

Guidance on decommissioning of non-nuclear facilities for radioactive substances activities

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2. Scope

This guidance applies to all authorised places that are not nuclear sites as defined in paragraph 4, Schedule 8 of EASR and is relevant throughout the lifetime of the authorised place, but is particularly relevant when an authorised person is decommissioning with a view to surrendering or partially surrendering their permit¹ entirely or reducing the footprint of the authorised place (for example removing a single laboratory without a permit variation) from use with radioactive substances activities. It outlines the actions that need to be taken so that the environment affected by the authorised activity is restored to a satisfactory state as required by the Environmental Authorisations (Scotland) Regulations (EASR) 2018.

3. Purpose of the guidance

The SEPA guidance document Principles on Surrendering Permits and Registrations under the Environmental Authorisations (Scotland) Regulations 2018² sets out five Principles and three related Expectations. These expectations are that you will:

- return the premises to a satisfactory state;
- do so as soon as is reasonably practicable; and
- engage early with SEPA and develop and maintain an open and transparent dialogue with stakeholders.

¹ For the purposes of this guidance the term “permit” is used to mean a registration or permit under EASR

² Principles on Surrendering Permits and Registrations under the Environmental Authorisations (Scotland) Regulations 2018

4. Decommissioning Plan

EASR Standard Condition B.8.1 requires that all authorised persons keep and maintain a waste management plan which includes a decommissioning plan. The decommissioning plan should be commensurate with the complexity of the facility and the radioactive substances activities carried out there.

The plan should include:

- A description of the facility, its operational history and identification of areas and equipment where radioactive substances are or may be present. For example, where sealed sources are held, areas which may be potentially contaminated by leaks or spills;
- An outline contamination monitoring protocol (not usually required for sealed source registrations, if leak testing demonstrates integrity of source);
- A description of how the facilities known to contain radioactivity will be decommissioned;
- The anticipated destinations (next user or disposal route) for all radioactive materials and wastes on the authorised place.

An outline of the decommissioning plan should be developed prior to the commencement of the radioactive substances activity and the decommissioning plan should be regularly reviewed and maintained throughout the operation of the facility. Preparing and reviewing such a plan will allow early identification of any issues that may arise. This will help minimize uncertainties at final decommissioning and the need for a lengthy and expensive monitoring plan.

For sealed source permits, we envisage a relatively simple decommissioning plan outlining plans for transfer or disposal of the sources when they are no longer required. For permits involving HASS sources, we expect regular review of the financial provision to ensure that it remains adequate for the disposal of any disused HASS sources.

5. Return to a satisfactory state

5.1 A Satisfactory State

EASR schedule 1 paragraph 14 (b) (iii) requires the authorised person to return the authorised place to a satisfactory state prior to surrender. EASR schedule 1 paragraph 17 provides the factors SEPA must have regards to in determining whether the environment affected by an activity has been restored to a satisfactory state. The high level principles outlined in our guidance² must be met such that following surrender or partial surrender, further radioactive substances regulation by us will not be required. In certain situations regulated by EASR, surrender may be contingent on conditions applied in a surrender notice.

5.2 Achieving a satisfactory state

Authorised persons are required to return their authorised places to a satisfactory state and demonstrate that this is the case before SEPA will grant surrender of the permit. We have set out what we consider is a satisfactory state for the majority of non-nuclear facilities.

The conditions for achieving a satisfactory state are:

- The whole body dose to any member of the public, including a future user on the authorised place will be 10 μ Sv per year from any radioactive contamination (or 300 μ Sv per year or less from NORM contamination³);
- No radioactive substances (material or waste) that require a permit to remain on the authorised place;
- No radioactive substances or contamination will be left on the authorised place that is likely to result in radioactive waste being generated in the future that will require regulatory approval to be disposed of; and
- There are no radioactive trefoils, markings or labelling remaining on the authorised place.

³ Strategy for the management of Naturally Occurring Radioactive Material (NORM) waste in the United Kingdom

5.3 Removal of radioactive substances

All radioactive substances being managed at the authorised place must be removed and their removal appropriately documented and recorded. All radioactive substances must be transferred to a person legally entitled to manage them or disposed of in accordance with your permit. Where radioactive substances have been transferred to another person we expect an acknowledgement of receipt to be provided to the authorised person and subsequently to SEPA as demonstration that the substances have been removed. Where the transfer involves HASS, a HASS Record must be submitted to us.

5.4 Remediation of radioactive contamination

SEPA expects authorised persons to use best practicable means to remediate any radioactive contamination in accordance with EASR Standard Condition B.5.1 and B.5.2, ideally, to a level that is indistinguishable from background levels of radioactivity. If this cannot be achieved, the contamination should be remediated to ensure that it cannot give rise to a whole body dose exceeding 10 μSv per year (or 300 μSv per year or less from NORM contamination). This is so that it will not require a future permit (for example, will a contaminated building generate radioactive waste if it is demolished that would require to be authorised in order to be disposed of). In cases where whole body dose limits cannot be met SEPA may consider partial or conditional surrender to be appropriate.

To demonstrate that these criteria have been met, it is appropriate to apply the “out of scope” values specified in Table 2 of Schedule 8 of the Environmental Authorisations (Scotland) Regulations 2018. SEPA will consider premises where these levels cannot be met on a case by case basis.

