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### SUMMARY

The Dounreay Emergency Plan has been reviewed and updated to:

- Reflect the change from Northern Constabulary to Police Scotland
- Reflect the change from Highlands Islands Fire and Rescue Service to Scottish Fire and Rescue Service
- Reflect the numerous terminology changes that have occurred
- Reflect the Site Representative details as required by REPPIR
- Reflect the cohesion of integrated emergency response in relation to security type events

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### DISTRIBUTION

DNSEC Standard

# Dounreay Emergency Plan

(DNSEC(15)P11)



## CONTENTS

Page

1	INTRODUCTION .....	6
2	SCOPE OF THE DOUNREAY EMERGENCY PLAN .....	7
3	ACCIDENT ANALYSIS.....	7
4	DECLARATION DEFINITIONS .....	8
4.1	Dounreay Emergency.....	8
4.2	Nuclear Off-site Emergency .....	8
4.3	Dounreay Clear.....	8
4.4	RADSAFE Incident.....	8
4.5	Vulcan Declaration States.....	8
4.6	Security Response Levels .....	9
5	SITE EMERGENCY ORGANISATION.....	9
5.1	Objectives .....	9
5.2	Emergency Tiered Response.....	10
5.3	Alarms.....	10
5.3.1	Site Alert.....	10
5.3.2	SCRAM Alarm .....	10
5.4	Site Emergency Staffing Organisation.....	11
5.4.1	Site Emergency Controller.....	11
5.4.2	SICC Incident Controller .....	11
5.5	Emergency Facilities and Organisation.....	12
5.5.1	Forward Control Point (FCP).....	12
5.5.2	Site Incident Control Centre (SICC).....	12
5.5.3	Site Emergency Command Centre (SECC) .....	12
5.5.4	Strategic Co-ordinating Centre (SCC) .....	13
5.5.5	Emergency Radiological Incident Centre (ERIC) .....	13
5.5.6	Personnel Accountancy – Local Assembly Points / Personnel Accountancy Co-ordinating Offices (PACO)/ Personnel Accountancy Bureau (PAB) .....	13
5.5.7	Criticality Evacuation Centres (CECs) .....	14
5.5.8	Media Briefing Centre (MBC) and Forward Media Information Point (FMIP).....	14
5.5.9	Local Authority Emergency Centre (LAEC).....	14
5.5.10	Force Incident Manager (FIM) at Culham Security/ CNC Response.....	14

5.6	Specialist Services.....	15
5.6.1	Dounreay Fire Ambulance and Recue Service (DFARS).....	15
5.6.2	Occupational Health Department (OHD) .....	15
5.6.3	Civil Nuclear Constabulary (CNC).....	15
5.6.4	Analytical Services .....	16
5.6.5	Meteorological Services.....	16
5.6.6	Dosimetry Services .....	16
5.6.7	Explosives Ordnance Disposal [EOD].....	16
5.7	Emergency Equipment.....	16
5.8	Emergency Exposures.....	16
5.9	Training.....	16
5.10	Exercises .....	17
6	COUNTERMEASURES ADVICE .....	17
6.1	Detailed Emergency Planning Zone (DEPZ).....	17
6.2	Implementation of Countermeasures .....	17
6.3	Countermeasures.....	18
6.3.1	Sheltering .....	18
6.3.2	Stable Iodine Tablets (SITs) .....	18
6.3.3	Evacuation.....	18
6.3.4	Lockdown.....	18
6.3.5	Control of contaminated or potentially contaminated food supplies.....	18
6.3.6	Control of contaminated or potentially contaminated water supplies.....	19
7	RESPONDING ORGANISATIONS.....	19
7.1	Introduction.....	19
7.2	Responding Organisations .....	19
7.2.1	Food Standards Scotland.....	19
7.2.2	Scottish Fire and Rescue Service (SFRS).....	19
7.2.3	Highland Council .....	20
7.2.4	Highland NHS Board .....	20
7.2.5	Maritime and Coastguard Agency (MCA).....	20
7.2.6	Police Scotland.....	20
7.2.7	Office for Nuclear Regulation (ONR) .....	21
7.2.8	Public Health England (PHE) – Centre for Radiation, Chemical & Environmental Hazards (CRCE) .....	21
7.2.9	Scottish Ambulance Service (SAS) .....	21
7.2.10	Scottish Environment Protection Agency (SEPA).....	21
7.2.11	Scottish Government Enterprise Environment and Innovation Directorate .....	22
7.2.12	Scottish Government Rural Payments and Inspections Directorate (SGRPID) .....	22
7.2.13	Scottish Water.....	22
7.2.14	RIMNET .....	22

8	REVIEW AND UPDATE .....	23
	APPENDIX A: DOUNREAY EMERGENCY ORGANISATION STRUCTURE.....	24
	APPENDIX B: DETAILED EMERGENCY PLANNING ZONE .....	25
	APPENDIX C: ABBREVIATIONS .....	26

# 1 INTRODUCTION

The operation of the Dounreay site is subject to the conditions attached to the Nuclear Site Licence granted by the Office for Nuclear Regulation (ONR) under the Nuclear Installations Act 1965 (as amended). The act places an absolute duty on the licensee to prevent injury and damage in relation to nuclear matter and/or ionising radiation.

Licence Condition 11 – Emergency Arrangements - requires the Licensee to make adequate arrangements for dealing with accidents and emergencies and submit to the Executive for approval those parts of the arrangements specified by the Executive. The ONR have identified that an Emergency Plan is required for submission and that plan should give an overview of the arrangements.

The arrangements to comply with this licence condition are described in this document, the Emergency Plan, prepared by the licensee for approval by the ONR. The Emergency Plan discharges part of Dounreay Site Restoration Limited's (DSRL) obligations under the Ionising Radiations Regulations 1999 to prepare contingency plans in respect of any reasonably foreseeable accident, occurrence or incident and under Radiation (Emergency Preparedness and Public Information) Regulations 2001 for production of an 'Operator's Emergency Plan'.

Although this document primarily describes the arrangements for dealing with accidental events involving radioactivity, it outlines the principles to be adopted in dealing with any accident or emergency on the site. This document should be read in conjunction with the Counter Terrorist Contingency Plan which details the measures to be taken in a security event.

