

Interim Guidance on the Regulation of In-situ Disposals of Radioactive Waste and Residual Radioactive Contamination on Nuclear Authorised Premises

Contents

1.1	Introduction	2
1.2	Site Wide Environmental Safety Case (SWESC)	2
1.3	Planning for Clean up & Revocation	3
1.4	Integrated Approach to Decommissioning and Clean Up	3
1.5	On-Going Site Regulation.....	3
1.6	Protection of the Water Environment	4
1.7	What is Radioactive Waste	4
1.8	Clean up of Leaks & Spills.....	5
1.9	Managing Off-Site Contamination.....	5
1.10	Restricted Use of Sites.....	5

1.1 Introduction

This Guidance is supplementary to SEPA's Part I Guidance on Revoking Authorisations and Cancelling Registrations Granted under the Radioactive Substances Act 1993 (RSA 93) which sets out SEPA's principles and expectations on revoking Authorisations granted under RSA 93. The Part I Guidance (http://www.sepa.org.uk/radioactive_substances/revocation_guidance.aspx) requires any Nuclear Authorisation Holder to return the Authorised Premises to a satisfactory state as soon as is reasonably practicable taking due account of the environmental impacts of all radioactive and non-radioactive substances.

1.1.1 This document is interim guidance pending the production of detailed Part II Guidance on Requirements for Revocation and summarises SEPA's current thinking on:

- the production and use of Site Wide Environmental Safety Cases (SWESC)
- managing residual radioactive contamination, both on and off the Nuclear Authorised Premises (which may correspond to the boundaries of a nuclear licensed site),

1.2 Site Wide Environmental Safety Case (SWESC)

1.2.1 SEPA has the regulatory responsibility to review the plans and programmes compiled by any Nuclear Authorisation Holder to assess their impact on the production of and disposal of radioactive waste. One of the key documents would be a Site Wide Environmental Safety Case (SWESC)

1.2.2 SEPA expects the Authorisation Holder to develop a SWESC. This must demonstrate that the radiological and non-radiological risks to people and the environment from all radioactive substances remaining on the Authorised Premises, and any radioactive substances that may have migrated beyond the Authorised Premises as result of activities on the Authorised Premises, are consistent with SEPA's regulatory requirements. SEPA expects that the SWESC will be periodically reviewed to take account of information that arises as clean-up of the Authorised Premises progresses. It is SEPA's expectation that when an application is made to revoke the Authorisation, it will be in accordance with and underpinned by a fully developed SWESC.

1.2.3 The SWESC will be the overarching control document, providing the justification for and substantiation of, the plans and programmes for how the Authorisation Holder manages residual radioactive contamination and any in-situ disposals of radioactive waste from now until such time as SEPA is satisfied that the Authorised Premises are no longer under SEPA's regulatory control. The SWESC will also need to take account of any, separately, authorised disposal facilities either on or close to the Authorised Premises.

1.2.4 Demonstration of optimisation must be included in the SWESC, together with an explanation how people and the environment are protected from the

risks posed by residual contamination/waste to air, land and the water environment.

1.2.5 Numerical requirements in the form of radiological risk and/or dose criteria will apply to the whole of the Authorised Premises, not just individual waste disposals or contaminated areas. Therefore, specific areas within the Authorised Premises may need to be cleaned-up to a more stringent degree to ensure the whole Authorised Premises complies with SEPA's revocation criteria.

1.2.6 In the event that the Authorisation Holder wishes to dispose of radioactive waste in a specific location upon the Authorised Premises, he may choose to develop a specific Environmental Safety Case (ESC) to support disposal at that location. In such circumstances, SEPA expects that any such location-specific ESC must be fully incorporated in the SWESC.

1.3 Planning for Clean-up & Revocation

1.3.1 In line with our Part I Guidance, SEPA expects the Authorisation Holder to return the Authorised Premises to a satisfactory state. Demonstration of this should be by means of a SWESC. Only after the Authorisation Holder has demonstrated in the SWESC that the Authorised Premises have been returned to a satisfactory state will SEPA revoke the Authorisation.

1.3.2 SEPA expects the Authorisation Holder to develop a SWESC as part of the development of plans for decommissioning and clean-up of the Authorised Premises. A SWESC should be considered at the earliest opportunity and not after decommissioning and clean-up is near to finishing or has finished. The level of detail to include in the SWESC will depend on the stage of decommissioning and clean-up work. SEPA expects more detail to be included in the SWESC as the planning for, and actual, decommissioning and clean-up work progresses.

1.4 Integrated Approach to Decommissioning and Clean Up

1.4.1 SEPA's Part I Guidance focuses on radioactive substances and revocation of RSA 93 authorisations. However, SEPA also has duties under other environmental legislation that are relevant to non-radioactive substances. SEPA will, therefore, be looking for Authorisation Holders to take a joined up approach to decommissioning and clean up and to take due account of non-radioactive and radioactive hazardous substances. This will ensure the Authorised Premises are returned to a satisfactory state for the purposes of all relevant legislation that the Authorisation Holder needs to comply with.

