

# The latest developments in the regulatory framework for contaminated land

Marion Hill, Independent Consultant

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## **UK regulatory framework for the management of contaminated land on nuclear, defence and other sites where there may be radioactive contamination**

### **Marion Hill, Independent Consultant**

All the material in this presentation will appear in a new version of the SAFEGROUNDS information paper on the UK regulatory framework. The information paper will cover all the types of site on which it is known or suspected that radioactive contamination is present. The regulatory regimes included are those for dealing with radioactive contamination, non-radioactive contamination and mixed contamination on such sites. The paper does not cover sites on which there is only non-radioactive contamination, for which there is much other information available. It will be placed on the SAFEGROUNDS website in April 2007, in a new 'regulatory' section.

The major regulatory regimes for the management of contaminated land on the various types of site are shown in Table 1. The principal regulators are shown in Table 2. The information paper summarises the regimes and the roles of the regulators, and signposts further guidance. The aspects of the regulatory framework that are new to this version of the paper are:

- extension of Part 2A to radioactively contaminated land (other than on nuclear-licensed sites), England, Wales and Scotland
- Northern Ireland regulations for radioactively contaminated land
- revised HSE safety assessment principles (SAPs) for nuclear facilities
- amendment to Part 2A non-radioactive regime in Scotland to exclude trivial groundwater pollution
- OCNS role and relevance to radioactively contaminated land.

This presentation will summarise the additions to the paper that are not related to Part 2A. Colette Grundy of the Environment Agency, will talk about the extension to Part 2A in England and Wales.

The presentation on the SAFEGROUNDS information paper will also cover areas in the regulatory framework where further development is planned or would be desirable. These are:

- further regulations for radioactively contaminated land on nuclear-licensed sites
- radioactively contaminated sites outside the Part 2A and planning regimes
- risk-based remediation standards for radioactively contaminated land on nuclear and other sites.

**Table 1 Regulatory Regimes for Contaminated Land**

<i>Type of site</i>	<i>Radioactive contamination</i>	<i>Non-radioactive contamination</i>
1. Nuclear-licensed sites		
1.1 operational sites	NIA, (RSA)	Part 2A
1.2 sites to be delicensed	NIA, (RSA), (planning regime)	Part 2A, (planning regime)
2. MoD sites (non-licensed)		
2.1 "nuclear" sites	MoD, Part 2A	Part 2A
2.2 "non-nuclear" sites, no change of land use planned	Part 2A, (MoD)	Part 2A
2.3 "non-nuclear" sites, change of land use planned	planning regime, (RSA)	planning regime
3. Other sites		
3.1 no change of land use planned	Part 2A, (RSA)	Part 2A
3.2 change of land use planned	planning regime, (RSA)	planning regime

Key to Table 1

NIA – Nuclear Installations Act 1965 (as amended)

RSA – Radioactive Substances Act 1993 (as amended)

Part 2A – Part 2A of the Environmental Protection Act 1990 (and associated Regulations)

planning regime – see PPS 23 for England, PAN 33 for Scotland, Welsh Assembly guidance

Regimes in parenthesis are relevant but subsidiary.

**Table 2 Principal Regulators for Contaminated Land**

<i>Type of Site</i>	<i>Radioactive contamination</i>	<i>Non-radioactive contamination</i>
Nuclear-licensed sites	HSE	EA, SEPA
Defence sites (non-licensed)	MoD, HSE, EA, SEPA, EHS(NI)	EA SEPA, EHS(NI)
Other sites	EA, SEPA, EHS(NI), local authorities	Local authorities (environment agencies on "special sites")

Key to Table 2

HSE – Health and Safety Executive (in Great Britain)

EA – Environment Agency (England and Wales)

SEPA – Scottish environment Protection Agency

MoD – Ministry of Defence

EHS(NI) – Environment and Heritage Service (Northern Ireland)

## **The role of the Environment Agency- Part 2A extension to include radioactively contaminated land**

**Colette Grundy, Environmental Agency**

The presentation will give an introduction to the Environment Agency, and its role in advising on and regulating radioactively contaminated land. It will include types and numbers of contaminated sites, and provide details on EA's approach to regulating the extension of Part 2A to include radioactively contaminated land.

