

DRAFT FOR COMMENT

SAFEGROUNDS

Citizens Guide

First full draft

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VERSION CONTROL

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HISTORY:	This is the first full draft and is based on responses to the consultation on the scope and outline contents of document that took place in November 2007 and subsequent discussions with the SAFEGROUNDS Project Steering Group (PSG). For full details please see www.safegrounds.com/citz_guide_log.htm
STATUS:	This draft is for consultation. It has not been reviewed by the SAFEGROUNDS Project Steering Group (PSG) prior to its issue. Members of the PSG will be invited to provide comments in parallel with the wider stakeholder community.

1. SAFEGROUNDS

“SAFEGROUNDS” stands for SAFety and Environmental Guidance for the Remediation of UK Nuclear and Defence Sites

All SAFEGROUNDS reports and papers can be down loaded from

www.safegrounds.com/guidance.htm

This would probably be a separate contents list, depending on final design

SAFEGROUNDS Network

SAFEGROUNDS is a forum for developing and disseminating good practice guidance on the management of land with radioactive, non-radioactive and mixed contamination. The guidance focuses on the two major types of site on which radioactive contamination is likely to be found:

- nuclear licensed sites; and
- non-nuclear defence sites.

The guidance has been developed primarily to help those responsible for the management of contaminated land and inform other stakeholders. It is not binding on site owners/operators and has no legal standing. It was developed with input from a wide range of stakeholders but participation must not be taken as an indication of support for the whole of the guidance.

SAFEGROUNDS Guidance

The Guidance comprises a main document - Good Practice Guidance for the Management of Contaminated Land on Nuclear and Defence Sites (Hill et al, 2007) (the 'Main Guide') – plus more detailed guides and technical papers covering site characterisation, risk assessment, options comparison, stakeholder engagement, the regulatory framework etc. All these supporting documents have been reviewed and updated to be consistent with the 2008 version of the Main Guide.

This Citizens Guide is a new document published in response to requests from community groups for a non-technical overview of the principles which underpin the Guidance and the approach it recommends to decision-making and community involvement. Advice is also included on sources of further information.

- Section 2 starts with some background on the nature of radioactive contamination.
- Sections 3 and 4 explain the differences between nuclear and defence sites and how they are regulated.
- Section 5 describes the SAFEGROUNDS key principles and what they mean in practice.
- Sections 6 and 7 gives an overview of the recommended process for managing contaminated land.
- Sections 8 and 9 then give more detailed advice on choosing an option and involving stakeholders.
- Sections 10 and 11 help stakeholders find out how to get involved, who to contact and where to find more information.

2. Radioactive Contamination

For more information on radioactivity and radioactive contamination see the information sources in Section 11

This 'place holding' text is intended to prompt discussion on the scope and content of this section.

*It was borrowed from elsewhere (www.wikipedia.org) and is **not** intended to be representative of the final text*

Radioactive contamination is typically the result of a spill or accident during the production or use of radioisotopes. Contamination may occur from radioactive gases, liquids or particles. Radioactive contamination may also be an inevitable result of certain processes, such as discharges from nuclear facilities.

Containment is what differentiates radioactive material from radioactive contamination. Therefore, radioactive material in sealed and designated containers is not properly referred to as contamination.

Radioactive contamination can enter the body through ingestion, inhalation, absorption, or injection. Radioactive contamination may also be ingested as the result of eating contaminated plants and animals or drinking contaminated water or milk from exposed animals. The biological effects of internally deposited radionuclides depend greatly on the activity and the biodistribution and removal rates of the radionuclide, which in turn depends on its chemical form. The biological effects may also depend on the chemical toxicity of the deposited material, independent of its radioactivity. Some radionuclides may be generally distributed throughout the body and rapidly removed, as is the case with tritiated water. Some radionuclides may target specific organs and have much lower removal rates. For instance, the thyroid gland takes up a large percentage of any iodine that enters the body.

The biological effects of external exposure to radioactive contamination are generally the same as those from an external radiation source not involving radioactive materials, such as x-ray machines, and are dependent on the absorbed dose.

High levels of contamination may pose major risks to people and the environment. People can be exposed to potentially lethal radiation levels, both externally and internally, from the spread of contamination following an accident (or a deliberate initiation) involving large quantities of radioactive material. The hazards to people and the environment from radioactive contamination depend on the nature of the radioactive contaminant, the level of contamination, and the extent of the spread of contamination.

Low levels of radioactive contamination are generally considered to pose little risk, but can still be detected by radiation instrumentation. In the case of low-level contamination by isotopes with a short half-life, the best course of action may be to simply allow the material to naturally decay. Longer-lived isotopes have to be cleaned up and properly disposed of. Having said which, there are still differences of opinion as to what constitutes safe levels of contamination, as described later in this Guide

3. Nuclear-licensed & Defence Sites

Nuclear Licensed Sites

Nuclear licensed sites include civil nuclear sites that are being used for electricity generation or other purposes, defence nuclear sites that are being operated for the Ministry of Defence by contractors, and nuclear sites that are being decommissioned and are the responsibility of the Nuclear Decommissioning Authority.

Most of the radioactive contamination on such sites is from past activities and has been there for years or decades. Non-radioactive contamination might be present from past, non-nuclear use (for example, a number of nuclear licensed sites were used for military purposes before nuclear installations were built on them). Current industrial-type activities may also lead to non-radioactive contamination such as hydrocarbon spills.

British Energy:
www.british-energy.com

British Energy owns and runs the operating nuclear power stations at Dungeness B, Hinkley Point B, Hartlepool, Heysham 1 and 2, Hunterston and Torness.

The Nuclear Decommissioning Authority (NDA) is a non-departmental public body, set up in April 2005 under the Energy Act 2004. The NDA has responsibility for the UK's historic nuclear legacy, which includes all the older 'Magnox' power stations (whether operating or decommissioning), the Sellafield complex, the research sites at Harwell, Dounreay, Winfrith and Culham, the fuel manufacturing facilities at Capenhurst and Springfields, and the low level waste repository (LLWR) near the village of Drigg.

NDA: www.nda.gov.uk

Specific NDA web page on relationships not yet published

The sites themselves are operated by seven Site License Companies (SLCs) under contract to the NDA. The SLCs are being progressively sold by the NDA to new Parent Companies who will in turn be responsible for providing support and direction to their SLCs. The NDA web site provides an overview of the relationship between sites, SLCs and Parent Companies.

