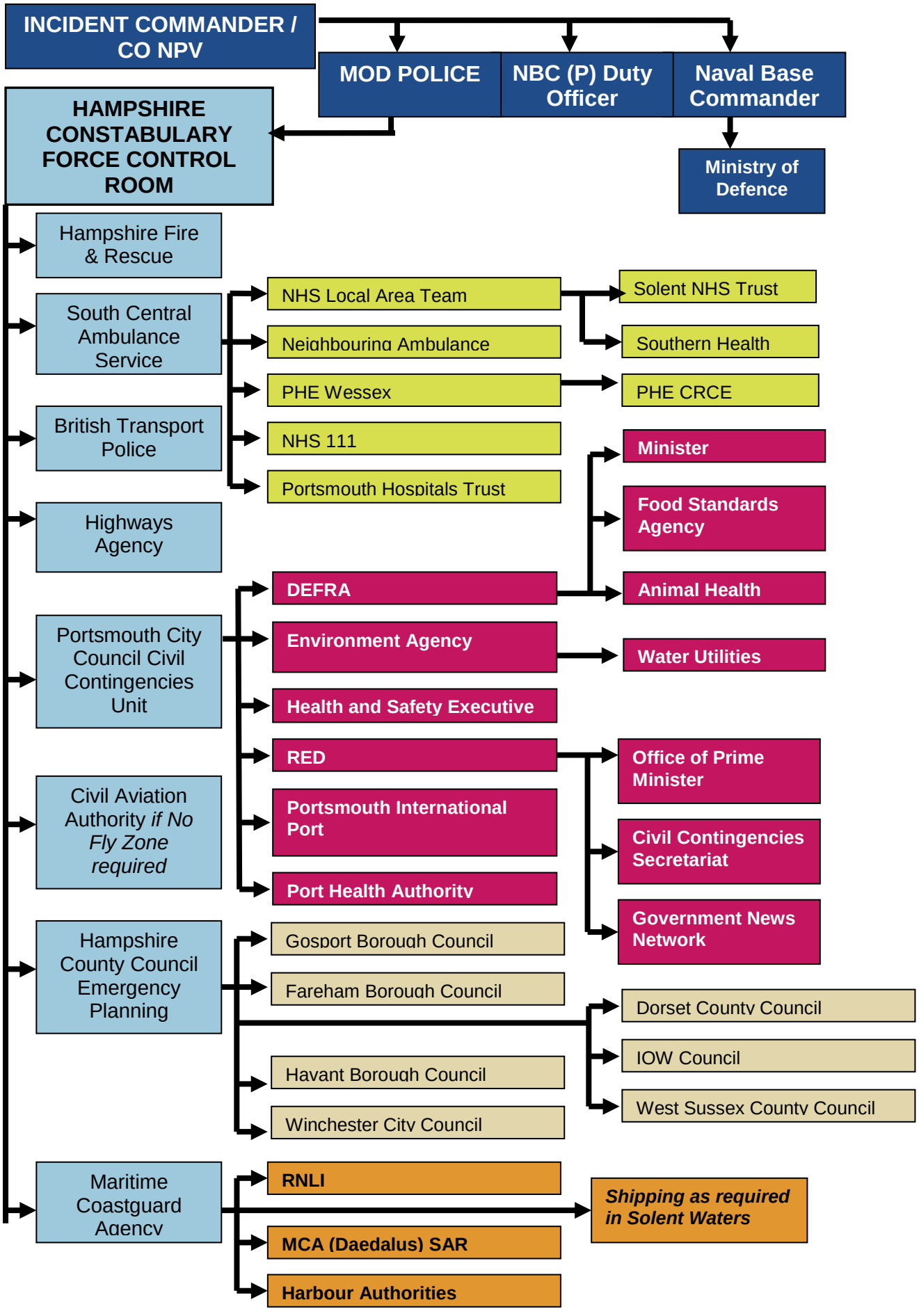
OFF SITE NUCLEAR EMERGENCY
NAME OF VESSEL
TYPE OF VESSEL
LOCATION OF VESSEL
PREVAILING WEATHER CONDITIONS

- Hampshire Constabulary Force Control Room will notify civil authorities through the cascade alerting system that an off-site nuclear emergency has been declared.

- On receipt of the declaration of an off-site nuclear emergency, civilian agencies are to implement their PORTSAFE response actions, including their cascade alerting responsibilities.

2.4 Cascade alerting system

The cascade alerting system allows the quick communication of the accident notification to multiple agencies. The system is represented in the following diagram. See **Annex G** for the protected version with telephone numbers.


INCIDENT COMMANDER / CO NPV
MOD POLICE
NBC (P) Duty Officer
Naval Base Commander
HAMPSHIRE CONSTABULARY FORCE CONTROL ROOM
Ministry of Defence
Hampshire Fire & Rescue
South Central Ambulance Service
British Transport Police
Highways Agency
Portsmouth City Council Civil Contingencies Unit
Civil Aviation Authority *if No Fly Zone required*
Hampshire County Council Emergency Planning
Maritime Coastguard Agency
NHS Local Area Team
Neighbouring Ambulance
PHE Wessex
NHS 111
Portsmouth Hospitals Trust
Solent NHS Trust
Southern Health
PHE CRCE
Minister
Food Standards Agency
Animal Health
DEFRA
Environment Agency
Water Utilities
Health and Safety Executive
RED
Portsmouth International Port
Port Health Authority
Office of Prime Minister
Civil Contingencies Secretariat
Government News Network
Gosport Borough Council
Fareham Borough Council
Havant Borough Council
Winchester City Council
Dorset County Council
IOW Council
West Sussex County Council
RNLI
MCA (Daedalus) SAR
Harbour Authorities
Shipping as required in Solent Waters

2.5 Notification of radiation and release hazards

Following the declaration of an OSNE, the MOD will advise the SCG (or TCG if SCG not operating) when:

- A radiation hazard is confirmed
- A release of radioactive material confirmed.

On each change of condition the STAC is to review the public health impact and issue an off-site countermeasures advice for public protection (**Annex C**).

2.6 Notification of end of off-site nuclear emergency

The MOD will advise the SCG (or TCG if SCG is not operating) when the Off-Site Nuclear Emergency no longer presents a hazard to the public. The SCG will then consider when the transition to the recovery phase can be made.

2.7 Command and control

In response to an off-site nuclear emergency, civilian responders implement an integrated management organisation, detailed in the **Strategic Response Framework for Emergencies** and the **SCC Manual of Guidance**. Participants at each level are:

The Operational Level (Bronze)

- Incident commander (MOD)
- MOD technical adviser
- MOD medical adviser
- MOD health physics adviser
- MOD mobile emergency monitoring HQ

- MDP liaison officer
- Hampshire Constabulary liaison officer
- Hampshire Fire and Rescue Service liaison officer
- South Central Ambulance Service liaison officer
- Portsmouth City Council liaison officer
- Gosport Borough Council liaison officer

The Tactical Level

- TCG chair (Hampshire Constabulary)
- Hampshire Constabulary tactical officers
- Hampshire Fire and Rescue Service tactical officers
- South Central Ambulance Service tactical officers
- Public Health Consultant
- Health Service Tactical Officer
- Portsmouth City Council senior executive
- Commercial port representative
- Gosport Borough Council senior officer or Local Authority Liaison Officer
- Hampshire County Council EPU officers
- Tactical military coordinating authority
- Communications and media officers

The Strategic Level

- SCG chair (Hampshire Constabulary)
- Hampshire Constabulary strategic officers
- Hampshire Fire and Rescue Service strategic officers
- South Central Ambulance Service strategic officers
- Portsmouth City Council Chief Executive

- Gosport Borough Council Chief Executive
- Hampshire County Council CEPO
- Maritime and Coastguard Agency
- RED liaison officer
- Scientific and Technical Advice Cell chair
- Public Health England CRCE senior representative
- Strategic military coordinating authority
- Environment Agency
- Food Standards Agency
- Health and Safety Executive Nuclear Installations Inspectorate
- HIOW LRF communications and media cell

2.8 Suggested SCG/TCG meeting agenda

- Confirm level of attendance and who should be at the meeting
- Urgent items for attention
- Confirm actions already taken, including PITS distribution to downwind zone
- Consider wider distribution of PITS, in light of forecast weather and technical information about reactor condition
- Actions from previous meetings
- Develop/review aims and objectives
- Information and intelligence
- Agency updates in support of the aims and objectives
- Next steps
- Media strategy
- Move to recovery
- Resilience of staff

2.9 Information displays

The Briefing Cell in the SCC is to co-ordinate the provision of information to the SCG and TCG. This is to include maps (created by the GIS cell) showing:

- Areas in shelter
- PITS distribution areas
- Extendibility areas

Mapping should be published electronically so that the information can be accessed remotely from each working area of the SGC and TCG. In addition the maps are to be printed and displayed in a prominent and accessible part of the SCG together with a state board detailing actions and situation reports.

2.10 Resourcing the response

As with all incidents, responders are responsible for ensuring they provide the necessary personnel, facilities and equipment to support their responsibilities in the plan. This includes standard practices such as the nomination of deputies, implementation of business continuity plans, maintenance of cascade callout lists and requesting mutual aid. If facilities routinely used for the response are not available then the owning agency will identify other suitable venues and advise the TCG/SCG.

The SCG will determine priorities for action and resource allocation if an off-site nuclear emergency is declared during another significant and unrelated incident (for example, severe weather). In all cases the potential impact on immediate and long term public safety will be the determining factor in deciding priorities.

2.11 Initial actions

The initial actions taken by individual civilian responding agencies are listed at **Part 3**. Immediate public protection measures are:

HM Naval Base

- Controlled evacuation of the immediate area around the berth. No members of the public are expected to be in this area. Detailed information is contained in the on-site plan and the MOD is responsible for the process.
- Instruction to shelter indoors for personnel within 400m (all directions) of the berth in order to protect against direct gamma radiation. No members of the public are expected to be in this area. Detailed information is contained in the on-site plan and the MOD is responsible for the process.
- Closure and evacuation of the public from the heritage area.

Civilian area of the DEPZ

The 1.5kms zone is a planning figure for initial actions. The exact extent of the release may be less than this distance or exceed it. In addition, the risk will be greater nearer to the source and reduce further away. Mitigation measures to protect the public therefore need to be assessed against the evidence of contamination and deposition as the accident progresses to ensure a proportionate response. Responders need to implement a monitoring strategy as soon as possible to support risk assessments.

Shelter Advice to the public within the DEPZ to shelter indoors to protect against the possibility of a release of radioactive material. In the event of an off-site nuclear emergency, staying indoors with windows and doors closed is a key public health message. Supporting individuals in homes, businesses and schools presents a number of challenges in a prolonged incident. The SCG/TCG will need to consider intervention plans for:

- The potential distribution of food and welfare supplies to sheltering residents, workers, visitors, education establishments and closed communities
- Specialist needs for more vulnerable people who require support such medication, essential care and meals on wheels
- Non- related accidents, serious illness and emergency protection interventions which require people to be removed from their shelter location

The effectiveness of sheltering as a countermeasure reduces over time, as no structure is completely airtight. This means that when the shelter posture is lifted buildings need to be ventilated.

Potassium Iodate tablets On behalf of the MOD the local authority issues PITs to the public in the downwind zone in order to protect against an uptake of radioactive iodine in the thyroid. Delivery of PITS is an automatic action on declaration of an off-site nuclear emergency. As an initial action the SCG should consider if a wider distribution is required, especially if the wind direction is likely to change within the next few hours.

The decision that the public need to take PITS is made by the SCG through the relevant Director of Public Health and STAC. The decision is based on a risk assessment that a release hazard is likely to occur, or confirmation from the MOD that a release hazard has taken place and that SSILs have been reached. The MOD provides the technical information to support the risk assessment process. See **Annex A** for the PITS distribution process.

Evacuation The decision to evacuate the affected downwind area from the release site is based on an assessment of risk to public health from the release, and will be authorised by the SCG and managed by the TCG. Planning guidance can be found in:

- Portsmouth City Council's Evacuation Guidance

- Gosport Borough Council's Emergency Response Plan
- Hampshire County Councils' Major Incident Plan and Community Recovery Plan
- Police Strategic Guidance on the Management of CBRN Events
- ACPO National Guidance on the Decontamination of People.

Other considerations

- If Portsmouth is the affected area, consider advising Gunwharf Quays shopping and leisure centre to close. If Gosport is the affected area, consider closure of the High Street area.
- Consider impact on operations in Portsmouth International Port. It may be necessary to stop sailings if the wind direction indicates the port will be affected. Actions could include the re-routing of inbound sailings to an alternative port, clearing ships and passengers from the port, communicating information to those intending to sail, creating safe holding areas for outbound freight and passengers.
- Determine policy for staff based or working in the affected area.

Next steps

Subsequent actions after the immediate countermeasures will be determined by risk assessment in light of scientific, technical and health advice provided to the SCG by the strategic military co-ordinating authority, STAC and other responding agencies.

2.12 Personal protective equipment

The decision about the level of equipment required for responding emergency services personnel is based ongoing dynamic risk assessments by individual agency commanders and their respective radiation protection advisors. It is important that the SCG develops a coherent strategy for use of PPE in public

areas, with clear explanations in public communications as to why personnel may be wearing PPE.

2.13 Weather information

The Portsmouth City Council GIS team are responsible for obtaining initial and updated weather information through the Met Office EMARC (Environment Monitoring And Response Centre) on 01392 886095. The SCC GIS Cell is responsible for providing updates once the cell has been established.

2.14 Access to the Naval Base

Access to HM Naval Base Portsmouth will be through Unicorn Gate. The MOD will advise responders of alternative access points if Unicorn Gate not useable. All emergency services personnel entering the HM Naval Base Portsmouth will be issued with PITS as required. The MOD will provide safety briefings and entry control to all responders working in the base area.

2.15 Portsmouth Historic Dockyard

The Heritage Area of the Naval Base is open to the public every day except Christmas Eve, Christmas Day and Boxing Day, between 1000-1800hrs. In addition, there is a cinema, No 6, which opens to the public several evenings a week. The Heritage area is outside the Automatic Countermeasures Zone. In the event of an off-site nuclear emergency the area will be closed immediately and visitors cleared from the site by the MOD Guard Service and MDP.

2.16 Off-site traffic management

The TCG, in conjunction with the local authority, will put in place a traffic management plan covering:

- Access and egress routes to the incident site and the surrounding areas
- Access routes to hospitals
- Off-site rendezvous points
- Marshalling area and holding points
- Alternative routes

A decision by the naval base to evacuate non-essential personnel will have a significant impact on the road network around the base, especially the M275 and approach roads to the base. Traffic management will be required to ensure the potential for gridlock is minimised.

2.17 Cordons

The naval base is responsible for managing on-site inner and outer cordons.

The TCG, in conjunction with the local authority, will manage any cordons required for the safe management of the incident outside the base, including:

- Traffic cordons: to prevent unauthorised vehicle access to the area and aid emergency service access/egress
- Evacuation cordons: to aid safe evacuation and prevent unauthorised access to the evacuated area

The Police CBRN commander will determine the deployment of CBRN trained officers at off-site cordons, and detection and monitoring arrangements. CBRN

officers are equipped with PPE and Radiation Detector Pagers, and the force has access to 2 Ram Gene units to measure dose rates and contamination.

2.18 Harbour, rail and air movements

The SCG (or TCG if the severity of the accident demands immediate action) is to consider the options regarding harbour, rail and air movements. Any decisions to close or restrict harbour and train movements or request an air exclusion zone will take into account:

- **Risk** – closure will prevent additional personnel entering the affected area and exposing themselves to potential harm. Less traffic in the harbour will allow responders better access to the accident area.
- **Benefit** – keeping transport networks open may assist in a wider scale evacuation and aid return to normality.

The Queen's Harbour Master is responsible for restricting movements in the harbour and closing it to shipping. In general the harbour and access lanes will be closed if the direction of plume presents a hazard in those areas. QHM will notify the TCG/SCG, other agencies and shipping of restricted movements as per normal procedures.

2.19 Management of people

Information

People will be anxious to trace family members and friends who live, work, visit or attend school in the affected area. Equally, people sheltering in the affected area will wish to be reassured that displaced family members and friends are accounted for and safe. The early establishment of a Casualty Bureau, together with effective reporting mechanisms at rest centres etc will be essential in providing timely and correct information to the public.

Displaced people

The establishment of cordons may leave people displaced, for example people may return to the affected area following an incident and find themselves displaced as a result of cordons. If required, local authorities will establish a rest centre to provide shelter, welfare and information until it is safe for people to return to the affected area.

Returning residents may be able to draw attention to potentially vulnerable family members and neighbours in an affected area, for example they may be formal or informal carers.

School children and students

Local authorities are to provide welfare facilities in rest centres or schools for students unable to return to an affected area whilst an incident is ongoing.

In the event of an accident occurring during the school day, local authorities will request that schools in the affected area stay open and keep children with them until it is safe for staff and students to leave the premises. The local authority, in consultation with the TCG, will provide support.

The infants building of Portsmouth Grammar School has been placed inside the DEPZ because of the need to follow natural boundaries to designate the DEPZ, rather than follow a notional line across HMS Temeraire playing fields. The remaining school buildings are outside the zone. If OSNE is declared for this part of the city, Portsmouth City Council is to advise the school to move staff and students form the infants building to the main site, where they can be collected by parents or looked after by the school until they can leave.

Vulnerable people

Agencies are to share information about vulnerable individuals and groups within the area in order to ensure that support or interventions can be considered on a priority basis.

2.20 Humanitarian assistance

People affected by the incident will have a range of needs both during and after the response. The Hampshire and Isle of Wight Local Resilience Forum **Humanitarian Assistance Guidance** details the options and procedures for welfare provision; a summary of key functions is below. Portsmouth City Council and Hampshire County Council have detailed plans to support humanitarian assistance.

Rest Centre

A rest centre is a facility providing temporary accommodation to displaced people who have no place to stay following an incident. It provides basic welfare, food and shelter requirements for a limited period. It is the responsibility of the local authority to open and manage rest centres. Rest centres may be required as part of the PORTSAFE response if the hazard from the incident requires people to be evacuated from areas of the DEPZ.

Humanitarian Assistance Centre

The SCG will determine if the scale and the nature of the incident requires the opening of a Humanitarian Assistance Centre (HAC). The role of the HAC is to provide longer-term welfare support to victims, survivors, family, friends, witnesses and responders. It acts as a 'one stop shop' where people can access information and support from local authority police, health, legal, financial and voluntary agencies. The affected local authority is responsible for providing a facility and a HAC should be in place 2 or 3 days after an incident.

Part 3
Initial actions by responding agencies

3.1 Hampshire Constabulary

1	Authenticate the message with the Ministry of Defence Police Control Room at HM Naval Base Portsmouth.
2	Alert the civil accident response organisations through the cascade alerting system.
3	FCR to activate Action Plan AP058
4	Activate the Gold, Silver and Bronze police response, including CBRN response
5	Notify the Duty Gold Commander that an incident has occurred
6	Complete internal cascade alerting
7	Activate the multi-agency Tactical Coordination Centre at Portsmouth City Council or other agreed location if weather and accident conditions dictate
8	Provide the chair of the Tactical Co-ordinating Group
9	Activate the multi-agency Strategic Co-ordination Centre at Netley Police Support HQ or suitable location
10	Provide the chair of the Strategic Co-ordinating Group
11	Establish off-site cordons, associated radiation monitoring and traffic management plan, considering the resources requirement (regional response). Deployment of CBRN assets to be authorised
12	If requested provide visible protection to local authority PITs delivery teams
13	Co-ordinate media and public information in accordance with the HIOW LRF Media Plan
14	Consider opening the Casualty Bureau
15	Other tasks as agreed by Bronze/TCG/SCG

3.2 Hampshire Fire and Rescue Service

1	Authenticate the message with Hampshire Constabulary police operations Force Control.
2	Respond into the naval base via Unicorn Gate unless otherwise directed.
3	Notify the Duty Chief Officer that an incident has occurred.
4	Complete internal and external cascade alerting
5	Provide officers to: • Bronze - Incident Command Cell, Semaphore Tower, naval base • TCG - Portsmouth City Council or as advised • SCG – Police Training and Support HQ Netley or as advised
6	Attend scene in accordance with pre-determined minimum first attendance. Additional attendance will depend on the extent of the situation. Conduct risk assessment before deployment if the incident presents a radiological threat.
7	Upon arrival at Unicorn Gate MOD will issue HFRS personnel with an emergency bag containing: • 1 x personal electronic dosimeter (PED) • 1 x thermoluminescent dosimeter (TLD) • 2 x potassium Iodate tablets (PITs) • 1 x particulate respirator • Personnel are to switch on the PED using the black on button located at the top right hand side of the device. Personnel should monitor their PEDs regularly and report readings to the control point. If the PED alarms then HFRS staff must take two PITs, put on the particulate respirator (if not already in BA) and evacuate to the holding area. Personnel are to return the equipment once the incident is resolved.

