



Exemption guidance

Waste sealed radioactive sources

**September 2011
Version 1**

**Radioactive Substances Act 1993
The Environmental Permitting (England and Wales)
(Amendment) Regulations 2011**

Waste sealed sources GUIDANCE

Version 1.0
September 2011

1 General questions

What is a sealed source?

For the purposes of exemption, a sealed source is defined as a radioactive source containing radioactive material where the structure is designed to prevent, under normal use, any dispersion of radioactive substances, excluding such a source where it is an electrodeposited source or a tritium foil source.

Guidance on dealing with sealed sources which are leaking is given in section 2 below.

What is a waste sealed source?

“Waste” and “radioactive waste” are defined in the relevant Regulations above. A sealed source which is no longer used or intended to be used for the practice for which the permit was granted is likely to be a waste sealed source.

Examples of waste sealed sources could include, for example:

- industrial radiography sources which have become too weak to use for the type of radiography undertaken;
- industrial gauges installed in a manufacturing facility where the owner has gone out of business;
- sources installed in obsolete equipment;
- sources significantly beyond their recommended working life;
- “spare sources” with no realistic prospect of them being used.

The Regulations specify that where any substance arising from the production, keeping and use of radioactive material is (i) accumulated on a part of the premises “appropriated for the purpose” and (ii) kept there for more than three months, the substance is presumed to be radioactive waste unless the contrary is proved.

Who is this guidance for?

This guidance is for businesses and other organisations that have kept and used sealed sources and mobile radioactive apparatus, under the conditions of a permit or an exemption, and where those sources have now become waste.

This guidance is aimed at holders of waste sealed sources which, before they became waste, were held under the terms of a permit for keeping and use. This guidance applies equally to fixed sealed sources and to mobile radioactive apparatus, when they become waste.

This guidance is not for organisations which receive waste sealed sources for the purposes of storage, dismantling, recovery or disposal – such organisations are not exempt and must hold a permit to carry out these

activities (unless they are receiving and disposing of them mixed with ordinary refuse – see separate guidance).

Separate guidance is available to cover small sealed sources which are exempt from permitting, and which when they become waste, can also be disposed of by other routes.

Does it apply in England, Wales, Scotland and Northern Ireland?

Yes. The requirements are the same across the UK.

Where can I get more advice?

From an appropriate adviser, eg a suitable Radioactive Waste Adviser or Radiation Protection Adviser. Or from the environment agency which regulates your premises.

2 Accumulation of waste sealed sources

How much waste can I create?

You can only accumulate waste sealed sources under the exemption which have previously been kept and/or used by you under a permit or other exemption. Note that if you have received waste sources for the purposes of disposal, you cannot use the exemption.

For large sealed sources (above the limits in Table 3.2 of Government Guidance, which require a permit for their keeping or use), there is no limit on the number of waste sealed sources, individual source activity or total activity held on the premises. Once a sealed source becomes waste, it is no longer subject to the conditions of the permit for keeping or use, and is regulated under the terms of this exemption; thus waste sources no longer count against the maximum holdings specified on the keeping or use permit. Stockpiles of waste sealed sources must not be allowed to build up; the conditions in the Regulations prevent this.

For small sealed sources which are exempt from permitting for keeping and use (eg. sealed sources which are individually less than 4 MBq), there is a ceiling on the maximum activity of radioactive material and waste which can be held on the premises at any one time (eg. 200 MBq for small sealed sources) – see separate guidance.

Can I store waste sealed sources?

When a sealed source or mobile radioactive apparatus becomes waste, it should be disposed of as soon as reasonably practicable. You can store waste sealed sources for up to 26 weeks while the disposal is being arranged, unless the environmental regulator advises in writing that a longer period of accumulation is acceptable.

Regulators can agree a longer period of exempt storage in cases where operational needs make this reasonably practicable. For example the disposal company is unexpectedly unable to accept the waste within 26 weeks for technical reasons. The intention is not to allow long periods of exemption of sources held for decay or for routine disposals.

Can I store waste sealed sources to allow them to decay?

You can store waste sealed sources for the purposes of decay if a reasonable reduction in activity can be achieved in the 26 week period and this makes the subsequent management of the waste easier.

Can I store waste sealed sources to make disposal more cost effective?

It is not acceptable to store waste sealed sources for the sole purpose of deferring the cost of disposal to the future. Users of sealed sources must anticipate the end of life of their sources, plan a disposal route and budget for the costs of disposal.

However, it is recognised that a moderate period of storage (normally within the 26 week maximum accumulation time) may make disposal more cost effective, for example to allow a full load to be made up for transport, or in order to optimise contractual arrangements with waste disposal companies.

In the case of High-activity Sealed Sources (HASS) where there is a take back agreement or financial provision to cover the costs of disposal, it is unlikely that the environmental regulator would grant an extension to the 26 week period.

How should waste sealed sources be stored?

Waste sealed sources should be stored in a dedicated store which is suitable for the purpose, and which does not produce an unacceptable radiation dose to people on the premises.

The store where the waste sealed sources are held must be secure in order to prevent accidental removal, loss or theft of the sources. In order to prevent fire damage to the sources and risk of loss of containment, stores should be fire resistant.

Each waste sealed source should be stored in a suitable container. Containers must not be modified or damaged, and must be such as to prevent the release of the radioactive waste from the container.