MOD nuclear licensed sites

Royal Navy: www.royal-navy.mod.uk

AWE: www.awe.co.uk

The nuclear licensed sites being operated for the Ministry of Defence (MOD) by contractors are the naval bases at Clyde and Devonport (by Babcock and BML), the Vulcan Naval Reactor Test Establishment at Dounreay (Rolls Royce) and the Atomic Weapons Establishment sites at Aldermaston and Burghfield (AWE).

Non-nuclear defence sites

SAFEGROUNDS uses the term 'non-nuclear defence site' to mean any site that is owned by the MOD where it is known or suspected that radioactive contamination is present but where the site is not a one of the nuclear licensed sites listed above.

The most common source of radioactive contamination on non-nuclear defence sites is the production, maintenance and disposal of luminised instruments for vehicles, aircraft and ships. The peak period for luminising was from the 1930s to the 1970s.

Mixed radioactive and non-radioactive contaminants are often present on MOD sites. Hydrocarbons have for instance been used widely on MOD sites as fuel, lubricants and solvents and there may well have been spills and leakage over the years. MOD nowadays has stringent accounting procedures but explosive ordnance and ammunition may still be present on land used for training purposes and research facilities. Other contaminants commonly found on MOD land include asbestos, metals and general waste from workshops, storage and operational facilities. On certain sites more unusual contamination could be encountered, including chemical weapon residues.

*Defence Estates:
www.defence-estates.mod.uk*

MOD has a programme of work to clean-up its non-nuclear sites and sell those that it no longer needs. The MOD Defence Estates (DE) organisation is responsible for managing this process and for the MODs portfolio of buildings and land generally.

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4. Regulation

See Main Guide Section 4

For further information on the regulatory framework for the management of contaminated land on nuclear licensed and defence sites:

www.safegrounds.com/quietance.htm

For further information on the UK Regulatory Framework for other sites:

<http://www.environment-agency.gov.uk/subjects/landquality/113813/1442829/>

The prime responsibility for the safe and environmentally responsible management of contamination, radioactive waste and discharges lies with the site operator. The principles by which these are regulated are common to all sites. However, there are differences in the regimes under which radioactively and chemically contaminated land on nuclear licensed sites and defence sites in the UK are managed. Broadly speaking:

- If there is no immediate danger and where land contaminated with radioactivity is going to be developed it is the responsibility of the developer to control the risks to occupants and users of the proposed development – controlled under planning regulations
- Where the current use of land contaminated with radioactivity gives rise to prolonged exposure to humans above certain levels, that land may be determined as “radioactive contaminated land” by the local authority. The “appropriate person” is then required to undertake the necessary remediation (clean up) – controlled under EPA 1990 Part 2A
- Land contaminated with radioactivity on civil or MOD nuclear licensed sites is regulated by the Health and Safety Executive (HSE) as described below.
- Remediating land contaminated with radioactivity is likely to involve the accumulation and subsequent disposal of radioactive waste. This must be authorised by the Environment Agency (EA) or Scottish Environment Protection Agency (SEPA) as appropriate before the work starts under the Radioactive Substances Act 1993 (RSA (93)).
- MOD is not subject to RSA (93) but has in place administrative arrangements at defence sites that are not nuclear licensed sites to achieve a similar standard of control.

SAFEGROUNDS focuses on nuclear licensed and defence sites, though there is a longer-term aspiration that the guidance be applied to any type of site on which there is the potential for radioactive contamination. In line with this, the Main Guide provides limited guidance for other types of site e.g. former and current industrial, medical and research sites on which there is long-standing radioactive contamination from past activities. More information concerning the regulation of other sites with radioactive or mixed contamination is available from the EA and SEPA.

Nuclear Licensed Sites

Under UK law employers are responsible for ensuring the safety of their workers and the public, and this is just as true for a nuclear site as for any other. This responsibility is reinforced for nuclear installations by the Nuclear Installations Act 1965 ((NIA)(65)).

Under the NIA, a site cannot have nuclear plant on it unless the user has been granted a site licence by the HSE. This licensing function is administered on HSE's behalf by its Nuclear Directorate. The legal regime is complemented by the Ionising Radiations Regulations 1999 (IRRs) which provide for protection of workers in all industries from ionising radiations and by the generality of health and safety regulation which the Nuclear Directorate also enforces on nuclear sites.

Further information on the HSE SAPs:

www.hse.gov.uk/nuclear/saps/index.htm

HSE Nuclear Directorate sets out the general safety requirements to deal with the risks on a nuclear site in conditions attached to the site licence. Licensees comply with these conditions through a safety case for that stage in the plant's life or by establishing arrangements and procedures to meet a licence condition. Detailed guidance is set out in the Nuclear Directorate's safety assessment principles (SAPs) which are available to the public.

The HSE regulates all activities associated with radioactive waste management while the waste remains on the nuclear licensed site. These include the creation, treatment, conditioning and storage of radioactive waste until it is removed from the site. Key aspects of a safety case specific to radioactive waste management are to demonstrate: consistency with radioactive waste management strategies; that risks are reduced to as low as reasonably practicable through adherence to modern standards and best practice; that radioactive material and radioactive waste are adequately controlled and contained; and that the waste is packaged in a way that ensures it can be disposed of both now and in the future.

Joint guidance from EA, HSE & SEPA:

The Regulation of Radioactive Waste Management on Nuclear licensed sites.

<http://www.hse.gov.uk/nuclear/managewaste.pdf>

The Management of Radioactive Waste on Nuclear Licensed Sites.

www.hse.gov.uk/nuclear/wastemanage1.pdf

HSE regards land contaminated with radioactivity on nuclear licensed sites as an accumulation of radioactive waste and it requires licensees to manage it as such. It requires that the licensee should develop and maintain a preferred strategy for the management of the contaminated ground. The strategy should cover the same range of issues that are considered for any radioactive material or radioactive waste on the site. The strategy should be developed on a case by case basis, and the approach will depend on the particular circumstances of each instance of contamination. The strategy should be part of the overall strategy for the site and integrated with the decommissioning strategy.

The strategy should describe the extent and nature of the contaminated ground and the options for managing it. The preferred option and timescale should be justified in terms of the factors that have been taken into account. It should cover the means by which the radioactive waste (contaminated land) will be managed in the short term, which may involve remediation work, and the plan for final disposal. Alternative options should be identified in case the preferred option has to be changed as a result of unforeseen circumstances. The management and remediation will need to be costed to the extent that judgments can be made on the practicality, and so that the adequacy of financial provisions can be demonstrated.