This Emergency Plan describes the arrangements for the response to an emergency at Dounreay. The plan summarises the implementation of monitoring to determine whether a spread of radioactive or other toxic materials has occurred outside the Dounreay boundary and if so the extent of that spread. The alerting and advising of external authorities and responding organisations with responsibilities for the health and welfare of the public in the event of such an incident are explained. These organisations have their own arrangements for dealing with those aspects of an emergency response appropriate to their responsibilities. As required by statute and licence conditions, Dounreay consults and discusses the required arrangements with the appropriate multi-agencies to ensure co-ordination of the Emergency Plans of those involved.

DSRL's key responsibilities in an emergency at Dounreay are:

- To protect employees and the public.
- To provide initial advice to the off-site organisations on actions and any counter measures necessary to protect the public.
- To monitor the environment to assess whether any radioactivity or other toxic material has been released and, if so, to assess the quantity.
- To act to prevent escalation of the event.
- To safely and efficiently return facilities and equipment to a stable condition.

DSRL has taken account of lessons learned as a result of the Fukushima Dai-ichi nuclear accident in Japan that occurred in 2011. In addition to this DSRL work closely with other nuclear site licensed operators and with the Department of Energy and Climate Change

through the Nuclear Emergency Arrangements Forum to ensure that best practice is applied. DSRL also attend the Scottish Nuclear Resilience Group meetings.

## **2 SCOPE OF THE DOUNREAY EMERGENCY PLAN**

This Emergency Plan describes the main arrangements and basic principles of response to protect both the workforce and the public. The detailed arrangements for the implementation of this Emergency Plan are contained in the Dounreay Emergency Manual and its associated documentation plus the Dounreay Off-site Emergency Plan.

This Emergency Plan also covers Dounreay's response to protect its workforce in the event of a major incident at the neighbouring Ministry of Defence Vulcan site which houses the Naval Reactor Test Establishment (NRTE).

The Counter Terrorist Contingency Plan, which is a requirement derived from the National Objectives Requirements and Model Standards [NORMS], details the management, site and emergency service actions and responses in the event of a terrorist related incident or threat. It also provides an essential link between CNC and the Site emergency responders and actions to ensure a clear, cohesive and robust response to a terrorist incident. It details guidance to all staff and contractors on their responsibilities and on what specific action to take.

Vulcan is responsible for evaluating the safety, reliability and performance of naval reactor plant and components of that plant, prior to introduction in Royal Navy submarines. Due to their proximity Vulcan and Dounreay responses are co-ordinated and include mutual aid.

The Dounreay Site Representative for REPPiR is the Director of Assurance contactable on 01847 802121.

## **3 ACCIDENT ANALYSIS**

The main potential hazard from plant at Dounreay arises from the possibility of a high external dose rate and/or release of radioactive or other toxic material to the environment, requiring action to protect employees and the public.

Detailed safety analyses of plant and decommissioning activities at Dounreay are carried out to assess the plant hazards so that appropriate protective measures can be taken. The aim is to guard, so far as is reasonably practicable, against the possibility of a fault or failure leading to a release of radioactive or other toxic materials.

The safety analyses identify potential accident sequences in which failure or partial failure of safety controls and systems could occur. Analysis of the consequences of such potential accident sequences helps to determine the extent of the safety and protection systems, which are required to be built into nuclear plant.

## 4 DECLARATION DEFINITIONS

The following definitions apply to the different emergency states (including Vulcan) described within the emergency plan:

### 4.1 Dounreay Emergency

A Dounreay Emergency is declared as a result of an incident causing, or liable to cause:

- an enhanced radiation field;
- a release or spread of radioactive or other toxic material;

such that special precautionary measures are necessary to minimise the danger to life or health of personnel within the Dounreay licensed site boundary.

Note: a Dounreay Emergency could arise from an incident at Vulcan.

### 4.2 Nuclear Off-site Emergency

A Nuclear Off-site Emergency is the result of an event which gives rise to or potentially gives rise to the release of activity off-site.

Declaration of a Nuclear Off-site Emergency is equivalent to identifying that a Radiation Emergency has begun. A Radiation Emergency is defined in the Radiation Emergency Preparedness and Public Information Regulations 2001 (REPPPIR). The REPPPIR guidance states that a Radiation Emergency includes those events that have the potential to become an actual Nuclear Emergency.

A Dounreay Emergency or Nuclear Off-site Emergency must be declared before emergency doses to intervention workers are permitted under REPPPIR.

### 4.3 Dounreay Clear

The Dounreay Clear is declared when it can be shown that no further effects of the incident will take place.

### 4.4 RADS SAFE Incident

A RADS SAFE Incident is declared when a RAM Transport accident occurs off-site which requires the RADS SAFE procedures to be invoked with a response required by Dounreay.

Note: A RADS SAFE incident may not necessarily involve a Dounreay owned/operated vehicle.

### 4.5 Vulcan Declaration States

A **Reactor Safety Alert (RSA)** is an abnormal event which poses a potential threat to, or causes serious concern for, reactor plant safety.

An **Off Site Nuclear Emergency (OSNE)** is a hazardous condition which requires the implementation of urgent countermeasures to protect the public.



An **Off Site Nuclear Emergency (Radiation Hazard Confirmed) (OSNE/RHC)** is an off-site nuclear emergency/nuclear transport emergency in which a radiation hazard has been detected.

An **Off Site Nuclear Emergency (Release Radioactive Material Confirmed) (OSNE/RRMC)** is an off-site nuclear emergency/nuclear transport emergency in which a release of radioactive material to the environment has been detected.

#### 4.6 Security Response Levels

**Normal** – Routine baseline measures are to be in place to protect site and buildings containing nuclear material. Should the threat rise, additional measures that are appropriate at each location will be required.

**Heightened** - The heightened response level requires additional protective security countermeasures above NORMAL to address the threat to sites and buildings. Measures deployed should be sustainable indefinitely. They may also be applied as a precautionary measure for a specified period.

**Exceptional** – The exceptional response level requires implementation of high levels of protective security measures to minimise vulnerabilities. Extra measures implemented are likely to be sustained for a limited period only.

