



Exemption guidance

Very low level radioactive waste

**September 2011
Version 1**

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

1 General questions

What regulations apply to permitting radioactive substances in the UK?

The Environmental Permitting (England and Wales) (Amendment) Regulations 2011

Radioactive Substances Act 1993

The Radioactive Substances Exemption (Scotland) Order 2011

The Radioactive Substances Act 1993 Amendment (Scotland) Regulations 2011

The Radioactive Substances Exemption (Northern Ireland) Order 2011

The Radioactive Substances Act 1993 (Amendment) Regulations (Northern Ireland) 2011

What other guidance is available?

The UK Government and Devolved Administrations have issued guidance for environmental regulators and users of radioactive substances as follows: *Guidance on the Exemptions Framework under the Radioactive Substances Act 1993 and Schedule 23 to the Environmental Permitting (England and Wales) Regulations 2011.*

This document is one of a series of guidance documents issued by the environmental regulators to assist users in complying with the above regulations. They are available on the Environment Agency and SEPA web sites. The guidance is intended to apply to all parts of the UK. Because the regulations are different though, reference is made here to the tables in the Government Guidance to keep the text simple.

1 General questions

What is very low level waste?

Limited amounts of solid radioactive waste can be disposed of conveniently and without causing environmental harm provided that it is mixed with large quantities of non-radioactive waste which are themselves being disposed of. We call such waste very low level waste (VLLW) and for the purposes of exemption it meets the definitions in columns 1 and 2 of the following Table 1. Disposal of VLLW in this way is sometimes known as “dustbin disposal”.

Table 1

| Radioactive waste | Maximum concentration of radionuclides | Maximum quantity of waste to be disposed of per calendar year |
|--|---|---|
| Solid radioactive waste, with no single item > 4 x 10 ⁴ Bq | 4 x 10 ⁵ Bq for the sum of all radionuclides per 0.1m ³ | 2 x 10 ⁸ Bq/year |
| Solid radioactive waste containing tritium and C-14 only, with no single item > 4 x 10 ⁵ Bq | 4 x 10 ⁶ Bq of tritium and C-14 per 0.1m ³ | 2 x 10 ⁹ Bq/year |

VLLW can contain items of both types at their own separate limits, so VLLW is solid waste containing no single item of more than 40 kBq and concentrations no more than 400 kBq per 0.1 cubic metres for radionuclides other than H-3 and C-14 and no single item more than 400 kBq and concentrations no more than 4 MBq per 0.1 cubic metres of H-3 and C-14.

When assessing whether waste containing radionuclides which are the head of a decay chain are VLLW, the calculation should include only the head of the chain present, eg the activity of Cs-137 is used as the value for Cs-137 and Ba-137m.

VLLW is therefore solid waste containing no single item of more than 40 kBq and concentrations no more than 400 kBq per 0.1 cubic metres for radionuclides other than H-3 and C-14 and no single item more than 400 kBq and concentrations no more than 4 MBq per 0.1 cubic metres of H-3 and C-14.

VLLW typically arises from hospitals, research organisations and other premises using open sources of radioactivity and often comprises slightly contaminated equipment, clothing, etc. It can come from nuclear or non-nuclear sites.

The concentration of activity in VLLW is measured or assessed before mixing with other waste, eg before a container of radioactive waste is sent for landfill or a bag of radioactive waste is put into a skip of non-radioactive waste. The waste must be disposed of or sent for disposal with substantial quantities of non-radioactive waste, otherwise it needs permitting.

Who is this guidance for?

This guidance is intended to cover people who produce VLLW and those who receive it.

It does not apply to households, which are outside the controls.

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

Yes. The requirements are the same across the UK.

What does exemption from regulation mean?

Exempt means that no radioactive substances permit is required under EPR or RSA93 to accumulate and dispose of VLLW, or for receipt and disposal of the waste by a person who manages substantial quantities of non-radioactive waste by burial in landfill, incineration or recovery, provided that the conditions specified are met. In this context management of waste includes disposal, recovery or treatment.

New or varied open source permits will not have a VLLW condition unless the user cannot operate under the exemption provision, eg more than the maximum allowed quantities need be disposed of.

Who is responsible for deciding if VLLW is exempt?

The person or organisation responsible for the waste, eg a university producing VLLW.

Do I need to tell anyone I believe VLLW is exempt?

There is no need to inform the environment agencies. If the environment agencies become aware of failure to hold a permit when one is needed or failure to comply with exemption conditions, action will be taken to obtain compliance.

Where can I get more advice?

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

I have a permit with VLLW in it – am I exempt?

No. People with VLLW in their permit will continue to be subject to those conditions for as long as that permit remains in force. If users wish to be exempt they will need to have their permit changed or cancelled. This will occur anyway over time as permits are replaced.

Until 31 March 2012, applications to remove items from permits as a result of it becoming exempt are free of charge. After that a charge may be made.

3 Producing VLLW

How much exempt solid waste can I have at any time?