The management of contaminated land should aim to achieve, so far as is reasonably practicable, the following:

- minimisation of migration of radioactive contamination on-site and, in particular, to prevent its spread off-site;
- retrieval of contaminated material for storage pending a disposal route becoming available; or

- implementation of measures to achieve in-situ stabilisation, If the selected option is to leave the contamination in place

Delicensing

The HSE is also responsible for establishing criteria for delicensing all or part of a nuclear licensed site. For the site licensee's responsibility to be ended, HSE must be satisfied that there has ceased to be any danger from ionising radiations from anything on the site.

HSE has published a policy statement setting out its criterion for judging when risks have been reduced sufficiently to satisfy the 'no danger' requirement of NIA (65). It requires "a demonstration that any residual radioactivity, above background radioactivity, which remains on the site, which may or may not have arisen from licensable activities, will lead to a risk of death to an individual using the site for any reasonably foreseeable purpose, of no greater than 1 in a million per year".

If land is designated as radioactively contaminated measures should be taken, where appropriate, to reduce the doses. In some circumstances such measures may not be appropriate for a variety of reasons. Equally, where land is not designated as radioactively contaminated, this would not automatically preclude the use of simple measures to reduce doses. The costs and benefits of remediation should be assessed in both cases.

Any person who believes they may have suffered harm as a consequence of activities on a licensed nuclear site is entitled to make a claim for compensation for up to 30 years after the date of the occurrence which gave rise to the claim.

RSA (93)

The Environment Agency (EA) in England and Wales and the Scottish Environment Protection Agency (SEPA) in Scotland regulate radioactive liquid or gaseous discharges from nuclear sites and the disposal of solid radioactive waste.

An authorisation under Radioactive Substances Act 1993 (RSA (93)) is needed to accumulate or dispose of radioactive waste resulting from clean-up work, unless covered by an Exemption Order. As soon as any action is taken in relation to that radioactively contaminated land, the potential exists for regulation under RSA (93).

Remediating (cleaning up) land contaminated with radioactivity can generate radioactive waste e.g. contaminated soil or rubble excavated from the site for disposal; contaminated groundwater discharged from a site to a local watercourse or public sewer; and contaminated dust that becomes airborne as a result of the work.

The EA or SEPA have to authorise any accumulation and/or disposal of radioactive waste resulting from remedial/clean up work, unless the waste is covered by an exemption order.

HSE Criterion for Delicensing Nuclear Sites:

www.hse.gov.uk/nuclear/delicensing.pdf

This is HSE text, which needs some more explanation

See also Section 6

These ideas need some more explanation

Is this the best reference?

EA Guidance on Characterisation and Remediation of Radioactive Contaminated Land:

http://www.safegrounds.org/pdf/guidance_characterisation_remediation_ea.pdf

Exemption orders are statutory instruments that specify classes of premises, undertakings or persons, and radioactive material or radioactive apparatus that do not need to be registered or further authorised. The orders are a mechanism for providing a degree of control, without excessive bureaucracy, over minor uses of radioactive substances where there is a clear benefit from its use, whilst ensuring continued protection of the environment and the public. The most relevant exemption orders include:

- The Radioactive Substances (Substances of Low Activity) Exemption Order 1986 (as amended); and
- The Radioactive Substances (Phosphatic Substances, Rare Earths etc.) Exemption Order 1962

Defence sites

Good reference required

MOD and HSE have agreed principles which apply to the MOD's observance of health and safety legislation for both military and civilian employees affected by their activities. These principles apply equally to the management of radioactive materials and radioactive waste and are intended to facilitate inspections, recognising the statutory right of HSE to carry them out under the Health and Safety at Work etc Act (HSWA, 1974) in such a way as not to compromise national security and the operational capability of MOD.

On sites where a commercial organisation is in significant control of nuclear related work on behalf of MOD, the regulation of nuclear and radiological safety is the duty of HSE. The Naval Nuclear Regulatory Panel (NNRP) is an independent regulator, within MOD, in relation to the safety of operations undertaken under the Naval Nuclear Propulsion Programme (NNPP) (i.e. the MOD's programme for UK submarines equipped with nuclear steam raising plant). NNRP has two roles - that of "external" regulator for parts of the NNPP where the civil provisions do not apply, and that of providing MOD with an internal assurance mechanism where they do.

For all contaminated land on non-nuclear defence sites the principal regimes are those of Part 2A of the Environmental Protection Act 1990 (if no change of land use is proposed or if a site had an historic defence use) and of planning legislation (if a change of land use is proposed). The principal regulators are the environment agencies (Environment Agency, SEPA, EHS(NI), local authority environmental health departments and local authority planning departments).

MOD is not subject to RSA (93) but has in place administrative arrangements to achieve a similar standard of control. RWMAC referred to this arrangement as 'Pseudo-RSA93', being the application of regulatory control on radioactive wastes by EA and SEPA to defence sites operated by MOD directly, which has no force in statute, but is intended to have identical practical effect.

Contamination in emergencies

Land contaminated by a radiological emergency would be regulated under Part 2A by the environment agencies if it met the criteria for "radioactive contaminated land" under Part 2A. There are to be new regulations for land contaminated by an accident at a nuclear site.

5. Key Principles

See Main Guide Section 2

A wide range of stakeholders worked together drafting the five key SAFEGROUNDS principles for the management of contaminated land on nuclear and defence sites. They are complementary and apply at various stages in land management.

- Principle 1: Protection of People and the Environment
- Principle 2: Stakeholder Involvement
- Principle 3: Identifying the Preferred Land Management Option
- Principle 4: Immediate Action
- Principle 5: Record-Keeping

The rest of this Section explains what these principles mean in practice. The cross-references are to the Main Guide.

Main Guide Section 5

Principle 1: Protection of people and the environment

The fundamental objective of managing contaminated land on nuclear licensed sites and defence sites should be to achieve a high level of protection of people and the environment, now and in the future.

This is the first and most fundamental objective of any contaminated land programme. Civil nuclear and defence sites are tightly regulated as one would expect and radioactively and chemically contaminated land is covered by a wide range of legislation as described above.

In Key Principle 1, 'protection of people' refers to the health and well-being of the public and workers. The 'environment' includes land, water, air, flora, fauna, buildings, natural resources and sites of historical and cultural importance. It should not be assumed that protecting people protects the environment or vice versa. The balance between protecting people and protecting the environment has to be resolved in the process of identifying the preferred land management option. It is necessary to protect people and the environment both from expected situations and those with only a chance of occurring. This means taking measures, if needed, to reduce the likelihood of adverse effects occurring as well as reducing the effects themselves. Protection of people and the environment in the future should be at least to the same standards as used today. This is essential to uphold the concept of sustainability.