**Exceptional Enhanced** – ONR may require Exceptional Enhanced measures to be implemented in response to specific intelligence.

## 5 SITE EMERGENCY ORGANISATION

### 5.1 Objectives

The objectives of the emergency organisation are:

- (a) To activate the site emergency arrangements.
- (b) To issue appropriate warnings at the correct time and ensure the safe withdrawal of all persons on site to pre-arranged assembly points.
- (c) To notify external organisations concerned with implementing remedial actions.
- (d) To assemble and deploy emergency teams to assess and minimise the consequences of the emergency.
- (e) To assess the extent of any potentially hazardous situation and ensure timely advice is given on appropriate measures to safeguard the public and that appropriate measures are taken to safeguard site personnel.
- (f) To make the affected plant safe and so minimise and then terminate any release of radioactivity.
- (g) To provide specialist advice to the Police, Local Authorities and other organisations responsible for taking the necessary action to protect the public and staff of responding organisations.
- (h) To ensure the safety of unaffected plant.

## 5.2 Emergency Tiered Response

Any incident at Dounreay is managed using the 'all hazards approach'. This consists of a three tier emergency response:

- Operational / Bronze Level** - control of the incident and the safety of personnel directly involved.
- Tactical / Silver Level** - control of the Dounreay site, excluding direct control of the incident.
- Strategic / Gold Level** - co-ordination of actions dealing with the off-site aspects of the incident.

The levels of control required are set up according to the particular incident being dealt with.

## 5.3 Alarms

### 5.3.1 Site Alert

The site alert (a high-frequency pulsed 'Peeow' tone, followed by a voice message stating 'Site Alert, move inside the nearest building') can be sounded by any person on the Dounreay site who believes that the effects of an incident may go beyond their local area. The main actions taken when the site alert sounds are:

- Personnel muster at their nearest local assembly point and personnel accountability procedures are implemented.
- Emergency facilities are manned.
- The site is locked down if a security event is declared.

The site alert system undergoes an audibility test once a month. The test commences with the sounding of the 'Site Alert Test' voice message followed by the sounding of the site alert 'Peoow' tone. The test is concluded by sounding the 'All Clear' voice message.

### 5.3.2 SCRAM Alarm

The SCRAM alarm (a slow whooping sound) will be sounded in the event of a criticality incident occurring within certain Facilities on the Dounreay site. The SCRAM alarm is initiated by the Site Shift Manager following the activation of two or more Facility CIDAS Systems going into alarm. In the event of the SCRAM alarm being sounded personnel undertake a prompt evacuation to Criticality Evacuation Centres located out-with the area affected by the criticality incident.

The SCRAM alarm is tested once a month to ensure its audibility within the Criticality Evacuation Zone (CEZ).

## **5.4 Site Emergency Staffing Organisation**

The site emergency staff consist of individuals who have specified duties and responsibilities in response to an incident. These individuals have been appropriately trained and appointed. The organisation is headed by the Controller of the Day who takes on the role of the Site Emergency Controller and manages the tactical level response to an emergency from the Site Emergency Command Centre (SECC). The operational level response is managed by the SICC Incident Controller from the Site Incident Control Centre (SICC).

The Site Emergency Controller and SICC Incident Controller are supported by a team of specialist technical personnel and other staff. Arrangements ensure that during normal working hours, there are always people on site capable of carrying out the actions necessary in an emergency. In silent hours, procedures ensure that a team is assembled from rostered personnel on call and the shift team.

### **5.4.1 Site Emergency Controller**

During an emergency the Site Emergency Controller has overall executive responsibility for making decisions on the Dounreay site. These responsibilities include:

- a) The control of all on-site activities and the safeguarding of site personnel with the exception of the incident scene, which in the first instance is the responsibility of the Incident Controller.
- b) Authorisation of site personnel to wear emergency respirators, and the taking of Stable Iodine Tablets if required.
- c) The notification of responding organisations in the event of an Off-site Emergency.
- d) The radiological monitoring outside the Dounreay boundary to a radius of 40 kilometres.
- e) Provision of information and advice on countermeasures to the Strategic Co-ordinating Centre.
- f) Liaison with the CNC Force Incident Manager at Culham in the event of a potential security incident.
- g) Briefing Police Scotland officers about the emergency and its consequences for media briefings prior to the appointment of a Government Technical Adviser (GTA) at the Strategic Coordination Centre (SCC).

### **5.4.2 SICC Incident Controller**

The SICC Incident Controller has responsibility for the incident scene. These responsibilities include:

- a) Accounting for all personnel in the incident area.
- b) The safeguarding of personnel in the incident area.
- c) Ensuring that all practical steps are taken to minimise the incident and to bring it under control.
- d) Keeping the Site Emergency Controller updated on events.
- e) Communications with the CNC Police Control and the initial crime scene management following a security incident.

## **5.5 Emergency Facilities and Organisation**

All emergency facilities are maintained in a state of readiness. Each facility has the required equipment and documentation to allow post holders to carry out their duties. In the event of an emergency facility becoming untenable, post holders would relocate to an alternative location.

The emergency organisation structure is detailed in Appendix A.

### **5.5.1 Forward Control Point (FCP)**

Where applicable, the Forward Control Point (FCP) is set up as close to the incident scene as considered safe. All services are delivered to the incident through the Local Incident Controller at the FCP which also controls the movement of personnel in and out of the incident area. Facilities are provided for personal dose assessment and contamination control.

### **5.5.2 Site Incident Control Centre (SICC)**

The Site Incident Control Centre (SICC), together with the FCP, provides the operational level of command and control. The technical team headed by the SICC Incident Controller, within the SICC, make the safety and technical decisions on how to manage the incident.

Authorisation to re-enter the incident area is given from the SICC Incident Controller.

### **5.5.3 Site Emergency Command Centre (SECC)**

SECC is a dedicated facility on the Dounreay site. SECC provides the tactical level of command and control and its main functions are:

- To manage the safety of personnel on-site (excluding incident area).
- Ensure all site personnel are accounted for.
- Keep site personnel informed of incident developments.
- Maintain the safety of plant and material where there is a potential to impact on the safety of personnel.
- Support the SICC.
- Notify responding organisations.
- Provide information to the Strategic Co-ordinating Centre (SCC) on the extent of the effects of the incident.
- Provide advice to the (SCC) on countermeasures for the public.
- Develop in conjunction with Police Scotland a safe and timely evacuation plan for personnel on the Dounreay site.
- Look at potential extendibility issues and how they are managed taking account of the public, the environment and the security of personnel and the site.