8	If the scale of the incident requires it, the decontamination of public casualties at a safe distance from the incident using current procedures and before: • Any secondary triage or clinical intervention • Transportation to hospital.
9	Other tasks as agreed by Bronze/TCG/SCG

3.3 South Central Ambulance Service

1	Respond into the naval base via Unicorn Gate unless otherwise directed.
2	Notify the Duty Senior Manager that an incident has occurred.
3	Complete internal and external NHS cascade alerting
4	Provide officers to: • Bronze - Incident Command Cell, Semaphore Tower, naval base • TCG - Portsmouth City Council or as advised • SCG - Police Training and Support HQ Netley or as advised
5	Identify the Receiving Hospital and notify it of the incident.
6	Attend scene in accordance with pre-determined minimum first attendance. Additional attendance will depend on the extent of the situation. Conduct risk assessment before deployment if the incident presents a radiological threat
7	Other tasks as agreed by Bronze/TCG/SCG

3.4 Portsmouth City Council

1	Complete internal and external cascade alerting
2	Implement the Emergency Response Plan for a major incident and open the Emergency Response Centre
3	Provide officers to: • Bronze - Incident Command Cell, Semaphore Tower, naval base • TCG - Portsmouth City Council or as advised • SCG - Police Training and Support HQ Netley or as advised • RCG - Police Training and Support HQ Netley or as advised
4	Provide access to the TCG offices (conference rooms floor 2, Civic Offices).
5	Determine the pre-planned countermeasures zone: • GIS to obtain wind and weather information from the Meteorological Office. • GIS to plot the position of the vessel and the line of the wind direction from the centre of the vessel. • GIS to plot a 60-degree downwind sector centred on the wind direction line to a distance of 1.5kms or the distance advised by MOD. • GIS to plot a 60-degree downwind sector centred on the wind direction line to a distance of 10kms (extendibility zone). • GIS to identify and plot schools, nurseries, hospitals, residential and sheltered housing, prisons and other public utilities in the zone. • GIS to provide the initial plot information on 1.5 and 5kms zones to: o SCC GIS cell o SCC media cell (to include street names) o TCG

	○ PCC's Emergency Response Centre ○ HCC's Emergency Control Centre
6	If downwind zone affects Portsmouth:
	PITS • Housing Management and Community Wardens deliver PITS to properties in predicted plume area • **See Annex A for more details**
	Communications and public information • Comms staff to release agreed public information advising the public in the pre-planned countermeasures zone to shelter. • When authorised by the STAC/Director of Public Health or nominated deputy, comms staff to release agreed advice to public to take PITS tablets. • Comms staff to provide agreed internal message for staff. • **See Part 5 for more details**

	Schools • Emergency Response Centre manager to provide Director of Children's Services/ Head of Learning and Achievement with list of schools, nurseries and educational establishments in the downwind zone • Director of Children's Services/Head of Learning to advise schools, nurseries and educational establishments with advice to schools in the downwind zone to keep students and staff in doors and be ready to issue PITS when advised. • Director of Children's Services/Head of Learning and Achievement to provide advice to schools and educational establishments outside the downwind zone. • Director of Children's Services/Head of Learning and Achievement to advise Portsmouth Grammar School to move staff and students form the infants building to the main site.
	Adult and Children's Social Care • Identify council-supported vulnerable people in the downwind zone and arrange advice or support as required • Work with partner agencies to provide advice for other known vulnerable people
	Portsmouth International Port • Provide a liaison officer to Bronze. • Provide a liaison officer to the Emergency Response Centre/TCG • Act as a PITS distribution centre if required
7	City Help Desk to open the emergency helpline and advise the media of the public number.
8	Other tasks as agreed by Bronze/TCG/SCG

3.5 Hampshire County Council

1	Complete internal cascade alerting
2	Provide officers to: • Bronze - Incident Command Cell, Semaphore Tower, naval base • TCG - Portsmouth City Council or as advised • SCG - Police Training and Support HQ Netley or as advised • RCG - Police Training and Support HQ Netley or as advised
3	Open headquarters Emergency Control Centre, Winchester
4	Implement the Major Incident Plan
5	If downwind zone affects Gosport, deliver PITS to properties in the predicted plume area
6	**Communications and public information** • Comms staff to release agreed public information advising the public in the pre-planned countermeasures zone to shelter. • When authorised by the STAC/Director of Public Health or nominated deputy, comms staff to release agreed advice to public to take PITS tablets. • Comms staff to provide agreed internal message for staff
7	**Adult and Children's Social Care** • Identify council-supported vulnerable people in the downwind zone and arrange advice or support as required • Work with partner agencies to provide advice for other known vulnerable people
8	**Schools** • Emergency Control Centre to provide list of schools, nurseries and educational establishments in the downwind zone • Director of Children's Services/Education to advise schools, nurseries and educational establishments with advice to schools in the downwind zone to keep students and staff in doors and be

	ready to issue PITS when advised. • Director of children's services/head of learning and achievement to provide advice to schools and educational establishments outside the downwind zone.
9	Provide support to Gosport Borough Council and other districts as required
10	Open emergency helpline and advise the media of the number to advertise to the public
11	Other tasks as agreed by Bronze/TCG/SCG

3.6 Gosport Borough Council

1	Complete internal cascade alerting
2	Provide officers to: • Bronze, if wind direction over Gosport - Incident Command Cell, Semaphore Tower, naval base • TCG - Portsmouth City Council or as advised • SCG - Police Training and Support HQ Netley or as advised • RCG - Police Training and Support HQ Netley or as advised
3	Open the Emergency Control Centre
4	Implement the Emergency Response Plan
5	If pre-planned countermeasures zone affects Gosport: • Provide public information advising the public in the pre-planned countermeasures zone to shelter. • When authorised by STAC/Director of Public Health or nominated deputy, advise public to take PITS tablets.
6	Open emergency helpline and advise the media of the number to advertise to the public
7	Other tasks as agreed by Bronze/TCG/SCG

3.7 Public Health England Centre

1	Provide immediate public health advice/messages
2	Initiate alert cascade, including PHE Centre for Radiation Chemical and Environmental Hazards (CRCE)
3	Agree PHE incident level and nominate incident director
4	Identify and mobilise resources within the Centre
5	Duty team or first on call to respond to immediate queries/issues until incident team are in place
6	Set up separate incident team/activate the Emergency Operations Centre and nominate EOC manager
7	Send senior member of staff (plus loggist/runner if available) to STAC when activated. In the absence of SCG/STAC, send senior member of staff to the TCG if requested or appropriate
8	Send senior member of staff to Recovery Coordinating Group if activated
9	Provide expert advice on radiological issues for the recovery phase.
10	Forward plan staffing and resources including requesting mutual aid if required
11	Other tasks as agreed by Bronze/TCG/SCG

3.8 Public Health England CRCE

1	Determine level of the CRCE response
2	Deploy senior staff to: • SCG • Recovery Co-ordinating Group • Media Briefing Centre • Lead government department
3	Send a Monitoring Liaison Officer to the TCG to coordinate between MOD resources and the CRCE Monitoring Officer • Provide information on location and capability of assets • Update risk assessments and priorities for monitoring
4	Appoint a CRCE Monitoring Coordinator at CRCE to: • Develop a monitoring strategy for the incident • Monitor the overall progress of the monitoring programme • Direct and manage CRCE environmental and personal monitoring teams • Direct monitoring resources made available to CRCE by other organisations
5	Set up an emergency operations centre at CRCE: • Collate and assess radiation monitoring information • Provide expert advice
6	Deploy monitoring radiation monitoring teams capable of measuring environmental contamination and personal measurements of radioactivity.
7	Provide support to Radiation Monitoring Units if resources allow
8	Undertake the role of national radiation monitoring coordination
9	Provide expert advice on radiological issues for the recovery phase
10	Liaise with key stakeholders at a local, regional and national level (for example, the EA, Food Standards Agency, local authority

	Environmental Health Officers, water companies
11	Other tasks as agreed by Bronze/TCG/SCG

3.9 National Health Service Commissioning Board Wessex Area Team

1	Complete internal cascade alerting
2	Implement the NHS CB LAT Wessex Major Incident plan
3	Manage the health services strategic response
4	Appropriate members of staff to attend the Strategic Coordination Centre at Police Training and Support HQ Netley for the following roles: • Director • Staff Officer (Emergency Planner) • Loggist • Admin Support • Communications Manager 1 • Briefing and Information Officer • Recovery Working Group Officer • Strategic Working Group Officer • NHS CB Wessex Area Team Liaison Officer
5	Work with NHS organisations to ensure a Health Services Tactical Officer is present at the Tactical Coordinating Group (TCG) at Portsmouth City Council (or as advised). Act as the main point of contact between local health agencies and the TCG
6	Liaise with Community Provider Trusts to ensure health support for Potassium Iodate Tablets (PITs) distribution centres
7	Ensure appropriate health services messages are included in public and media messages as required
8	Other tasks as agreed by Bronze/TCG/SCG

3.10 Environment Agency

1	Complete internal cascade alerting
2	Provide officers with specialist knowledge of radioactive substances to: • SCG - Police Training and Support HQ Netley or as advised • RCG - Police Training and Support HQ Netley or as advised. • DEFRA Environment Operations Centre • BIS Nuclear Emergency Briefing Room or MoD HQ, as advised
3	Investigate and/or assess the situation to ensure the protection of people and the environment
4	Advise partners and other organisations on environmental contamination, based on sound science and recognising that this may not be available in the early stages of an incident
5	Provide information to the public and the media, in consultation with other responders at the SCG.
6	If requested provide sampling and radiochemical analysis controlled waters
7	Advise on appropriate disposal of radioactive waste.
8	Advise DEFRA divisions on technical and regulatory aspects of the response
9	Manage flows of regulated waters if appropriate, to minimise impact.
10	Investigate in line with statutory duties
11	Support to the Recovery Co-ordinating Group to assist the community in returning to normality: • Advise on the impact of radioactive contamination in the environment • Work with partner organisations to identify feasible remediation options and support the development of a recovery strategy • Advise on the management and disposal of wastes contaminated

	with radioactivity • Advise on the standards and criteria that will need to be satisfied by premises/locations where radioactive waste from remediation can be stored on a temporary basis • Advise DEFRA on any need for an Exemption Order under the Radioactive Substances Act 1993 to facilitate the efficient management and disposal of radioactive wastes
12	Other tasks as agreed by SCG

3.11 Office for Nuclear Regulation

1	Deploy inspectors to the affected site's emergency facilities and to the appropriate off-site facility (OSF) who will monitor the situation and the steps taken to restore control
2	Provide independent advice and support to the SCG through the STAC, on the technical prognosis of the emergency and the health protection aspects
3	Set up its Incident Suite at Redgrave Court Bootle (RCIS) to provide a technical assessment capability and to support the Senior Nuclear Inspector, the ONR inspectors on the site and at the OSF
4	Make independent assessments of the likely course of the accident, its consequences and consider any implications for other nuclear installations
5	Submit routine reports on events at the site through the RCIS
6	Deploy a Senior Nuclear Inspector, normally an ONR Deputy Chief Inspector, to MOD Whitehall. The Senior Nuclear Inspector will act as advisor to central government in nuclear emergencies and will give advice based on ONR's assessments to government departments, devolved administrations, HSE and the operators as appropriate

Part 4
Scientific and health response

4.1 Health physics advice and monitoring

The main source of immediate radiation protection advice and monitoring support will come from MOD resources. In addition there are civilian assets which can be utilised both for the response and recovery phases. Public Health England is responsible for the overall co-ordination of radiation monitoring resources and strategy.

The presentation of radiological information is crucial to an effective public health response. MOD and civilian specialists should aim to provide technical detail in a way which places the information in context, and supports decision-making with understandable assessments of impact and options for mitigation measures.

4.2 Site Specific Intervention Levels (SSILs)

PHE CRCE has recommended dose criteria for the implementation of emergency countermeasures. These intervention levels are known as Emergency Reference Levels (ERLs) and are specified in terms of the dose to the individual, which would be averted by taking the relevant countermeasure. ERLs are specific to each countermeasure because the detriment associated with each measure is different, and are promulgated as a range between values. If doses that can be avoided by the measure are **below** the lower level for that measure, then PHE CRCE advises that the countermeasure should not be implemented as it would be unlikely to be justified. If does that could be avoided are estimated to **exceed** the upper level, then PHE CRCR would expect every effort to be made to implement the measure.

Like ERLs, Site Specific Intervention Levels (SSILs) refer to the dose that can be avoided by taking the countermeasure, and are determined for each licensed site. The implementation of countermeasures for PORTSAFE has been agreed at the following SSILs:

- Shelter: lower ERL 3mSv
- PITs: lower ERL 30mSv where practical
- Evacuation: to be decided at time of accident

4.3 MOD response

The role of the MOD's emergency monitoring organisation is to produce radiological information and advice to assist the decision-making process. This support is initially provided through locally deployed resources and may be supplemented by additional MOD, PHE CRCE and EA teams. Health physicists from the Defence Scientific and Technology Laboratory (DSTL) will provide radiation protection advice for workers, the public and the environment.

During the initial stages of a nuclear emergency the priority will be to undertake air sampling and ground monitoring of any potential or actual release plume. Monitoring of gamma radiation to determine whether there is a radiation hazard external to the vessel is undertaken by the vessel itself and automatic monitoring systems. Air sampling and ground monitoring will continue after the release stops to assist responders in their response and recovery strategies.

The MOD's scientific and health resources are organised as follows:

Operational level (Bronze/incident site)

- **Local Emergency Monitoring Organisation**. The task of the LEMT is to gather, process and present radiological information in a way that informs decision-making, for example, the need for shelter or evacuation, identification of areas where PITS should be distributed, stay times for re-entry to restricted zones etc. It comprises 3 elements:

  - Emergency Monitoring Headquarters (EMHQ). EMHQ is located adjacent to Semaphore Tower and directs the deployment of monitoring assets and co-ordinates monitoring activity.
  - Local Emergency Monitoring Team (LEMT). The LEMT is a mobile DSTL resource and provides air sampling information to the health physicists.
  - Environmental Monitoring. The Environmental Monitoring team provides data on radiation and contamination levels in the area.

- **Health physicists**. Their role is to provide advice to the MOD's Incident Commander on the appropriate on-site response to minimise hazards to people and the environment, and the adequacy of existing countermeasures.

During the early stages of an incident the priority will be to undertake air sampling and ground deposition monitoring on the central axis of the release plume in an area in the public domain (500-700m from the vessel). Sampling results are presented as activity per cubic metre of radionuclides, and the information is used to determine if automatic countermeasures have been effective.

Tactical level

- **Health Physics Data Management Cell**. The cell is part of the tactical military co-ordinating authority located in Conference Room A of the Civic Offices, Portsmouth City Council. Its role is to:

  - Assess, interpret and co-ordinate the supply of monitoring information from the MOD's Nuclear Accident Response Information Management System (NARIMS) to the rest of the response organisation.
  - Work with the civilian Tactical Public Health Consultant.

  - Inform the EMHQ of monitoring priorities.
  - Liaise with 42 Eng Reg (Geo) on the production of mapping resources to support response activities.

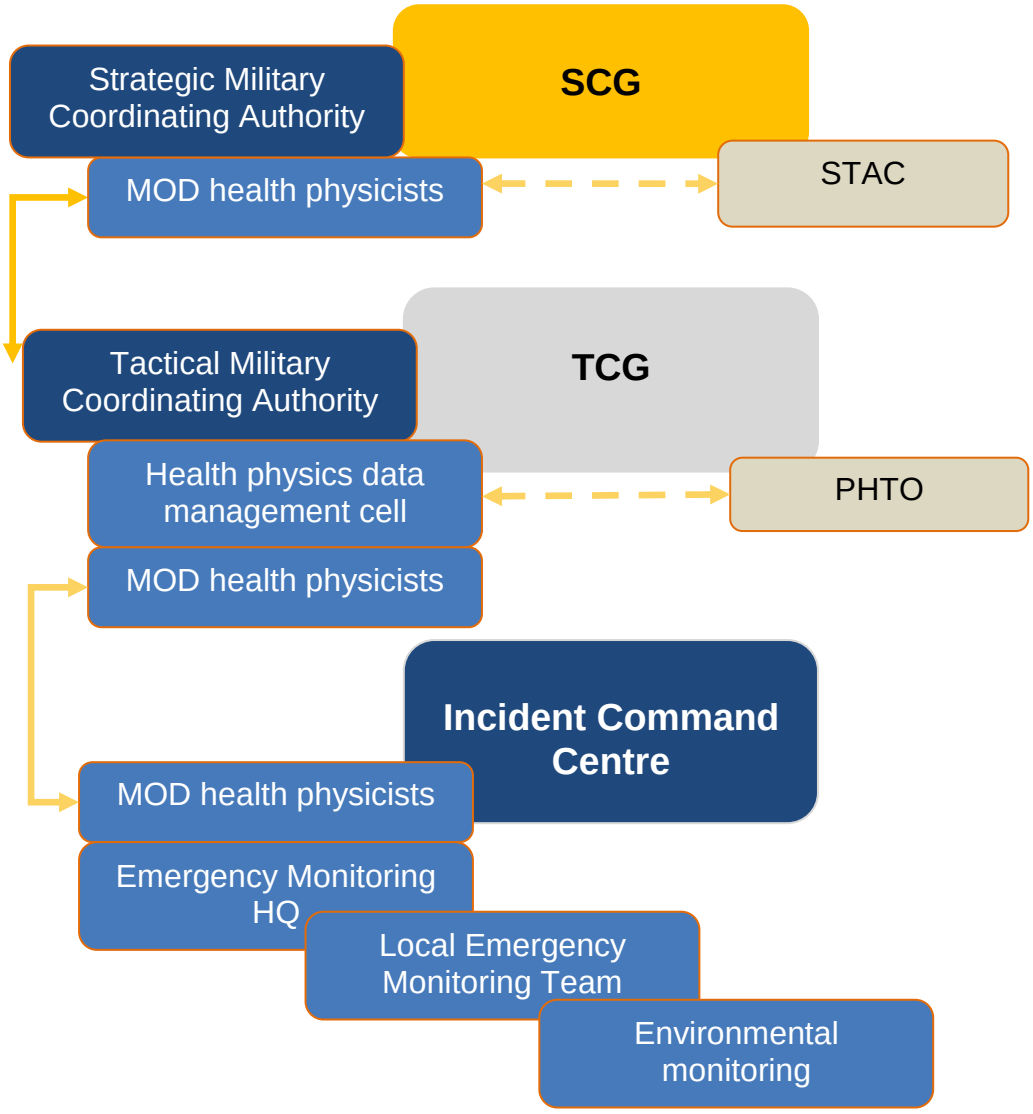
- **Health physicists**. Their role is to provide advice on the hazards to the public and the implementation of countermeasures.

Strategic level

MOD health physicists will deploy as part of the strategic military co-ordinating authority. Their role is to:

- Provide advice on the hazards to the public and the implementation of countermeasures.
- Work with the Scientific and Technical Advice Cell (STAC).
- Liaise with medical staff on contamination levels, radiation doses and the treatment of casualties off-site.

Structure of MOD scientific response



4.4 Civilian agencies

Tactical level

Public Health Tactical Officer

The Public Health Tactical Officer (PHTO) provides public heath input to the Tactical Co-ordinating Group. The PHTO will operate during the response phase, and in the recovery phase until other structures are established or residual tasks revert to individual agencies.

The role of the PHTO is to:

- Act as the main point of contact between the Director of Public Health and the TCG
- Act as the main point of contact between the STAC and TCG.
- To work closely with the Health Physics Data Management Cell to provide public health advice to the TCG
- Providing the first point of contact for PITs related health queries and liaise with medical and public health partners to resolve queries
- Provide agreed STAC public health content for publication on local health and partner help lines, press and media releases

Health Services Tactical Officer

The Health Services Tactical Officer provides health services input to the Tactical Co-ordinating Group. The HSTO will operate during the response phase, and in the recovery phase until other structures are established or residual tasks revert to individual agencies. A Senior Manager from the National Health Service will act as the HSTO

The role of the HSTO is to:

- Provide health service input to the TCG
- Act as the main point of contact between the NHS and the TCG
- Work with the NHS Commissioning Board Local Area Team Emergency Control Centre to support the coordination of the local NHS Providers and Clinical Commissioning Groups
- Work with Portsmouth and Gosport local authorities to co-ordinate the health staff aspects of PITs distribution centres

South Central Ambulance Services Tactical Officer

The SCAS Tactical Officer provides the ambulance service input to the Tactical Co-ordinating Group.

Public Health England CRCE Monitoring Liaison Officer

The PHE CRCE Monitoring Liaison Officer acts a point of contact between MOD and the CRCE Monitoring Coordinator at CRCE. Their role is to:

- Provide information on location and capability of MOD and CRCE assets
- Update risk assessments and priorities for monitoring

Strategic level

Health Services Strategic Officer

The Health Services Strategic Officer provides health services input to the Strategic Co-ordinating Group. They will operate during the response phase, and in the recovery phase until other structures are established or residual tasks revert to individual agencies. This person will be represented by a Senior Director or Chief Executive from the National Health Service Commissioning Board Wessex Local Area Team. They will be supported by a team at the Strategic Coordination Centre.

The role of the Health Services Strategic Officer is to:

- Provide strategic health service input to the SCG
- Act as the main point of contact between the NHS and the SCG

Multi-agency Scientific and Technical Advice Cell

The Scientific and Technical Advice cell forms part of the SCG and provides timely and co-ordinated advice on scientific and technical issues. The STAC will operate during the response phase, and in the recovery phase until other structures (such as the Recovery Co-ordinating Group) are established or residual tasks revert to individual agencies. The role of the STAC is to:

- Provide co-ordinated, consistent and agreed scientific and technical advice to the SCG.

- On the evidence available, assess the impact of the emergency on public health and the environment, how the situation might develop and likely effects of mitigation strategies
- Establish radiation monitoring and decontamination strategies for the short, medium and long-term.
- Confirm the implementation of the PORTSAFE public health countermeasures through the issue of off-site countermeasures advice for public protection (**Annex C**)
- Liaise with national specialist advisors and wider scientific and technical community as required
- Identify other agencies or individuals who should be invited to join the cell

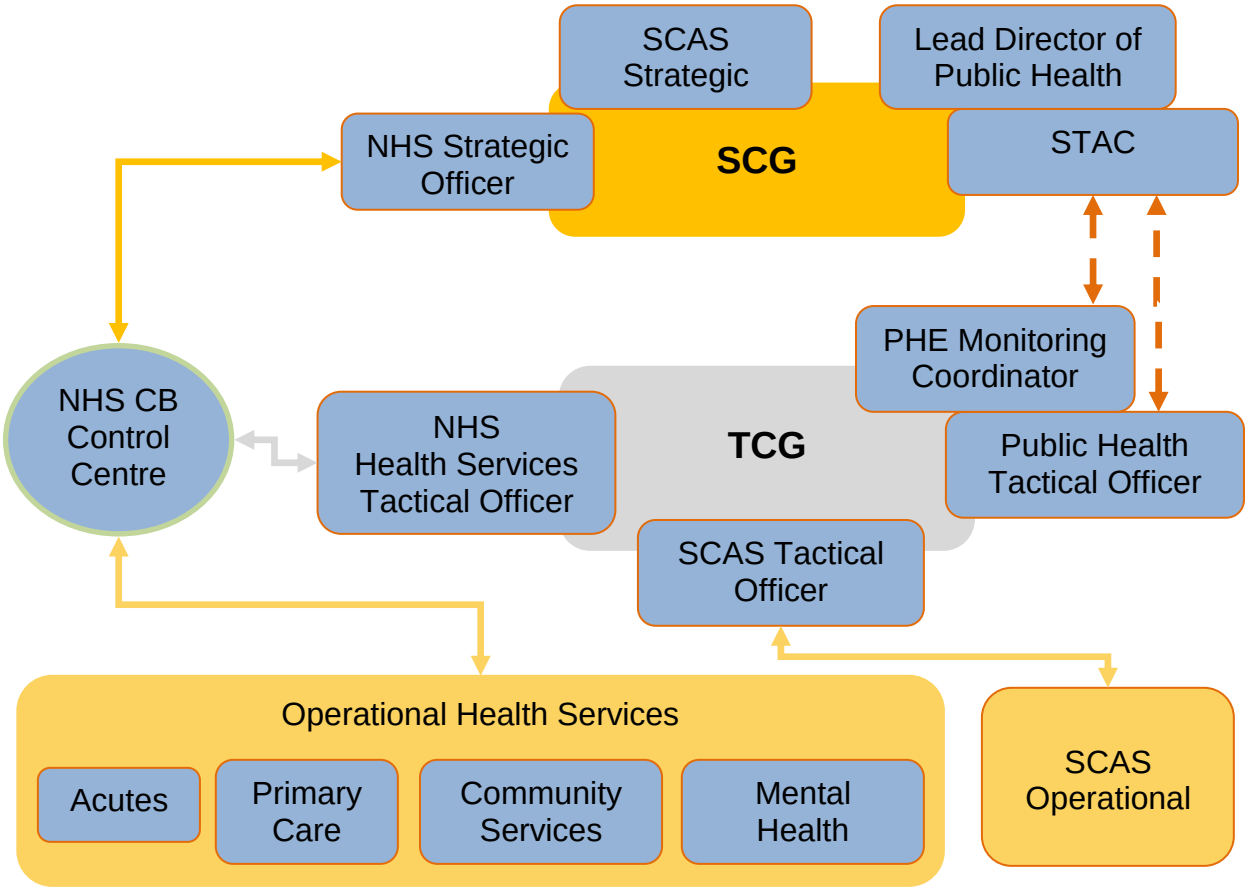
Typical membership of the STAC:

- Director of Public Health (Chair)
- Strategic military co-ordinating authority health physicists
- Emergency services technical advisors
- Public Health England CRCE senior radiological advisers/liaison officers
- Public Health England Centre representative
- Environment Agency
- Food Standards Agency
- DEFRA
- Met Office
- Southern Water/Portsmouth Water
- Health and Safety Executive Office of Nuclear Regulation
- Government Decontamination Service

South Central Ambulance Service Strategic Officer

The SCAS Strategic Officer provides the ambulance service input to the SCG.

Structure of civilian health response



4.5 Coordination of radiation monitoring

PHE CRCE is responsible for the provision of expert advice and information on the radiological protection aspects of the incident, assessing the impact of a release on:

- The immediate safety of people, including determination and confirmation of immediate public protection countermeasures, and provision of public reassurance monitoring
- The environment
- Food countermeasures

PHE CRCE has monitoring teams capable of undertaking and personal monitoring. Additional local capability may also be available through the MOD.

Hampshire and Isle of Wight Local Resilience Forum Radiation Monitoring Unit Plan.

Radiation monitoring is both a response and recovery activity. A number of organisations identified in the DECC Nuclear Emergency Planning and Response National Strategic Framework have resources and the capability to undertake environmental and personal radiation monitoring. Public Health England is responsible for the strategic co-ordination of activities of these organisations, and the preparation of monitoring strategies for approval by the SCG through the STAC. Individual organisations retain tactical and operational control of their teams and resources.

The purpose of any monitoring strategy is to:

- Provide information to influence public protection measures i.e. extension or reduction of countermeasures
- Monitor the environment to determine the extent and nature of a release of radioactivity
- Monitor members of the public who may have been exposed to radioactivity
- Provide reassurance

Other key organisations and their responsibilities are:

- People monitoring: local health services and nuclear operators (MOD)
- Environmental monitoring: the EA
- Food monitoring: the Food Standards Agency
- Public drinking water supplies: water supply companies (Portsmouth and Southern Water)
- Private drinking water supplies: local authority Environmental Health Officers

- Food in the retail chain: local authority Environmental Health Officers
- Non-food goods: local authority Trading Standards Officers

Portsmouth City Council has no capability to conduct monitoring. Such activity would need to be in liaison with the DEFRA/FSA.

4.6 Decontamination of people

Contaminated casualties

Contaminated casualties will be decontaminated by SCAS using current DH procedures before transportation to hospital. Decontamination will take place at a safe distance from the incident and will occur before any secondary triage or clinical intervention, other than basic life support and/or airway protection. Contaminated casualties with life threatening injuries may be transported to hospital before decontamination.