Further details on levels of protection are given in Section 6 below.

See Main Guide Section 6

Principle 2: Stakeholder involvement

Site owners/operators should involve stakeholders in the planning and decision-making processes for the management of contaminated land.

The intent of Key Principle 2 is to ensure effective external participation, whether it is required by organisational policy or regulatory frameworks, in order to meet stakeholder expectations and to improve decision-making.

Stakeholders are all the people with an interest in the situation. They include 'institutional' stakeholders, such as regulators, local and national government and senior management within site owner/operator organisations, and others who could be affected by, or have a direct interest in, land management decisions, such as local residents, community-based organisations (CBOs) and non-governmental organisations (NGOs).

Stakeholder involvement includes communication, provision of information, consultation and participation in decision-making processes. For legal and practical reasons, final decisions on how to manage contaminated land have to be the sole responsibility of the site owner or operator. Within SAFEGROUNDS the term 'involvement' is used in preference to 'engagement'. This is because "engagement" usually includes communication, provision of information and consultation, but excludes participation in decision-making processes.

Adherence to Key Principle 2 does not mean that all stakeholders have to be involved in all decision-making steps for every contaminated land issue on every site. The presumption, in case of doubt, should be for inclusion. But the scale and level of involvement should reflect the nature and extent of the perceived potential technical and societal impact. It should also reflect the project's importance as a precedent. A broad range of stakeholders should be involved in informing strategic decision-making for problems that are seen as significant by many groups within society. Lower profile decisions for smaller problems warrant less involvement.

The appropriate level of stakeholder involvement in the management of contaminated land varies from one stage in the process to another as described in the Main Guide.

Further details on stakeholder engagement are given in Section 9 below.

See Main Guide Section
11

Principle 3: Identifying the preferred land management option

Site owners/operators should identify their preferred management option (or options) for contaminated land by carrying out a comprehensive, systematic and consultative assessment of all possible options. The assessment should be based on a range of factors that are of concern to stakeholders, including health, safety and environmental impacts and various technical, social and financial factors.

The purpose of this Principle is to ensure that contaminated land decision making processes are appropriate to the nature of the decision being taken. Accordingly the decision-making process should be supported by a proper structured analysis that accounts for the factors that are important to the community, and not just the legal requirements and costs.

SAFEGROUNDS guidance does not require the use of any one approach. Instead, the Main Guide describes the overall decision making process and the principles the proposed approach must satisfy (see Section 7 below).

See Main Guide Section 10

Principle 4: Immediate action

Site owners/operators should take measures immediately to monitor and control all known (or suspected) contamination and continue such measures until an acceptable management option has been identified and implemented.

Stakeholders identified this as a key principle because legal and regulatory requirements - backed up by HSE guidance - require this principle to be applied at nuclear licensed sites. At non-licensed defence sites, monitoring and control actions are required if contamination has been identified or is suspected. The need for immediacy of action will be related to the potential risk.

For situations such as spills or other incidents immediate clean up is often preferable. For sites with several different areas of contamination it will be necessary to prioritise them, but low risks should not be used as an argument not to take prompt action to control and monitor contamination. No short-term action should be taken that could compromise the selection and implementation of the best long-term management option.

The type of action taken depends on the scale, nature and complexity of the contamination. Different measures may be needed for different areas. Where the contamination is widespread or historic it is most likely that monitoring and an interim control measure should be implemented, perhaps to persist for some time before a long-term management option is selected.

Principle 5: Record-keeping

Site owners/operators should make comprehensive records of the nature and extent of contamination, the process of deciding on the management option for the contaminated land and the findings during the implementation and validation of the option. All records should be kept and updated as necessary.

Most stakeholders involved in the SAFEGROUNDS consultation are in favour of the long-term keeping of records by public bodies, in a form that is accessible to the public. At present there is no mechanism for this. Site owners and operators should ensure that comprehensive records are made, bearing in mind that a mechanism may be introduced in the future. Every effort should be made to avoid relying on commercial confidentiality or national security as reasons for denying the public access to records.

SAFEGROUNDS supporting guidance on record keeping introduces the concept of a "land quality file" to be created for each site with a suggested formalised structure for the records that should be retained to cover activities as appropriate.

The expectation of regulators, owners, investors, site workers and the wider public is that:

- Records should contain all the information that may be required both now and in the future.
- Records should be accessible to those who will consult them.
- Records should be assembled and maintained in a secure form.

See Main Guide Section 8

Further information on record keeping is contained in a separate SAFEGROUNDS Guidance Document (Cruickshank & George, 2007). Available from www.safegrounds.com/guidance.htm

By consistently following the SAFEGROUNDS record keeping guidance, the ability of sites to locate information and meet stakeholder expectations will improve. The guidance should be used to identify:

- Why it is important that land quality information should be recorded.
- What land quality information should be recorded and in what form.
- How a record keeping system should be set up and maintained.

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6. Levels of Protection

See Main Guide Section 5

Radioactively contaminated land

In deciding what is a 'high level' of protection account should be taken of important scientific uncertainties (for example, about the effects of radioactive and non-radioactive contaminants on human health). Differences of view amongst stakeholders about such issues should be recognised and given explicit consideration in decision-making processes.

The legislation aims to ensure that no site exceeds a maximum acceptable level of risk. At the other end of the scale it recognises that there is a level of risk that is deemed by regulators to be broadly acceptable to society. Beyond this point additional protection or clean-up is generally not necessary. This level is a risk of death to an individual of one in a million per year.

In between these two levels, the organisation responsible for the site has to demonstrate that the cost involved in reducing the risk further would be grossly disproportionate to the benefit gained. This is implemented through the As Low as Reasonably Achievable (ALARA) and As Low As Reasonably Practicable (ALARP) principles.

With this background it is clear that there is no one level of protection that can be specified as appropriate for all radioactively contaminated land. The level of risk depends on the nature of the site and how it is being (or will be) used. Site-specific risk analysis has to be carried out and different options have to be assessed to determine what is 'practicable' in the circumstances. SAFEGROUNDS recommends a case-by-case approach with stakeholder involvement. Here the level of protection is not selected in advance, but emerges from assessment and comparison of strategies or options for the management of the contaminated land.

ALARA and ALARP still apply if risks are assessed to be below one in a million, though only to the extent that it should be shown that there are no low cost actions that could be taken to reduce risks and a case-by-case approach with stakeholder input is still recommended.

Differing views amongst stakeholders on the health risks from intakes of radionuclides, and on the risks per unit dose of internal or external radiation, are thereby taken into account. Such differences of view are best addressed by involving stakeholders in assessments and comparisons of land management strategies and options. In this way it is possible to explore the practical implications of the various views on radiation risks for management of the land in question.