In the event of a Vulcan emergency, the Emergency Radiological Incident Centre would be manned to support Vulcan. Manning of SECC would be at the discretion of the Site Emergency Controller.

#### 5.5.4 **Strategic Co-ordinating Centre (SCC)**

In the event of a Nuclear Off-site Emergency being declared, the Strategic Co-ordinating Centre would be set up by Police Scotland at Police Office in Inverness.

The functions of the SCC are:

- Manage the strategic level of response to the incident.
- Relieve the load on the Dounreay site, by taking responsibility for all activities not directly concerned with rectifying the situation.
- Provide a central liaison and information exchange point for the multi agencies.
- Ensure that an adequate flow of information and specialist technical advice on the incident is provided to the emergency services, local and central government, responder organisations, and to the media and public.
- Management of the Media Briefing Centre.
- Provide co-ordination of the off-site radiological and other monitoring activities.

The Strategic Coordinating Group (SCG) will review and formulate the overall strategy with regard to incident/emergency management and recovery. The Scientific Technical Advice Cell (STAC) will feed into the SCG by providing advice on what is known to have happened, have made a prognosis on how the incident may develop and provide countermeasures advice.

#### 5.5.5 **Emergency Radiological Incident Centre (ERIC)**

ERIC co-ordinates the Health Physics support for the site and provide advice primarily to the SECC team. It is manned with a combination of trained Health Physics professionals and support staff. During silent hours the shift Health Physics team is supported by a Health Physics on-call team. The main functions of ERIC are:

- Co-ordinates the Health Physics resource on site.
- Implements and co-ordinates off-site radiological monitoring.
- Collate and evaluate radiological data and information from on and off-site.
- Assess the nature and extent of any radiological releases.
- Provide countermeasure advice to SECC.
- Provide advice and support to the SICC.

To enable off-site monitoring, dedicated vehicles are deployed with Health Physics teams to undertake air sampling, dose rate and contamination measurements at locations identified by the ERIC Health Physics assessing team.

#### 5.5.6 **Personnel Accountancy – Local Assembly Points / Personnel Accountancy Co-ordinating Offices (PACO)/ Personnel Accountancy Bureau (PAB)**

Local Assembly Points (LAP) are designated areas within a building where personnel assemble in the event of an emergency. The nominal role for the building is checked and missing or surplus persons identified. When the site alert has sounded this information is sent to the identified Personnel Accountancy Co-ordinating Office (PACO) for the building. Supplies of site emergency respirators are held at all assembly points.

The PACOs identify all missing and surplus personnel and pass this information to the Personnel Accountancy Bureau (PAB). The PAB is a dedicated facility. The functions of PAB are:

- To reconcile all missing and surplus persons information to identify any outstanding missing persons.
- Report accountancy information to SECC.

#### 5.5.7 **Criticality Evacuation Centres (CECs)**

In the event of a criticality incident, personnel within the Criticality Evacuation Zone (CEZ) evacuate to a Criticality Evacuation Centre. There are two CECs on site, their main functions are:

- To manage all personnel who evacuate from the CEZ.
- Accountancy of personnel.
- Identification of exposed personnel.
- Identification of the incident site and gathering information of operations being undertaken.
- Welfare and safety of evacuated personnel.

#### 5.5.8 **Media Briefing Centre (MBC) and Forward Media Information Point (FMIP)**

Media briefings are undertaken in Inverness at the Media Briefing Centre (MBC). The MBC provides accommodation for press conferences, radio and TV interviews, and communication facilities for journalists. The MBC is controlled and managed by Police Scotland.

A Forward Media Information Point (FMIP) will be set up at an appropriate location and managed by DSRL. This facility provides basic information to the media.

#### 5.5.9 **Local Authority Emergency Centre (LAEC)**

The LAEC would assume the responsibilities of co-ordination from the SCC once the emergency phase is over. The main function of the LAEC is to co-ordinate the recovery phase of the incident. DSRL liaison and interactions with this centre will be dictated by the scale and scope of the recovery operations.

#### 5.5.10 **Force Incident Manager (FIM) at Culham Security/CNC Response**

The Force Incident Manager [FIM] is based at Culham and is the CNC Silver Command to the site in the event of a security incident. In a security related incident there will be a Bronze Commander who will take his direction from the FIM in conjunction with the Site Emergency Controller as required.

If a terrorist incident has, or is likely to result in, a radiological incident, the Site Emergency Controller will make management decisions based on the circumstances and information available provided by the CNC. A suspected terrorist incident means that the CNC will have initial primacy at the incident location and they will seek specialist guidance through the CoD Site Emergency Controller in the event of an incident with potential radiological implications.

Incident scene primacy will be formally handed over to Police Scotland at an appropriate time and in accordance with the Memorandum of Understanding between the Chief Constable CNC and the Chief Constable Police Scotland. Specialist guidance with respect to the incident scene will be sought through the Site Emergency Controller in the event of a radiological incident. A Security Advisor and CNC Liaison Officer are within the SECC to support the Site Emergency Controller as required.

At all times the Site Emergency Controller will maintain control of the site.

## **5.6 Specialist Services**

There are a number of specialist services that support the site's emergency arrangements either directly supporting incident mitigation and recovery or in assessing the effects of the incident.

### **5.6.1 Dounreay Fire Ambulance and Rescue Service (DFARS)**

The Dounreay Fire Ambulance and Rescue Service (DFARS) provide a full time service on site, 24 hours a day. The DFARS officers are trained and equipped to deal with a range of incidents. The DFARS uses a wide range of protective, radiation monitoring and rescue equipment. The ambulance is manned by qualified ambulance technicians who operate a range of life support equipment.

The DFARS would co-ordinate any fire fighting teams provided by Scottish Fire and Rescue Service.

### **5.6.2 Occupational Health Department (OHD)**

The Occupational Health Department (OHD) at Dounreay has trained medical staff capable of treating injuries. Nursing staff are on site during normal day working hours and are on call during silent hours.

