



Revised Exemption Orders : A new era for clearance of radioactive waste?

Steve Chandler, Dept of Energy & Climate Change
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The new legislation

- ⚠ The Environmental Permitting (England and Wales) (Amendment) Regulations 2011 (SI 2011 No. 2043)
- ⚠ The Radioactive Substances Act 1993 Amendment (Scotland) Regulations 2011 (SSI 2011 No. 207)
- ⚠ The Radioactive Substances Exemption (Scotland) Order 2011 (SSI 2011 No. 147)
- ⚠ The Radioactive Substances Act 1993 (Amendment) Regulations (Northern Ireland) 2011 (SR&O 2011 No. 290)
- ⚠ The Radioactive Substances Exemption (Northern Ireland) Order 2011 (SR&O 2011 No. 289)

The new guidance

- ! One Government Guidance document (same throughout UK)
- ! One set Regulators' Guidance documents (same throughout UK)
- ! Industry guidance may follow... (e.g. NiCOP)
- ! Not perfect but better!

Scope (RSA/EPR)

Radioactive material & waste

- ❗ Substance only radioactive material/waste (“in scope”) if from one of these categories:
 - § NORM industrial activities
 - § “Practices” using NORM
 - § “Practices” using artificial radionuclides

- ❗ Radionuclide activity thresholds for each category to determine if “out of scope”

NORM Industrial Activities

- i Industrial activities in 2 parts (Govt Guidance pg. 18);
 - § Part I - products and waste in scope (use of uranium and thorium)
 - § Part II – only wastes in scope (extraction of metals, oil & gas etc)

Scope of Legislation

i Activity thresholds:

- § Solids, liquids and gases from NORM Industrial Activities - RP122 part 2 (300 $\mu\text{Sv}/\text{y}$)
- § Solids and "relevant liquids" from practices - RP122 part 1 (10 $\mu\text{Sv}/\text{y}$)

["relevant liquids" – those that will be treated as solids

- Non-aqueous liquids
- Certain highly toxic aqueous liquids]

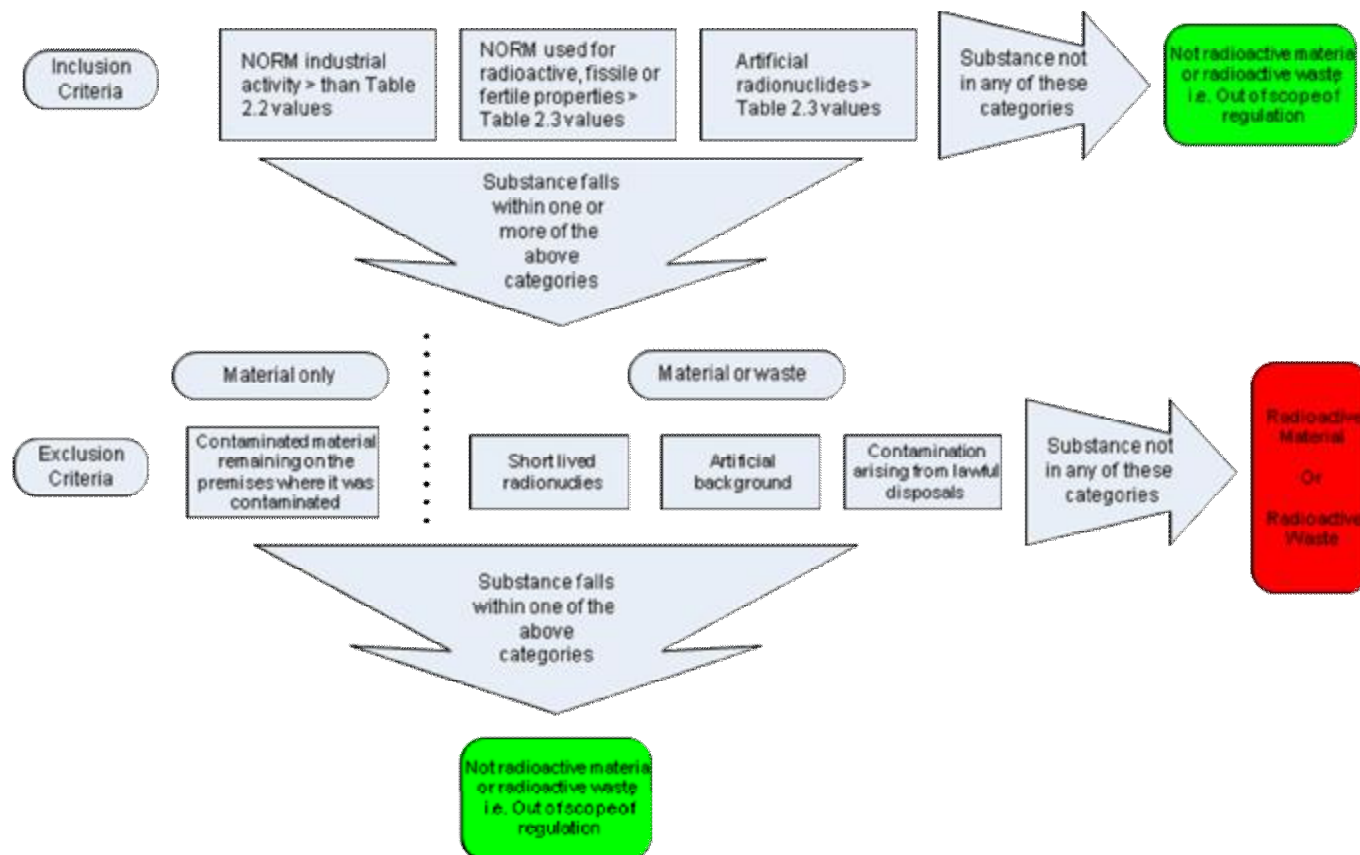
Out of scope?