The case-by-case approach with stakeholder involvement is also recommended when radioactively contaminated land is investigated under the Part 2A regime. This includes radioactive contamination present on the land, but it is not "radioactive contaminated land" in the Part 2A sense. In such cases there is no legal obligation on anyone to take further action. However, it is likely that some stakeholders will request that a more comprehensive risk assessment is undertaken, and that options for reducing risks are assessed.

Non-radioactively contaminated land

The regulatory approach is described in 'Defra Circular 01/2006' and the technical framework and decision-making in CLR11 in the 'CLR 11' Environment Agency procedures. They were developed to provide the technical framework for applying a risk management process when dealing with land affected by contamination. The process involves identifying, making decisions on, and taking appropriate action to deal with land contamination in a way that is consistent with government policies and legislation within the UK.

They use 'unacceptable risk' to mean the level of risk below which no action need be taken, and above which options for reducing risks should be assessed and compared. The criteria are absolute i.e. they are not linked to any comparison of land management strategies or options. They are usually expressed in terms other than risk to health, for example guideline values of contaminant intakes or concentrations in soils.

This approach was developed for the relatively large number of sites on which there is only non-radioactive contamination. On most of these sites remediation will be carried out in connection with redevelopment. Stakeholders can be involved through the planning regime consultation processes, rather than by any special means.

The CLR11 approach is not consistent with regulatory approaches for radioactivity, particularly not with the ALARA and ALARP principles. If it is used for sites on which there is both radioactive and non-radioactive contamination, SAFEGROUNDS recommends that the owners/operators should discuss and agree with stakeholders the criteria to be used to decide when further action is necessary and when it is not.

On each site where there is radioactive and non-radioactive contamination, there should be a single integrated strategy for the management of radioactively contaminated land, non-radioactively contaminated land and land with mixed contamination. This strategy should be developed using the case-by-case approach to levels of protection discussed above.

Defra Circular 01/2006:
<http://www.defra.gov.uk/environment/land/contaminated/pdf/circular01-2006.pdf>

Model Procedures for the Management of Land Contamination (CLR 11):

<http://www.environment-agency.gov.uk/subjects/landquality/113813/881475/>

7. SAFEGROUNDS Process

See Main Guide Sections 2 and 3.

The SAFEGROUNDS Main Guide explains how the overall process for the management of contaminated land should be developed. It gives three examples to illustrate how the process should be tailored to reflect known or anticipated patterns of contamination.

For sites with only one or two areas of contamination, or with relatively uniform contamination over the whole site, the generic diagram in Figure 1 below could be used.

As described in the Main Guide, on a more complex site it is necessary to classify areas and prioritise them for action before carrying out detailed characterisation. The high priority areas are then dealt with first when a long-term management strategy for the site has been agreed.

On all sites it is essential that the short-term and long-term strategies for the management of contaminated land are consistent with the objectives and plans for the whole site. For example, on a nuclear licensed site that is being decommissioned, the contaminated land management strategy should be consistent with the decommissioning strategy for the site, including the chosen end-state(s), and the integrated waste strategy.

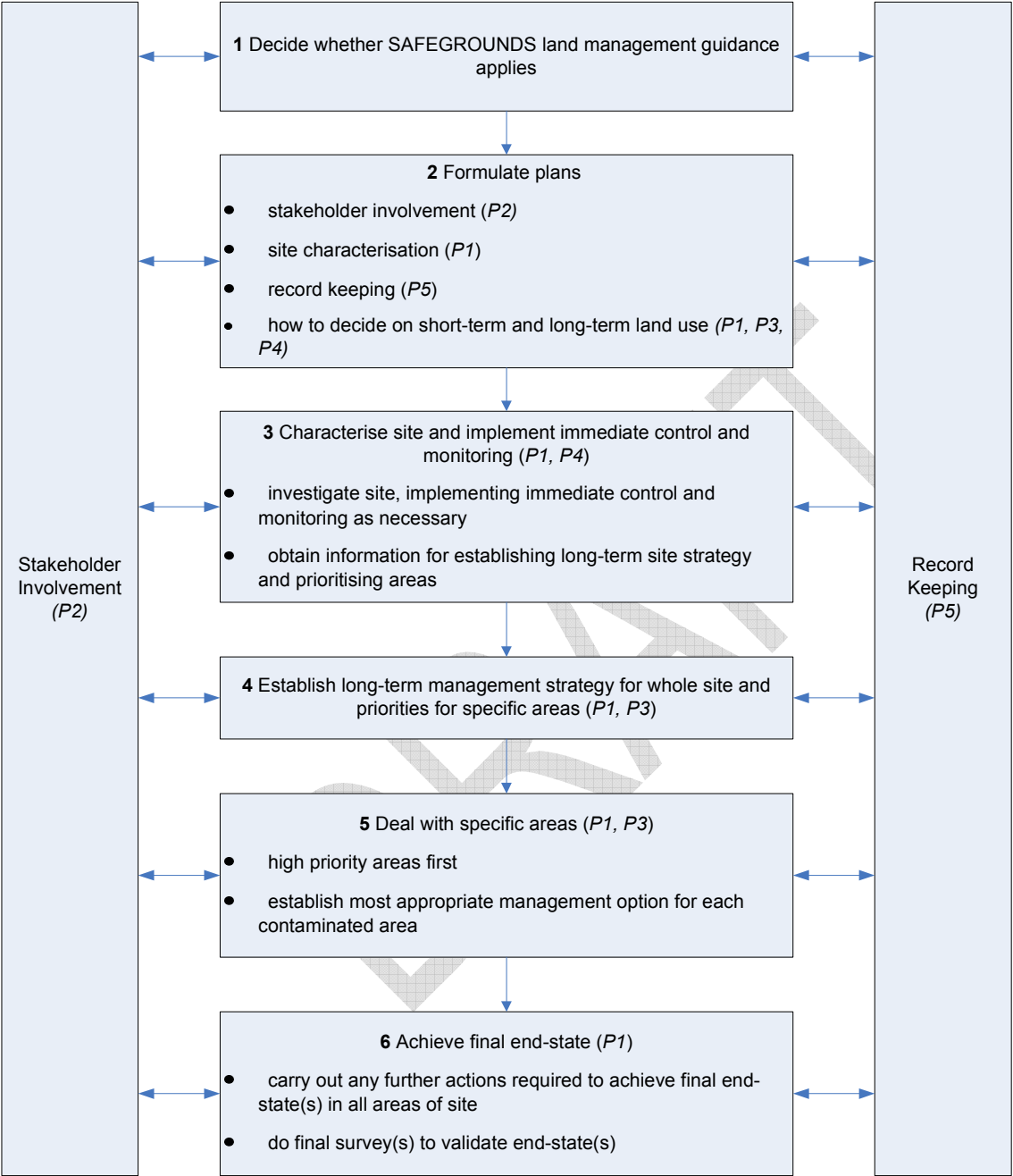
Stage 1: SAFEGROUNDS application

The process begins with a decision as to whether the SAFEGROUNDS guidance applies. It applies if it is known or suspected that radioactive contamination is present on the site, with or without non-radioactive contamination. The guidance does not apply if it is certain that there is only non-radioactive contamination on the site. Stakeholders should be involved as described in the Main guide.