The OHD has facilities which enable it to deal with contaminated personnel. Where a patient's clinical condition allows, decontamination in the OHD would be attempted before the patient was despatched to hospital.

If a medical practitioner certifies that a casualty has died on the Dounreay site, the Civil Nuclear Constabulary must be informed to enable the correct procedures to be invoked.

### **5.6.3 Civil Nuclear Constabulary (CNC)**

The Civil Nuclear Constabulary (CNC) has officers on site 24 hours a day. In the event of an incident occurring, these officers would assist in implementing the on-site emergency response plan.

The CNC would ensure security at Dounreay by controlling all site gates, and obtaining authorisation for entry and exit of persons to and from the site via the Site Emergency Controller in the SECC.

The CNC has a Memorandum of Understanding with Police Scotland to provide assistance where resources permit.

#### **5.6.4 Analytical Services**

Laboratories are available on the Dounreay site to provide analytical services to aid in the assessment of the radiological consequences arising from an emergency. These laboratories have sophisticated equipment for assessing both radiation and contamination levels. The laboratories can also undertake a range of analyses in support of a chemical incident.

#### **5.6.5 Meteorological Services**

Dounreay has a weather monitoring system which provides data with regard to wind direction and wind speed. Arrangements are also in place with the Meteorological Office to provide weather forecasts for the area.

#### **5.6.6 Dosimetry Services**

Dounreay has an approved dosimetry service on site able to provide a range of internal, external and emergency dosimetry. Berkley ADS are the Dounreay approved dosimetry service. They will provide dosimetry service support in the event of an emergency being declared at Dounreay.

#### **5.6.7 Explosives Ordnance Disposal [EOD]**

The EOD is a specialist regiment of the British Army's Royal Logistic Corps who are responsible for counter terrorist Explosive Ordnance Disposal (EOD) as well as the safe recovery or disposal of conventional munitions. Should there be a requirement to utilise their services, they would be contacted to support the site. The CNC would advise on cordons required for safe distances until such time as they arrived.

### **5.7 Emergency Equipment**

An adequate supply of emergency equipment, including breathing apparatus, protective clothing, communication equipment and Health Physics instrumentation is available to implement an appropriate emergency response.

### **5.8 Emergency Exposures**

When a Nuclear Off-site Emergency has been declared the Site Emergency Controller and the SICC Incident Controller are authorised to allow exposures in excess of the normal legal dose limits as detailed in the Ionising Radiations Regulations 1999. The exposure limits for these authorisations are given in the Dounreay Emergency Manual.

Emergency exposures will always be kept as low as reasonably practicable and will only be authorised for the purpose of saving life, helping endangered people, or preventing large numbers of people being exposed to ionising radiation.

### **5.9 Training**

All DSRL personnel with emergency duties receive specific training. All training is recorded and only trained personnel are appointed to emergency positions.



## **5.10 Exercises**

Regular emergency exercises are carried out as part of the overall emergency training programme. These exercises allow emergency arrangements to be tested to ensure their continued applicability. Certain exercises are demonstrated formally to the Office for Nuclear Regulation.

Dounreay has a requirement to hold one Level 1 exercise annually. A Level 1 exercise demonstrates the operational/bronze and tactical/silver level of control. This exercise is aimed primarily at demonstrating that Dounreay has adequate emergency arrangements to deal with a nuclear safety/counter terrorist incident. A level 1 exercise is demonstrated to the ONR.

Dounreay has a requirement to hold an annual site counter terrorist exercise. This exercise is aimed primarily as to demonstrate the immediate actions associated with successfully and expeditiously resolving a site based terrorist incident in order to assure the regulator as well as DSRL that the arrangements are robust.

The Local Authority as part of its emergency arrangements requirement under REPPiR are required to hold a Level 2 exercise every three years to demonstrate their role in the Dounreay Off-site plan. A Level 2 exercise demonstrates the co-ordination at strategic level of the off-site arrangements. The Dounreay site collaborates with the Local Authority in developing the exercise and also participates in the exercise.

Dounreay has an exercise programme which incorporates the above demonstration exercises, in addition to the Vulcan NRTE exercises and plant specific exercises.

## **6 COUNTERMEASURES ADVICE**

### **6.1 Detailed Emergency Planning Zone (DEPZ)**

A 1.15 kilometre radius Detailed Emergency Planning Zone (DEPZ) (Appendix B), the reference point of which is towards the centre of the Fuel Cycle Area, has been identified and agreed with the ONR as part of the Dounreay site REPPiR submission. Personnel within this zone are pre-issued with information on actions that may need to be taken in the event of an incident.

### **6.2 Implementation of Countermeasures**

If either the incident conditions or the assessments of the incident indicated that employees or the public were at risk then countermeasures would be implemented.

On the Dounreay site the Site Emergency Controller taking advice from the ERIC assessment team would authorise the implementation of countermeasures on the site. Countermeasures for the general public would be implemented by the Chief Constable Police Scotland (or deputy) taking advice initially from the Site Emergency Controller and later from the GTA once appointed.

## **6.3 Countermeasures**

There are a number of different countermeasures that can be implemented during an emergency dependent on the incident and the risks involved.

### **6.3.1 Sheltering**

Personnel would be advised to stay indoors, close doors and windows, and follow the advice given. Sheltering reduces the risk from exposure to direct radiation and the inhalation of radioactive material. This countermeasure is automatically implemented on the Dounreay site on the sounding of the site alert.

### **6.3.2 Stable Iodine Tablets (SITs)**

SITs minimise the effects of any intake of radioactive iodine from the passage of the plume. These tablets work by ‘flooding’ the thyroid gland with non-radioactive iodine so that there is no room left for the uptake of radioactive iodine. As radioactive Iodine is associated with a release from an operational nuclear reactor the taking of SITs would be implemented on the Dounreay site following a reactor accident at the neighbouring Vulcan site.

### **6.3.3 Evacuation**

The removal of personnel from site and the public from area(s) around the site reduces or removes the risk of being exposed to high external dose rates and/or radioactivity or other toxic materials which are present as an airborne hazard or deposited on the ground. Evacuation of personnel may also be as a result of a terrorist attack/incident.