Hospital procedures

The ambulance service will identify a suitable receiving hospital for incident casualties, which is likely to be the Queen Alexandra hospital in Cosham. The hospital will implement its Green CBRN plan for handling contaminated casualties. The plan covers:

- Radiation protection and personal safety
- Hospital lockdown procedures
- Triage priorities for radiation/nuclear incidents
- Action cards detailing staff roles and layout of facilities.

Decontamination of the public

The decision to decontaminate members of the public in the downwind plume outside HM Naval Base will be taken by the SCG based on scientific and health information provided by the STAC. In general, decontamination should only be carried out if the overall health benefit outweighs the risk. It is not an automatic countermeasure.

Decontamination of people is a multi-agency task and the TCG is to establish a tactical management team to deliver an operational plan, in consultation with the PHE CRCE Monitoring Coordinator. Decontamination should be carried out before evacuees arrive at any rest centre.

There are several resources available for decontamination:

- MOD decontamination facilities in the Exclusion Zone Reception Centre. These facilities are set up immediately on declaration of OSNE and so are available quickly. However, they may be at capacity dealing with MOD personnel, will require transport assets to move members of the public into the base, and may be affected by proximity to the incident site. Use of MOD assets requires agreement under MACR through the SCG.
- HFRS mass decontamination unit. This system is a 'one –size' approach and may not be suitable in certain weather conditions or for very vulnerable people. Contaminated water run-off will need to be managed with the EA.
- Self decontamination. Advice to shower and bag clothing.

4.7 Food monitoring

The FSA will develop a sampling strategy to determine the extent of contamination and to define the area requiring possible food restrictions. Reassurance monitoring and monitoring for impact assessment purposes should also be considered.

Food sampling will not be carried out in areas which are subject to shelter or evacuation advice. The boundary for food restrictions, and hence the area to be sampled, is likely to be larger than for other countermeasures. Initial effort will concentrate on easily collected samples such as grass and milk. At a later stage, other food stuffs may become more important. Consideration will be given to potential hotspots where deposition may be higher, for example hill sides and lee valleys.

Part 5
Media and public information

5.1 Background

There are 2 components of media and public information involving an off-site nuclear emergency, as directed by REPPIR 2001:

- The provision of information to the public in the DEPZ, prior to an incident, at intervals not exceeding 3 years
- Warning, informing and advising the public in the event of an accident

In the event of the declaration of an off-site nuclear emergency, responding agencies will implement the Hampshire and Isle of Wight Local Resilience Forum **Emergency Communications Plan**. The plan outlines a co-ordinated media and public information response to major incidents. This chapter provides the additional information required by REPPIR and to respond to the unique context of an off-site nuclear emergency.

5.2 Prior information to the public

REPPIR requires that the following information be provided to the public living in the DEPZ:

- Basic facts about radioactivity and its effects on people and the environment
- Types of radiation emergency relevant to the operator's site and the consequences for people and the environment
- Emergency arrangements for alerting, protecting and assisting the public in the event of a radiation emergency
- Information on the actions to be taken by the public in the event of a radiation emergency
- The authorities responsible for implementing emergency measures and actions

The duty to provide the information rests with the operator, who can seek the agreement of the local authority to issue it to the public. The information is to be issued at least every 3 years.

Portsmouth City Council produces and distributes the information on behalf of and in consultation with the MOD, Gosport Borough Council and Hampshire County Council. Portsmouth City Council recovers the associated costs from the MOD. Copies of the leaflets are published on the public websites of Portsmouth City Council, Hampshire County Council and Gosport Borough Council. Copies of the leaflets are at **Annex F**.

5.3 Aim and objectives of a PORTSAFE communications strategy

The **aim** of a PORTSAFE communications strategy is to ensure clear, accurate and timely information is provided to the public, staff and responders before, during and after a reactor accident.

The **objectives** of the strategy are:

- To provide a management framework for the provision of co-ordinated and consistent public information
- To inform residents in the pre-planned countermeasures zone of the risk and civil response arrangements
- To inform the public when an accident has occurred and what immediate actions to take
- To provide public health messages
- To warn, inform and reassure the public about the MOD and civilian response
- To co-ordinate and manage the communications response in the recovery phase

- To reassure the public when the accident is over and inform residents and businesses as services return to normal

A suggested PORTSAFE media management and public communications strategy is included at the end of this section.

5.4 Public advice in the event of an off-site nuclear emergency

It is essential that information about an accident and public advice be issued as soon as possible after the declaration of an off-site emergency. The aim of this initial announcement should be to provide an early warning to assist the swift broadcast of messages that will help to keep the public safe.

In accordance with the LRF major incident media plan, it is essential that agencies co-ordinate the release of information to the media to avoid inaccuracies and confusion. The lead agency communications and media representative will co-ordinate this activity through a joint media cell at the Strategic Centre Coordinating. The media cell includes a **communications director**, usually a senior communications professional from the police, who participates in the SCG and delegates tasks from SCG to the media cell.

It is the role of the cell's **media manager**, usually a senior communications professional from the affected local authority, to ensure messages are co-ordinated and that joint statements are issued at intervals throughout the incident. Individual agencies can issue information to the media on behalf of their own organisations but this information must be shared with other agencies involved in the incident, and must be logged by the media cell.

Pre-scripted statements have been created as guidance at **Annex B**.
Maps with street names and lists of streets in the DEPZ are required to complete some of the statements and can be obtained from the GIS cell at the SCC - ask for maps with street names on 1:10 000 scale.

5.5 Media liaison at the scene

The TCG, through Hampshire Constabulary media team, should establish a media liaison point as near to the scene as safety allows and in consultation with the MOD and SCG. Local agency spokespeople may be required at the media liaison point but any information provided and lines to take are to be cleared thorough the SCG and its multi-agency media team.

5.6 Media briefings and other press statements

Media briefings will be held at the SCC or other venue in accordance with the Hampshire and Isle of Wight Emergency Communications Plan. Hampshire Constabulary (through the Media Cell) will co-ordinate the multi-agency content for media briefings and press statements during the response phase. This is likely to switch to the affected local authority for the recovery and remediation phases.

The Media Cell will brief beforehand any participants who are taking part in press conferences or other media event. The pre-scripted media statements at **Annex B** contain preparatory information and content for this purpose under 'notes for editors'.

5.7 Casualty figures

Confirmed and updated civilian casualty figures can only be released after consultation with the GOLD Police Commander and SCG. The MOD will release their casualty figures, in consultation with the SCG.

5.8 Public information beyond the DEPZ

Public information may be needed beyond the DEPZ to provide public re-assurance or advice to the public if countermeasures are extended. The pre-scripted statements at **Annex B** can be used and the media cell will identify the appropriate transmission mechanism, which will likely include a proactive and coordinated use of social media channels across agencies.

5.9 PORTSAFE emergency communications plan (example)

Introduction

This sample emergency communications plan for Portsafe is designed to be delivered using the framework set out in the over-arching Hampshire and Isle of Wight Local Resilience Forum (HIOWLRF) Emergency Communications Plan, and should be read in the context of that plan. This sample plan assumes sufficient resources are available to fully staff the LRF media cell, in accordance with the LRF emergency communications plan.

This plan is a sample only. In the event of an incident, the media director will develop a plan to respond to the specific needs of the situation.

Objective

The aim of this strategy is to support emergency responders in ensuring public safety during a reactor incident on a nuclear-powered submarine at the Naval Base in Portsmouth.

Specifically, the objectives are to:

- manage media interest to:

  - ensure information communicated via the media is accurate and carries the correct key messages
  - ensure members of the media do not disrupt the emergency response

- ensure people in the affected area are informed about the incident, understand the risks and the actions they need to take:

- ensure key target audiences outside the affected areas are informed about the wider impact and understand any actions they need to take to:
  - ensure their own safety and the safety of others
  - support/not hamper the emergency response

Spokespeople

Spokespeople from a range of agencies will be needed for media interviews from early in the incident.

A Hampshire Constabulary spokesperson, a senior uniformed officer, will be needed at the scene as soon as possible after OSNE is declared.

A health spokesperson, likely to be the Director of Public Health or an appropriate deputy, should act as media spokesperson on the potential health issues and the level of risk to provide reassurance, as soon as possible after OSNE is declared.

Spokespeople from: Hampshire Constabulary, affected local authority (senior council officer and representative from public health), and the MOD should be available for media briefings at the SCC at regular intervals. Spokespeople should be identified who are sufficiently senior to inspire public confidence but so that media interviews are not delayed as a result of key people being unavailable in SCG meetings.

Target audiences and tools

Media

- information via social media
- information via media statements
- media interviews at scene
- media briefings/press conference
- information on council and other agency websites

Residents and businesses in affected area(s)

- information delivered with PITs tablets
- information via emergency broadcasts through local radio/media
- information on social media
- information on council and other agency websites

Residents in Portsmouth, Gosport and surrounding areas

- information via emergency broadcasts through local radio/media
- information on social media
- information on council and other agency websites

Motorists in Portsmouth and surrounding areas

- information via emergency broadcasts through local radio/media
- information on social media

Messages

Our overall aim is to protect the public from exposure to ionizing radiation, and to support emergency services in responding effectively to the incident.

The overall key message for residents and businesses in the affected area(s) is **'go in, stay in, tune in'**.

Different messages will be appropriate at different times as every incident is different. Below are some pre-drafted example to assist with accuracy and speed of response (please also refer to pre-drafted media and social media statements, also available in the Portsafe plan).

Key messages: Background facts and scale

- The incident has happened on a nuclear-powered submarine in the Naval Base in Portsmouth.
- The incident involves the small nuclear reactor that is used to power the submarine.
- The reactor is the size of an industrial wheelie bin.
- There is absolutely no danger whatsoever of an atom-bomb type explosion.
- As a result of this incident, a small amount of radioactive material *could be/has been* released from the submarine.
- IF NOT YET RELEASED: The MOD/Royal Navy are presently working hard to prevent radioactive material from being released into the air. In the meantime, precautionary measures are being taken now to make sure everyone is well-prepared if a release happens.

Key messages: Impact of incident

- The type of radiation that *could be/has been* released occurs naturally in the environment and comes from things like microwaves and televisions in extremely small quantities.
- Radiation is measured in *millisieverts. The average amount of radiation people are exposed to is 3mSV a year, although the amount coming from the environment in some areas can be up to 10mSV a year.*
- *The amount of radioactive material that* could be/has been *released as a result of this incident is unlikely to be more than INSERT, so only slightly more than occurs naturally over the course of a year (CHECK AGAINST AMOUNT ON THE DAY).*

- The emergency services are working hard to respond to this incident and have asked the public to help by only using the 999 number for real emergencies. If you need help but it's not urgent, please call 101 or INSERT HELPLINE.

Key messages: Location

- The amount of radioactive material that *could be/has been* released into the air is very small indeed. This means it only affects a very small area of the Portsmouth/Gosport that is closest to the Naval Base.
- As the radioactive material has been released into the air, we look at the wind direction to work out exactly which area *could be/has been* affected.
- The area that is actually affected by the release of radioactive material is likely to be quite small. To be on the safe-side, we take precautionary measures in a bigger area, just to make absolutely sure people are not put at risk. Precautionary measures are being taken in the following area: INSERT STREETS
- Precautionary measures being taken include advising the public to go in, stay in and tune in, and distributing potassium iodate tablets to those affected

Key messages: By audience type

Residents/businesses outside the affected area

- If you do not live in the area where precautionary measures are being taken, you are not at risk and you can go about your business as normal.
- However, drivers are asked to avoid making unnecessary journeys in and around the city until the incident is over to keep main roads clear for the emergency services.
- INSERT IF NECESSARY: Roads in and around the area where precautionary measures are being taken have been closed, emergency traffic plans and in place and traffic congestion is likely on busy alternative routes.
- Do not attempt to go into the area(s) where precautionary measures are being taken, even if you are concerned about someone who lives or works there.

- The emergency services will make sure those in the area(s) are safe and well. If you try and go into the area, you could put yourself and other people at risk, and make it more difficult for the emergency services to respond to the incident.

Parents of children in school/nursery in area

- If you have a child at school or nursery in the area(s) where precautionary measures are being taken, we understand that you are likely to be concerned but please don't try and collect them.
- The schools and nurseries have enough Potassium Iodate Tablets for all the children and will keep them inside where they are safe, and make sure they are well looked after.
- If you try and pick your child up, you could put yourself and your child at risk.
- The schools/nurseries in the area where precautionary measures are being taken are: INSERT NAMES.
- No other schools/nurseries are affected.

Residents/businesses in the area where precautionary measures are being taken

- The radioactive material that *could be/has been* released into the air won't make you feel at all unwell in the short-term.
- However, exposure to this type of radiation could be harmful to your health in the future as it slightly increases your risk of developing some cancers.
- It important you take action to make sure you are protected from exposure to the radioactive material, and so keep the slightly increased risk of cancer to an absolute minimum.
- You should protect yourself by going inside, closing your all your doors and windows, and turning off any fans or vents that draw in air from outside.
- You should stay inside until the emergency services or the council tell you it is safe to go outside. That information will come from local radio stations or from the council's website www.portsmouth.gov.uk, or from the Police twitter feed (@hantspolice).
- If you have pets, where possible you should also bring them inside and keep them inside until you are told it's safe to go back out.

- If you live in the area where precautionary measures are being taken, Potassium Iodate Tablets, which are sometimes called PITS, *are being/have been* delivered to homes. Each household will receive a strip of ten tablets (enough for five people) and an information pack.
- If you live in the area where precautionary measures are being taken and have not received your tablets, or do not have enough, call 0800 085 0375 (NOTE ONLY USE THIS MESSAGE WHEN PITS DISTRIBUTION IS COMPLETE)
- Potassium Iodate Tablets help to reduce the risks associated with exposure to radioactive material by stopping the thyroid gland in your body from absorbing harmful material.
- EITHER - The Potassium Iodate Tablets *have been/are being* delivered as a precaution in case radioactive material is released into the air as a result of the incident involving the nuclear submarine at the dockyard. You do not need to take the tablets yet. You will be advised if you need to take the tablets. We will let you know via information on local radio, on the council's website (www.portsmouth.gov.uk), and on twitter (@hantspolice or @portsmouthtoday).
  OR: The Potassium Iodate Tablets *have been/are being* delivered. You are advised to take them as soon as you receive them.
- Information packs have been delivered with the tablets, which tell you all you need to know about the tablets, including safe doses for infants and small children, and for women who are pregnant or breastfeeding.
- If you are concerned about taking PITS and the leaflet enclosed with them does not fully answer your questions, please call the NHS on 101 and they will be able to help you.
  (NOTE: THE FULL PITS INFORMATION LEAFLET SHOULD BE PROVIDED TO THE MEDIA)

Monitoring and responding to coverage

Media coverage on TV, radio, online and on social media will be monitored by the media cell and reported back to the SCG.
Inaccurate reporting will be addressed immediately.

Action plan example

This is an example of what the action plan to support this communications strategy COULD look like to show the types of actions that will need to be taken. DO NOT FOLLOW THIS SAMPLE ACTION PLAN. In the event of an incident, an action plan to deliver the communications strategy for that specific incident will be put together by the media cell manager.

In reality, many of the actions listed below would happen simultaneously and in a different order depending on how fast the media cell is established and working.

action	responsible	time
MOD press office alerted to incident MOD press office ready with 'if-asked' statement, to be issued if media alerted by Naval Base siren/evacuation of Historic Dockyard. (Note - if statement is issued council and police comms MUST be alerted)	MOD	
MOD press office alerts Portsmouth City Council and Hampshire Constabulary communications MOD, PCC and police comms coordinate on media enquiries until multi-agency media cell established as part of SCG	MOD PCC	
Obtain affected area map (including all road names) from GIS	media cell: (runner)	
Issue shelter statement (approved by media director), including incident specific messages and associated tweets	media cell: (statement team and social media team)	
Issue additional media information, including copy of info delivered with PITS, pictures of PITS, copy of radiation info leaflet, picture of the sub (from MOD)	media cell: (media response team)	
Media liaison point established at scene	Hampshire Constabulary	
Multi-agency media cell established as part of SCG,	Hampshire	

as per LRF emergency communications plan, and media director and media cell manager identified	Constabulary	
Incident communications strategy developed by media director and communicated to SCG for approval	media cell: (media director)	
Media cell roles and responsibilities allocated	media cell: (manager)	
Establish media and social media monitoring, and clear process for reporting monitoring in to media cell manager/director, and media response, statement and social media teams)	media cell: (manager	
Set-up media interviews with Police commander at the scene and public health professional at SCG - this needs to happen as quickly as possible after issue of shelter statement	media cell: (media response team)	
Provide info to individual agency communications teams for websites, social media, and internal communications	media cell: (statement team)	
On-going - respond to media enquiries and ensure info contained in responses provided to social media team to share via twitter	media cell: (media response team and social media team	
On-going - use twitter to provide steady flow of reassuring measures and reminders of advice	media cell (social media team)	
Issue PITS statement (approved by media director) with incident specific messages, and associated tweets	media cell: (statement team and social media team)	
Provide info to individual agency communications teams for websites, social media, and internal communications	media cell: (statement team)	
Provide public health professional for interviews with the media at SCG - as soon as possible after the PITS statement is issued to provide health info and reassurance	media cell (media response team)	
Issue traffic information statement (not pre-scripted) and associated tweets	media cell: (statement team and social media team)	

Provide info to individual agency communications teams for websites, social media, and internal communications	media cell: (statement team)	
Provide media interview with Police or council re traffic situation and request for motorists to keep the roads clear	media cell: (media response team)	
Set-up press conference for media at SCG	media cell: (media response team, facilities manager)	
Issue radioactive release statement (approved by media director), including additional incident specific messages, and associated tweets	media cell: (statement team and social media team)	
Provide info to individual agency communications teams for websites, social media, and internal communications	media cell: (statement team)	
Provide public health professional and MOD radiation expert for interviews - as soon as possible after statement release to support reassurance.	media cell: (media response team)	
Issue all-clear statement (approved by media director) including incident specific information, and associated tweets	media cell: (statement team and social media team)	
Provide info to individual agency communications teams for websites, social media, and internal communications	media cell: (statement team)	
Media cell to handover on-going communications to lead council.	media director/lead council	

Part 6
Recovery and remediation

6.1 Introduction

Emergencies disrupt communities and create a range of physical, psychological and economic issues that outlast the immediate response operation. Recovery is an integral element of emergency management and whist it is distinct from incident response, it is a complementary and concurrent activity. The recovery phase is the period when less urgent countermeasures are implemented to protect the public from longer term, chronic risks.

Recovery may be more than the simple replacement of what has been destroyed and the rehabilitation of those affected. The aftermath of an emergency can present the opportunity to regenerate a community or location. Recovery activity may be the initial steps towards longer- term and more ambitious regeneration projects.

The Local Authority will usually lead the recovery process, unless the specific consequences of the emergency means another agency may assume responsibility.

The **National Recovery Guidance**[1] provides comprehensive generic advice on dealing with the recovery phase of an emergency. Other plans and guidance include:

- Public Health England UK Recovery Handbook for Radiation Incidents.
- Portsmouth City Council's Emergency Response Plan Chapter 4.
- Hampshire County Council's Community Recovery Plan

This section contains a summary of the main recovery structures and tasks. Officers involved in recovery activity should refer to the references.

[1] Published by the Cabinet Office and available on the UK Resilience website.

6.2 Purpose of recovery

The purpose of providing recovery support is to assist the affected community towards the management of its own recovery. It recognizes that when a community experiences an emergency, there is a need to supplement the personal, family and community structures that have been disrupted.

There are 4 components of recovery:

6.3 Activation of the Recovery Co-ordination Group

- The Local Authority will activate the Recovery Co-ordination Group (RCG), normally at the request of the SCG. It needs to form as early as possible in order to ensure decisions made by the SCG do not compromise long term recovery.

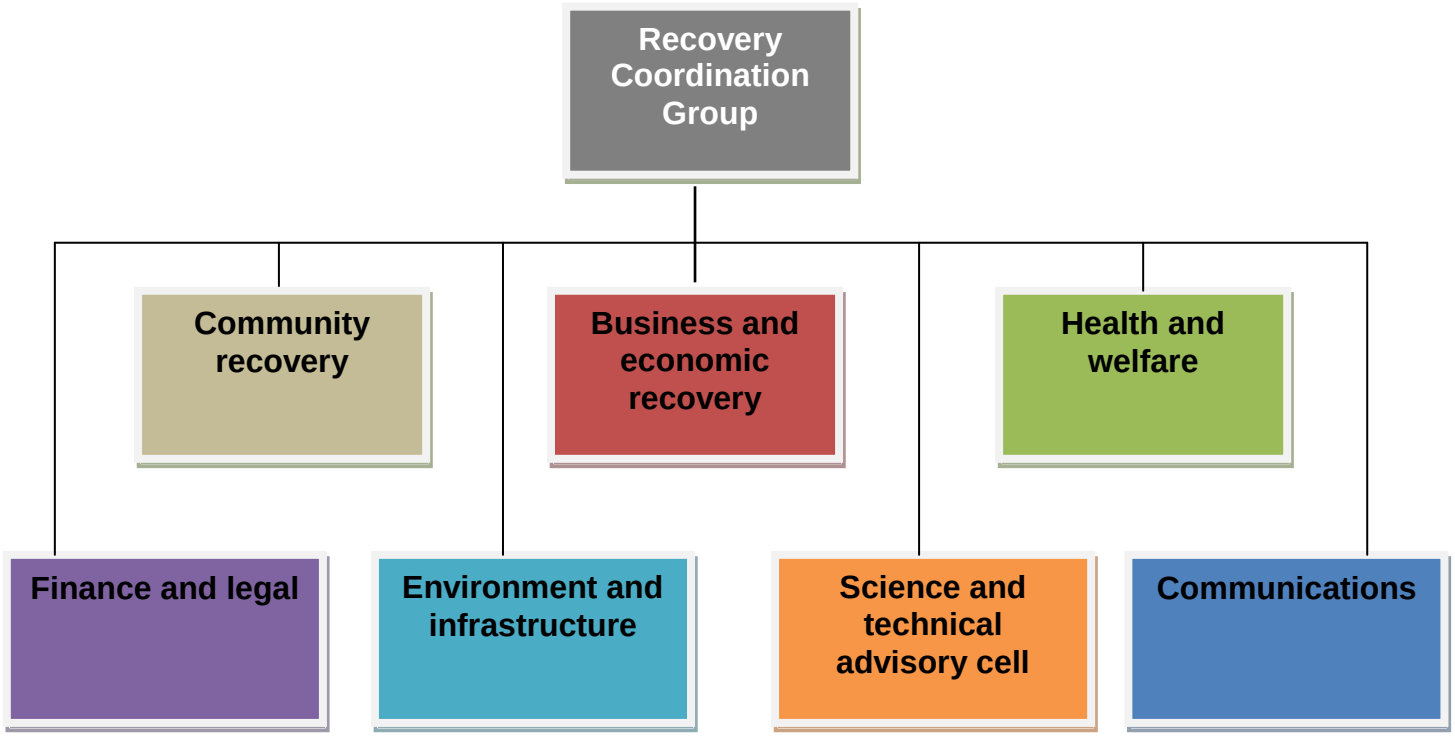
- The Chair of the RCG, or nominated deputy, needs to sit on the SCG to aid joint working and the flow of information.

- A suggested agenda for the first meeting of the Recovery Co-ordinating Group is in the **National Recovery Guidance**.

- In the early stages of the recovery phase when the SCG and RCG are running in parallel it should be possible for the 2 groups to be co-located.

Once the response phase is complete and the operational SCG has stood down, then the Local Authority may need to find an alternative location to ensure the continuity of recovery activity during this second period.