Stage 2: Formulation of plans

Planning for stakeholder involvement throughout the rest of the land management process follows. A programme has to be developed for site characterisation, record-keeping and decision taking on short-term and long-term strategies for the management of the contaminated land. The appropriate level of stakeholder involvement varies from one type of site to another and from one stage in land management to another. It is good practice to consult stakeholders about site characterisation plans because they may have views on, for example, the contaminants of concern and the techniques to be used.

Figure 1. Generic Flow Diagram for Management of Contaminated Land



Where P1, P2 etc. are the key SAFEGROUNDS principles that apply.

Stage 3: Characterisation and immediate control

The site will then be characterised (i.e. the nature and extent of contaminant will be established through sampling etc.) and a short-term strategy developed for managing the contaminated land. This will include immediate control and monitoring measures and criteria for deciding when to implement them in a particular area of the site. Information also has to be gathered for prioritisation and the development of a long-term management strategy.

Stages 4 & 5: Long-term strategy and area management

There are several steps in establishing the most appropriate long-term management strategy for a site or the most appropriate management option for an area within a site:

- Defining the objectives, assumptions and constraints for the options comparison;
- Identifying potential options, screening and selecting the set for assessment;
- Determining the assessment criteria;
- Assessing the options (scoring);
- Comparing the options; and
- Deciding on final option or progressive development of strategy with increasing level of detail.

Stakeholders should be involved to some extent in all these steps (see Option Comparison Guide for further details of the assessment and comparison process).

Assessments of health and environmental risks will begin as soon as enough site characterisation data are available. They are particularly important for providing input to prioritisation of areas and comparisons of potential management strategies and options. SAFEGROUNDS supporting document on assessments of health and environmental risks (Smith, 2005) gives further guidance on the types of assessment required at each stage.

Further details on the identification of the appropriate management option are given in Section 8 below

Stage 6: Achievement of end-state

The last stage in the land management process is to achieve the final end-state, i.e. the one beyond which no further action is required. There may be one final end-state for a whole site or different final end-states for different areas.

Where the chosen long-term management option does not achieve the final end-state at the time of implementation (e.g. if it is long-term control and monitoring to allow radioactive decay), further action may be needed. This may be many years later and may involve the removal of residual contamination. In all cases a final survey or surveys should be performed to validate that the final end-state has been achieved in all areas of a site.

In practice, several parts of the land management process are iterative. For simplicity, these have been omitted from the generic diagram in Figure 1. An example being the review of the long-term management strategy for the site in the light of experience obtained in implementing options for specific areas.

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8. Choosing a Strategy

Further information on Approaches to option comparison is given in a separate SAFEGROUNDS Information Paper (Penfold, 2007) See http://www.safegrounds.com/current_consultations.htm

The Main Guide and supporting documents cover the following topics, with worked examples:

- The principles for options comparison, the general approach that can be applied to fulfil these principles, and guidelines for the key stages in options comparison;
- Option comparison methods that can be applied to the management of contaminated land; and
- Guidance on selecting a particular method, with reference to a range of general contaminated land situations that can be expected.

Guiding principles

A set of guiding principles has been established for options comparison in the context of contaminated land management. These principles are not prescriptive, but help to ensure that the SAFEGROUNDS Key Principles are put into practice during options comparison. They also steer the process to be undertaken in a reasonable and proportionate manner consistent with good practice. The guiding principles are:

- Comparison of land management options should be undertaken in a structured, systematic and transparent manner with the involvement of stakeholders.
- The extent of stakeholder involvement depends on the technical and societal significance of the contaminated land problem.
- The level of detail in which the options are compared must be commensurate with the magnitude of the contaminated land issue, whether it is strategic or specific, and its potential impact on people.
- The options comparison process will require information and data, which should be at an appropriate level of detail for the study. Uncertainties should be identified and taken account of in the options comparison.
- The output of the options comparison must be a clear record of the information considered, the assessment of options, the views expressed, and the conclusions reached. Unless issues of national security dictate, it should be available to all relevant stakeholders.

Options Comparison methods

The guidance is not prescriptive as to which method to use, but it does require that it be systematic, objective and transparent. It must have the following features:

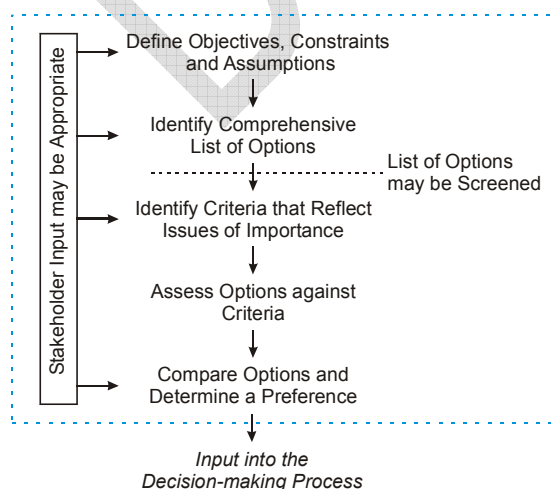
- The objectives and context need to be established;
- A number of options need to be identified;
- Criteria that reflect the factors that are important to stakeholders need to be established;
- The options need to be assessed in terms of criteria; and
- The options then need to be compared in order to determine the trade-offs so that the option that best meets the expectations of the key stakeholders can be determined.

SAFEGROUNDS supporting guidance includes details of a range of different methods that interested readers can refer to as necessary. Each contaminated land situation is different, but the choice of method generally depends on three factors:

- The characteristics of the contaminated land
- The status of the management of the contaminated land; and
- The range of stakeholders with an interest in the issue.