### **6.3.4 Lockdown**

Lockdown is a considered position which enhances the access control measures already in place, in the event of an actual, or suspected, unlawful intrusion, or other increase in risk to security. Following an assessment of the situation, lockdown may be initiated by the CNC Bronze or Silver Commander, the Site Shift Manager or the DSRL Controller of the Day.

The purpose of lockdown is to:

- Enhance security at times of increased risk
- Optimise the safety of personnel and;
- Minimise the movement of personnel to assist in the identification of suspected intruders.

### **6.3.5 Control of Contaminated or Potentially Contaminated Food Supplies**

Contaminated, or potentially contaminated, food supplies would be controlled in accordance with advice from, or under the statutory authority of, the Foods Standards Scotland (FSS), the Scottish Environment Protection Agency (SEPA), and the Scottish Government Directorate Enterprise, Environment and Innovation Directorate.

### 6.3.6 **Control of Contaminated or Potentially Contaminated Water Supplies**

Contaminated, or potentially contaminated, water supplies would be controlled by Highland Council and/or Scottish Water in accordance with advice from the Public Health England and/or the Scottish Environment Protection Agency.

## 7 **RESPONDING ORGANISATIONS**

### 7.1 **Introduction**

DSRL regularly liaises with the responding organisations to ensure that adequate arrangements are in place to protect the public if a Dounreay Nuclear Off-site Emergency were to be declared. The Dounreay Vulcan Off-Site Emergency Planning Group (DVOEPG) meets twice yearly and any issues which could affect the Emergency Plan are discussed.

If a Nuclear Off-site Emergency were to be declared, the site would notify Police Scotland, ONR, SEPA, Vulcan, ONR, Berkeley ADS and the NDA. Police Scotland would then be responsible for cascading the declaration status and the requirement to man the SCC to the responding organisations. The actions to be carried out by the responding organisations are detailed in the Dounreay Off-site Emergency Plan.

### 7.2 **Responding Organisations**

The site collaborates with the following organisations:

#### 7.2.1 **Food Standards Scotland**

In the response to an emergency, the Food Standards Scotland would lead the government in Scotland's response regarding food safety issues, assessing the impact of the emergency on the food chain and implementing any necessary countermeasures. Specific responsibilities are as follows:

- To determine the level of any contamination of the food chain.
- To take action to ensure that food contaminated to unacceptable levels does not enter the food chain, implementing, as necessary, restriction orders under the Food and Environment Protection Act (FEPA), 1985. FEPA orders are used to restrict the supply, movement or sale of produce from the affected area.
- To provide support, advice, information and guidance to Local Authorities, businesses and the public on the implications for food.
- To provide support and advice to the Scottish Government on request.
- To ensure that subsequent recovery arrangements take account of food safety issues.

#### 7.2.2 **Scottish Fire and Rescue Service (SFRS)**

The concerns of the SFRS are the saving of life in conjunction with other emergency services, the rescue of trapped casualties, tackling fire, released chemicals or other hazards, and assisting the police and ambulance services with casualty handling and recovery of bodies. The SFRS is also normally best placed to advise on the safety of

personnel of all agencies involved within the immediate incident area, and it will gather information on chemicals hazards via the UK databases, 'Chemdata' and 'Chemnet'.

If additional resources were required on the Dounreay site, the SFRS Emergency Plan would be implemented following a request from the Dounreay Fire Ambulance and Rescue Service (DFARS). Close co-operation is maintained with the SFRS, which trains and exercises with the DFARS. Arrangements exist for integrating the command structures of the DFARS and the SFRS.

### 7.2.3 **Highland Council**

The Highland Council develop and maintain the Dounreay Off-site Emergency Plan. They will assist in implementing any evacuation measures, including emergency housing, food, transport and social services. The Highland Council would co-ordinate and lead the recovery phase following an off-site emergency. Their operations would be co-ordinated from the Local Authority Emergency Centre (LAEC).

### 7.2.4 **Highland NHS Board**

Highland NHS Board is responsible for the overall assessment of health care needs of the population, and for arranging for these needs to be met. Highland NHS Board have the responsibility for the provision of Reception Centres following an evacuation.

### 7.2.5 **Maritime and Coastguard Agency**

In response to an incident, the Maritime and Coastguard Agency (MCA), as co-ordinators of civil maritime incidents, including search and rescue and counter pollution/salvage, would be able to provide a communications network for working with surface vessels, coastguard units, and search and rescue aircraft. The agency would also be able to provide maritime information, including tidal data. The MCA can be contacted through the Operations Room at Aberdeen Coastguard and can provide a Liaison Officer on scene to work with responding Authorities.

### 7.2.6 **Police Scotland**

Police Scotland is responsible for:

- The saving of life in conjunction with the other emergency services.
- Co-ordination of the emergency services and other organisations during the emergency phase of the incident at strategic level.
- The protection and preservation of the scene.
- The investigation of the incident in conjunction with the other investigatory bodies.
- The collation and dissemination of casualty information.
- Assisting Highland Council with the restoration of normality at the earliest opportunity.
- Initiating the cascade call-out system to alert other organisations.

### 7.2.7 **Office for Nuclear Regulation (ONR)**

The Office for Nuclear Regulation's major function and responsibilities in an emergency is:

- Investigate the circumstances of the emergency, and be satisfied that appropriate actions are being taken.
- Consider any implications for safety at other nuclear sites.
- Provide advice and guidance to Government Departments.
- Provide a Government Technical Adviser (GTA).

ONR Inspectors would be sent to the site and other locations as necessary in connection with these responsibilities.

### 7.2.8 **Public Health England (PHE) – Centre for Radiation, Chemical & Environmental Hazards (CRCE)**

Public Health England (PHE) would liaise with Dounreay management, government departments and the ONR, and provide advice as necessary on radiological protection. The PHE would co-ordinate environmental monitoring beyond 40km from Dounreay and would undertake independent assessments of any radiological hazards. The Radiation Protection Division (RPD) would also provide guidance on the criteria to be used in assessing the need for countermeasures.

The PHE would contribute to the Scientific Technical Advice Cell (STAC), Recovery Working Group (RWG) and other sub groups as appropriate. The PHE would undertake, in conjunction with other agencies, studies on the impact of the incident in the long term.