The presentation will cover the role of the Local Authority as the lead regulator for radioactively contaminated land, together with details of the interactions between EA and Local Authorities in regulating radioactively contaminated land. For example, documentary reviews, visual inspections, intrusive investigations and determination of land.

Information and guidance and tools available will also be discussed and lastly, future developments will be covered.

# Latest Developments in the Regulatory Framework for Contaminated Land

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## Scope of SAFEGROUNDS Information Paper and Website Area

### Types of Site

- nuclear-licensed sites (civil and defence)
- MoD nuclear sites
- non-nuclear defence sites
- other sites where may be radioactive contamination

## Scope of SAFEGROUNDS Information Paper and Website Area

### Types of Contamination

- radioactive
- non-radioactive
- mixed

(does not cover sites with only  
non-radioactive contamination)

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## New Features of Regulatory Framework for Nuclear-Licensed Sites

### HSE SAPs 2006

- 8 principles for management of  
radioactively contaminated land
- strategy for whole site
- detect, control, characterise, monitor

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## New Features of Regulatory Framework for Nuclear-Licensed Sites

HSE SAPs 2006 cont.

- plan and implement remediation of areas
- keep records
- remediate appropriately before constructing new facilities
- prepare and review safety cases

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## New Features of Regulatory Framework for Defence and Other Sites

- extension of Part 2A to radioactive contaminated land
- Northern Ireland regulations for radioactive contaminated land
- Northern Ireland consultation on a 'Part 2A' for non-radioactively contaminated land

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## Outstanding Issues (1)

### Radioactively Contaminated Land outside Part 2A and Planning Regimes

- doses less than 3mSv per year
- no change of land use in prospect
- owner could voluntarily assess and remediate
- perhaps bring under Part 2A later

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## Outstanding Issues (2)

### Remediation Standards for Radioactively Contaminated Sites

- need for benchmark, not single standard
- problems with health risk benchmark
- ideally, radionuclide concentrations in surface and sub-surface soils, and groundwater

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## The Role of the Environment Agency- Part 2A Extension to include Radioactively Contaminated Land

**Dr Colette Grundy**

Technical Specialist - Radioactive Substances Regulation  
Environment Agency

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## Contents

- Introduction
- The Environment Agency's role
- Contaminated sites-types and numbers
- Environment Agency and Local Authority Interactions
- Guidance available from EA & Others
- Future developments

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## Introduction - The Environment Agency

- A non-departmental public body established by the 1995 Environment Act, covering England and Wales
- Sponsored principally by Defra and the National Assembly for Wales
- Functions include pollution prevention and control, waste regulation, flood defence, conservation and recreation
- Regulator for the Radioactive Substances Act 1993
- 13,000 staff; ca. £900m budget

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## EA and LA Role- Radioactively Contaminated Land

- In the past, generally linked with planning and site development
- Regulatory: Prior Authorisation of Accumulation and Disposal of Radioactive Waste under RSA 93
- Advisory: Planning Consultee & Advice to Developers/Consultants on remediation end points etc
- Local Authorities have the lead role in regulating Radioactively Contaminated Land
- They have a Duty to Inspect Land under extended Part 2A- there must be "reasonable grounds" ( lasting exposure to radiation dose)
- Inspection may include desk studies, site visits for visual inspections, limited surface sampling or surface radiation surveys

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## Additional EA Roles for RCL

- Requests for information- generic, strategic or site specific
- Request from Local Authorities:
  - related to B20a Inspections (desk study- LAs to have regard to any EA advice)
  - and B20b Inspections (visual/limited sampling)
- Requests from LAs to undertake B20c investigations
  - Intrusive-LAs consult EA and have regard to advice on who carries out
- Requests from LAs related to determination
- EA is responsible for Regulation of Special Sites once they have been determined as Radioactively Contaminated Land
- Also, Remediation of designated RCL sites

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## Who carries out the work in EA?

