



Implementing the new exemption regime: A regulator's viewpoint

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- Summary of the changes affecting you
- Overview of the guidance
- What the regulators expect
- First thoughts on characterisation and sentencing guidance

- Gather feedback:
 - issues that would be helpful to address

EO Review package

- **Legislation – came into force 1 October 2011**

- The Environmental Permitting (England and Wales) (Amendment) Regulations 2011
SI 2043
- The Radioactive Substances Act 1993 Amendment (Scotland) Regulations 2011
SSI 207
- The Radioactive Substances Exemption (Scotland) Order 2011
SSI 147

Different across UK but same effect

- **Govt Guidance**

- single document jointly issued by Govt & devolved administrations

- **Regulators guidance**

- Jointly issued by the three Env Agencies

Transitional provisions

- Legislation came into force on 1 October 2011
- 6 months to comply with new EOs or apply for a permit if necessary
- If application is required, because previously exempt or out of scope, you will remain exempt or out of scope until your application has been determined
- If a permit (or part of it) is no longer needed – you may apply for a surrender/partial surrender/variation
- Can use existing EOs until 31 March 2012 but not a mixture of old and new for same waste type

Implementing the new regime?

- Who needs to do it?
- What do they need to do?
- To answer these questions we need to identify the changes

Most significant changes affecting you...

- The changes to the definition of radioactive material and radioactive waste
- Changes made for 2 reasons
 - To clarify situation – remove long standing issues
 - To make the legislation risk informed
 - Radionuclide specific “clearance” values

What is in and out of Scope

Inclusion
Criteria

1B
NORM industrial activity
> than table 2 values

1C
NORM used for
radioactive, fissile or fertile
properties
> table 3 values

1D
Artificial radionuclides
> table 3 values

Substance not
in any of these
categories

Not radioactive material
or radioactive waste,
i.e. Out of scope of
regulation

Substance falls
within one or
more of the
above
categories

Material only

Material or waste

Exclusion
Criteria

1G
Contaminated material
remaining on the
premises where it was
contaminated

1E
Short lived
radionuclides

1F
Artificial
background

1H
Contamination
arising from lawful
disposals

Substance not
in any of these
categories

Radioactive
Material
Or
Radioactive
Waste

Substance falls
within one of the
above
categories

Not radioactive material
or radioactive waste,
i.e. Out of scope of
regulation

SoLA and the new “out of scope” values

- The new “out of scope” values are the replacement to the SoLA exemption order
- Was 0.4 Bq/g
- Now range from 100 to 0.01 Bq/g
- This is the change with the biggest affect on your industry
- As such substances are now out of scope (not classed as radioactive), rather than exempt radioactive substances all other waste legislation applies

Transitional provisions – SoLA and “out of scope”

- Mixed impact on wastes previously captured by SoLA
- Those below out of scope levels as of 1 October are no longer classed as radioactive waste
 - Your EPR / RSA permit does not apply to them
 - Should not be consigned as radioactive
 - Recognise practical difficulties of re-characterising so will take a pragmatic view
 - Discuss with your inspector
- Some wastes previously captured by SoLA will now need to be disposed of in accordance with a permit
 - Can continue to use SoLA until 31 March 2012

Implementing the new out of scope values

- You need to comply with them and implement them into your management procedures
- We will check that you comply through routine inspection and audit

Other changes affecting you in the new exemptions?

- Keeping, use and accumulation is still exempt on nuclear sites
- Exemptions that relate to disposal may be relevant, in particular
 - LV VLLW is now exempt, no restrictions on which industries may use it
 - Aqueous liquid waste exemptions (there are restrictions on use)

LV - VLLW

<i>Radioactive waste</i>	<i>Maximum quantity or concentration of radionuclides</i>	<i>Maximum quantity of waste to be disposed of in the period stated</i>
Solid radioactive waste, with no single item > 4×10^4 Bq	4×10^5 Bq of all radionuclides (except tritium and C-14) per 0.1 m^3 .	2×10^8 Bq/year
Solid radioactive waste containing tritium and C-14 only, with no single item > 4×10^5 Bq	4×10^6 Bq of tritium and C-14 per 0.1 m^3	2×10^9 Bq/year

- The definition of LV VLLW used in the 2007 LLW Policy has been used in the legislation
- Note that the threshold between LV and HV is now defined by a total activity disposed of per year rather than a volume (= 50 m^3 at the maximum activity concentration)

Conditions

- Dispose of waste with normal refuse (for burial, incineration or recovery where the waste will be mixed with substantial quantities of non-radioactive waste)
 - Keep adequate records
 - Remove labelling where practicable if using “dustbin disposal”
 - Allow access to records
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- Additionally and importantly...
 - The exemption does not apply if waste has been diluted with the purpose of ensuring that it falls within scope of the exemptions

Other waste legislation

- Other waste legislation applies to exempt waste which is treated as “dustbin disposal”
- All the exemption says is that no special precautions are needed in respect of the radioactive properties – almost any route can be used if it is with substantial quantities of non-radioactive waste
- Exempt radioactive waste that is also “hazardous” should be treated like any other hazardous wastes

Transitional arrangements for LV-VLLW

- Depends on what your current permit says: conditions in permits take precedence over exemptions
- If LV VLLW is already included then debateable whether or not any benefit in having it removed
- If VLLW included in a different form, e.g. excluding alpha emitters, may be beneficial to surrender that permitted disposal and make use of exemption
- If not included, then should be able to make use of exemption straight away.
- In all cases, good practice to discuss with you inspector

Implementing LV VLLW on nuclear sites

- You have to decide what you want to do
- We will work with you to change your permit if requested to do so
- You must comply with the permit or exemption conditions
- We will check compliance

Aqueous radioactive waste

- Possible the most complex part of the exemption regime.....