### 7.2.9 **Scottish Ambulance Service (SAS)**

If additional resources were required on the Dounreay site, the Scottish Ambulance Service Emergency Plan would be implemented by the Dounreay Fire Ambulance and Rescue Service. Close co-operation is maintained with members of the Scottish Ambulance Service who train with the DFARS.

### 7.2.10 **Scottish Environment Protection Agency (SEPA)**

SEPA is concerned with the overall environmental impact of any radioactive or other toxic release to the environment following an emergency. Specifically, SEPA would:

- Provide SEPA representatives at the SCG and STAC.
- Set up and staff the SEPA Emergency Control Centre.
- Provide advice on the environmental impact of a radiological incident to relevant organisations.
- Provide information on the environmental effects of the incident where appropriate.
- Advise on appropriate disposal of radioactive waste and, if appropriate, authorise such disposals.
- Determine if a breach of site authorisation has occurred and gather relevant information if necessary.

### **7.2.11 Scottish Government Enterprise, Environment and Innovation Directorate**

The Scottish Government Enterprise, Environment and Innovation Directorate lead the government response at national level.

The Scottish Government Resilience Room (known as SGORR) would be opened and would be the focal point for briefing Scottish Government ministers and officials and forwarding up to date information to United Kingdom government departments. The Department of Energy and Climate Change would also staff up. Departments and agencies with responsibilities for public health and safety in Scotland would be represented at the SGORR to co-ordinate the response of the Scottish Government. A press briefing centre and telephone enquiry point for members of the public would also be set up close to the SGORR in Edinburgh.

The Scottish Government is responsible for the formal appointment of a Government Technical Adviser (GTA) a senior member of the ONR, and the Senior Government Liaison Officer (SGLO) a senior civil servant in the Scottish Government. The GTA and SGLO would attend at the SCC as soon as possible. The GTA would give authoritative technical advice to Police Scotland and other external bodies on any actions necessary to protect the public.

SGORR would obtain most of its information about the emergency directly from the SCC when this centre was fully operational.

### **7.2.12 Scottish Government Rural Payments & Inspections Directorate (SGRPID)**

SGRPID are a directorate within the Director General – Enterprise, Environment and Innovation but for contingency planning purposes SGRPID would be the directorate responsible (in partnership with the Food Standards Scotland (FSS)) for any agricultural implications in any nuclear incident.

### **7.2.13 Scottish Water**

Scottish Water is responsible for monitoring water supplies and is advised by the Highland NHS Board on the need, if any, for restriction on consumption of water from the public supply. Scottish Water would implement any necessary restrictions on water supplies and provide alternative sources of supply when required. The Highland Council would be advised by Scottish Water and/or the Radiation Protection Division on the need for any restriction on the consumption of water from the private water supplies in the area.

### **7.2.14 RIMNET**

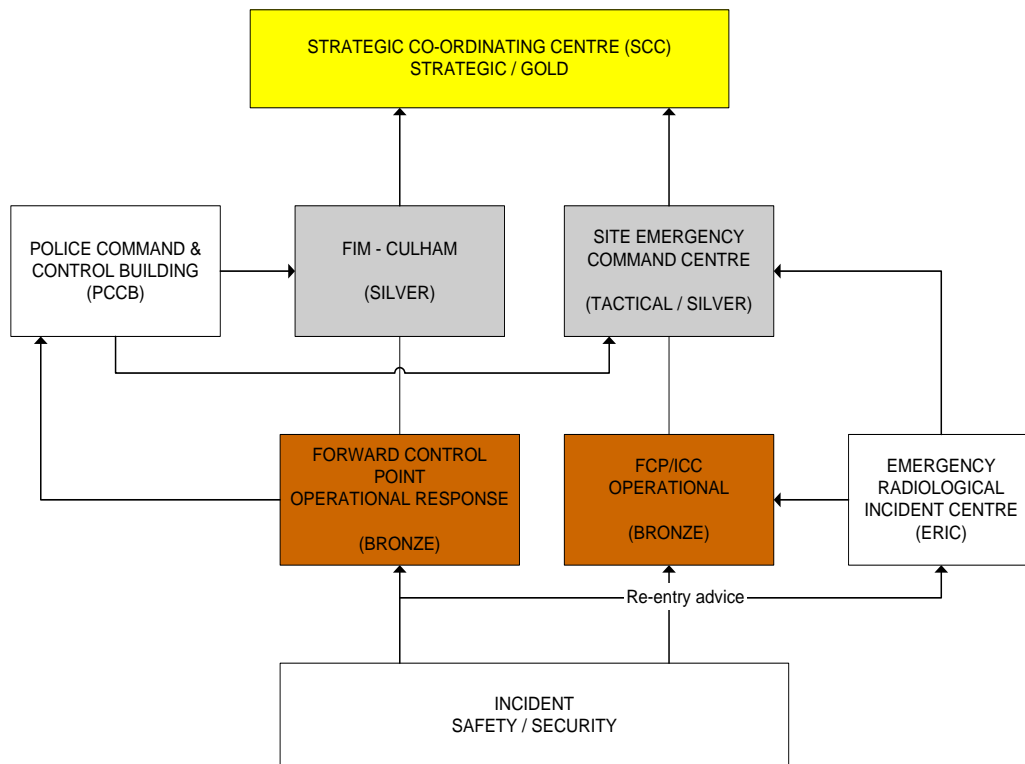
RIMNET, the Radioactive Incident Monitoring Network, is the UK radiation monitoring and nuclear emergency response system, set up as part of the National Response Plan following the Chernobyl accident. RIMNET supports all major radiological and nuclear accidents/incidents affecting the UK, including assisting the Department of Energy and Climate Change.

## **8 REVIEW AND UPDATE**

The DSRL Emergency Arrangements Manager is responsible for the preparation, issue and periodic review of the Emergency Plan. The Emergency Plan is approved by the Dounreay Site Safety Working Party and reviewed by the Dounreay Nuclear Safety and Environment Committee prior to being submitted to the ONR for approval.

The Emergency Plan shall be subject to review and where necessary revision at suitable intervals not exceeding three years.