- The RCG may have several sub-groups working on specific aspects of recovery activity. Potential groups are as follows:



6.4 Membership of Recovery Coordination Group[2]

- Portsmouth City Council
- Fareham Borough Council
- Gosport Borough Council
- Havant Borough Council
- Hampshire County Council
- Health organisations

[2] The list is illustrative: other agencies may be required

- Public Health England (C)
- Public Health England CRCE
- Government Decontamination Service
- Environment Agency
- Food Standards Agency
- Department of Environment, Food, Rural Affairs.
- Portsmouth Water Company
- Southern Water
- MOD/HM Naval Base Portsmouth

6.5 Recovery strategy

Effective recovery activity requires a clear and agreed strategy. Suggested **objectives** include:

- Produce an Impact Assessment and update on a regular basis
- Produce a concise, balanced and affordable Action Plan
- Bring utilities and transport networks back into use as soon as possible
- Involve and work with the affected community
- Produce a pro-active and integrated framework of support to businesses
- Set agreed standards for levels of restoration
- Co-ordinate environmental protection and recovery issues
- Produce a co-ordinated public information and media management strategy
- Set protocols for political involvement and liaison

6.6 Recovery targets

The recovery strategy should also include agreed targets so progress can be measured and reviewed. Suggested **milestones** include:

- Displaced people returned to permanent accommodation
- Public services returned to agreed levels
- Utilities functioning at normal capacity
- Transport infrastructure available and running normally
- Local businesses trading at normal levels
- Tourism re-established

6.7 Priorities

The RCG will agree priority sites for restoration and clean-up activity. These will include:

- Residential properties
- Nurseries, schools and colleges
- Key utility sites
- Roads
- Transport infrastructure
- Key economic facilities
- Environment and conservation sites

6.8 Risk assessment

The need for clean-up activity is based on the potential of exposure in the aftermath of an accident from:

- External irradiation from radioactive material deposited in the environment
- Inhalation of re-suspended radioactive material
- Ingestion of contaminated foods

6.9 Reinstatement of pre-accident conditions

It is a general principle that recovery activity seeks to reinstate pre-accident conditions. Where contamination from a nuclear reactor accident occurs over a wide area the removal of all detectable radiation may not be possible without significant and intrusive changes to infrastructure and landscape. Reinstatement to pre-accident conditions may not be a practicable option. T he recovery strategy should include effective communication and consultation with affected the public to ensure people are aware of constraints, options and actions.

6.10 Recovery Countermeasures

Decontamination measures

Decontamination reduces exposure by treating contaminated areas directly. Techniques include removing contaminated materials from the area and redistributing or fixing radionuclides so that they are less available to contribute to exposure.

- Removal of contaminated soils or surfaces reduces the exposure of those living in a contaminated area, but results in contaminated waste for which an appropriate disposal route has to be found.
- Redistribution or fixing of the contamination avoids waste disposal problems, but leaves the contamination in situ, as a potential long-term hazard.

Restricted access measures

Restricted access measures reduce exposures by removing people from areas of contamination, or by controlling the time spent in such areas. Such measures may range from preventing or limiting access to localised contaminated areas (e.g., the site of the accident, or recognised hot spots), to relocation of the resident population from, and prohibition of all access to, an area for weeks, months, or

even years, until general exposure levels have reduced to acceptable levels.

Dose effectiveness

The effectiveness of remedial action on infrastructure and landscape is measured as the reduction achieved in the overall exposure from deposited gamma-emitting material. The reduction is expressed as dose effectiveness. The actual dose effectiveness of a particular intervention depends on factors such as weather conditions following release and the half-life of the radioactive material involved. Measures are categorised as:

- **Category A**: moderately dose effective, incur relatively little disruption and can be completed soon after the accident
- **Category B**: More strongly dose effective, incur significant disruption and/or resources or can only be carried out over protracted periods
- **Category C**: Poorly or moderately dose effective, and incur significant resources and/or disruption.

The table is a guide to possible interventions and their impact:

Countermeasure categories, techniques and effectiveness

Category	Impact on public	Technique	Dose Effectiveness
A **Moderately effective**	• Incurs little disruption • Requires low level of resources • Generally completed within the first month following the end of a release • Once completed, minimal ongoing disruption	Ploughing large areas of grass (e.g., playing fields, parks).	20 to 40%
		Extended evacuation; short lived radionuclides	20 to 40%
		Vacuum sweeping - all metalled surfaces.	20 to 40%
		Fire hosing - all metal surfaces	20 to 40%
		Grass cutting and removal - public and private areas.	20 to 40%
		Temporary relocation for 1 month.	30 to 60%/20 to 40% <10%
B **Strongly effective**	• Significant disruption • Substantial resources required • Take a protracted time, difficult to complete within the first month of remediation activity • Continue to cause disruption once completed	Turf removal and replacement - public and private areas	30 to 60%
		Rotovating all soil/gross areas (assumes all shrubs and plants removed and replaced).	30 to 60%
		Double digging all soil/grassed areas (assumes all shrubs and plants removed and replaced).	30 to 60%
		Turf and soil removal and replacement - all soil/grass areas (assumes all shrubs and plants removed and	30 to 60%

		replaced). Road planning and replacement Prolonged or permanent relocation	 30 to 60%/20 to 40% 30 to 60%
C **Poorly effective**	• Significant disruption • Substantial resources required • Not normally justified on radiological protection grounds • Used when circumstances of the accident prevent other, less resource-intensive countermeasures being implemented, or for reasons other than dose reduction such as public reassurance.	Fire hosing buildings Sandblasting walls Tree felling/plant and shrub removal and replacement Stipple coating - metalled surfaced and buildings Ammonium treatment of buildings Roof replacement Cleaning of indoor surfaces	<10% <10% 20 to 40% <10% <10% <10% <10%

Annex A
Potassium iodate tablets

A.1 Background

In the event of a reactor accident levels of radiation would increase above the natural background and pose a potential hazard to the population. Individuals who have been exposed may have an increased risk of developing late effects such as thyroid cancer or hereditary defects. The administration of potassium iodate tablets (PITs) is a mitigation measure and prevents the uptake of radioactive iodine by the thyroid gland.

The issue of PITs to the public is a pre-planned countermeasure and is undertaken automatically at the declaration of OSNE. The process can be used if risk assessments indicate that issue to the public should be made over a wider area. There are 3 stages to distributing PITs:

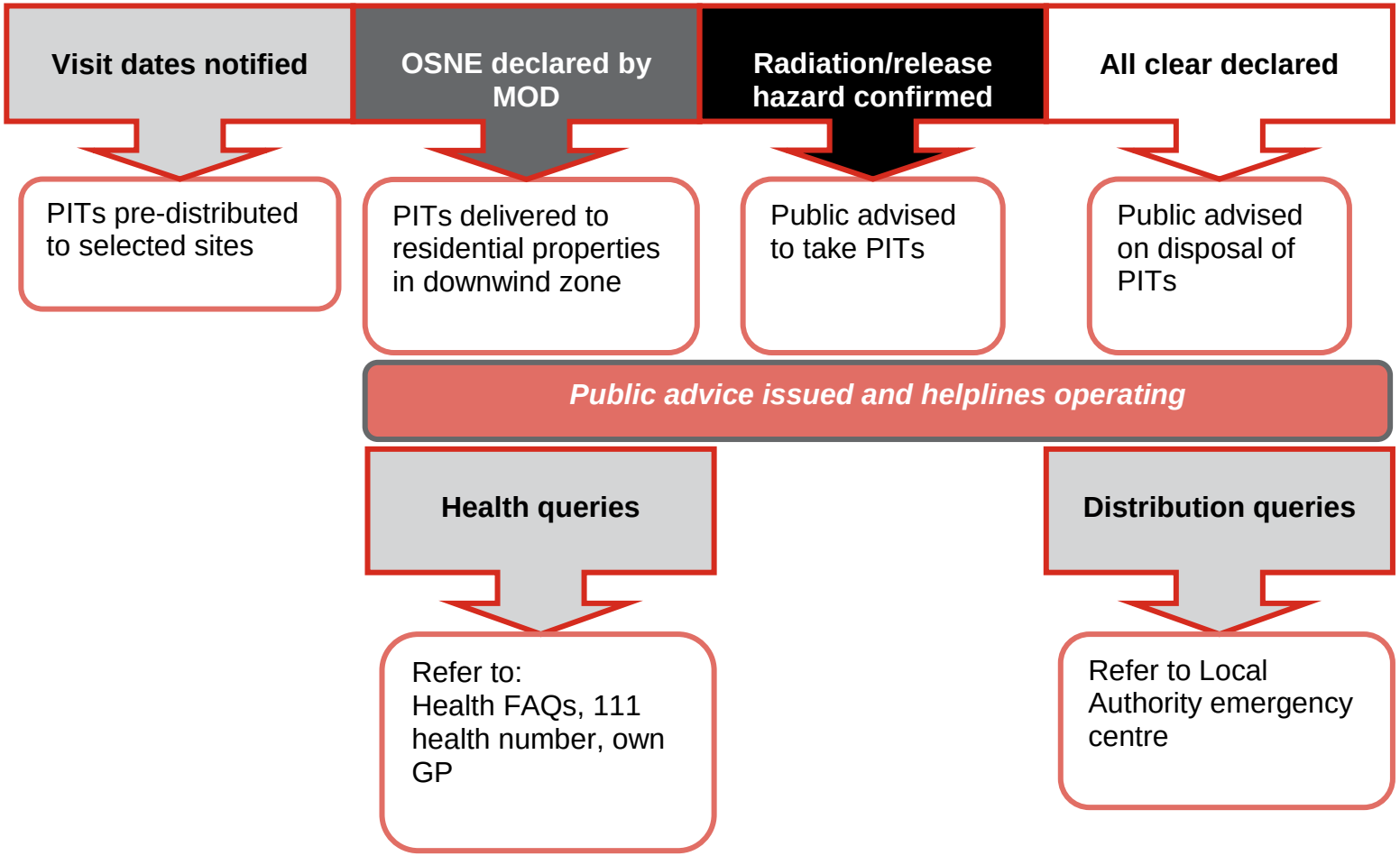
- **Pre- distribution**: PITs are pre-distributed to selected education, emergency services' sites, contingency centres and hospital sites in Portsmouth and Gosport by Portsmouth City Council Civil Contingencies Unit. This is completed before the vessel arrives.
- **Delivery to the public**: PITs are delivered to residents in the downwind zone on declaration of OSNE by council staff.
- **Public told to take PITS**: The decision that the public need to take PITs is made by the SCG through the relevant Director of Public Health and STAC. The decision is based on a risk assessment that a release hazard is likely to occur, or confirmation from the MOD that a release hazard has taken place.

A.2 Risk factors

In limited circumstances potassium iodate can present a risk factor to those taking it. Queries that cannot be handled by the PITs distribution team or the accompanying health leaflet are to be referred to the health 111 number, TCG

health team or STAC. In general the benefits of PITs outweigh any risk factor, including the potential need to collect tablets during a release.

Diagram: PITs distribution and delivery process



A.3 Delivery of PITs to the public

When

The delivery of PITs to the public is a pre-planned countermeasure activated on declaration of OSNE. PITs are delivered as quickly as possible after the declaration of an off-site nuclear emergency, so that the public have the tablets before any potential release occurs. PITS are delivered to all domestic properties in the affected downwind zone. See Part 1 of the main plan for instructions on how to plot a plume map. GIS staff from PCC and HCC can provide the road names inside the plume for public information - ask for a scale of 1:10 000.

PITs are delivered only when there is no confirmed hazard from radiation or release. Portsmouth City Council and Hampshire County Council have not sought the agreement of staff to undergo emergency procedures in accordance with REPPIR Section 14. If a radiation or release hazard occurs during a walk route then staff are to shelter immediately.

How

PITs are delivered to the public direct, through delivery to residential properties by staff from Portsmouth City Council/Gosport Borough Council. The DEPZ is divided into walk routes, with the exact walk routes to be used will depend on the predicted extent of the plume. For more details see Portsmouth City Council and Hampshire County Council **PITs Distribution Plans.**

Public information

A pre-scripted statement about delivery of PITs to residents is at **Annex B.** The statement should be broadcast through all available news sources. The affected local authority is to set up a helpline for public advice on PITs.

Contingency and extendibility

Stocks of PITs are distributed to the following centres which can be opened as public collection points if required, for example if the walk route process is disrupted or the DEPZ is extended:

- John Pounds Centre
- Portsmouth Anglican Cathedral
- Guildhall, Portsmouth
- The Haven Salvation Army Centre, Lake Road
- Clarence marina
- Premier marina
- HEDCA Hardway

Distribution of PITs outside the planned DEPZ zones can be achieved by the creation of ad hoc walk routes to deliver the tablets, or additional public collection points can be made available at rest centres. The affected local authority would seek the help of health staff in resourcing the centres. The MOD would deliver the required number of tablets to the centres/local authority.

A.4 Recommended doses

The Department of Health recommends the following doses:

- Adults(including pregnant and breast feeding women): 2 tablets
- Children aged three to twelve years: 1 tablet
- Children aged one month to three years: half of a tablet
- Birth to one month: quarter of a tablet

For children and infants the tablets can be crushed and taken with a drink. The dose is for a 24 hour period of cover and can be repeated.

A.5 Actions on the decision to take PITs

The decision that the public need to take PITs is made by the SCG through the relevant Director of Public Health and STAC. The decision is based on a risk assessment that a release hazard is likely to occur, or confirmation from the MOD that a release hazard has taken place. The SCG (or TCG if SCG is not operating) will also advise the emergency services if responders operating in an affected area outside HM Naval Base should take PITs.

A pre-scripted statement advising the public to take PITS is at **Annex B.** The statement should be broadcast through all available news sources.

If circumstances warrant, it has been agreed by the Directors of Public Health in Portsmouth and Hampshire that PITS can be issued and taken immediately.

A.6 Issue of PITs to the emergency services

Responders to the incident site in HM Naval Base

The MOD will issue PITs to emergency services personnel on entry at Unicorn Gate or other designated entry point. See paragraph 1.16 in the main plan for details.

Responders to a contaminated area outside the naval base

PITs are held by the emergency services for issue to personnel who are required to enter a contaminated area outside the naval base. Responders are to collect PITs before deployment into the affected area from the following collection points:

Service	For response into Portsmouth	For response into Gosport	Quantity held
South Central Ambulance Service	Portsmouth ambulance station, Eastern Road	Fareham and Gosport ambulance stations	300 total, 100 per station

Hampshire Fire and Rescue Service	Cosham and Southsea fire stations	Fareham and Gosport fire stations	1000 total, 250 per station
Hampshire Constabulary	Portsmouth Central Police Station	Fareham Police Station	2000 total, 1000 per station

A.7 Post incident actions

The local authority PITs distribution team leader should return remaining stocks of PITs to the Civil Contingencies Unit for return to the MOD.

On the declaration of All Clear PHE are to provide the public with advice on the disposal of any tablets they may have.

A.8 Letters of authorisation

Hampshire County Council

Chief Executive
Gosport Borough Council
Town Hall
High Street
Gosport
Hampshire
P012 1EB

Room 153
1st Floor, EII Court South
Hampshire County Council
Winchester
SO23 8TG

Our ref: RM/CH/Portsafe - GBC

1 April 2013

Dear Mr Lycett

Re: Port of Portsmouth Off-Site Reactor Emergency Plan (PortSafe)

In the event of a radiation emergency involving a nuclear powered submarine in HM Naval Base Portsmouth, responsibility for authorising distribution and consumption of Potassium Iodate Tablets (PITs) to the public in the Detailed Emergency Planning Zone (DEPZ) in Gosport rests with me as Director of Public Health, Hampshire County Council.

In accordance with the PORTSAFE Plan, the authorisation to distribute and then to consume PITs would be given by myself or my nominated deputy.

However, in discussion with Hampshire and Isle of Wight Health Protection Unit and Portsmouth City Council Emergency Planning Unit (who are responsible for writing and updating the PORTSAFE plan), it has been agreed that as a contingency, I will pre-authorise the issuing and consumption of these tablets in the circumstances that I, or my deputy, are not contactable.

Therefore, in relation to the PORTSAFE Plan:

1) I hereby authorise the issuing of Potassium Iodate tablets to defined members of the public if an Off-Site Nuclear Emergency (OSNE) is declared. At this stage, the public will be advised not to take the tablets but to await further instructions.

2) If a radiation hazard or release of radioactive material has been confirmed, I hereby authorise the issuing of Potassium Iodate Tablets to defined members of the public for immediate consumption.

Yours sincerely

Dr Ruth Milton
Director of Public Health
Hampshire County Council

Portsmouth CITY COUNCIL

Chief Executive
Portsmouth City Council
Civic Offices
Guildhall Square
Portsmouth
PO1 2AL

Director of Public Health
3rd Floor, Civic Offices
Guildhall Square
Portsmouth
PO1 2AL
Phone: 023 92 688700
Fax: 023 9283 4571
Our Ref: AM/caa
Your Ref:

Date: 03 February 2014

Dear Chief Executive

Portsmouth off-site nuclear emergency plan (PORTSAFE)

In the event of a radiation emergency involving a nuclear powered submarine in HM Naval Base Portsmouth, the responsibility for authorising distribution and consumption of Potassium Iodate Tables (PITs) to the public in the Detailed Emergency Planning Zone (DEPZ) rests with me as Director of Public Health.

In discussion with Public Health England (Hampshire, Dorset and Isle of Wight) and Portsmouth City Council Civil Contingencies Unit, it has been agreed that as a contingency, I pre-authorise the issue and consumption of the tablets in the circumstances that I, or my deputy, are not available.

Therefore in relation to the PORTSAFE Plan:

- I authorise the issue of PITs to defined members of the public if an off-site nuclear emergency is declared. At this stage the public will be advised not to take the tablets but to await further instructions.
- If a radiation hazard or release of radioactive material has been confirmed, I authorise the issue of PITs to defined members of the public for immediate consumption.

Dr Janet Maxwell
Director of Public Health

1

www.portsmouth.gov.uk

Annex B
Pre-scripted media statements

B.1 MOD accident notification 'IF ASKED' holding statement

What this is	'If asked' media statement
Who issues it	MOD to the media 'if asked'
When to issue	In the event of an off-site nuclear emergency (OSNE) being declared by the MOD, this statement should ONLY be released if activity at the Naval Base or the siren triggers questions from the media. This should then be used as a holding statement while the shelter statement is finalised. If the holding statement is released, a copy should also be sent to the council and police communications teams. Should the volume of enquiries escalate, the police, council and MOD will agree whether to issue the holding statement proactively to the media.
Who authorises issue	MOD
Headline	MOD news release: Accident in Portsmouth Naval Base

A problem has occurred on board the nuclear-powered vessel X in Portsmouth Naval Base.

There is no danger to the public. A well-rehearsed response plan to deal with this incident is being put into operation by the emergency services, the Ministry of Defence, local authorities and the health services.

As a precaution, non-essential personnel are being moved from an area around the vessel within the Naval Base.

Notes to editors:

MOD TO INSERT ADDITIONAL INFO ABOUT THE AFFECTED SUBMARINE to assist the media in creating a story around the 'if asked' statement.

MOD TO INSERT APPROPRIATE NUMBER FOR ADDITIONAL ENQUIRIES.

B.2 Shelter statement

What this is	**Emergency broadcast** Prepared public information and media statement
Who issues it	Media cell on behalf of TCG/SCG
When to issue	When the decision is taken that the public should shelter (note: if announcement B1 is not triggered proactively this would be sent out at the same time as the first announcement [B1]). Change the local authority website address if Gosport is affected.
Where to send it	Public information and media channels, including social media channels.
Who authorises issue	SCG (delegated to media cell director or media cell manager), or TCG if SCG not operating in early stages
Headline	People urged to stay indoors after naval base incident – update at **INSERT DATE AND TIME**

This is an emergency broadcast.

The Ministry of Defence has issued information about a problem with the nuclear-powered submarine **X** in Portsmouth Naval Base.

There is a very small possibility this problem could lead to radioactive material escaping from the submarine. A well-rehearsed plan is in place to deal with this incident and has been put into action by the emergency services, the Ministry of Defence, local authorities and the NHS.

As part of this plan, precautionary measures are being taken in a small area of **Portsmouth/Gosport** to ensure the public are protected should a release of radioactive material occur.

Precautionary measures are being taken in the following area:

INSERT AREA TO BE DEFINED BY EASILY-UNDERSTOOD JUNCTIONS AND LANDMARKS. LIST OF ROADS AND PICTURE/MAP ALSO TO BE ATTACHED

REPEAT

(NOTE: THE PRIORITY AT THIS POINT IS TO GET THE SHELTER MESSAGES OUT TO PROTECT THE PUBLIC. IF SPECIFIC ROAD NAMES ARE NOT AVAILABLE, DESCRIBE THE AREA AFFECTED WITH ROAD NAMES TO FOLLOW)

As part of the plan for dealing with the incident, council staff are delivering potassium iodate tablets to all homes in the area where precautionary measures are being taken.

The potassium iodate tablets provide protection against harmful contamination. Information leaflets are being delivered with the tablets.

INSERT ONE OF FOLLOWING STATEMENTS AS REQUIRED

EITHER: We are delivering the tablets as a precaution. You don't need to take them now. We will let you know if and when you should take the tablets.

OR: You should take the potassium iodate tablets now, or as soon as you receive them, to keep the long-term health risks to an absolute minimum.

REPEAT AREA TO BE DEFINED BY EASILY-UNDERSTOOD JUNCTIONS AND LANDMARKS. LIST OF ROADS AND PICTURE/MAP ALSO TO BE ATTACHED

If you are in the area we have described and you live there, please go home.

If you are visiting or working in the area, please stay inside your workplace, a shop or public building.

You should go in, shut windows and doors, and shut down any fans, fires, ventilators or air-conditioning systems that draw air from outside the building.

You should stay in. If you have children at school in the area where precautionary measures are being taken, please don't try and collect them. The school will take care of them.

You should tune in to local radio or check the council's website at www.portsmouth.gov.uk or follow Hampshire Police on twitter @hantspolice.

If you live in the area and cannot return home, you can go to a rest centre at

INSERT PLACE AND ADDRESS HERE

If radioactive material is released into the air, the quantity would be very small and wouldn't make anyone feel unwell in the short-term.

However, it could be harmful to health in the future as it slightly increases the risk of developing some cancers. If you are in the area where precautionary measures are being taken, it is important you take action to make sure you are protected and so keep the slightly increased risk of cancer to an absolute minimum.

If you are outside the affected area, you are not at risk and you can continue with your normal activities.

Drivers are asked to avoid making unnecessary journeys to help keep main roads clear for emergency vehicles.

We will give out more information when we have it, so please check our website at www.portsmouth.gov.uk, listen for updates on local radio or follow @hantspolice on twitter.

The emergency services are working hard to respond to this incident and have asked the public to help by only using the 999 number for real emergencies.

If you need help but it's not urgent, please call 11 OR

INSERT HELPLINE OR CASUALTY BUREAU NUMBER IF OPERATING

If you need help, call the emergency helpline: 0800 085 0375.

(NOTE; check numbers)

If you have health worries, call the NHS non-emergency number 111.

Notes to editors:

- The incident has happened on a nuclear-powered submarine in the Naval Base in Portsmouth. The submarine is called **INSERT NAME**.
- The incident involves the small nuclear reactor that is used to power the submarine.
- The reactor is the size of an industrial wheelie bin.
- There is absolutely no danger whatsoever of an atom-bomb type explosion.
- As a result of this incident, a small amount of radioactive material ***could be*** released from the submarine into the air. The measures being taken are a precaution in case a release of radioactive material happens.
- The type of radiation that **could be** released occurs naturally in the environment and comes from things like microwaves and televisions in extremely small quantities.
- Radiation is measured in millisieverts. The average amount of radiation people are exposed to is 3mSV a year, although the amount coming from the environment in some areas can be up to 10mSV a year.
- The amount of radioactive material that **could be** released as a result of this incident is unlikely to be more than **INSERT**, so only slightly more than occurs naturally over the course of a year (NOTE: CHECK THIS IS CORRECT ON THE DAY).
- The amount of radioactive material that **could be** released into the air is very small indeed. This means it only affects a very small area of the **Portsmouth/Gosport** that is closest to the Naval Base.
- If a radioactive material is released, it would be released into the air so we look at the wind direction to work out exactly which area could be affected.
- The area that would actually affected by the release of radioactive material is likely to be quite small. To be on the safe-side, we take precautionary measures in a bigger area, just to make absolutely sure people are not put at risk.

- The radioactive material that **could be** released into the air won't make anyone feel at all unwell in the short-term.
- However, exposure to this type of radiation could be harmful to health in the future as it slightly increases the risk of developing some cancers.
- The precautionary measures are necessary to protect the public from possible exposure to radioactive material and so keep the slightly increased risk of cancer to an absolute minimum.
- Where possible, pets should also be brought inside and kept inside until residents are told that it is safe to go outside.
- Potassium Iodate tablets are being delivered to all homes in the area where

precautionary measures are being taken. Each household will receive a strip of ten tablets (enough for five people) and an information pack.