.....Unless you are permitted to discharge aqueous radioactive waste

- In this case the exemptions are not available for you to use.
- However, if you want to make use of the provisions they can be varied into your permit

Aqueous Waste

- If you want something equivalent to the aqueous waste exemptions included in your permit then you must apply for a variation
- Government guidance states that regulators should rely on government's assessments carried out as part of the EO review; making the process more straightforward.
- As always discuss with your inspector

Guidance

Guidance

- 2 sets of guidance
 - Government guidance
 - Joint Regulators guidance
- Government has issued guidance regarding what the intentions of the legislation are
 - Aimed at regulators and users
- Environment agencies will issue “how to comply” guidance
 - Targeted at specific sectors

Regulators guidance

- General introduction to use of exemptions
- NORM industrial activities
- remediation of radium contaminated land
- Smoke detectors
- GTLDs
- Schools
- Small sealed sources
- Hospitals
- Small amounts of U & Th
- Luminous articles, inc. clocks and watches
- Lamps
- Valves
- **Characterisation and sentencing of solid wastes**
- Aqueous wastes and adventitious gaseous releases
- Storage in transit
- Waste sealed sources
- VLLW
- Small amounts of open source activities
- Advice to suppliers of exempt articles
- Museums and geological specimen collections

Characterisation and sentencing

Includes averaging and sampling

Introduction

- The regulatory guidance on this topic is still in preparation
- It will be consulted on widely and will specifically include CEWG & NILG
- Please consider this presentation as the start of discussions

Why do we need this guidance?

- Good question!
- New exemption regime has changed out of scope values, but nothing new in relation to how you should go about characterising waste
- Opportunity to try and provide guidance on some long standing issues
- Unlikely to say very much that is “new”, it will consolidate existing guidance and put it into context of characterisation

Overarching Principles

- Use common sense!
- Keep radiation exposures to public ALARA
 - Underpinned by our BAT/BPM requirements
- Preferred use of concentrate and contain vs dilute and disperse
- Consideration of waste hierarchy

principles

- The quantity of waste in mass/volume terms that is sentenced for disposal (as opposed to recovery) should be minimised but the activity maximised
 - Contamination should be removed where practicable to do so
 - Waste should be segregated into different categories and types where it is practicable to do so

Sentencing

- Sentencing decisions should be based on and supported by appropriate information and evidence
- Sentencing decisions should be supported by appropriate records.

First considerations

- Is the waste radioactive?
- What radionuclides does it contain?
- What is the concentration and/or total activity?
- Does it have any other characteristics that might affect its fate?

Use BAT to characterise waste

- Requirement to use BAT means thinking carefully about what is proportionate and what is best practice
- Gather relevant information so that informed decisions about appropriate monitoring can be made and justified
- Do not rush to pick up a monitor or take samples

History and provenance is key

- Very few wastes where you don't know anything
- Consider the history and provenance of the waste
- Where and how has it been generated?
- Is there the possibility of contamination, if so how?
 - Activation
 - Adsorption
 - Absorption
 - Admixture
 - Internal or external contamination
 - Heterogeneous or homogeneous
- Consider info on similar wastes
- Can accountancy be relied upon?

Select an appropriate monitoring technique

- Important that limitations and uncertainties associated with monitoring techniques are understood
- Can it detect what you are looking for?
- Is the LoD good enough?
- Don't have to measure everything can rely on fingerprinting

Select an appropriate sampling strategy

- If you can't monitor everything you will have to take samples
- Understand why samples are being taken – to characterise waste or to confirm assumptions
- More confidence that exists regarding characteristics of waste less sampling that is required

Considerations for averaging

Is averaging dilution?

Dilution and averaging

- Dilution to meet particular thresholds (e.g. out of scope, exempt, LLW) is not allowed
but
- Dilution that takes place as part of normal management and conditioning is permissible
 - Operator must be able to justify why dilution is necessary
- Waste activity concentrations should be calculated when sentencing the waste.
- Dilution may be possible or even desirable after sentencing decision made
- Preferred use of concentrate and contain vs dilute and disperse

Contaminated items

- Contaminated substances should be broken down to smallest practicable constituent parts prior to averaging.
- If a large item has contamination in one small section, the contamination should be averaged over the contaminated area not the whole item, unless good reason not to

Being proportionate

- The potential fate/next use/disposal option being considered is a legitimate consideration in deciding what is an appropriate volume or mass to average over and whether this is practicable. e.g
- item sent for free release - then the potential for public contact with a “hotspot” should be considered or break up of the item giving rise to currently inaccessible contamination.
- bulk metal item being recycled - associated radioactive substances will be homogenised or separated out then a more relaxed approach to averaging could be appropriate.

Dealing with background

What is distinguishable from background?

- Depends on what the radionuclide is
- Some of clearance values, particularly NORM radionuclides, impossible to distinguish
- Operator must make a case based on variability of background.
- May help to demonstrate contamination not removable

Questions