Special attention should be given to surface contamination. Although specific activity may be low, the surface contamination may still give doses exceeding 10 μSv per year (300 μSv per year for NORM industrial activities). We expect that any “loose” or mobile contamination will be removed.

5.5 Monitoring of Radioactive Contamination

Where only sealed sources have been used, appropriate leak testing of the sources will usually be sufficient to demonstrate that no contamination is present.

Where unsealed sources or radioactive waste have been present, or a sealed source has failed its leak test, we expect that best practicable means will be used to monitor the facility in order to demonstrate contamination is not present. Where contamination is found this should be remediated using best practicable means.

We expect that a written contamination monitoring protocol will be produced by the authorised person or their Radioactive Waste Adviser before the monitoring is carried out. The protocol will result in a consistent approach to monitoring and establish appropriate clearance criteria, based on the contamination present and the monitoring approach used. Further information is given in Appendix 1.

5.6 Removal of Radioactive Signage

All radioactive signage and labelling should be removed following the removal of radioactive substances authorised under permit and any contamination. All labelling and signage must be disposed of in an appropriate and responsible manner such that it cannot be interpreted as representing the presence of radioactivity.

5.7 Demonstrating return to a satisfactory state

Records kept for the purposes of demonstrating that all radioactive substances have been removed, as well as the contamination monitoring protocol and the results of the contamination monitoring, must be available for inspection or have been submitted as part of a surrender application. We may carry out an inspection, either physical or desk-based, as part of the surrender process or as part of a routine inspection, to confirm that a satisfactory state has been achieved.

6. Cleaning-up and monitoring as soon as is reasonably practicable

In addition to routine monitoring carried out in accordance with the permit, SEPA expects that facilities are monitored and cleaned-up as soon as is reasonably practicable after they have stopped being used in relation to radioactive substances with a view to decommissioning the facility. Prompt action is preferred as best use can be made of the knowledge of what radionuclides have been used, where they have been used and the uses they have been put to.

Delays in monitoring may also lead to delays in identifying contamination which may result in it becoming difficult to manage or it spreading and creating further contamination. Such spread of contamination may be considered a breach of the permit conditions.

For the reasons set out above, we also strongly recommend the progressive decommissioning of facilities as they fall out of use. This will also prevent an overly large contamination monitoring and disposal programme at the end of life of the authorised place.

7. Engage early with SEPA and develop and maintain an open and transparent dialogue with stakeholders

7.0 Engagement with SEPA

Early engagement with us should ensure that regulatory expectations are understood and avoid any unexpected requirements being imposed at a late stage. It is never too early to engage with us regarding the details of a decommissioning plan.

7.1 Engagement with other stakeholders

It is for the authorised person to decide what dialogue with other stakeholders is necessary and appropriate. For example, in some circumstances it may be appropriate to engage with the next users of the facility to be able to explain the decommissioning and monitoring that has been carried out.

8. Radioactive Substances Activities Following Surrender

Surrender of a permit does not prohibit the continued use of radioactive substances on the facility under the limitations and conditions of the EASR general binding rules. If radioactive substances are to remain on the premises under general binding rules, such items should be identified along with the relevant rules which apply to them. These records may be included in the surrender application to SEPA. Note that some activities may require formal notification to SEPA.

Appendix 1 - What should be included in a contamination monitoring protocol?

What is to be monitored?

Identify all areas where radioactive substances have been stored, used and disposed of. This may involve areas of the facility that have not been used for radioactive substances for some time, but for which there are no records to demonstrate that they have been appropriately decommissioned.

All fittings, equipment and containers associated with the storage, use and disposal of radioactive substances must be appropriately monitored. The protocol should consider the possibility that radioactive contamination has entered the fabric of the facility (walls, floors or ceilings), drainage pipework or extract systems, and propose appropriate monitoring strategies.

It may be appropriate to use recorded routine or previous contaminations surveys, such as those required by the permit, to eliminate an area from the need for monitoring. If this is proposed, the justification must be clearly documented and any limitations to that monitoring identified.

What radionuclides are being monitored for?

Specify the different radionuclides that have been present on the authorised place. It should be borne in mind that the list of potential radionuclides may include those which have not been used for some time, but which have relatively long half-lives (e.g. H-3, C-14).

Where short-lived radionuclides have been present, it may be appropriate to consider radioactive decay as a means of decontamination and minimising waste produced during decommissioning.

What equipment is being used?

Specify the monitoring methods to be used, and how measurements from the chosen instrument(s) relate to the relevant clearance criteria. Depending on the radionuclides used, it may be necessary to use swabs as well as direct measurement with appropriate contamination monitors.

Who will carry out the monitoring?

SEPA expects that monitoring will be carried out by a suitably qualified and experienced person. The complexity of the decommissioning project will determine the level of qualification and experience required. This person should be identified in the monitoring protocol.

Actions to be taken if contamination is found

The protocol should indicate what actions are to be taken should contamination be found. For example, suggest suitable decontamination options, add details of contamination found to the inventory of waste arising from the decommissioning project or seek further advice from the Radioactive Waste Adviser.

Recording of results

Details of how all monitoring results will be recorded and the location where the results and any associated reports will be stored.