- If you live in the area where precautionary measures are being taken and have not received your tablets, or do not have enough, call 0800 085 0375. (NOTE ONLY USE THIS MESSAGE WHEN PITS DISTRIBUTION COMPLETE)
- Potassium iodate tablets help to reduce the risks associated with exposure to radioactive material by stopping the thyroid gland in your body from absorbing harmful material.
- Information packs have been delivered with the tablets, including details about safe doses for infants and small children, and for women who are pregnant or breastfeeding.
- Anyone concerned about taking PITS can call the NHS on 11 for more information.
- The schools and nurseries in the area where precautions are being taken have enough potassium iodate tablets for all the children and will keep them inside where they are safe, and make sure they are well looked after.
- The schools/nurseries in the area where precautionary measures are being taken are: **INSERT NAMES.**
- No other schools/nurseries are affected.

Author	Sign Off	Date/time released

Shelter statement	**Associated tweets**
*The following are sample tweets that could be used in association with the above emergency broadcast. Social media is a key communications tool but care needs to be taken to ensure additional information is online **before** tweets are issued so key audiences (including the media) can find more information.* ***The media cell manager (or communications lead at TCG if SCG is not yet running) will ensure tweets and other social media updates are appropriately timed and authorised.***	
Sub problem at Naval Base. No need for alarm. Emergency services on hand. Find out more www.portsmouth.gov.uk #portsmouthsub	
Small possibility of radioactive material from sub. No cause for alarm. Precautions being taken. Find out more www.portsmouth.gov.uk #portsmouthsub (125 characters)	
Precautions being taken in (INSERT AREA) following submarine incident. Check if your street is affected. www.portsmouth.gov.uk #portsmouthsub (128 characters)	
If you are in area affected by sub, go in, stay in, tune in. Find out what's happening www.portsmouth.gov.uk #portsmouthsub (124 characters)	
Potassium iodate tablets being delivered to area affected by #portsmouthsub. Find out more at www.portsmouth.gov.uk (115 characters)	
Outside area affected by #portsmouthsub then carry on as normal. No cause for any concern. Just avoid main city roads as it's busy out there. (140 characters)	
Outside area affected by #portsmouthsub? Don't try to go into the area to collect children from school. They are safe and well looked after. (141 characters)	
In the area affected by #portsmouthsub? Go in, stay in, and bring your pets in too. They are also safer inside. www.portsmouth.gov.uk (134 characters)	

B.3 Advice to the public to take PITS tablets

What this is	**Emergency broadcast** Prepared public information and media statement
Who issues it	Media cell on behalf of TCG/SCG
When to issue	When MOD and health representatives, through SCG/TCG, authorise the public to take PITS Change the local authority website address if Gosport is affected
Where to send it	Public information and media channels, including social media
Who authorises issue	SCG (delegated to media cell director or media cell manager), or TCG if SCG not operating in early stages
Headline	People urged to take potassium iodate tablets now following Naval Base incident – update at **INSERT DATE AND TIME**

This is an emergency broadcast.

The Ministry of Defence has issued information about a problem with the nuclear-powered submarine **X** in Portsmouth Naval Base.

There is a very small possibility this problem could lead to radioactive material escaping from the submarine. A well-rehearsed plan is in place to deal with this incident and has been put into action by the emergency services, the Ministry of Defence, local authorities and the NHS.

As part of this plan, precautionary measures are being taken in a small area of **Portsmouth/Gosport** to ensure the public are protected should a release of radioactive material happen. The precautionary measures include advising people in the area to go inside, stay in and tune in for more information, and distributing potassium iodate tablets to homes in the area.

If you live in the area where precautionary measures are being taken, the advice from health professionals is to take the potassium iodate tablets now to minimise the health risks.

Council staff have already delivered the tablets to homes in the area where precautionary measures are being taken. If you live the in the area and your tablets have not been delivered, please call the helpline on 0800 085 0375.

Precautionary measures are being taken in the following area:

INSERT AREA TO BE DEFINED BY EASILY-UNDERSTOOD JUNCTIONS AND LANDMARKS. LIST OF ROADS AND PICTURE/MAP SHOULD ALREADY BE ON THE WEBSITE - REFER MEDIA TO THIS.

REPEAT

The potassium iodate tablets provide protection against harmful contamination.

Information leaflets are being delivered with the tablets.

If radioactive material is released into the air, the quantity would be very small and wouldn't make anyone feel unwell in the short-term.

However, it could be harmful to health in the future as it slightly increases the risk of developing some cancers. If you are in the area where precautionary measures are being taken, it is important you take action to make sure you are protected and so keep the slightly increased risk of cancer to an absolute minimum.

If you are in the area we have described, you must go inside now.

If you live in the area, please go home. If you are visiting or working in the area, please stay inside your workplace, a shop or public building.

You should go in, shut windows and doors, and shut down any fans, fires, ventilators or air-conditioning systems that draw air from outside the building.

You should stay in. If you have children at school in the area where precautionary measures are being taken, please don't try and collect them. The school will take care of them.

You should tune in to local radio or check the council's website at www.portsmouth.gov.uk or follow Hampshire Police on twitter @hantspolice.

If you live in the area and cannot return home, you can go to a rest centre at

INSERT PLACE AND ADDRESS HERE

If you are outside the affected area, you are not at risk and you can continue with your normal activities.

Drivers are asked to avoid making unnecessary journeys to help keep main roads clear for emergency vehicles.

We will give out more information when we have it, so please check our website at www.portsmouth.gov.uk, listen for updates on local radio or follow @hantspolice on twitter.

The emergency services are working hard to respond to this incident and have asked the public to help by only using the 999 number for real emergencies.

If you need help but it's not urgent, please call 11 OR

INSERT HELPLINE OR CASUALTY BUREAU NUMBER IF OPERATING

If you need help, call the emergency helpline: 0800 085 0375.

(NOTE; check numbers)

If you have health worries, call the NHS non-emergency number 111.

Notes to editors:

- The incident has happened on a nuclear-powered submarine in the Naval Base in Portsmouth. The submarine is called **INSERT NAME**.
- The incident involves the small nuclear reactor that is used to power the submarine.
- The reactor is the size of an industrial wheelie bin.
- There is absolutely no danger whatsoever of an atom-bomb type explosion.
- As a result of this incident, a small amount of radioactive material ***could be*** released from the submarine into the air. The measures being taken are part of the Portsafe plan and are a precaution in case a release of radioactive material happens.

- The type of radiation that ***could be*** released occurs naturally in the environment and comes from things like microwaves and televisions in extremely small quantities.
- Radiation is measured in millisieverts. The average amount of radiation people are exposed to is 3mSV a year, although the amount coming from the environment in some areas can be up to 10mSV a year.
- The amount of radioactive material that ***could be*** released as a result of this incident is unlikely to be more than **INSERT**, so only slightly more than occurs naturally over the course of a year (NOTE: CHECK THIS IS CORRECT ON THE DAY).

- The amount of radioactive material that ***could be*** released into the air is very small indeed. This means it only affects a very small area of the **Portsmouth/Gosport** that is closest to the Naval Base.
- If a radioactive material is released, it would be released into the air so we look at the wind direction to work out exactly which area could be affected.
- The area that would actually affected by the release of radioactive material is likely to be quite small. To be on the safe-side, we take precautionary measures in a bigger area, just to make absolutely sure people are not put at risk.

- The radioactive material that ***could be*** released into the air won't make anyone feel at all unwell in the short-term.
- However, exposure to this type of radiation could be harmful to health in the future as it slightly increases the risk of developing some cancers.
- The precautionary measures are necessary to protect the public from possible exposure to radioactive material and so keep the slightly increased risk of cancer to an absolute minimum.
- Where possible, pets should also be brought inside and kept inside until residents are told that it is safe to go outside.
- Potassium Iodate tablets are being delivered to all homes in the area where precautionary measures are being taken. Each household will receive a strip of ten tablets (enough for five people) and an information pack.
- If you live in the area where precautionary measures are being taken and have not received your tablets, or do not have enough, call 0800 085 0375

- Potassium iodate tablets help to reduce the risks associated with exposure to radioactive material by stopping the thyroid gland in your body from absorbing harmful material.
- Information packs have been delivered with the tablets, including details about safe doses for infants and small children, and for women who are pregnant or breastfeeding.
- Anyone concerned about taking PITS can call the NHS on 11 for more information.

- The schools and nurseries in the area where precautions are being taken have enough potassium iodate tablets for all the children and will keep them inside where they are safe, and make sure they are well looked after.
- The schools/nurseries in the area where precautionary measures are being taken are: **INSERT NAMES.**
- No other schools/nurseries are affected.

Author	Sign Off	Date/time released

Advice to the public to take PITS	**Associated tweets**

The following are sample tweets that could be used in association with the above emergency broadcast. Social media is a key communications tool but care needs to be taken to ensure additional information is online ***before*** *tweets are issued so key audiences (including the media) can find more information.*
The media cell manager (or communications lead at TCG if SCG is not yet running) will ensure tweets and other social media updates are appropriately timed and authorised.

Sub problem at Naval Base. No need for alarm. Emergency services on hand. Find out more www.portsmouth.gov.uk #portsmouthsub
Small possibility of radioactive material from sub. No cause for alarm. Precautions being taken. Find out more www.portsmouth.gov.uk #portsmouthsub (125 characters)
Precautions being taken in (INSERT AREA) following submarine incident. Check if your street is affected. www.portsmouth.gov.uk #portsmouthsub (128 characters)
If you are in area affected by sub, go in, stay in, tune in. Find out what's happening www.portsmouth.gov.uk #portsmouthsub (124 characters)
Potassium iodate tablets being delivered to area affected by #portsmouthsub. Find out more at www.portsmouth.gov.uk (115 characters)
Outside area affected by #portsmouthsub then carry on as normal. No cause for any concern. Just avoid main city roads as it's busy out there. (140 characters)
Outside area affected by #portsmouthsub? Don't try to go into area to collect children from school. They are safe and well looked after. (137 characters)
In the area affected by #portsmouthsub? Go in, stay in, and bring your pets in too. They are also safer inside. www.portsmouth.gov.uk (134 characters)
In the area affected by #portsmouthsub? Potassium iodate tablets should have been delivered to you. Find out more at www.portsmouth.gov.uk (139 characters)
In the area affected by #portsmouthsub? Health advice is take the potassium iodate

tablets now. Find out more at www.portsmouth.gov.uk (135 characters)
Area affected by #portsmouthsub? No radioactive leak. Measures are precaution. Go in, stay in, tune in for more info. www.portsmouth.gov.uk (139 characters)
#portsmouthsub Measures are precaution to protect against exposure to radioactive material if leak happens. www.portsmouth.gov.uk

B.4 Radioactive release statement

What this is	**Emergency broadcast** Prepared public information and media statement
Who issues it	Nominated lead agency on behalf of TCG/SCG
When to issue	When MOD confirm a release of radioactive material into the atmosphere has occurred. Change the local authority website address if Gosport is affected
Where to send it	Public information and media channels; MOD. Use social media channels.
Who authorises issue	SCG, or TCG if SCG not operating in early stages
Headline	People urged to stay indoors after naval base incident – update at **INSERT DATE AND TIME**

This is an emergency broadcast

The Ministry of Defence has issued information about a problem with the nuclear-powered submarine X in Portsmouth Naval Base.

A small amount of radioactive material from the submarine has now been released into the atmosphere.

There is no danger whatsoever of a nuclear explosion.

The radioactive material that has been released won't make you feel unwell in the short term. However, it could be harmful to your health in the future as exposure slightly increases the risk of developing some cancers. That is why, if you are in the area where precautionary measures have been taken, it is very important that you take action to make sure you are protected and keep the slightly increased risk of cancer to a minimum.

The following area is affected:

INSERT AREA TO BE DEFINED BY EASILY-UNDERSTOOD JUNCTIONS AND LANDMARKS. LIST OF ROADS AND PICTURE/MAP SHOULD BE ONLINE. DIRECT THE MEDIA AND PUBLIC THERE.

REPEAT

If you are in the affected area, potassium iodate tablets will have been delivered to you. You should already have taken the potassium iodate tablets to minimise the health risks.

If you haven't taken your potassium iodate tablets, please do so now.

If you need potassium iodate tablets, call the helpline: 0800 085 0375.

You should also:

Go in – shut windows and doors and shut down fans, fires, ventilators or any air conditioning system drawing air from outside the building.

Stay in – don't collect children from school until you are asked to. The school will take care of them, and if they need to take potassium iodate tablets, these will be available.

Tune in – to local radio, check www.portsmouth.gov.uk and follow @hantspolice on twitter

If you are outside the affected area, you are not at risk and you can continue with your normal activities.

Drivers are asked to avoid making unnecessary journeys to help keep main roads clear for emergency vehicles.

We will give out more information when we have it, so please check our website at www.portsmouth.gov.uk, listen for updates on local radio or follow @hantspolice on twitter.

The emergency services are working hard to respond to this incident and have asked the public to help by only using the 999 number for real emergencies.

If you need help but it's not urgent, please call 11 OR

INSERT HELPLINE OR CASUALTY BUREAU NUMBER IF OPERATING

If you need help, call the emergency helpline: 0800 085 0375.

(NOTE; check numbers)

If you have health worries, call the NHS non-emergency number 111.

Notes to editors:

- The incident has happened on a nuclear-powered submarine in the Naval Base in Portsmouth. The submarine is called **INSERT NAME**.
- The incident involves the small nuclear reactor that is used to power the submarine.
- The reactor is the size of an industrial wheelie bin.
- There is absolutely no danger whatsoever of an explosion.
- As a result of this incident, a small amount of radioactive material ***has been*** released from the submarine into the air.

- The type of radiation that ***has been*** released occurs naturally in the environment and comes from things like microwaves and televisions in extremely small quantities.
- Radiation is measured in millisieverts. The average amount of radiation people are exposed to is 3mSV a year, although the amount coming from the environment in

some areas can be up to 10mSV a year.

- The amount of radioactive material that ***has been*** released as a result of this incident is **INSERT**, so only slightly more than occurs naturally over the course of a year (NOTE: CHECK THIS IS CORRECT ON THE DAY).

- The amount of radioactive material that ***has been*** released into the air is very small indeed. This means it only affects a very small area of the **Portsmouth/Gosport** that is closest to the Naval Base.
- As radioactive material is released into the air, we looked at the wind direction to work out exactly which area is affected.
- The area actually affected by the release of radioactive material is likely to be very small. To be on the safe-side, we take measures to protect the public in a bigger area, just to make absolutely sure people are not put at risk.

- The radioactive material that ***has been*** released into the air won't make anyone feel at all unwell in the short-term.
- However, exposure to this type of radiation could be harmful to health in the future as it slightly increases the risk of developing some cancers.
- The measures taken are designed to protect the public from possible exposure to radioactive material and so keep the slightly increased risk of cancer to an absolute minimum.
- Where possible, pets should also be brought inside and kept inside until residents are told that it is safe to go outside.
- Potassium Iodate tablets have been delivered to all homes in the area where measures are being taken to protect the public. Each household should have received a strip of ten tablets (enough for five people) and an information pack.
- If you live in the area where precautionary measures are being taken and have not received your tablets, or do not have enough, call 0800 085 0375.
- Potassium iodate tablets help to reduce the risks associated with exposure to radioactive material by stopping the thyroid gland in your body from absorbing harmful material.
- Information packs have been delivered with the tablets, including details about safe doses for infants and small children, and for women who are pregnant or breastfeeding.
- Anyone concerned about taking PITS can call the NHS on 11 for more information.

- The schools and nurseries in the area where measures are being taken to protect the public have enough potassium iodate tablets for all the children and will keep them inside where they are safe, and make sure they are well looked after.
- The schools/nurseries in the area where precautionary measures are being taken are: **INSERT NAMES.**
- No other schools/nurseries are affected.

Author	Sign off	Date/time released

Radioactive release	**Associated tweets**
The following are sample tweets that could be used in association with the above emergency broadcast. Social media is a key communications tool but care needs to be taken to ensure additional information is online ***before*** *tweets are issued so key audiences (including the media) can find more information.* ***The media cell manager (or communications lead at TCG if SCG is not yet running) will ensure tweets and other social media updates are appropriately timed and authorised.***	
In area affected by #portsmouthsub? Small release of radioactive material. Go in and stay in to minimise health risks www.portsmouth.gov.uk (140 characters)	
In area affected by #portsmouthsub? Radioactive release won't make you feel ill now. Slight increase risk of cancer in long-term. www.portsmouth.gov.uk	
Precautions being taken in (INSERT AREA) following submarine incident. Check if your street is affected. www.portsmouth.gov.uk #portsmouthsub (128 characters)	
In area affected #portsmouthsub, take action now. Go in, stay in, tune in and take potassium iodate tablets. www.portsmouth.gov.uk (130 characters)	
Potassium iodate tablets have been delivered to area affected by #portsmouthsub. Call INSERT NUMBER if not got yours. www.portsmouth.gov.uk (118 characters)	
Outside area affected by #portsmouthsub then carry on as normal. No cause for any concern. Just avoid main city roads as it's busy out there. (140 characters)	
Outside area affected by #portsmouthsub? Don't try to go into area to collect children from school. They are safe and well looked after. (137 characters)	
In the area affected by #portsmouthsub? Go in, stay in, and bring your pets in too. They are also safer inside. www.portsmouth.gov.uk (134 characters)	
In the area affected by #portsmouthsub? Health advice is take the potassium iodate tablets now. Find out more at www.portsmouth.gov.uk (135 characters)	

B.5 All clear statement

What this is	**Emergency broadcast** Prepared public information and media statement
Who issues it	Nominated lead agency on behalf of SCG/TCG
When to issue	When SCG authorises all-clear
Where to send it	Public information, media and social media channels; MOD
Who authorises issue	SCG
Headline	Public advised it is now safe to go outside following Naval Base incident - update at **INSERT DATE AND TIME**

This is an emergency broadcast

The MOD and health professionals have advised the council that there is no danger to the public arising from the problem with the nuclear powered submarine **INSERT NAME OF VESSEL IN HERE** at Portsmouth Naval Base.

It is safe to go outside and get on with your normal activities.

IF THERE HAS BEEN A RELEASE, CONFIRM RADIATION LEVELS ARE NOW SAFE. The council would like to thank residents and visitors for their help during the recent incident.

If you still need help, call the emergency helpline: 0800 085 0375.

INSERT HEALTH ADVICE ON WHAT TO DO WITH ANY UNUSED POTASSIUM IODATE TABLETS

IF THERE HAS BEEN A RELEASE, INSERT ADVICE TO VENTILATE BUILDINGS THROUGHLY AND ANY ON-GOING HEALTH ADVICE RELATING TO DRINKING WATER, FOOD AND ANYTHING ELSE THAT HAS BEEN OUTSIDE.

INSERT HELPLINE OR CASUALTY BUREAU NUMBER IF OPERATING
If you have health worries, contact your GP or call the NHS non-emergency number 111.

Notes to editors:

- The incident has happened on a nuclear-powered submarine in the Naval Base in Portsmouth. The submarine is called **INSERT NAME**.
- The incident involves the small nuclear reactor that is used to power the submarine.
- The reactor is the size of an industrial wheelie bin.
- There was absolutely no danger whatsoever of a bomb type explosion.
- As a result of this incident, a small amount of radioactive material ***was/could have been*** released from the submarine into the air.
- The type of radiation that ***was/could have been*** released occurs naturally in the environment and comes from things like microwaves and televisions in extremely small quantities.
- Radiation is measured in millisieverts. The average amount of radiation people are exposed to is 3mSV a year, although the amount coming from the environment in some areas can be up to 10mSV a year.
- The amount of radioactive material that ***was/could have been*** released as a result of this incident is (unlikely to have been more than) **INSERT**, so only slightly more than occurs naturally over the course of a year (NOTE: CHECK THIS IS CORRECT ON THE DAY).
- The amount of radioactive material that ***was/could have been*** released into the air is very small indeed. This means it only affected a very small area of the **Portsmouth/Gosport** that is closest to the Naval Base.
- The area that ***was/could have been*** actually affected by the release of radioactive material ***was/is likely to have been*** quite small. To be on the safe-side, we took precautionary measures in a bigger area, just to make absolutely sure people are not put at risk.
- The radioactive material that ***was/could have been*** released into the air won't make anyone feel at all unwell in the short-term.
- However, exposure to this type of radiation could be harmful to health in the future as it slightly increases the risk of developing some cancers.
- The precautionary measures are necessary to protect the public from possible exposure to radioactive material and so keep the slightly increased risk of cancer to an absolute minimum.
- Where possible, pets should have been brought inside and kept inside until residents are told that it is safe to go outside.
- Potassium Iodate tablets were delivered to all homes in the area where precautionary measures were taken. Each household should have received a strip of ten tablets (enough for five people) and an information pack.
- Potassium iodate tablets help to reduce the risks associated with exposure to radioactive material by stopping the thyroid gland in your body from absorbing harmful material.
  The public were advised by health professionals to take the PITS tablets **INSERT WHEN**

- Information packs were delivered with the tablets, including details about safe doses for infants and small children, and for women who are pregnant or breastfeeding.
- Anyone concerned about PITS can call the NHS on 111 for more information.
- The schools and nurseries in the area where precautions were taken had enough potassium iodate tablets for all the children.
- The schools/nurseries in the area where measures were taken are: **INSERT NAMES.**
- No other schools/nurseries were affected.