They all have the same fundamental steps shown in Figure 2 below, differing primarily in the manner in which the comparison stage is applied. The process of comparing options needs always to be based on appropriate information, and should be informed by stakeholder's views to an appropriate degree. The resources required depend on the complexity of the problem and the steps shown in Figure 2 may take days or months depending on the context. The outcome is not the decision; it is only an input to the final decision-making process that is the responsibility of the site owner/operator.

Figure 2: Generalised Options Comparison Process



9. Stakeholder Involvement

Further information on community stakeholder involvement is contained in a separate SAFEGROUNDS Information Paper (Collier, 2005). Available from www.safegrounds.com/guidance.htm

SAFEGROUNDS approach

The SAFEGROUNDS process emphasises the fact that beginning stakeholder participation early in a decision-making process is important. People then have a legitimate opportunity to help frame the questions to be addressed, as well as to participate, and to influence the outcome. Other advantages of early involvement include: not wasting time in carrying out technical work on options that most stakeholders will never accept, shorter formal public consultation processes, and shorter regulatory approval procedures.

Involvement of stakeholders throughout a cycle of planning and decision-making is more effective than separate consultations on a number of issues. At sites where management of contaminated land will continue over many months, years, or even decades, means should be established to involve stakeholders throughout this period. It should not simply be when a particular project is in the late stages of planning or carried out, but at the outset

SAFEGROUNDS guidance recommends that:

- If there is doubt about who to involve and how, then the best course of action for the site owner/operator is to consult key stakeholders about what should be done. Communities remote from the site also need to be consulted if they may be affected by management of the contaminated land for a site, for example, where communities live near a disposal facility that could be used for remediation wastes.
- Stakeholders should be given enough information to enable them to participate effectively. Every effort should be made to avoid relying on national security or commercial confidentiality as reasons for failing to involve a wide range of stakeholders, or for denying them information.
- The resources required by stakeholders should be discussed with them at the planning stage. The stakeholder involvement programme should be designed to be reasonable in terms of the time, effort and financial resources required from all concerned, and commensurate with the scale of the problem. Where there is less experience of involvement, there may need to be an initial capacity-building stage to strengthen and provide resources to community institutions to allow them to participate fully.

See Main Guide Section 6

The rest of this section covers two key issues in more detail – trust and framing – and then discusses good practice in respect of nuclear licensed sites and non-nuclear defence sites. The Main Guide also briefly covers other types of site and sites contaminated by accidents or emergencies

Trust

SAFEGROUNDS supporting guidance on stakeholder involvement discusses good practice in the building trust between owners/operators and communities. The main points are as follows.

The increasingly positive approach to stakeholder relations on contaminated land issues is partly motivated by the sense that good governance, as understood by the community and major shareholders, requires it. However, the primary purposes are often to make better decisions, to develop approaches that can be implemented with community support, to improve transparency and to build trust.

Community involvement programmes are unlikely to be effective unless a degree of trust can first be established. Relationships with stakeholders and the public need to be built up over time. It is not realistic to expect that the trust and credibility required for successful consultation will be established quickly, especially where the project is contentious and the debate polarised from the start.

The validity of external participation depends crucially on the integrity of those running it and their responsiveness. Contributions should be objectively considered, there should be a genuine willingness to take a different course of action if new information or insights are provided. It is essential that site owners/operators can demonstrate to stakeholders that their views have been taken into account.

Acceptable motives, realistic strategies and effective regulation are prerequisites for building trust, but perhaps the most important factor is openness. An open culture within the organisation is the ideal. Practical examples of openness in the context of a community involvement programme include: admitting mistakes, acknowledging uncertainty, and giving people the full picture.

Reliability is another important contributor to trust. That is, the confidence that the sponsoring organisation and the individuals working within it will do what they say they will do. Not only should the organisation be open and honest, but it should also be efficient and competent so that its promises mean something. Poor reliability can easily grow into a more general lack of trust.

Independence and objectivity are also important considerations. Information from 'biased' sources will tend to be distrusted, particularly where the organisation's motives are primarily commercial or political. People place most weight on information that is clearly neutral and addresses all sides of the argument. For instance, independent peer review of the important subjective judgements underpinning the analysis may need to be carried out to underpin a comparison of options for a controversial project.

Although much is known about the differences between the way engineers and communities think about risk, communications between the two can still be fraught with difficulty. Any stakeholder programme has to deal with these risk perception and acceptability factors in an open and straightforward way if participants are to see it as addressing their concerns. At no time should concerns be dismissed as for example 'irrelevant' or 'unscientific'. Considered responses need to be provided in all instances. More information and technical references are provided in supporting SAFEGROUNDS documents.

Framing

SAFEGROUNDS supporting guidance on stakeholder involvement also discusses good practice in 'framing' the questions for consultation. The main points are as follows.

The public rarely see decisions as independent of the wider context. They inevitably perceive decisions that form part of a wider programme, such as site restoration, as being linked and if they cannot see the overall picture they will be likely to feel either mistrust or frustration – probably both. An involvement process will therefore be successful only if the participants fully understand the context, e.g. how a decision on one element of a wider plan fits together with decisions on other elements and on the overall framework. Participants need to be aware if proposals may be overturned or modified at a later stage or if other bodies (e.g. regulators) might initiate their own separate consultation. Communities link issues and decisions that seem separate to industry and regulators. Also, people see little distinction between policy and its implementation.

Members of the public usually wish to make their views known on the overall merits of the project and of alternatives but are rarely in a position to make much contribution on the technical development of the proposal. Thus a programme that aims to involve members of the public by allowing them to comment only on technical detail will frustrate them. They frequently want to be heard on matters that concern them but that are ostensibly outside the formal scope of the consultation and may well also be outside the scope of the project team's decision making. Exclusion and abrupt rejection of comment as 'outside the scope of what we are here to discuss' is liable to provoke an angry reaction. Some flexibility is therefore required, and there needs to be a mechanism for passing on such comments and obtaining a response.

Many environmental debates actually represent conflicts over competing social values as well as disagreements over scientific and economic data. The public and wider stakeholder community provide a social peer review function. This is comparable with the technical peer review that is the usual consultation objective but these represent different sorts of processes. They require different, perhaps parallel, approaches. Some of the difficulties in recent UK consultations are a result of attempting to stretch mechanisms and information provision designed for technical consultation to accommodate a different type of stakeholder input.

There is also the challenge of integrating the technical, social and local democratic inputs. Unless the decision-making process is tailored to accommodate all three types of input, and agreed before the process starts, the hard-won social input from the general public may simply be put to one side.