The same standards of security and storage as when the source was in use must be applied while it is being accumulated as waste.

What other conditions do I need to comply with during storage?

The container housing the waste sealed source should be marked or labelled as radioactive and should have a label giving details of the source inside (radionuclide, activity, reference date, source ID number).

Records must be maintained of each waste sealed source under accumulation, giving details of the source, when it was declared waste, its location on the premises and, when disposed, the date and destination of the disposal. The environmental regulator must be allowed access to these records on request to enable compliance with the conditions of exemption to be determined.

Regular inventory checks of the waste sealed sources in the waste store should be conducted, or other means used to confirm the presence of the sources in the store.

Are there any special requirements for accumulation of waste HASS?

The permit for keeping and use of the HASS contains a condition requiring you to notify the environmental regulator when you start to accumulate the HASS as a waste source under the exemption provisions. This notification should be made in writing at least 7 days in advance, or as agreed in writing with the environmental regulator.

Financial or non-financial provision, and the plan for end-of-life management and disposal of the HASS, must continue to be maintained during the period of accumulation of the waste HASS.

What should I do if I have an incident or lose a waste sealed source?

If a waste sealed source or waste mobile radioactive apparatus is lost or stolen, or is suspected to have been lost or stolen, you must notify the incident to the environmental regulator (using its incident hot line number) as soon as practicable (usually within 24 hours at the latest). The notification must include details of any other losses or thefts (or suspected losses or thefts) in the preceding 12 months.

In the case of small waste sealed sources, this notification is only necessary if the activity in the waste source(s) that has been lost or stolen (or suspected to have been lost or stolen) in the incident exceeds 10 times the value in column 2 of Table 3.1 in the Government Guidance; or the total amount of radioactive material or waste lost or stolen (or suspected to have been lost or stolen) in any incident in the preceding 12 months exceeds that value.

What should I do if a sealed source is leaking?

If there is minor damage to a source arising from the normal processes of use, which might appear as a failed leak test and some minor contamination inside the source's container, then the user could continue to use the provisions of

the exemption for waste sealed sources. However, the waste recipient should be informed of the condition of the source before it is dispatched to them.

At the other end of the spectrum, if a source is mutilated and damaged beyond what would reasonably be expected to occur as a result of its normal use, for example if it has been crushed or deformed to a degree that is visually obvious, or there are clear indications that the radioactive material is escaping, then it would no longer meet the definition of a sealed source, and the exemption provisions would not apply.

Circumstances between these two extremes may be difficult to determine. Users are encouraged to undertake multiple leak tests where they suspect that some integrity may have been lost. Perhaps more importantly, and where radiation protection considerations allow, the source should be visually examined, using high resolution camera equipment, on a periodic basis to check for signs of degradation.

Advice can be sought from the regulator in cases where it is unclear whether the source meets the definition of a sealed source.

3 Disposal of waste sealed sources

How can I dispose of waste sealed sources?

Any waste sealed source can be disposed of by transferring it to:

- a person who holds a permit to accept radioactive waste sealed sources of the same type (a “waste permitted person” in the Regulations); or
- a nuclear site licensee; or
- a person in another State who is lawfully entitled to receive such waste.

Typically waste sealed sources are disposed of to specialist radioactive waste disposal companies or to source suppliers who offer a service to their customers. In both such cases, the recipient of the waste must have a permit for the receipt, accumulation and disposal of waste sealed sources. You can only legally send an exempt waste sealed source above the levels specified in Table 3.2 of Government Guidance to a person of the type listed above.

Suppliers of sealed sources offering to take old sources who do not satisfy one of the three requirements specified above can only trade in radioactive material which is suitable for direct resale and reuse – you may be requested to demonstrate your criteria for judgement of sources as material and not waste. This would include your procedures and records so that we can see that all sources received are subject to appropriate checks on suitability for reuse and that the large majority of them are actually reused. Such sources would need to be included on your permit to keep or use radioactive material.

Can I receive waste sealed sources from other people for onward disposal?

No, not under these exemption provisions. If you receive waste sealed sources from another organisation, even though the original user is exempt when dispatching the source, you must hold a permit to receive and deal with them, even if they are small sources. The only exception here is if you are a waste management business which receives small sealed sources in ordinary refuse for recovery or disposal by you (ie. the sources have already been subject to dustbin disposal by the user – see separate guidance).

What other conditions do I need to comply with when I dispose of waste sealed sources?

You must keep a record of disposal of each waste sealed source, including the source ID number, radionuclide, activity, date of disposal and person to whom it was transferred. Records of sealed sources disposed of must be retained for at least four years after the permit under which they were held for keeping and use is surrendered (in England and Wales) or cancelled (in Scotland and Northern Ireland). The environmental regulator must be allowed access to these records on request to enable compliance with the conditions of exemption to be determined and can advise if appropriate.

When the waste sealed source is dispatched to the waste recipient, the container must be suitably labelled as radioactive and details of the source must be provided to the person receiving it, including radionuclide, activity, reference date, source ID number.

Are there any special requirements for disposing of waste HASS?

Yes. You must notify the details of the disposal of a waste HASS to the environmental regulator within 14 days of the disposal, using the HASS notification form appended to your permit for keeping and use of HASS.