- ⓘ < 100 s half-life (all media)
- ⓘ Artificial background (eg weapons fallout)
- ⓘ Previous lawful disposal
- ⓘ Contamination on the premises (material only)

- ⓘ If in scope, then check whether could be exempt from permitting

To Summarise...

Government Guidance, pg. 26



Conditional Exemptions (RSA EO /EPR)

Exemptions Framework

- ! Exemption levels:
 - § for keeping & use (BSSD reporting values)
 - § for keeping & use (specific items e.g. GTLDs)
 - § for disposal of substances/articles
 - § For disposals of bulk NORM
 - § for aqueous liquid disposals
 - § for gaseous disposals
- ! Provisions for mobile apparatus, waste accumulation & storage in transit

Conditions

- ⌚ Adequate record-keeping
- ⌚ Secure storage
- ⌚ Labelling (and removal) where appropriate
- ⌚ Notification of loss/theft to environmental regulators
- ⌚ Prevent unnecessary modification/mutilation
- ⌚ Avoid dilution
- ⌚ Allow access to records/premises to the environmental regulators
- ⌚ Some similarities for different media & different purposes but also media & use specific

What do you want to do?

Where do you need to look?

Keeping, use and accumulation

Material

Table 3.2 of the Govt Guidance
Exemption for specified substances and items, e.g. sealed sources, GTLDs, U & Th compounds, radionuclides for medical + vet use

Table 3.1 of the Govt Guidance
Exemption for unsealed sources not specified in Table 3.2

Para 3.64 and 3.132 of Govt Guidance
Accumulation of sealed sources, electrodeposited sources and trit foil sources

Waste

Disposal

Solid

Table 3.3 of Govt Guidance
Exempt solid and some aqueous liquid wastes

Para 3.130 – 3.142 of Govt Guidance
Disposal of sealed sources, electrodeposited sources and trit foil sources

**Para 3.142-3.153 (100 Bq/ml to sewer)
OR
3.165-3.183 & Table 3.4 (low conc aqueous liquid waste to sewer, river or sea)**