Author	Sign off	Date/time released

B.6 Specimen internal staff message

Incident Stage	Time of day	Audience	Sample internal messages	Communication methods
Stage One - Accident notification				
stage one accident notification	anytime	all staff	• A problem has occurred on board the nuclear powered vessel <insert name> at Portsmouth Naval Base. • We (PCC) are working with the emergency services, the MOD and our health colleagues to put a response plan in place to deal with this incident. • There is no danger whatsoever of a nuclear bomb type explosion. • Further information for the public will be provided as it becomes available, via local media, the council's website and social media. • Further information for staff will be provided as it becomes available, on intraLINK and via email. • In the meantime, you should continue to work as normal unless you are otherwise advised by your manager. • If you are part of the council's emergency response team, you should contact INSERT CONTACT DETAILS straight away.	intraLINK email
stage one - incident notification	anytime	heads of service/ managers	**<in addition to the messages above>** • At this stage, please ensure business as usual continues but make necessary preparations so you, and your service/staff, are ready to act should the incident escalate. • If you have staff who are working outside in areas of the city that could be affected by a leak of radioactive material *<insert link to map of areas within possible range of contamination>*, please ensure you are able to contact them and can advise them to return to a safe location should the need arise.	email only (to CTB and third tier managers)

Stage Two - Shelter				
stage two shelter	anytime	all staff and councillors	• As you know from our earlier message <if applicable> the MOD has announced a problem has occurred on board the nuclear powered vessel <insert name> at Portsmouth Naval Base. • We (PCC) are continuing to work with the emergency services, the MOD and our health colleagues to deal with the incident. • Although there is no cause for alarm, we need to let you know there is now a very small possibility that this problem could lead to radioactive material escaping from the vessel • The following area of the city is affected: INSERT info from external comms. • You can find our current advice for the public on the council website <insert link> or by following us on twitter @portsmouthtoday or on www.facebook.com/portsmouthcitycouncil • We will continue to keep staff informed via intraLINK and the council's email system. • Unless you are in the area of the city affected, you should continue to work as normal unless otherwise advised by your manager. • As the police will be asking everyone to avoid non-essential journeys in and around Portsmouth to help keep roads clear for emergency services, it would be helpful if staff could remain in one location and reschedule any off-site meetings until the incident is over. • If you have children at school in the affected area, please do not go and collect them. The school will take care of them until the incident is over.	intraLINK and email

stage two - shelter	anytime	heads of service/ managers	**<in addition to the messages above>** • At this stage, staff who are outside the affected area should continue to work as normal. Off-site meetings should be rescheduled to help keep the amount of traffic on the roads to a minimum • If you have staff working inside a building in the affected area, please ensure they are contacted and told to remain inside and wait for further information. • If you have staff working outside in the open air in the affected area, please ensure they are contacted immediately and told to return to the Civic Offices or other appropriate council building outside the affected area. • At this stage, there is no immediate danger but it is essential you make sure you know where all your staff are and can advise them appropriately to ensure they are in a safe place should the incident escalate. • Heads of service and managers should continue to manage their areas in accordance with business continuity and emergency response plans, keeping SMT informed of any key decisions. • You should be mindful of the fact that the council needs to continue to deliver essential services and manage the incident and staff should not be sent home without consultation with SMT.	email to CTB and third tier only

stage two - shelter	anytime	staff working inside a building in the affected area	**<in addition to all staff messages above>** • If you are working from home and are in the area affected by the incident, you should stay at home and wait for further information. • If you are working in a council building inside the affected area, you should ensure you are able to contact an appropriate manager and stay inside and wait for further information. • As with the public, the advice is to go in, stay in and tune in. Make sure all doors and windows are closed and shut down fans, fires and ventilation systems drawing in air from outside. In addition to providing staff information via email and the intranet, we will also provide information via @portsmouthtoday on twitter and on www.facebook.com/portsmouthcitycouncil and via our website and local radio.	email intraLINK managers to contact directly by phone
stage two - shelter	anytime	staff working outside in the open air in the affected area	**<in addition to all staff messages above>** • If you are working outside in the open air in the affected area, you should contact your manager as soon as possible. • Unless advised otherwise by your manager, you should return to the Civic Offices, or to another council office outside the affected area.	email intraLINK managers to contact directly by phone

Stage Three - PITS distribution				
Stage three PITS distribution underway	anytime - *<note tailored messages will be needed if the incident happens at the end of the day as we will need to let staff go home>*	all staff and councillors	• As you know from our earlier messages, the MOD has announced a problem has occurred on board the nuclear powered vessel <insert name> at Portsmouth Naval Base. • We (PCC) are continuing to work with the emergency services, the MOD and our health colleagues to deal with the incident. • Although there is still no cause for alarm, as there remains a small possibility that radioactive material could escape from the vessel, we are now taking further precautions to protect residents in the affected area and wanted to ensure staff are fully informed. • Exposure to radioactive material can be hazardous. The recognised way to minimise the health risks is for people to take potassium iodate tablets as this prevents the thyroid gland from absorbing harmful material. • We are now giving away/distributing potassium iodate tablets to residents in the affected area, which is *<INSERT link to map>* • You can find our current advice for the public on the council website <insert link> or by following us on twitter @portsmouthtoday or on www.facebook.com/portsmouthcitycouncil • We will continue to keep staff informed via intraLINK and the council's email system. • If you are working outside the affected area, you should continue to work as normal. If you have children at school in the affected area, please do not attempt to collect them. The school will look after them until the incident is over and has a supply of potassium iodate tablets for all pupils. • *Additional messages will be added regarding how long the incident may last, and any other relevant information such as traffic*	intraLINK and email

stage three - PITs distribution	anytime	heads of service/ managers	**<in addition to the all staff messages above>** • If you have staff working outside in the open air in the affected area, you must ensure they are contacted immediately and told to return to the Civic Offices or appropriate council building to take shelter • If you have staff working inside a building in the affected areas, you must ensure they are contacted and advised to remain inside. Make sure they know they must close all the doors and windows and turn off fires, fans and ventilation systems drawing in air from outside. • Heads of service and managers should continue to manage their areas in accordance with business continuity and emergency response plans, keeping SMT informed of any key decisions. • You should be mindful of the fact that the council needs to continue to deliver essential services and manage the incident and staff should not be sent home without consultation with SMT.	email to CTB and third tier only
stage three - PITS distribution	anytime If incident happens close to end of working day, might be better to advise staff to return home	staff working inside a building in the affected area	**<in addition to the all staff messages above>** • If you are working inside a building in the affected area, stay in the building. • Close all the doors and windows and turn off fires, fans and ventilation systems drawing in air from outside. Stay inside and wait for further information, either through the council's email and intranet or from your manager. • PITS tablets will be delivered to the building you are working at. <insert timescales> If you are concerned, contact your manager. • You can find the information being provided to the public on the	email and intraLINK managers to contact directly by phone

			website at www.portsmouth.gov.uk or on twitter @portsmouthtoday or www.facebook.com/portsmouthcitycouncil	
stage three - PITS distribution	anytime If incident happens close to end of working day, might be better to advise staff to return home	staff working outside in the open air in the affected area	**<in addition to the all staff messages above>** • Staff in the affected area should already have returned to a council building outside the affected area. If you are still outside in the affected area, you must take shelter immediately. • You must return to the Civic Offices or another council building outside the affected area. Make contact with your manager as soon as possible to seek further advice. • PITS tablets will be delivered to council buildings in the affected area <insert timescales>. If you are concerned, contact your manager. • Go in, close all the doors and windows and turn off fires, fans and ventilation systems drawing in air from outside. Stay inside and wait for further information, either through the council's email and intranet, from your manager, or from www.portsmouth.gov.uk or @portsmouthtoday or www.facebook.com/portsmouthcitycouncil	email and intraLINK managers to contact directly by phone

Stage Four - Take PITS tablets				
Stage 4 take PITS tablets	anytime If the incident happens later in the day, it may be advisable to send non-essential staff home.	all staff and councillors	• As you know from our earlier message, the MOD has announced a problem has occurred on board the nuclear powered vessel <insert name> at Portsmouth Naval Base. • We (PCC) are continuing to work with the emergency services, the MOD and our health colleagues to deal with the incident. • Although there is still no cause for alarm, as there remains a small possibility that radioactive material could escape from the vessel, we are now taking further precautions to protect residents in the affected area and wanted to ensure staff are fully informed. • Exposure to radioactive material can be hazardous. The recognised way to minimise the health risks is for those in the affected area to take potassium iodate tablets as this prevents the thyroid gland from absorbing harmful material. • The advice from health professionals for those in the affected area is to take the potassium iodate tablets now to minimise the potential risk to health • The affected area is <*insert link to map of affected area*> • You can find our current advice for the public on the council website <insert link> or on twitter @portsmouthtoday or on www.facebook.com/portsmouthcitycouncil • We will continue to keep staff informed via intraLINK and the council's email system. • If you are working outside the affected area, you should continue to work as normal. If you have children at school in the affected area, please do not attempt to collect them. The school will look after them until the incident is over and has a supply of potassium iodate tablets for all pupils. • *Additional messages will be added regarding how long the incident may last, and any other relevant information such as traffic*	email intraLINK

stage 4 - take PITS tablets	anytime	heads of service / managers	**<in addition to the all staff messages above>** • At this stage, you should be able to account for all of your staff and should have ensured anyone who was working in the open air in the affected area is now safely inside a council building outside of the area. • If you have staff working inside a building in the affected areas, you must ensure they have been contacted and advised to remain inside. Make sure they know they must close all the doors and windows and turn off fires, fans and ventilation systems drawing in air from outside. • Heads of service and managers should continue to manage their areas in accordance with business continuity and emergency response plans, keeping SMT informed of any key decisions. • You should be mindful of the fact that the council needs to continue to deliver essential services and manage the incident and staff should not be sent home without consultation with SMT.	email to CTB and third tier forum
stage 4 - take PITS tablets	anytime *If the incident happens later in the day, it may be advisable to send non-essential staff home*.	staff working inside a building in the affected area	**<in addition to the all staff messages above>** • If you are working inside a building in the affected area, stay in the building. • Close all the doors and windows and turn off fires, fans and ventilation systems drawing in air from outside. Stay inside and wait for further information, either through the council's email and intranet or from your manager. • PITS tablets should have been provided to you. The tablets will have been delivered to the building you are working from. If you have not received PITS tablets, please contact your manager for advice. You should now take the PITS tablets. • You can find the information being provided to the public on the website at www.portsmouth.gov.uk or on twitter @portsmouthtoday or www.facebook.com/portsmouthcitycouncil	intraLINK and email managers to contact directly by phone

stage four - take PITS tablets	anytime *If the incident happens later in the day, it may be advisable to send non-essential staff home.*	staff working outside in the affected area	**<in addition to the all staff messages above>** • There should not be any staff working outside in the affected area. If you are still outside, you must take shelter immediately by returning to the Civic Offices or other appropriate council office. Contact your manager as soon as possible.	intraLINK and email managers to contact directly by phone

Stage Five - Release				
stage five - release	anytime *If the incident happens later in the day, it may be advisable to send non-essential staff home.*	all staff and councillors	• As you know from our earlier messages, the MOD has announced a problem has occurred on board a nuclear powered vessel at Portsmouth Naval Base. • We (PCC) are continuing to work with the emergency services, the MOD and our health colleagues to deal with the incident. • The MOD has now confirmed that some radioactive material from the vessel has been released into the atmosphere. There is no danger whatsoever of a nuclear bomb type explosion. • There is a very small risk to health if the radioactive particles are inhaled. • Only the following area of the city is affected <*insert link to map of area*>. There is no risk to those in other areas. • Potassium iodate tablets (PITS), which prevent the thyroid from absorbing hazardous material, have already been distributed to residents (and staff???) in the affected area and residents have been advised to take them. • That advice is now being repeated. • In addition to taking potassium iodate tablets, anyone in the affected area is still advised to go in, stay in and listen for further information. • If you have children at school or nursery in the affected area, please do not attempt to collect them. The school will look after them until the incident is over and will ensure all the children take the potassium iodate tablets. • You can find our current advice for the public on the council website <insert link> or by following us on twitter @portsmouthtoday or on www.facebook.com/portsmouthcitycouncil	

			• We will continue to keep staff informed via intraLINK and the council's email system. • If you are not in the affected area, you do not need to take any action and can continue to work as normal *<note: this message may change if it is close to the end of the day and we want to send staff home>* • *Additional messages in here about expected duration of the incident, impact on traffic and other transport in the city, and any other relevant staff information.*	
stage five - release	anytime *If the incident happens later in the day, it may be advisable to send non-essential staff home.*	heads of service/ managers	**<in addition to the all staff messages above>** • At this stage, you should be able to account for all of your staff and should have ensured anyone who was working in the open air in the affected area is now safely inside a council building outside of the area. • If you have staff working inside a building in the affected areas, you must ensure they have been contacted and advised to remain inside. Make sure they know they must close all the doors and windows and turn off fires, fans and ventilation systems drawing in air from outside. You should have made sure they have been contacted to check they have received their PITS tablets and no the advice is to take the PITS tablets immediately. • Heads of service and managers should continue to manage their areas in accordance with business continuity and emergency response plans, keeping SMT informed of any key decisions. • You should be mindful of the fact that the council needs to continue to deliver essential services and manage the incident and staff should not be sent home without consultation with SMT.	email
stage five - release	anytime *If the incident happens later*	staff working inside the	**<in addition to the all staff messages above>** • If you are working inside a building in the affected area, you must stay in the building.	intraLINK and email managers to

	in the day, it may be advisable to send non-essential staff home.	affected area	• Close all the doors and windows and turn off fires, fans and ventilation systems drawing in air from outside. Stay inside and wait for further information, either through the council's email and intranet or from your manager. • You should have received PITS tablets, which have been distributed throughout the affected area. If you have not received your PITS tablets, please contact your manager • You can find the information being provided to the public on the website at www.portsmouth.gov.uk or on twitter @portsmouthtoday or www.facebook.com/portsmouthcitycouncil	contact directly by phone
stage five - release	anytime *If the incident happens later in the day, it may be advisable to send non-essential staff home*.	staff working outside in the open air in the affected area	**<in addition to the all staff messages above>** • There should not be any staff working outside in the affected area. • If you are still outside, you must take shelter immediately in the nearest available public or council building. Contact your manager as soon as possible. • PITS tablets have been distributed in the affected area. If PITS tablets are not available to you, you call your manager immediately for advice. If you have PITS tablets and haven't already taken them, take them immediately.	intraLINK email managers to contact directly by phone

Annex C
Template: off-site countermeasures advice for public protection (SCG)

Off-site countermeasures advice for public protection		
Advice serial number	**Date issued** / / dd/mm/yyyy format **Time issued** : 24 hour format	
Incident type	**OSNE/Radiation hazard confirmed/Release of radioactive material confirmed**	
Time declared : 24 hour	**Date declared** / / dd/mm/yyyy format	
Location of berth	**Advice issued by** Operator/STAC	
Weather conditions	**Current** wind direction is from degrees Rain/no rain/snow/sleet/hail	
	Forecast wind direction is from degrees, forecast change to occur at Rain/no rain/snow/sleet/hail forecast at (insert date and time)	

Current release (delete as appropriate)

- There has not been any radioactivity released from the site. The general public are not at risk and do not need to take precautions
- There has been radioactivity released from the site, countermeasures are recommended

Urgent countermeasures recommended	**Shelter** in downwind plume out to a distance of:	1.5kms (automatic action at OSNE)
		Other distance:
	Deliver PITS in downwind plume out to a distance of:	1.5kms (automatic action at OSNE)
		Other distance:
	Advise public to take PITS in downwind zone out to a distance of:	1.5kms (DEPZ planning distance)
		Other distance :
	Evacuate downwind zone out to a distance of:	1.5kms (DEPZ planning distance)
		Other distance:
	Other	
	This advice is issued on a precautionary basis/plant status/perimeter monitoring/off site monitoring	
Prognosis for the next 12 hours from time of this advice		

Signed	**Name**	**Role**

Annex D
Reference accident information

D.1 Categorisation of berths

MOD is designated as the operator of nuclear plant for all vessels visiting Portsmouth naval base. Delegated authority for operation of the berths rests with the Chief Staff Officer Engineering (Submarines) who for the purposes of REPPIR is the Duty Holder.

The Defence Nuclear Safety Regulator has approved the following areas as operational berths:

- Middle slip jetty (north)
- North corner jetty east/west berths
- 5,6 and 7 man of war anchorages at Spithead
- C anchorage at Stokes Bay

Operational berths are cleared for operational or recreational visits by nuclear powered vessels. The berths are not cleared for the maintenance or repair of the nuclear plant. The berth assessment process examines the safety aspects of navigational hazards, the provision of tugs and other facilities and the presence of other hazards. The locations of berths are chosen to minimise the proximity of the general public and facilities such as schools and hospitals.

During periods when a nuclear powered vessel is at a berth a number of MOD emergency response personnel will be on stand-by:

- Elements of the MOD Nuclear Emergency Monitoring Organisation
- Health physicists

D.2 Regulatory determination

The operator[3] has undertaken an assessment of the risk associated with potential accidents through the identification of a Reference Accident. A Reference Accident is defined as the worst-case accident which, although unlikely, is realistically possible.

In accordance with REPPIR the Reference Accident forms the basis of emergency response plans for the protection of the work force and the public who may be affected.

The HSE/NII have determined[4] that an off-site emergency plan is required for the protection of the public within an area extending to a distance of not less than 1.5km from a submarine berth.

D.3 Reference accident characteristics

A number of cautious assumptions are made about the radioactive material inventory and other characteristics of the reactor:

- A leak occurs in the primary cooling circuit of the reactor, which cannot be isolated and is beyond the capacity of coolant make-up systems.
- A series of unlikely engineering and other failures also occur
- The primary coolant leak coupled with the other failures lead to damage to the fuel within the reactor after more than 3 hours, resulting in elevated gamma radiation levels around the reactor.
- The fuel damage in turn releases some radioactive material form the reactor. This is largely contained within the submarine but a small proportion may be released to the environment over the following 1-2 days.

[3] Nuclear Emergency Arrangements Group Paper No 2, update of information provided to Local Authorities dated 29 Jul 09.
[4] HSE letter 4.10.2.26 2009/185711 dated 15 May 2009

- The radioactive material would be carried downwind and would therefore present a hazard in the downwind zone only. This hazard would arise principally via inhalation initially.

D.4 Emergency reference levels

Emergency Reference Levels (ERLs) are set by Public Health England and comprise recommended dose criteria for the implementation of emergency countermeasures. They are specified in terms of the dose to an individual that would be averted by taking the relevant countermeasure.

ERLs are specific to each countermeasure because the harm associated with each countermeasure is different. They are expressed as a range between a higher and lower value and inform decision-making. The intervention level selected for a specific situation should lie between the 2 ERL values:

- If the implementation of the countermeasure may result in an individual receiving a dose **lower** than the lower ERL specified for the measure, the measure is unlikely to be justified and should not be taken.
- If the implementation of the countermeasure may result in an individual receiving a dose **higher** than the upper ERL specified for the measure, then the measure is likely to be justified and should be introduced as soon as possible.

The implementation of counter measures for PORTSAFE has been agreed at the following Site Specific Intervention Levels:

- **Shelter:** lower ERL 3mSv
- **Taking potassium iodate tablets:** lower level 30 mSv where practical
- **Evacuation:** to be decided at time of accident

Radiation exposure or contamination does not necessarily end at the distance to which countermeasures have been introduced. The extension of

countermeasures beyond the implementation distance, however, would not be justified and could present more of a risk to the public than the radiation doses they are intended to avert.

D.5 Reference accident hazards

Fuel damage from the Reference Accident would give rise to significant direct gamma radiation doses in the immediate vicinity of the submarine such that early warning evacuation would be warranted to a distance of 200m. No members of the general public would be expected to be in this area.

Gamma radiation doses would be substantially attenuated beyond this distance but the lower ERL for shelter would be exceeded at a relatively early stage to a distance of 400m. This hazard area extends in all directions.

A release of radioactive material would lead to lower ERLS for PITS being exceeded to a distance of 1.5m downwind within the first few hours following an accident. Shelter ERLS would be exceeded over a more limited area.

D.6 Emergency exposures to radiation

Emergency exposures are managed through the processes detailed in the operator's on-site plan.

D.7 Non-emergency exposures to radiation

These are radiation exposures for employees in Nuclear Emergency Response Organisations (NERO) roles supporting the Off-Site Emergency Plan. The radiation exposures for this group of personnel must not exceed the relevant IRR99 radiation dose limits. This will include personnel supporting the SCG, TCG and Bronze command and control organisations as well as emergency services

personnel and doctors, nurses and local authority employees supporting the emergency services.

D.8 The exclusion zone

The exclusion zone is the area including the vessel itself in which people would be at greatest risk from the hazards of an accident. The size of this zone varies with local plans but the most basic consideration in its identification is that people within it, even if they took immediate automatic countermeasures, could still receive radiation doses above the upper ERL for evacuation. Within this zone, all people are accounted for and are provided with equipment, which can assess their radiation dose. The local plan (PORTNUSAFE, the operator's plan) provides for an exclusion zone reception centre where personnel evacuating from the zone would have access to medical, radiation protection, monitoring and decontamination facilities.

Automatic measures provide the great advantage of early and complete public protection if they are in place prior to the existence of the hazard. The distance to which they are planned however, must represent a balance between this possible benefit and the detrimental effects resulting from their implementation for the more probable accidents producing either no hazard or hazards that would not require measures to be taken to such a distance.

No members of the public are expected to be in the exclusion zone.

D.9 The automatic countermeasures zone

The automatic countermeasures zone is beyond the exclusion zone and is where automatic actions would commence immediately on the declaration of an accident, irrespective of category. Within this zone all people not essential to the management of the accident would be evacuated and provided with potassium

iodate tablets to be taken immediately. In the on-site plan, automatic countermeasures include initial shelter within pre-designated shelter stations followed by a controlled evacuation. All people working within this zone should be given instructions on what action they should take in the event of an accident. The extent of the automatic countermeasures zone is within the perimeter of the Naval Base.

D.10 Pre-planned countermeasures zone

This zone includes the automatic countermeasures zone and extends to a total radius of 1.5km from the vessel. The MOD notify civil authorities at the commencement of an off-site nuclear emergency so that shelter and potassium iodate tablet distribution can be implemented in the downwind sector of the zone to an initial distance of 1.5km. Local authorities have made plans for tablet distribution and issuing. There will also be a requirement for outline contingency planning for evacuation from this zone. The MOD will assist civil authorities as required in implementing these countermeasures.

D.11 Extendibility zone

This zone includes the automatic countermeasure zone and the pre-planned countermeasure zone and extends to a total radius of 5km from the vessel. Assessments of the consequences of reactor accidents demonstrate that emergency countermeasures would only be required beyond the pre-planned countermeasures zone in the very improbable event of a large release of fission products to the atmosphere. The probability of this event is so low that detailed emergency plans are not required. However, in view of the need for some pre-planning to be carried out to achieve effective implementation, should the need arise, outline contingency plans for this zone can provide a basis for the further extension of countermeasures. The zone extends in all directions around the pre-planned countermeasures zone but following an accident it is anticipated that the requirement for countermeasures would be confined to the downwind areas only.

Advice on the need for these measures would be based on a technical assessment of the way in which the accident was developing and on an assessment of doses likely to be received by the public.

D.12 Beyond the extendibility zone

The probability of any requirement for emergency countermeasures is so remote that specific plans for emergency public protection are not required. At these distances the main considerations would be monitoring of pasturage contamination and of foodstuffs. Any requirements for foodstuff restrictions would be based on EC Regulations which are mandatory in the UK and which are set at very low levels of contamination. As a result, food restrictions are likely to extend far beyond the area over which other safety measures are required, and will continue to be applied even when the immediate danger to the public from direct irradiation has ended. This is unavoidable but will need to be carefully explained in the context of the co-ordinated effort in dealing with the emergency.

Food controls and environmental impact will be defined by the Food Standards Agency, Environment Agency and STAC. They will also advise the Recovery Co-ordinating Group of mitigating strategies and methods of clean up during the recovery phase of the incident.

D.13 MOD advice on the protection of the public

In accordance with the ONR determination, the off-site emergency plan is required to secure the protection of the public within an area extending to a distance of not less than 1.5km from a submarine berth.

Declaration of an Off-Site Nuclear Emergency by the operator to the civil authorities provides the trigger for implementing the off-site emergency plan and for initiating actions to protect the public. MOD advise that this declaration

should trigger the following precautionary actions to protect the public in the early stages:

- Controlled evacuation of the immediate area around the berth
- Advice to staff within 400m (all directions) to shelter indoors in order to protect against direct gamma radiation hazards from the submarine
- Provision and consumption of PITS by members of the public within 1.5km downwind in order to protect against an uptake of radioactive iodine to the thyroid
- Advice to members of the public in the 1.5km downwind PITS zone to shelter indoors in order to protect against a release of radioactive material
- Any further protective action would not be justified on a precautionary basis. In the event of an accident the civil authorities will need to consider further actions on the basis of specialist technical assessment of the development of the accident, coupled with radiation monitoring measurements. This information and advice will be available from the MOD at an early stage.

D.14 Background to naval reactors

The Royal Navy operates a flotilla of nuclear powered submarines, which form a vital element of the defence of the UK. The nuclear reactor offers the submarine a level of speed and underwater endurance that cannot be achieved by any alternative method of propulsion. Nuclear power is the only mechanism available to allow HM Submarines to carry out elements of the Navy's task in support of the UK's independent nuclear deterrent, anti-submarine warfare and in the protection of maritime supply routes.

The safety of naval reactors is given the highest priority and their design, operation and maintenance is authorised by the Secretary of State for Defence through the Defence Nuclear Safety Regulator. They will be advised on these matters by a specialist committee, the Defence Nuclear Safety Committee (DNSC), whose membership includes independent nuclear and radiation safety experts. The MoD has all aspects of the Naval Nuclear Propulsion Programme

(NNPP) independently assessed by safety and reliability experts from SERCO Assurance whose performance and conclusions are subject to the scrutiny of the Director of Safety of the United Kingdom Atomic Energy Authority (UKAEA). The prime contribution to nuclear safety comes from engineered safeguards, good design, quality in construction, training and competence of staff in operations and maintenance.

Such measures ensure that the likelihood of a reactor accident occurring is extremely remote. Indeed during more than 40 years of the Naval Nuclear Propulsion Programme there has never been a reactor accident nor has any radiation incident resulted in a significant hazard to service personnel or a member of the public. Nevertheless, in accordance with best international practice, and the Radiation (Emergency Preparedness and Public Information) Regulations 2001 it is MoD policy to have detailed reactor accident contingency plans. These plans form an additional level of public protection for use in the extremely unlikely event of an accident.

Reactor plant operation

A Royal Navy nuclear powered warship is driven by steam turbine machinery. However, unlike a conventional steam driven vessel, which uses fossil fuels to fire its boilers, the source of heat within a nuclear powered vessel is provided by a nuclear reactor. The type of reactor used is known as a Pressurised Water Reactor (PWR).

The reactor core contains fuel modules and control rods. To achieve criticality, the state in which the reactor is able to provide useful power, the control rods are slowly withdrawn from the core until the fission reaction is established. The reactor is shut down by re-insertion of the control rods. The heat produced by the fission of the fuel is removed from the core by water contained in a sealed primary circuit. This water is pumped through steam generators where the heat is used to produce steam in a separate, secondary circuit. It is this steam which is used to provide power to the submarine. The primary circuit is kept under pressure to prevent the coolant water from boiling.

As well as heat, the fission process also produces radioactive fission products. Unlike some civilian power reactor designs where the minor release of fission products into the primary circuit can be tolerated, submarine fuel modules are designed differently to avoid any such release during normal operation and there has never been an instance when fission products have been released from the fuel. Indeed the MoD definition of a reactor accident is the release of fission products from the fuel, which is more restrictive than civil reactors. Although the fission products remain contained in the fuel, the gamma radiation that they emit is highly penetrating and thus there is a need for shielding to be fitted around the core and to be built into the submarine's reactor compartment. The shielding installed in RN nuclear powered submarines reduces the radiation levels within the manned compartments of the submarine to very low levels. Indeed the average levels of radiation dose received by members of the crew from reactor operation are less than the average natural background levels received by the UK population.