- Existing Main interface with Local Authorities- Groundwater and Contaminated Land Area Teams for Part 2A
- Technical support provided to GW/CL Area Teams by Radioactive Substances Regulation (RSR) Specialists
- Additional Expertise from RSR Policy and Land Quality Policy and via National Technical Specialist providing advice to Regional RSR teams

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## Types of RCL Site

- Early uses of radioactive material (particularly early-mid 20th Century)
- For Example Radium luminising (military, dials etc), gas mantles
- Adventitious concentration of naturally occurring radioactive material e.g. slag from tin and copper smelting
- Usually localised extent
- More hazardous radionuclides tend to be relatively immobile-groundwater problems not expected

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## Number of sites

- We don't know !
- Sites where radioactive materials used or produced - many
- Small fraction will have resulted in residual contamination - many of the worst sites already remediated
- Actually contaminated sites - likely to be very small: expect few to meet "reasonable grounds" test
- Sites to be seriously considered- Pre RSA60 coming into force and probably involving a substance ending in "ium"

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## Part 2A Extension to include Radioactively Contaminated Land

- The extended regime doesn't apply to:
  - Radioactivity on land causing significant harm to the wider Environment or Pollution of Controlled Waters
  - Radon Gas
  - Risks arising from changes in the way land contaminated with radioactivity is used. These risks are controlled under the Town and Country Planning system
  - Contamination originating from a Nuclear Licensed Site

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## Environment Agency and Local Authority Interactions

- Documentary reviews (B20(a))
  - LAs need to have regard to our advice on the manner in which to carry these out
- Visual inspections (B20(b))
  - LAs need to have regard to our advice on the manner ...
- Intrusive investigations (B20(c))
  - we are likely to undertake
- Determination of land as RCL
  - we will be consulted on draft 'record of determination'

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## Visual Inspection

- Will be only relevant to sites:
  - having had a limited range of historical practices; and
  - not currently subject to radiological monitoring or control; and
  - no adequate records to indicate that past radiological contamination issues have been assessed and remediated
- Early requirement - need to establish whether a pollution linkage is possible:
  - potential receptor is present and
  - one or more pathways could expose that receptor to any contamination present on the site

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## Determination

- Focus on human receptors
- Presence of Significant Pollutant Linkage
- Criteria for Harm
  - an effective dose of 3 mSv or more, per year;
  - an equivalent dose to the lens of the eye of 15 mSv or more, per year; or
  - an equivalent dose to the skin of 50 mSv or more, per year

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## Information and Guidance from EA

- Web pages outline full scope of Agency's roles in relation to land contaminated with radioactivity - covering RCL, planning, nuclear licensed sites and voluntary remediation
- For RCL:
  - explain the Agency's role
  - direct local enquiries to local authorities
  - links to guidance notes
- Wider aspects of land contaminated by radioactivity:
  - Agency interest generally limited to advice on application of Radioactive Substances Act 1993
  - provide external links (rather than advice) on wider aspects of site investigations, radiological assessments or remediation approaches

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## Information on Sites from EA

- The Agency holds records on current and past radioactive substances authorisations
- Existing authorisation information may be found on "What's in my backyard?" webpage, although practices regulated under Radioactive Substances Act are unlikely to have given rise to RCL
- The Agency will bring appropriate past sites to attention of Local Authorities if and when it becomes aware of them
- Information will also be provided in response to Local Authorities' requests about specific sites

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## Other Guidance and Tools

- Defra Industry Profile “ Industrial Activities which have used Materials Containing Radioactivity” March 2006
- Defra Webpage Environment/Index/Radioactivity
- RCLEA Spreadsheet
- RCLEA Summary Document “Using RCLEA- the Radioactively Contaminated Land Exposure Assessment Model” October 2006 Draft
- Defra Webpage Environment/Index/Radioactivity

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## Future Developments (1)

- Further extension of Part 2A Radioactively Contaminated Land regime to cover Nuclear Licensed Sites
- Consideration on fit with Nuclear Liabilities under Paris and Brussels Conventions
- Gap filling regulations to fully transpose BSS Directive
- New Regulations in England expected September 2007

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## Future Developments (2)

- Wales- Welsh Assembly Statutory Guidance is now available on web
- SEPA responsible for regulating all aspects of RCL In Scotland:
- Identifying, Inspecting, Designating and regulating remediation
- Scottish Executive and SEPA are drafting the Statutory Guidance, Input also planned from Local Authorities
- Latest timetable- Regulations before Parliament by 7 March, Enactment in October 2007
- Regulations in Scotland include water as a receptor as well as a pathway, and harm to biota and ecosystems