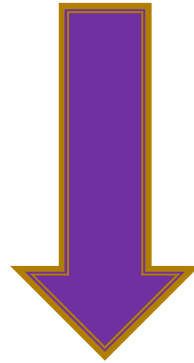
Aqueous Liquid

Gas

Para 3.184 – 3.192 of Govt Guidance
Disposal of Kr-85 and small releases when opening containers

Solid Waste Disposal

(Former) Schedule 1 + SoLA + PSRE
(+ *other provisions*)



(Now) "Out of scope" levels + VLLW definition +
NORM waste
(+ *other provisions*)

Impact on Waste Disposal

- ❗ Waste management practices should not change; procedures may do
- ❗ Some winners, some losers, but more robust underpinning
- ❗ Further controls on NORM waste but radiological impact assessment indicates they are needed
- ❗ Places LLW policy in exemption regime
- ❗ Guidance helps with issues around background & measurement

Treatment of NORM waste

- ! Definition relates to UK-specific Industrial Activities & relevant legacy wastes (remediation of contaminated land) except on nuclear sites
- ! NORM waste disposal:
 - Conditionally exempt (e.g. record-keeping, removing markings, etc.)
 - Concentration limits – additive over decay chain series
 - Disposal for low volume ≤ 5 Bq/g (generic radiological assessment)
 - $\leq 5 \times 10^{10}$ Bq/y to landfill
 - $\leq 1 \times 10^8$ Bq/y by incineration
 - Case-specific disposal to landfill for high volume ≤ 10 Bq/g
 - dose ≤ 1 mSv/y to workers (at place of disposal) & ≤ 300 μ Sv/y to public
 - template developed by environmental regulators
 - requires submission & approval by environmental regulators
 - cannot use if permit in place for > 10 Bq/g

Government Guidance

- ⚠ UK-wide Government guidance (top-level)
- ⚠ Format of Regs difficult to replicate in guidance; cannot do IRR99 ACoP style
- ⚠ Worked with environmental regulators & industry experts to produce guidance
- ⚠ Allows easier use by stakeholders than navigation of Regs
- ⚠ Covers items such as background deduction, measurement, averaging, etc. at the 'concept' level
- ⚠ Guidance available on Defra website
- ⚠ Supported by Regulators' guidance
- ⚠ What about industry guidance?

Regulator's guidance

- i Complement Government Guidance by focus on user groups or work types
- i Written by EA and SEPA
 - § Applies across UK
 - § Short consultation held – thanks for responses
- i Can be changed if necessary and more sections to follow
 - § Suggestions welcome

What to expect

i Now

- § Sealed sources (2)
- § Open sources
- § VLLW
- § U/Th
- § Medical / vet
- § Museums

- i <http://www.environment-agency.gov.uk/business/sectors/133736.aspx>

i Soon

- § General guidance
- § NORM
- § Storage in Transit
- § Lamps
- § Smoke detectors

i Later

- § Schools
- § Aqueous waste
- § Source suppliers
- § GTLDs
- § Characterisation of waste

Disposal exemption limits

- ⚠ Table 3.3 GG rows (includes VLLW)
 - ⚠ Aqueous waste limits – Table 3.4
 - ⚠ Medical provisions (EPR 22(5), RSA Art 14)
 - ⚠ Gaseous waste limits (EPR 23, RSA Art 17)
 - ⚠ NORM
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- ⚠ Solid waste limits (VLLW) – concentrations as now but max 200 MBq per year (ex H-3 / C-14 – 2 GBq)

Exempt disposal routes

- ! Solid waste routes
 - § Person receiving substantial quantities of non-radioactive waste
 - § Waste permitted person
 - § Nuclear site licensee
 - § Foreign person entitled to receive
- ! (Not all available for different waste types, eg first not for sealed sources > 200 kBq)
- ! Aqueous waste – subject to conditions
 - § Relevant river or sewer or to sea

What is not exempt?

- ⓘ Anything above the limits
- ⓘ Anybody not complying with the conditions
- ⓘ Disposal of relevant liquids
- ⓘ Disposal of aqueous liquid where a permit is held for aqueous liquid disposal

Any questions?