The heat produced by the fission process would be sufficient to melt the fuel modules if they were not cooled. Even after shutdown the radioactive fission products continue to generate heat, known as decay heat, and cooling is still necessary for some time. To overcome this submarine design incorporates a number of mechanisms, which are able to supply cooling to the reactor. These include natural convection so that cooling would continue even on complete loss of electrical power.

Fig 1.1 Schematic of a PWR

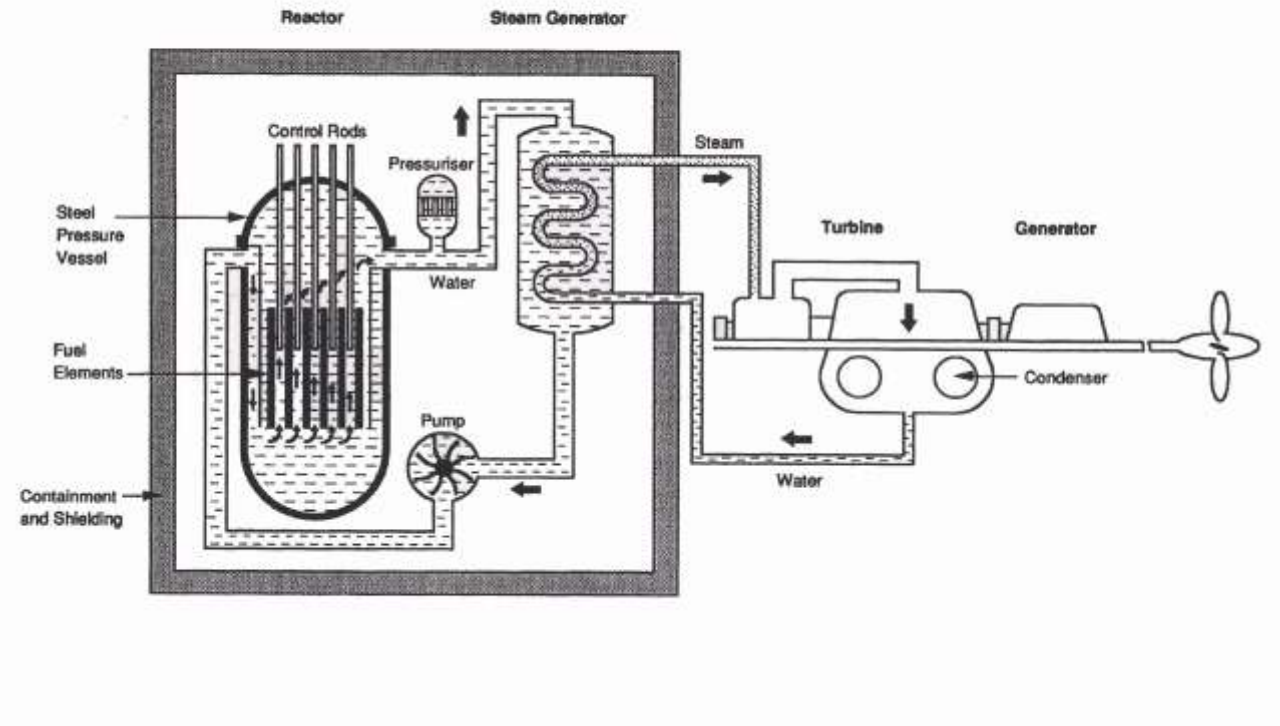
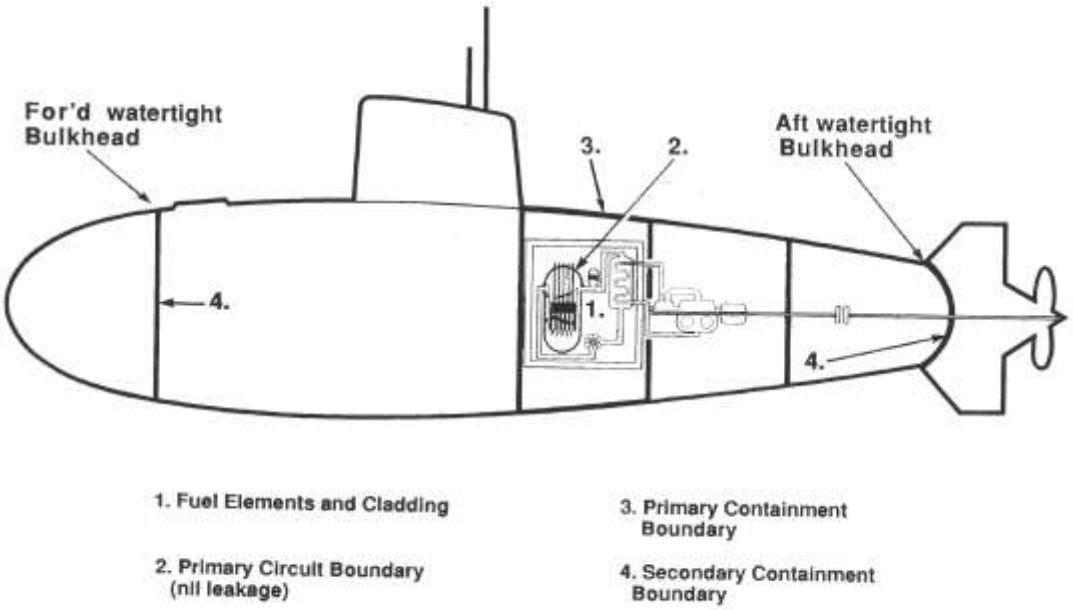


Figure 1.2 Barriers to fission product release



Following an accident the main potential hazard associated with nuclear reactors would come from the release of fission products from the fuel. As already stated, in order to prevent this, submarine reactor fuel is encased in strong and very high integrity cladding. In addition, beyond this protection there are a number of further barriers designed to contain the fission products should an accident situation develop. In the first instance, should the cladding fail the primary coolant system, which is a closed circuit, would contain the fission products and prevent further spread.

Beyond the primary coolant system, the submarine's reactor compartment is designed and constructed to meet the severe rise in pressure that could result from the very unlikely event of a complete failure of the primary system. This barrier to the release of fission products is termed the Primary Containment. Pipes, ducts and other penetrations between the primary containment and the remainder of the submarine are designed to be shut off automatically, but even if these openings were to allow a slow release of a proportion of fission products, they would still be contained by the immensely strong hull of the submarine which is, of course, designed to withstand the enormous pressures associated with operations at depth. The submarine's pressure hull is referred to as Secondary Containment.

Hazards of a reactor accident

Biological Effects of Radiation

It is the ionising radiation given off by the fission products, which would pose the hazard following any reactor accident. Radiation passing through the human body can trigger ionisation events which may damage or kill cells. The body is of course being subjected continuously to natural background radiation and has well developed repair processes to deal with radiation damage. Different human cell types have very different radiation sensitivities but if the radiation dose is great enough and large numbers of cells are killed, signs and symptoms of acute radiation exposure would appear. These acute radiation effects include skin burns and most severely death, but all have a defined threshold of dose below which the effect will not take place.

At radiation doses below the thresholds acute effects cannot occur, although cells may have been damaged with the result that exposed individuals have a statistically increased risk of the development of late effects (such as cancer) in years to come. Reproductive cells may also have been damaged so that children born to exposed individuals may have a very small increased risk of hereditary defects. For radiation protection purposes, the increased risk of these effects is assumed to be directly proportional to the radiation dose, without any threshold.

Radiation and Contamination

In order to understand the hazards of a reactor accident, it is important to appreciate the meaning of and differences between the terms radiation and contamination. Even in a situation where the fission products remain contained, the penetrating radiation, which they give off, may still irradiate people in the vicinity. This is termed a radiation hazard. Protection against such a hazard would be afforded by reducing the time people spent close to the fission products, placing shielding between the individuals and the radiation source or increasing the distance between them and the source. If, however, personnel became contaminated with fission products, either on the surface of their body or internally by breathing contaminated air or eating and drinking contaminated items, then the subjects carrying the source of the radiation around with them would continue to be irradiated until that source was removed. This is termed a contamination hazard. Some protection against such a hazard can be afforded by the use of protective clothing, and skin contamination can normally be removed by simple washing.

Hazards

Following a severe reactor accident involving the release of fission products outside the primary circuit, there are 2 distinct ways by which people could be irradiated:

- Gamma radiation from fission products retained within the submarine containment would be transmitted in all directions through the vessel's hull. The intensity of this pure radiation hazard would be diminished by both

shielding and distance from the submarine, but excessive levels of radiation could be received by people within, or in close proximity to, the vessel. This hazard is referred to as Hull Gamma Shine.

- Less likely is the release of some of the fission products from the submarine to the surrounding atmosphere or water. The release of fission products, the actual radioactive material, would also constitute a contamination hazard.

Release of Fission Products to Atmosphere (Fig 1.3)

If released to atmosphere the fission products would be dispersed in the area downwind of the vessel. The extent of the hazard and the distance to which such a fission product cloud could be detected would be highly dependent on the weather conditions during the period that the release took place. Such a cloud of radioactive contamination could irradiate people in 6 distinct ways:

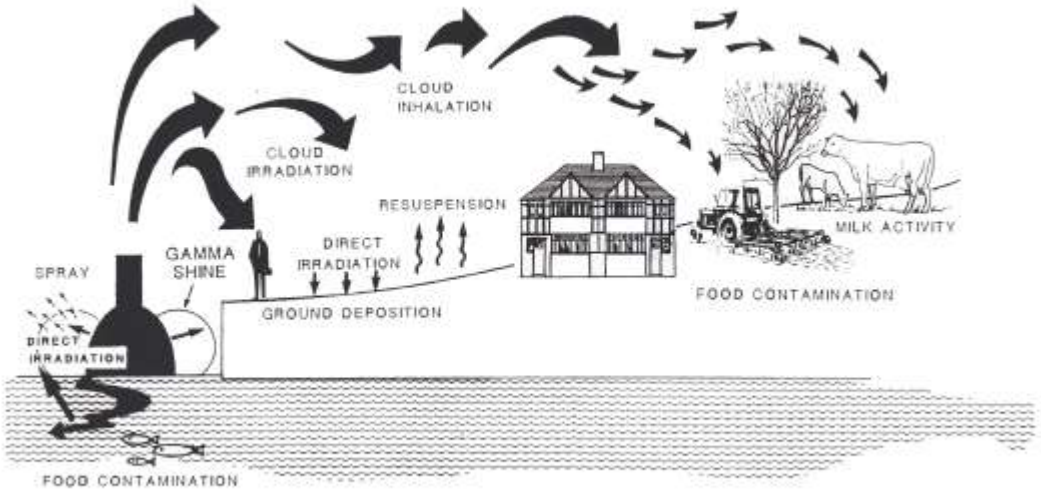
- Direct radiation from the cloud as it passes by.
- By inhalation of radioactive fission products from the cloud. The parts of the body receiving the greatest radiation doses would depend on the chemical and physical form of the individual fission products. It is possible that a significant dose to the thyroid gland could result from the inhalation of radioactive iodine, which is readily absorbed and concentrated, in the thyroid gland. Another group of fission products, being largely insoluble, would remain in the lung. A third main group would be readily absorbed but would not be concentrated in any particular organ.

- Direct radiation from fission products that have been deposited on the ground. This route, like a. above, would result in fairly uniform whole body radiation exposure.

- Direct radiation from beta and gamma emitting fission products that have been deposited on the skin.

- Inhalation of fission products, which have been resuspended after deposition on the ground. This route has been shown to be insignificant compared with doses that would result from b and c.

Consuming food or drink that has been contaminated by fission products. As a radioactive cloud moves downwind, some of the radioactivity would be deposited onto the surface of food, either growing in fields or exposed on market stalls etc. This superficially contaminated food would cause internal contamination to those who consumed it in the immediate post accident period. Fission products deposited on the ground may also be taken up by growing plants and animals that may be eaten by man, causing subsequent internal contamination and radiation dose. The contaminated plants and animals may not be eaten directly by man, but may enter a food chain and pass through a number of stages before entering the human diet.



For example, radioactive iodine deposited on pasture would be concentrated in the milk of grazing dairy animals that could present a hazard if the milk was consumed. Peak levels of radioactive iodine in milk would be reached 2 days after the release, with levels decaying over the next several weeks. After the decay of

the iodine, the dominant hazard via the ingestion route would be the take-up of longer lived fission products into the food chain.

In the very unlikely event of a release to atmosphere the principal short term hazards would be direct irradiation from the cloud, inhalation of fission products and irradiation from ground deposition. Food chain contamination, although representing less of a hazard initially, would come to be of increasing significance in the longer term.

Release of Fission Products to Water

The radiation effects from fission products released into water would be highly dependent on the state of the tide and the characteristics of the estuary into which the release took place. There are 4 ways in which people could receive a dose of radiation following such a release:

- Direct radiation from the water either to those immersed within it or to those in its immediate vicinity.

- Ingestion of the water or inhalation of spray.

- Irradiation from the deposition of fission products on banks and areas uncovered by the tide.

- Fission product contamination of marine food chains.

Following a reactor accident, the overall hazards to the population resulting from a fission product release to water would be on a smaller scale than for the same magnitude of release to atmosphere. Significant hazards could arise in the localised area around the contaminated water, however, and this area would drift with the tide gradually diluting and dispersing. Food chain contamination could become of increasing significance in the longer term, as would the accumulation of radioactivity in the sediments and mudflats.

Protection of the public

Accident Management

If a reactor accident were to occur, emergency procedures would be followed by the submarine crew and shore engineering support with the aim of preventing or minimising core damage, maintaining the integrity of containment and minimising any release of fission products. This accident management strategy would form an important element in the overall protection of the public.

Emergency Countermeasures

The entire population has always been constantly exposed to naturally occurring radioactivity, although as a general rule the levels of this radiation are so low as to be considered insignificant. In the event of a reactor accident, increases in the radiation level above natural background would result and probably continue unless some forms of intervention were to take place. For a serious accident, intervention to reduce doses could be required in the form of emergency countermeasures, which are implemented, in the surrounding population. Since the implementation of widespread countermeasures, even in accordance with a pre-planned scheme, is not a risk-free activity, it follows that there must be some criteria on which to base any decision to take such measures following a reactor accident.

The criteria for the implementation of emergency countermeasures following a reactor accident are based on the principles that the countermeasures should achieve more good than harm and that introduction and withdrawal of the measures should be aimed to provide optimum protection. It is the risk to the individual, which is considered of greatest importance in determining the need for emergency countermeasures. The basic requirements for implementation criteria are as follows:

- Countermeasures should be introduced to ensure that no individual suffers acute effects of radiation.

- The increase in probability of the individual suffering cancer or hereditary effects from radiation exposure in the absence of the countermeasure should be balanced against the detriment from the countermeasure itself to determine the optimum protection of the individual.

Within the UK, guidance on emergency countermeasures to protect the public following nuclear accidents is provided by Public Health England. Basic methods of reducing radiation exposure such as time, distance and shielding are still relevant in the mass countermeasure situation but they are incorporated into three countermeasures which are applicable to a population:

- Sheltering: the public remaining indoors with doors and windows shut.

- Stable Iodine Administration: if tablets containing stable iodine (non-radioactive) are taken prior to or within a few hours of internal contamination with radioactive iodine, the resultant radiation dose to the thyroid gland would be reduced substantially.

- Evacuation: in the context of nuclear accident contingency planning, the term evacuation refers to the movement of people out of an area as an emergency measure to provide short-term protection for durations of up to a few days. If carried out prior to the existence of any hazard, evacuation would prevent almost all the radiation exposure that would have resulted. The adverse effects and difficulties of population evacuation, however, are significantly greater than for shelter.

Public Health England has recommended dose criteria for the implementation of these emergency countermeasures in an accident situation. These intervention levels are known as Emergency Reference Levels (ERLs), and are specified in terms of the dose to an individual which would be averted by taking the relevant

countermeasure. ERLs are specific to each countermeasure because the detriment associated with each countermeasure is different, and are promulgated as a range between two specified values. If doses that can be avoided by the measure are below the lower level for that measure, then Public Health England advise that the countermeasures should not be introduced because it would be unlikely to be justifiable. If doses that could be avoided are estimated to exceed the upper level, then Public Health England would expect every effort to be made to introduce the measure. The intervention level selected for a specific situation should therefore lie between the upper and lower ERL values.

Public Health England also recommends consideration of precautionary countermeasures to be implemented automatically particularly where the potential risks are significant, to provide protection at an early stage without requiring the full circumstances of the accident and of any release to be determined.

In considering emergency countermeasures following a release of radioactivity to the environment, it is important to recognise that radiation exposure or contamination does not necessarily end at the distance to which countermeasures have been implemented. It is simply that extension of emergency countermeasures beyond the implementation distance would not be justified and, indeed, could pose more of a threat to the public than the radiation doses they are intended to avert.

Other Countermeasures

In addition to emergency countermeasures for which ERLs are promulgated, other measures may be applicable to protect the public following a reactor accident:

- **Food Controls** In the UK the public would be protected from the hazards of fission products in foodstuffs by the control and disposal of the contaminated material. Intervention levels for food promulgated by the European Commission are mandatory in the UK and are set at very low levels, based on doses that individuals would receive if they consumed the food for a year

following the accident. It is probable, therefore, that in the event of an accident involving a release of fission products, food and farm restrictions could extend to distances significantly greater than those to which emergency countermeasures were required.

- **Relocation** Relocation is the term used to describe the movement of the public from contaminated areas to avoid long-term radiation exposure or to allow decontamination to take place. It is therefore distinct from evacuation, which is an emergency countermeasure aimed at providing immediate public protection. There are no national criteria for the implementation of relocation. Any requirements for relocation would be determined by discussion among relevant local and national agencies with the aim of optimising the protection of the public. The protection provided by adequate emergency countermeasures would allow the required time to assess the need for relocation.

Annex E
Agency roles and responsibilities

E.1 Local authorities

- Coordination of council response and resources
- Support to the emergency services
- Activation of emergency public health measures (advice to shelter, distribution of PITS)
- Provision of Public Health Liaison Officer to TCG
- Provision of DPH/Consultant in Public Health as STAC chair or deputy chair
- Operation of rest centres, including transport to the centres
- Emergency welfare support for evacuees and, where practicable, those remaining in their homes
- Support and advice to vulnerable people
- Provision of liaison officers to Bronze, TCG and SCG and other designated locations
- Environmental and waste management advice
- Coordination of voluntary agency activity
- Provision of public advice and emergency helpline
- Provision of mutual aid to neighbouring local authorities
- Provision of temporary mortuary if required
- Lead and co-ordination of clean-up and recovery activity
- Provision of longer term humanitarian assistance to those affected by the incident.

E.2 Royal Navy Nuclear Emergency Response Organisation

- To initiate and control the emergency procedures and actions in the event of a nuclear accident at HM Naval Base, Portsmouth
- To protect the public and mitigate the consequences of an accident
- To provide personnel in support of off-site activities:

- Emergency Monitoring HQ
- Emergency Monitoring Team
- Tactical Military Coordinating Authority
- Strategic Military Coordinating Authority
- PITS distribution to the public via local authorities
- Public warning, informing and media

E.3 Hampshire Constabulary

- Initial accident notification of civilian agencies in response to an accident alert
- Saving life in co-operation with other emergency services
- Co-ordination of Hampshire Constabulary response and resources
- Co-ordination of multi-agency response, including chair of TCG and SCG
- Determination of hazard exposure limits for Hampshire Constabulary staff
- Assisting with public warning and informing
- Evacuation planning and implementation with partners
- Maintenance of public order and, as far as practicable, the security of empty properties
- Response to road and traffic issues
- Primary responsibility for recovery of the dead and identification of victims on behalf of HM Coroner
- Collection and dissemination of casualty information
- Protecting and preserving the scene
- Investigating the incident in conjunction with other investigate bodies

E.4 Hampshire Fire and Rescue Service

- Co-ordination of Hampshire Fire and Rescue Service response and resources
- Provision of liaison officers to Bronze, TCG, SCG and other designated locations
- Internal cascade alerting of accident notification
- Lifesaving operations
- Responding to all emergency incidents as required
- Determination of hazard exposure limits for HFRS staff
- Assisting the community where a need is identified and the use of the fire service personnel and equipment is appropriate and practicable.

E.5 South Central Ambulance Service

- Co-ordination of South Central Ambulance Service NHS response and resources
- Provision of liaison officers to Bronze, TCG, SCG and other designated locations
- External cascade alerting of accident notification to other NHS agencies as per the PORTSAFE Plan
- Initial treatment and evacuation of casualties
- Management of hospital access plan
- Determination of hazard exposure limits for SCAS staff
- Establishment of Casualty Clearing Station and Ambulance Loading Point if required
- Deployment of Medical Incident Officer and additional resources if required
- Assistance with the transportation of medically vulnerable people if capacity available

E.6 NHS local area commissioning board

- Coordination of NHS response and resources
- Provision of liaison officers to TCG and SCG and other designated locations
- Provision of advice to health professionals, other agencies and the public in monitoring long-term effects of an accident
- Support to emergency responders and local A&E departments with clinical and nursing staff

E.7 Portsmouth Hospitals NHS Trust

- Receive and treat casualties
- Review planning to create capacity as required
- Provision of mortuary facilities as required

E.8 Public Health England

- Co-ordination of Public Health England response and resources
- Provision of Public Health England Centre for Radiation, Chemical and Environmental Hazards specialist to SCG meetings
- Provision of liaison officers to TCG, SCG and other designated locations
- Provision of health risk assessments
- Provision of public health advice and control measures
- Preparation of strategic monitoring strategy for people and the environment
- Deployment of radiation monitoring personnel

E.9 Environment Agency

- Co-ordination of Environment Agency response and resources
- Provision of liaison officers to SCG and other designated locations
- Advice to public, other government departments and agencies, businesses and partner organisations on pollution and contamination issues
- Liaison and advice on impact on vulnerable and conservation areas
- Assistance and advice to local authorities with clean-up and restoration activities

E.10 Food Standards Agency

- Co-ordination of Food Standards Agency response and resources
- Provision of liaison officers to SCG and other designated locations
- Advice on potential contamination of food stuffs and impact of accident on food chain
- Advice on the safe disposal of contaminated food
- Enforcement of any countermeasures required for food safety