1.5 On-Going Site Regulation

1.5.1 As site decommissioning and clean-up progresses, SEPA does not expect to grant individual RSA 93 Authorisations on a project by project basis. Instead, we expect one RSA 93 Authorisation that covers the site as a whole. This means that there will be one application for revocation that assesses the radiological and/or non-radiological hazards associated with the whole of the Authorised Premises, not solely with individual contaminated structures or areas.

1.5.2 SEPA will continue to regulate the Authorised Premises until SEPA is satisfied that residual radiological risks and non-radiological hazards meet the requirements and criteria in SEPA's Part II Guidance (currently in development).

1.6 Protection of the Water Environment

1.6.1 The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) gives SEPA duties and powers to regulate:

- activities liable to cause pollution of the water environment,
- direct or indirect discharges of hazardous (which includes radioactive and non-radioactive) substances into the water environment, and
- any activity likely to cause direct or indirect discharge of any hazardous substances, to groundwater.

1.6.2 RSA 93 Authorisations are "relevant licences" under CAR and must comply with the requirements of CAR to prevent and limit pollution of the water environment (including groundwater). SEPA has, therefore, included conditions and limitations in RSA 93 Authorisation templates to require Authorisation Holders to clean up contamination by radioactive substances whose radiological or non-radiological properties pose a risk of pollution of the water environment.

1.6.3 SEPA will take appropriate regulatory action to control the management of radioactive and other non-radioactive/hazardous substances on nuclear sites if these controlled activities are found to be polluting, or are liable to pollute, the water environment.

1.7 What is Radioactive Waste

1.7.1 SEPA's Part I Guidance requires that the radiological risks arising from all radioactive substances, irrespective of whether they are waste, are taken into account when returning the site to a satisfactory state.

1.7.2 In so far as is consistent with its duties under RSA 93 and the Basic Safety Standards Direction placed on SEPA by the Scottish Ministers to ensure exposures of ionising radiation to members of the public are kept ALARA, SEPA seeks to achieve consistency between its regulation of radioactive waste and of non-radioactive waste.

1.7.3 All radioactive waste will need to be managed appropriately, and any remaining radioactive waste that falls within the scope of RSA 93 will require to be disposed of in accordance with an appropriate Authorisation. The decisions regarding the management of the waste should be informed and justified by the SWESC. It is not always clear which substances are classified as waste and the following paragraphs give guidance on this.

1.7.4 Directive 2008/98/EC ("the Waste Framework Directive") states:

- 1. The following shall be excluded from the scope of this Directive:*

(b) land (in situ) including unexcavated contaminated soil and buildings permanently connected with land;

- 1.7.5 Therefore, for the reasons set out in paragraph 1.7.4, unexcavated soils which contain radioactive substances above the “out of scope” values set out in RSA 93 are not radioactive waste; however, if excavation of these soils is necessary, then any excavated materials that fall within scope of RSA 93 are radioactive waste and must be managed as such.
- 1.7.6 Buildings or structures for which the Authorisation Holder has no further use and which are contaminated with radioactive substances to concentrations that are within scope of RSA 93 are radioactive waste and must be managed as such.
- 1.7.7 Below ground infrastructure (including, but not limited to pipelines, sumps and drains.) that is no longer in use, and which is contaminated with radioactive substances to levels that are within scope of RSA 93 are radioactive waste and must be managed as such. If the intention is to leave such waste in-situ, this will be considered a disposal and will need to be managed within the site-wide Authorisation referred to in paragraph 1.5.1. However, there is some scope for the Authorisation Holder to decide when the disposal will ultimately take place.

1.8 Clean up of Leaks & Spills

- 1.8.1 Where residual radioactive contamination arises by an unauthorised disposal, SEPA requires the Authorisation Holder to remediate that contamination.
- 1.8.2 Leaks and spills of radioactive waste to land and groundwater are unauthorised disposals and regulatory action can be taken as the disposal is a breach of Authorisation conditions.

1.9 Managing Off-Site Contamination

- 1.9.1 As specified in its Part I Guidance, SEPA will regulate radioactive and non-radioactive contamination beyond the Authorised Premises caused by the Authorisation Holder in the same way as we regulate radioactive and non-radioactive contamination on the Authorised Premises.
- 1.9.2 Contamination beyond the boundaries of the Authorised Premises must be dealt with prior to revocation and cleaned up to the same standards as any contamination that exists on the Authorised Premises.

1.10 Restricted Use of Sites

- 1.10.1 If an Authorisation Holder wishes to adopt the restricted site use approach advocated by IAEA (i.e. allowing sites to be used for a restricted use where the site dose constraint, with the restrictions in place, is less than 0.3mSv/a), this is unlikely to meet SEPA’s expectation that the site should be returned to a satisfactory state. Until SEPA is satisfied that the site has been returned to a satisfactory state, the Authorisation will remain in place which includes conditions and limitations that are proportionate to the radiological risks presented by the Authorised Premises.