## APPENDIX A – EMERGENCY ORGANISATION STRUCTURE



PCCB have a link via AIRWAVES with Bronze & CNC Liaison in SECC

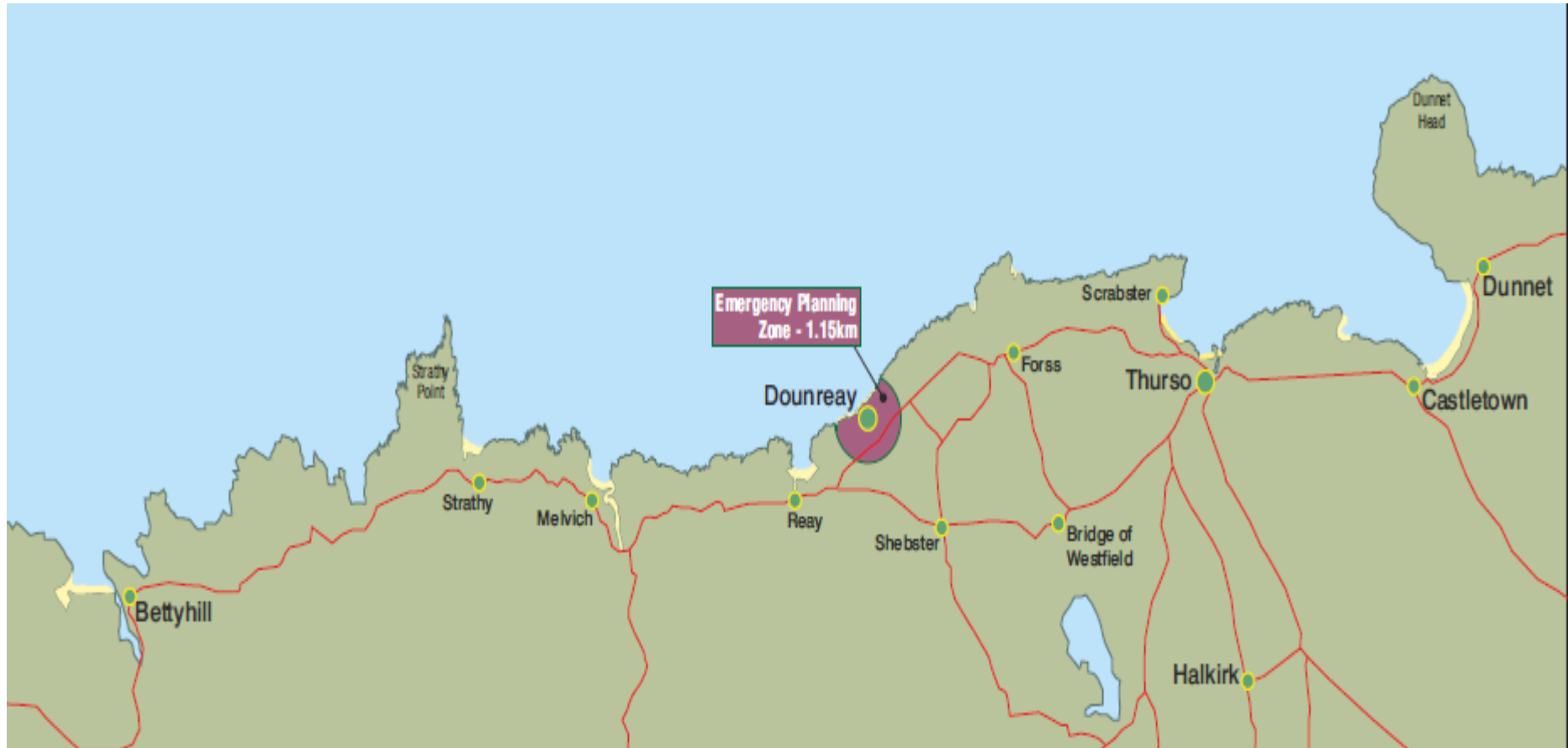
PCCB have an advisory link with FIM

SECC CNC Liaison have a link via AIRWAVES with FIM & Bronze

SECC CNC Liaison keep SEC informed



## APPENDIX B: DETAILED EMERGENCY PLANNING ZONE



## APPENDIX C: ABBREVIATIONS

CEC	Criticality Evacuation Centre
CEZ	Criticality Evacuation Zone
CIDAS	Criticality Incident Detection and Alarm System
CNC	Civil Nuclear Constabulary
DFARS	Dounreay Fire Ambulance and Rescue Service
DSRL	Dounreay Site Restoration Limited
DVOEPG	Dounreay Vulcan Off Site Emergency Planning Group
DEPZ	Detailed Emergency Planning Zone
ERIC	Emergency Radiological Incident Centre
FCP	Forward Control Point
FEPA	Food and Environment Protection Act
FIM	Force Incident Manager (CNC)
FMIP	Forward Media Information Point
FSS	Food Standards Scotland
GTA	Government Technical Adviser
HSE	Health and Safety Executive
ICC	Incident Control Centre
LAEC	Local Authority Emergency Centre
MBC	Media Briefing Centre
MCA	Maritime and Coastguard Agency
MoD	Ministry of Defence
NDA	Nuclear Decommissioning Authority
NRTE	Naval Reactor Test Establishment
NHS	National Health Service
PHE	Public Health England
OHD	Occupational Health Department
ONR	Office for Nuclear Regulation
ONR CNS	Office for Nuclear Regulation Civil Nuclear Security
PAB	Personnel Accountancy Bureau
PACO	Personnel Accountancy Co-ordinating Office
REPPIR	Radiation Emergency Preparedness and Public Information Regulations
RIMNET	Radioactive Incident Monitoring Network
RWG	Recovery Working Group
SAS	Scottish Ambulance Service
SCC	Strategic Co-ordinating Centre
SECC	Site Emergency Command Centre
SICC	Site Incident Control Centre
SFRS	Scottish Fire and Rescue Service
SGORR	Scottish Government Resilience Room

SGEEID	Scottish Government Directorate Enterprise, Environment and Innovation Directorate
SEPA	Scottish Environment Protection Agency
SGLO	Senior Government Liaison Officer
SITs	Stable Iodine Tablets
STAC	Scientific Technical Advice Cell