The term VLLW only really becomes relevant when waste is being disposed of; the limits in Table 3.3 of the Government Guidance are about disposal, not accumulation. So the amount of waste which can be accumulated for disposal

as VLLW is the same as for other open source solid wastes, and included in those limits.

Either you can have on the premises at any time, a total activity of solid waste plus other exempt waste (except sealed sources awaiting disposal) and exempt radioactive materials kept or used on the premises – this must not exceed the value specified in column 2 of Table 3.1 of the Government Guidance for any radionuclide (taking account of the summation rule for that table).

Or the maximum concentration of the solid waste must not be above the values in column 3 of Table 3.1 of the Government Guidance (taking account of the summation rule for that table). At the point of disposal, exempt VLLW must comply with the limits in Table 1 in this guidance (which is the same as the first two rows of Table 3.3 of the Government Guidance).

If you need to have more than this you must be permitted.

How much VLLW can I dispose of?

Limits on disposal of exempt VLLW are up to 200 MBq of radionuclides except H-3 and C-14 and 2GBq of H-3 and C-14 in a year. This is equivalent to 50 cubic metres per year of each type of VLLW at the maximum concentrations. Higher volumes can be disposed of if the concentrations are lower. Amounts above this need to be permitted.

Some organisations will have permits for disposal of solid radioactive waste and additionally dispose of exempt VLLW to the same place. It is recommended that consignments of permitted radioactive waste are not mixed with exempt VLLW (or other exempt waste) as that would introduce uncertainty about what waste is in which category.

How much VLLW can I receive for disposal?

Organisations which receive VLLW as part of substantial quantities of non-radioactive waste for disposal etc, can receive unlimited amounts of exempt VLLW and permitted VLLW. In practice waste disposal companies will often not be informed by waste consignors that their waste includes VLLW. The radiological assessment carried out for this waste type means that normal disposal or recycling arrangements are acceptable in these circumstances.

Some organisations (eg incinerators) receiving substantial quantities of non-radioactive waste also hold a permit to receive and dispose of radioactive waste. These organisations should not treat VLLW sent under the exemption as part of their radioactive waste receipts under the terms of their permits. Incinerators with permits to receive radioactive waste will need to continue to be certain they are complying with their permit conditions, such as concentrations of radionuclides in ash.

Can I store VLLW?

Yes within the limits described in the previous section, but if you hold a permit for keeping or use of open sources you will probably need a permit for accumulation of the resulting solid waste. You should dispose of accumulated waste as soon as reasonably practicable, which for VLLW generally means the next available waste collection. As a guide to what we believe is likely to be reasonably practicable, we do not expect you to store VLLW for more than two weeks unless you can demonstrate that it is not reasonably practicable to dispose of it within that time.

Radioactive waste containing short half-life radionuclides, which is above the activity levels for VLLW at the time of production, may be accumulated under the terms of a permit (not required by nuclear site licensees) and then disposed of as exempt VLLW once it decays to those levels. These permits will specify the maximum time for which the waste can be accumulated. Once waste reaches VLLW levels, you should be dispose of it as soon as reasonably practicable.

Organisations which receive VLLW as part of substantial quantities of non-radioactive waste for management (including treatment and disposal), should dispose of the VLLW in accordance with their permits for the non-radioactive waste as soon as reasonably practicable and dispersed in the non-radioactive waste. The VLLW should not be separated from other waste.

How should I dispose of my VLLW?

To a site where the organisation which receives it manages substantial quantities of non-radioactive waste. For example a landfill site, incinerator or waste transfer station.

Alternatively it may be disposed of to a person who holds a permit to receive it, for example a specialist radioactive waste contractor.

Organisations which receive VLLW as part of substantial quantities of non-radioactive waste for management, should dispose of the VLLW in accordance with their permits for the non-radioactive waste as soon as reasonably practicable and dispersed in the non-radioactive waste. The VLLW should not be separated from other waste.

Should I handle the VLLW the same as my other waste?

Exempt waste in the form of VLLW is subject to conventional waste legislation and the same standards and controls apply.

I receive VLLW from other people, are there special requirements on me?

Organisations which receive VLLW as part of substantial quantities of non-radioactive waste for disposal etc, are exempt from permitting provided they comply with the above conditions on storage and disposal.

Other organisations receiving VLLW will need to be permitted and comply with their permit conditions.

4 Conditions on exemption

Are there any conditions that I need to comply with?

If you produce exempt VLLW you will need to comply with all the conditions of the exemption, which include the need to:

- Keep adequate records;
- Remove radioactive labels before source disposal with ordinary refuse, where practicable;
- Allow the environmental regulator access to records / premises.

More information is given in the Government Guidance.

What do I do if I have an incident or lose some VLLW?

If you produce VLLW must notify the regulator as soon as practicable if:

- the amount of exempt radioactive substances 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 such substances lost or stolen (or suspected to have been lost or stolen) in the incident and in all other such incidents in the preceding 12 months exceeds that value.

The notification must include the details of any other losses or thefts (or suspected losses or thefts) in the preceding 12 months.

If you receive VLLW as part of receipt of substantial quantities of non-radioactive waste, you do not need to notify the regulator.