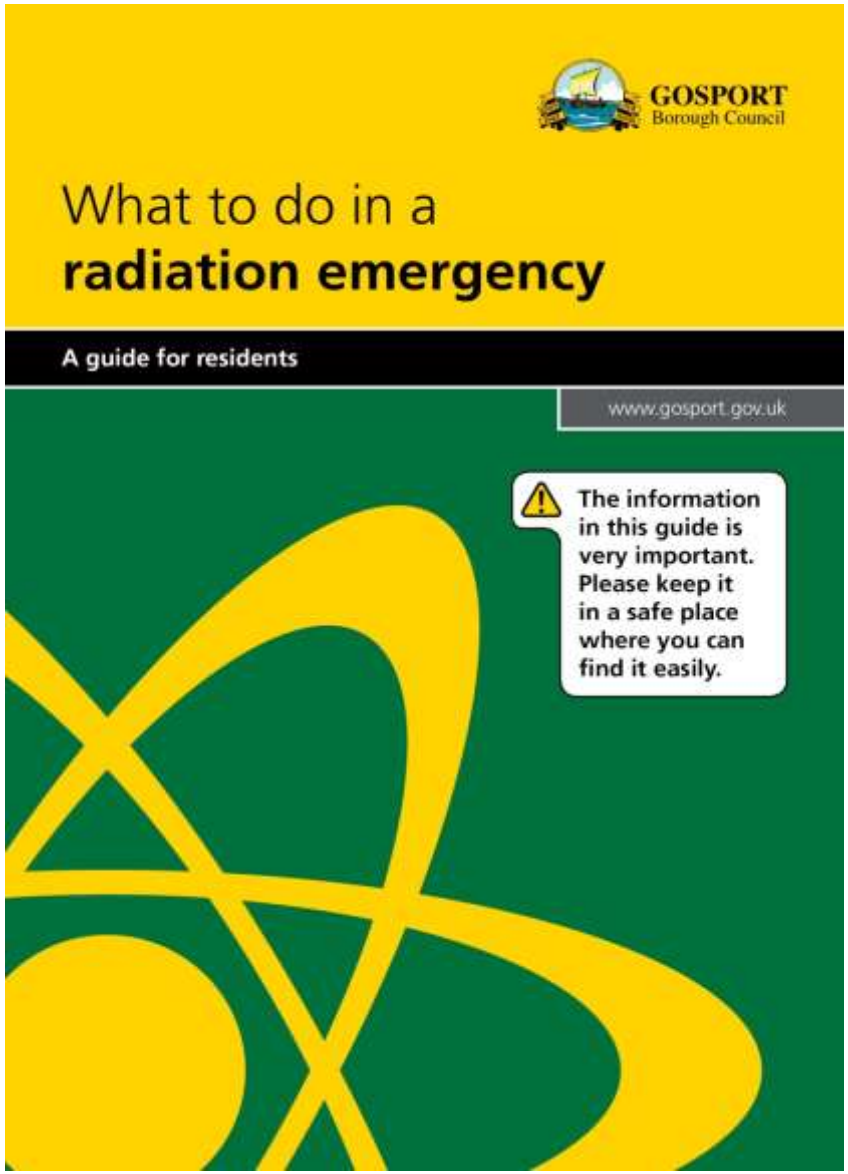
E.11 Maritime and Coastguard Agency

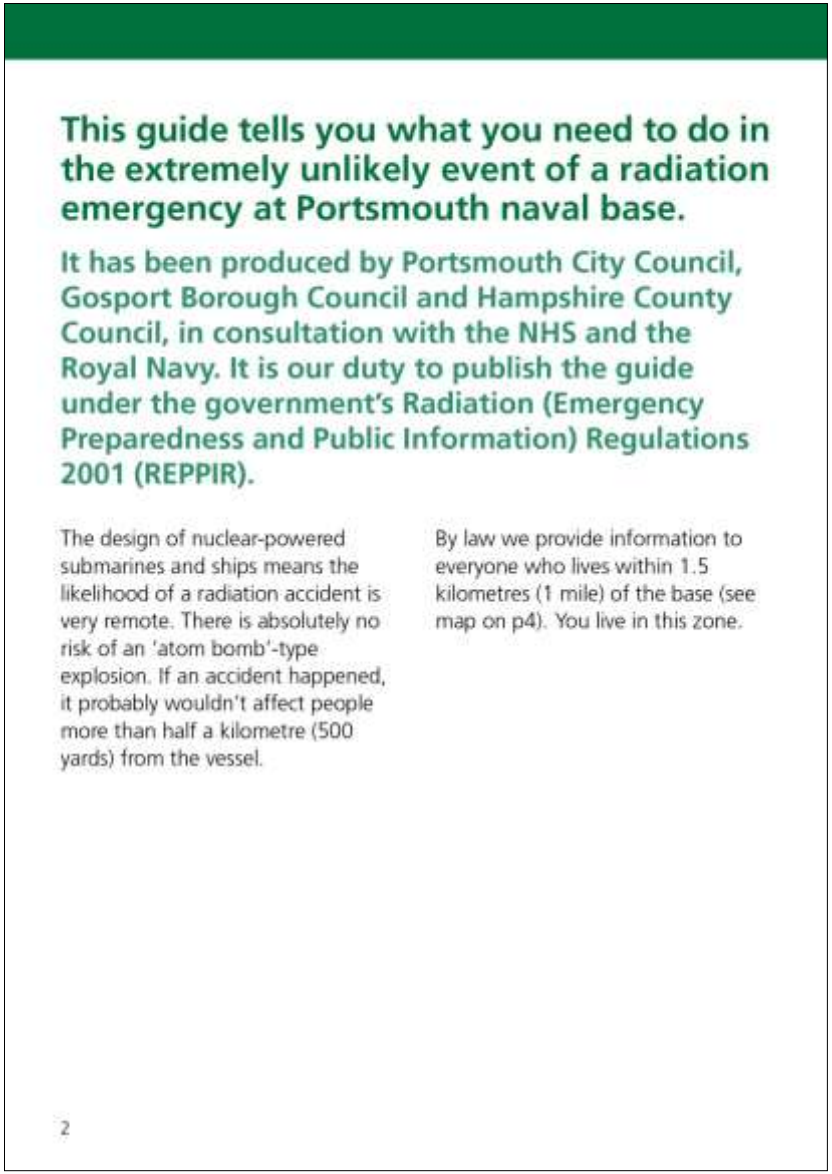
- Co-ordination of Maritime and Coastguard Agency response and resources
- Support to emergency services and local authority
- Provision of liaison officers to SCG and other designated locations

E.12 Health and Safety Executive Office for Nuclear Regulation

- Deploy inspectors to the affected site's emergency facilities and to the appropriate off-site facility (OSF) who will monitor the situation and steps taken to restore control
- Provide independent advice and support to the SCG through the STAC, on the technical prognosis of the emergency and health protection aspects
- Set up Incident Suite at Redgrave Court Bootle (RCIS to provide technical assessment capability and to support the Senior Nuclear Inspector, the ONR inspectors on site and at the OSF
- Make independent assessments of the likely course of the accident, its consequences and consider implications for other nuclear sites
- Submit routine reports on events at site through the RCIS
- Deploy a Senior Nuclear Inspector, normally an ONR Deputy Chief Inspector, to MOD HQ Whitehall to act as advisor to central government.

Annex F
Public Information Leaflets





This guide tells you what you need to do in the extremely unlikely event of a radiation emergency at Portsmouth naval base.

It has been produced by Portsmouth City Council, Gosport Borough Council and Hampshire County Council, in consultation with the NHS and the Royal Navy. It is our duty to publish the guide under the government's Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR).

The design of nuclear-powered submarines and ships means the likelihood of a radiation accident is very remote. There is absolutely no risk of an 'atom bomb'-type explosion. If an accident happened, it probably wouldn't affect people more than half a kilometre (500 yards) from the vessel.

By law we provide information to everyone who lives within 1.5 kilometres (1 mile) of the base (see map on p4). You live in this zone.

2

Advice on what to do in an emergency is simple:

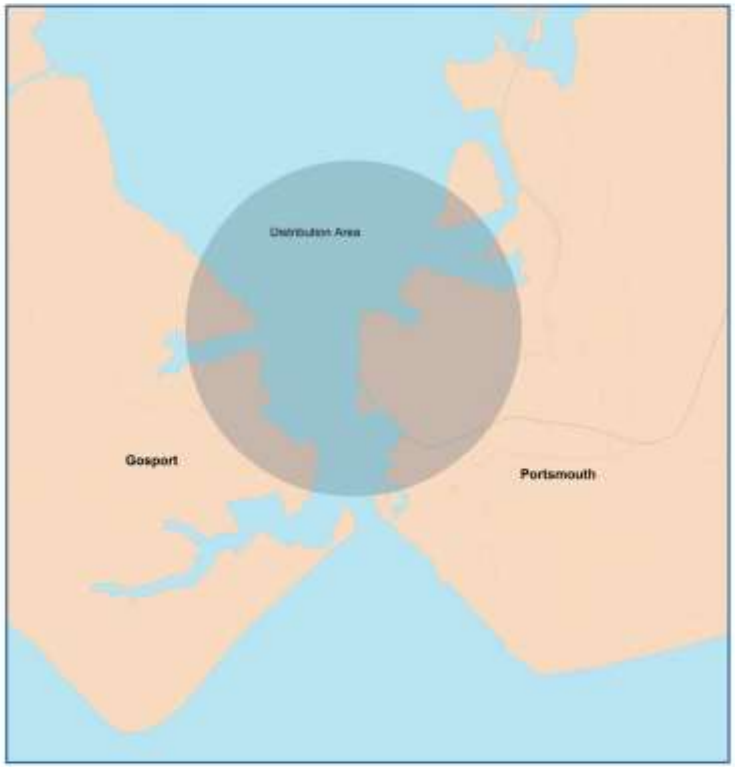
Go in, Stay in, Tune in

The information in this guide is very important. Please keep it in a safe place where you can find it easily.

3

Map of affected area

This map shows the approximate area in which this leaflet is distributed.



In this guide 'Portsmouth naval base' means the areas at HMS Nelson owned by the MOD and Her Majesty's Naval Base (HMNB), Portsmouth, as well as the Port of Portsmouth.

4

What could happen in a radiation emergency?

Usually, all radioactive material would be contained in the submarine or ship. In some circumstances it is possible that it could escape and affect areas close to the vessel or downwind of it.

In such an emergency, people in the naval base who were very close to the vessel could be exposed to gamma radiation, which is very similar to x-rays.

The main risk to the public would be if very tiny radioactive particles were released into the air. They might be carried by the wind and could settle on people or objects that people were in contact with.

You could be exposed to radioactive particles by:

- Inhaling contaminated air or gases
- Having contact with contaminated surfaces
- Eating or drinking contaminated food or water
- Direct exposure from particles as they are blown along in a 'plume'

How will I know about an emergency?

You will know if there is a radiation emergency because the police will tell you, or you will hear or see a news announcement. The naval base siren will also be used – a rising and falling wailing note.

What should I do if there's an emergency?

Follow the **Go in, Stay in, Tune in** advice.

Go in

In an emergency the best thing to do is go indoors.

- **Close all your doors and windows** to reduce the risk of contamination entering the building.
- **Switch off** fans, ventilation equipment or appliances such as central heating boilers and gas fires, which draw air from outside. This will help stop any contamination entering the building.
- **Put out** or damp down open fires

Stay in

- **Don't go outside**, where radiation could be higher, unless you're told to.
- **Keep pets indoors**, to stop them bringing possible contamination into the house.
- **If your children are at school, the school will look after them** – going to collect your children may expose you and them to radiation.

Tune in

- During an emergency, information and advice will be given out on local radio and TV programmes, and on the internet.
- **Keep listening** and watching
- **Follow any instructions** you are given

Announcements will be on TV and radio stations and websites including:

- BBC TV
- ITV Meridian
- Radio Solent (96.1 FM, 999 MW)
- Heart FM (96.7, 97.5 FM)
- Capital (103.2 FM)
- Wave (105.2 FM)
- The Breeze (107.4 FM)
- Jack FM (106 FM)
- Express FM (93.7 FM)
- and local digital stations

More information:
We will publish up-to-date information and advice on www.gosport.gov.uk (the Gosport Borough Council site).

Helpline:
In a radiation emergency you can call our helpline, 0800 085 0375

Health issues:
Call NHS Direct on 111 or go to www.nhsdirect.nhs.uk

Take potassium iodate tablets if you're told to

Exposure to radioactive material can be hazardous. But taking potassium iodate tablets minimises the health risks, by preventing the body absorbing certain harmful material.

Local authority staff will deliver the tablets to all homes in the affected area. Each household will receive a strip of 10 tablets (enough for five people) and an information pack. If you need more tablets then ask the person who delivers them or phone 0800 085 0375.

The authorities will tell you when to take the tablets, so keep tuned to the local radio stations, TV, our website and social media sites.

Where appropriate, children at school will be given potassium iodate tablets.

After taking the tablets you should still stay indoors. The tablets help to protect you, but staying inside is still the best protection.

If you have friends or relatives more than 1.5km (1 mile) downwind from the base there will be no immediate need for them to take the tablets. In the hours following an emergency the council and the health services will decide if the 1.5km zone should be expanded, based on contamination levels. It's unlikely they will have to take this step.

Don't use the phone unless you urgently need help

In an emergency, mobile and landline networks might be overloaded. If you must make a call, please keep it short.

7

Don't leave the area unless you're advised to

You will be much safer indoors.

There will probably be no need for an evacuation. But if you are advised to leave, follow the advice you're given.

If you do have to leave, you should stay with friends or relatives outside the affected area. If you don't have anyone you can stay with, we will make special arrangements to look after you in a safe place.

Use your own transport. If you don't have transport, you'll be told where to meet and transport will be provided.

Entry to evacuated areas will be carefully controlled until the emergency has ended.

8

If you are advised to evacuate, use this checklist:

- Get your family and pets together.
- Get a large bag or suitcase and pack the following things.
  1. Warm clothing and bedding.
  2. Food that your family and pets need.
  3. Medicines that your family needs.
  4. Baby food, clothes and nappies if needed.
  5. Private documents and valuables, such as bank books and passports.
  6. Books and toys for children if needed.
- Make sure fires are out and that cookers, ventilation equipment, fans, TVs, electric fires and other appliances are switched off and unplugged.
- Lock up your house and any other buildings and leave.
- Use the space here to write down any other things that you think you will need to remember:

9

More information

Arrangements for schools

The following schools and nurseries could be affected:

- Hopscotch Nursery
- HEDCA

They have potassium iodate tablets for all the children and staff in their care. In the event of an accident the school will look after the children – going to collect your children may expose you and them to radiation. When it is safe for children to leave the building the school will contact you.

Schools and nurseries more than 1.5km from the naval base will be told about any accident by the council.

Schools and nurseries will look after any pupils whose parents live within the 1.5km zone and who may not be able to collect them.

Radiation

Radiation is a form of energy we are exposed to all the time, from natural and man-made sources. In some forms it can be harmful to humans and other living things because it can damage cells. This can result in damage to organs or other long-term effects.

Food and drink

It is unlikely that tap water, food or drink in your house that is covered or sealed, will be affected. More information will be given out on the news as the incident goes on.

When the immediate danger has passed

You should keep listening and looking for announcements and updates on the news.

10

How to find out more

If you would like to find out more about the Ministry of Defence's nuclear-powered vessels, visit the Royal Navy website: **www.royalnavy.mod.uk**

If you would like to find out more about the emergency plan for the area around the naval base you can find a copy of it on the Gosport Borough Council website at **www.gosport.gov.uk**. The plan is called Portsafe.

You can get more information on radiation and the REPPIR regulations from these websites:

- Public Health England: **www.dh.gov.uk/health/tag/public-health-england**
- Health and Safety Executive: www.hse.gov.uk

More copies of this leaflet are available by:

- Writing to:
  Emergency Planning
  Gosport Borough Council
  Town Hall
  High Street
  PO12 1EB
- Emailing **enquiries@gosport.gov.uk**
- Calling **(023) 9258 4242**

You can also read and download leaflets from our website at **www.gosport.gov.uk**

11

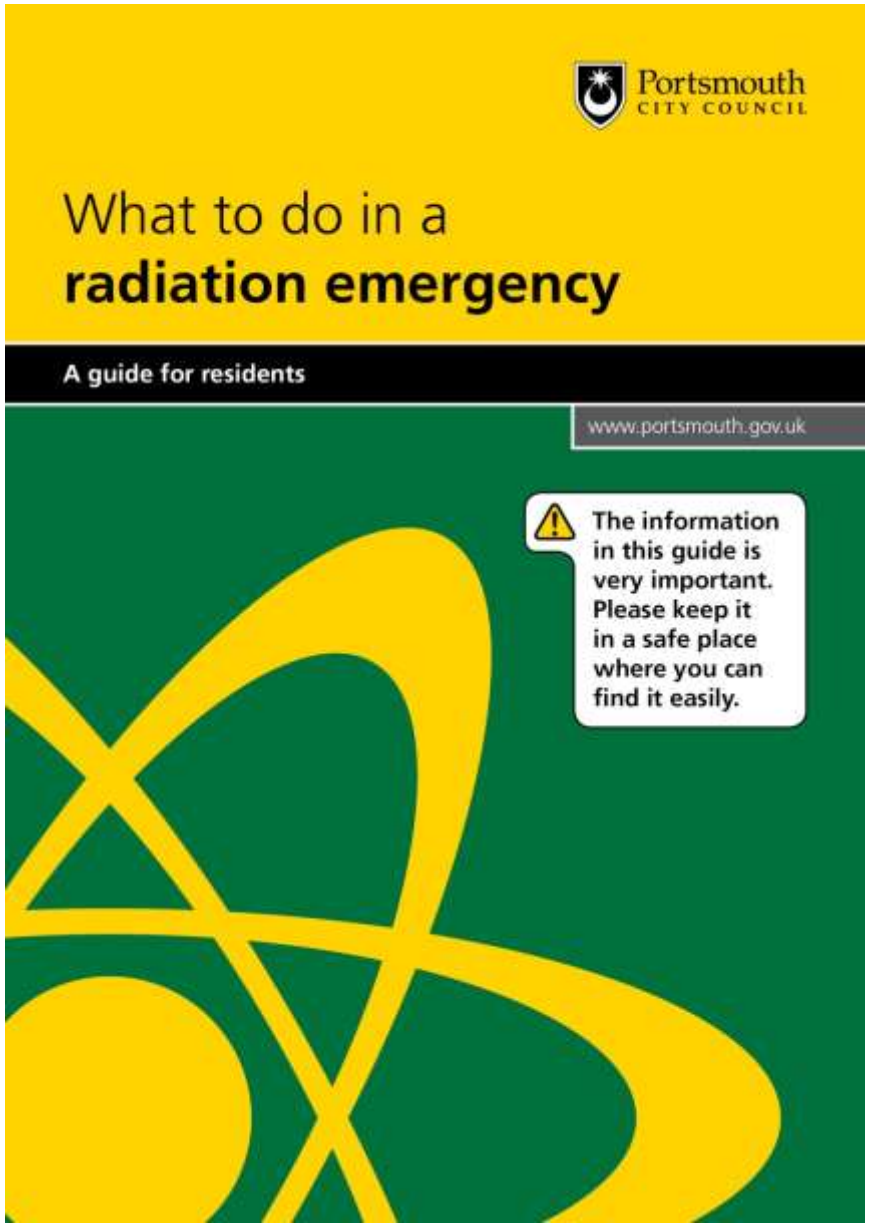
GOSPORT
Borough Council

www.gosport.gov.uk

You can get this Gosport Borough Council information in large print, Braille, audio or in another language by calling 023 9258 4242.

Corporate member of Plain English Campaign
Committed to clearer communication.
264

Designed by: design@portsmouthcc.gov.uk
Published: **February 2013** Ref: **3488**



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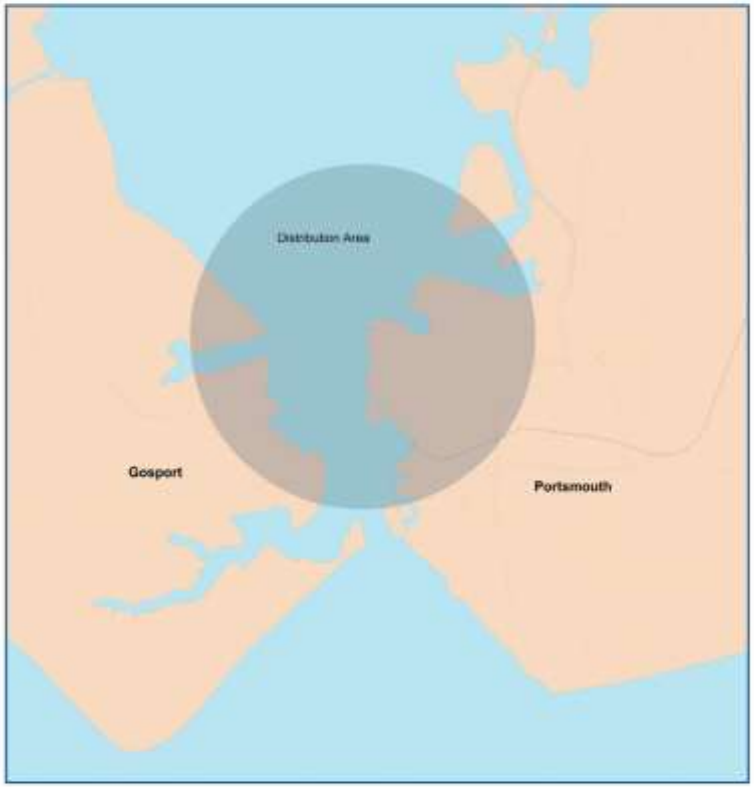

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Stay in

- **Don't go outside**, where radiation could be higher, unless you're told to.
- **Keep pets indoors**, to stop them bringing possible contamination into the house.
- **If your children are at school, the school will look after them** – going to collect your children may expose you and them to radiation.

Tune in

- During an emergency, information and advice will be given out on local radio and TV programmes, and on the internet.
- **Keep listening** and watching
- **Follow any instructions** you are given

Announcements will be on TV and radio stations and websites including:

- BBC TV
- ITV Meridian
- Radio Solent (96.1 FM, 999 MW)
- Heart FM (96.7, 97.5 FM)
- Capital (103.2 FM)
- Wave (105.2 FM)
- The Breeze (107.4 FM)
- Jack FM (106 FM)
- Express FM (93.7 FM)
- and local digital stations

More information:
We will publish up-to-date information and advice on www.portsmouth.gov.uk (the Portsmouth City Council site).

Helpline:
In a radiation emergency you can call our helpline, 0800 085 0375

Health issues:
Call NHS Direct on 111 or go to www.nhsdirect.nhs.uk

Take potassium iodate tablets if you're told to

Exposure to radioactive material can be hazardous. But taking potassium iodate tablets minimises the health risks, by preventing the body absorbing certain harmful material.

Portsmouth City Council staff will deliver the tablets to all homes in the affected area. Each household will receive a strip of 10 tablets (enough for five people) and an information pack. If you need more tablets then ask the person who delivers them or phone 0800 085 0375.

The authorities will tell you when to take the tablets, so keep tuned to the local radio stations, TV, our website and social media sites.

Where appropriate, children at school will be given potassium iodate tablets.

After taking the tablets you should still stay indoors. The tablets help to protect you, but staying inside is still the best protection.

If you have friends or relatives more than 1.5km (1 mile) downwind from the base there will be no immediate need for them to take the tablets. In the hours following an emergency the council and the health services will decide if the 1.5km zone should be expanded, based on contamination levels. It's unlikely they will have to take this step.

Don't use the phone unless you urgently need help

In an emergency, mobile and landline networks might be overloaded. If you must make a call, please keep it short.

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Don't leave the area unless you're advised to

You will be much safer indoors.

There will probably be no need for an evacuation. But if you are advised to leave, follow the advice you're given.

If you do have to leave, you should stay with friends or relatives outside the affected area. If you don't have anyone you can stay with, we will make special arrangements to look after you in a safe place.

Use your own transport. If you don't have transport, you'll be told where to meet and transport will be provided.

Entry to evacuated areas will be carefully controlled until the emergency has ended.

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If you are advised to evacuate, use this checklist:

- Get your family and pets together.
- Get a large bag or suitcase and pack the following things.
  1. Warm clothing and bedding.
  2. Food that your family and pets need.
  3. Medicines that your family needs.
  4. Baby food, clothes and nappies if needed.
  5. Private documents and valuables, such as bank books and passports.
  6. Books and toys for children if needed.
- Make sure fires are out and that cookers, ventilation equipment, fans, TVs, electric fires and other appliances are switched off and unplugged.
- Lock up your house and any other buildings and leave.
- Use the space here to write down any other things that you think you will need to remember:

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More information

Arrangements for schools

The following schools and nurseries could be affected:

- St George's Primary School
- Portsmouth Grammar School
- Portsea Community Day Nursery
- University Nursery

They have potassium iodate tablets for all the children and staff in their care. In the event of an accident the school will look after the children – going to collect your children may expose you and them to radiation. When it is safe for children to leave the building the school will contact you.

Schools more than 1.5km from the naval base will be told about any accident by the council.

Schools will look after any pupils whose parents live within the 1.5km zone and who may not be able to collect them.

Radiation

Radiation is a form of energy we are exposed to all the time, from natural and man-made sources. In some forms it can be harmful to humans and other living things because it can damage cells. This can result in damage to organs or other long-term effects.

Food and drink

It is unlikely that tap water, food or drink in your house that is covered or sealed, will be affected. More information will be given out on the news as the incident goes on.

When the immediate danger has passed

You should keep listening and looking for announcements and updates on the news.

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How to find out more

If you would like to find out more about the Ministry of Defence's nuclear-powered vessels, visit the Royal Navy website: **www.royalnavy.mod.uk**

If you would like to find out more about the emergency plan for the area around the naval base you can find a copy of it on the Portsmouth City Council website at **www.portsmouth.gov.uk**. The plan is called Portsafe.

You can get more information on radiation and the REPPIR regulations from these websites:

- Public Health England: **www.dh.gov.uk/health/tag/public-health-england**
- Health and Safety Executive: **www.hse.gov.uk**

More copies of this leaflet are available by:

- Writing to:
  Civil Contingencies Unit
  Portsmouth City Council
  Civic Offices
  Guildhall Square
  Portsmouth
  PO1 2BG
- Emailing **emergency.planning@portsmouthcc.gov.uk**
- Calling **(023) 9268 8052**

You can also read and download leaflets from our website at **www.portsmouth.gov.uk**

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www.portsmouth.gov.uk

You can get this Portsmouth City Council information in large print, Braille, audio or in another language by calling 9283 4092.

Corporate member of Plain English Campaign 264
Committed to clearer communication.

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