Nuclear licensed sites

Stakeholder involvement activities for the management of contaminated land should be integrated with the engagement programme for all the activities on a site. Close links exist between a site's decommissioning strategy, integrated waste strategy, contaminated land strategy and related issues such as choice of end-state(s). Many of the same stakeholders need to be involved in each consultation.

It is important that site owners/operators build and maintain relationships with their stakeholders, particularly local communities. Events such as consultations on particular topics should be recurrent features in an on-going programme, not self-contained, one-off exercises.

Where they exist, site stakeholder groups (SSGs) can be the starting point for involvement in contaminated land matters. However, the SAFEGROUNDS guidance notes that it will generally be necessary to involve a wider range of stakeholders than are represented on SSGs. Experts in particular aspects of contaminated land may also be employed. At sites where there is no SSG, consideration should be given to changing the composition and remit of the group that does exist (e.g. the local liaison committee) so that it can perform the required role.

Non-nuclear defence sites

Non-nuclear defence sites vary greatly in terms of their size and the extent of contamination, and hence in the time it will take to carry out the contaminated land management process. The nature of stakeholder involvement for sites that are to be sold for redevelopment differs from that for sites that are to remain in MoD ownership.

For large, complex sites that are to be sold, more involved processes will generally be applicable but there is unlikely to be SSG or equivalent group in existence. Where sites are to continue in their current use consideration should be given to setting up a 'project liaison group', made up of representatives of the local community, other affected communities, unions, CBOs, regulators, local authorities and perhaps consultants, contractors and prospective developers. Such a group would work throughout the land management process, with levels of involvement varying depending on the stage of the project. More information on good practice at smaller sites is given in the Main Guide.

Where a site is to be sold and redeveloped then stakeholder involvement is most likely to occur during the planning consultation process, usually initiated by the developing organisation.

At all defence sites that are to be sold, stakeholders need to be aware that government ministers have a role in final decisions. In practice it is very rare for ministers to refuse to approve strategies and options agreed between MoD and its stakeholders.

10. Involvement Opportunities

This section provides advice to people who want to find out what is happening at national policy or local site level and get involved in consultations and stakeholder involvement initiatives. Contact details for the organisations mentioned are given in the next section.

Policy Development

Policy on radioactive waste management and discharge policy generally originates with Defra. Defra does not operate a generic stakeholder register or a newsletter, so interested individuals are likely to find out about developments through other stakeholders who do (e.g. NGOs), or through national and specialist media (e.g. ENDS Report). A number of commercial organisations and NGOs provide routine summaries of media coverage of nuclear issues (sometimes free, sometimes paid for).

Consultation documents are usually available on the Defra website and on request as hard copies. Individuals and organisations can usually register their interest as stakeholders with the project team or the contractor running the programme. They will then typically receive updates and may be invited to 'road show' events and regional meetings.

The NDA is the other major source of consultation on policy and strategy matters. Interested individuals and organisations can register for email alerts and RSS feeds on its website. Consultation documents are usually available on the NDA website and on request as hard copies. The current NDA website has a useful stakeholder portal page with links to resources and consultation pages.

There are also two large ongoing independently facilitated programmes. The Committee on Radioactive Waste Management (CoRWM) and the ISOLUS project (Interim Storage of Laid-Up Submarines). The first stage of both these projects included extensive stakeholder involvement (reported on their websites). Second stages are expected to start during 2007.

Civil Nuclear Sites

There are a wide range of consultations linked to site-specific issues relevant to contaminated land matters. The following normally offer interested individuals and organisations the option of commenting on proposals or participating in the decision-making process.

- Options assessments carried out by the site licence companies (SLCs).
- Regulatory consultations on discharge authorisations.
- Planning applications e.g. 'change of use'.

All of these advertise consultations and events in the local media but it would be wise also to register with the local SLC communications team as an interested stakeholder. Most maintain a register and invite those on it to become involved as opportunities arise.

All such initiatives usually include consultation documents, supplemented by other mechanisms for getting stakeholder input such as open meetings, 'drop-in' days, focus groups, workshops and opinion polls.

Most local NGOs and pressure groups operate mailing lists, though they may not all include information on forthcoming consultations etc. in their newsletters and email bulletins.

Site Stakeholder Groups

All civil nuclear sites have standing site stakeholder groups, although they may be called something different. Typically they meet up to four times a year and provide both a channel for communication between the site and the community and a mechanism for community oversight of operations. Members usually represent a local stakeholder organisation. Their websites normally list members and set out the terms of reference.

Most SSG websites also give details of meeting dates and venues and allow people to download papers and meeting reports. Attending these meetings is a good way finding out what is happening on site. Agendas include reports from the SLCs and regulators, and it is a direct way to make contact with the people responsible.

The NDA has a portal page for SSGs covering its sites. British Energy has web pages for each of its sites that in turn have links to its site stakeholder groups and local community liaison committees.

MOD Sites

MOD sites relevant to submarine reactor operations are the naval bases at Clyde and Devonport, which have local liaison committees. Vulcan Naval Reactor Test Establishment shares a joint SSG with the NDA Dounreay site. All these are open to the public. AWE has a Local Liaison Committee which is not currently open to the public.

Several MOD sites in the Defence Estates portfolio have radioactive or mixed contamination. Community liaison arrangements vary and the starting point should be the site commander or Defence Estates.

NGOs

Non-Governmental Organisations are another route by which people who share their perspective can become involved and find out more about the issues. Some such as Friends of the Earth and Greenpeace campaign on nuclear issues as part of a wider campaign portfolio; others (e.g. Low Level Radiation Campaign) have a narrower focus. There are local campaign groups associated with many of the main civil and MOD nuclear-related sites. Generally those opposed to nuclear power or nuclear weapons typically have a more site-specific focus. There are too many to list in this Guide but the resources page of the 'no 2 nuclear power' campaign site provides links to most.

11. Contacts and Information

Government

Defra

The Department for Environment, Food and Rural Affairs is responsible for environmental protection generally (including contaminated land) and is the sponsoring department for the Environment Agency. The Radioactive Substances Division at Defra is responsible for policy on radioactive waste management and radioactively contaminated land issues. Recent consultations include the on-going 'Managing Radioactive Waste Safely' programme (of which CoRWM was one element) and the now published policy for the long term management of solid low level radioactive waste

[Defra RSD Address in here]

www.defra.gov.uk/environment/radioactivity/index.htm

Defra and the devolved administrations sponsor the Committee on Radioactive Waste Management (CoRWM). CoRWM provides independent advice to the on the long-term management of radioactive waste.

www.corwm.org.uk

DBERR

The Department for Business, Enterprise & Regulatory Reform's role in respect of nuclear issues a varied one, encompassing: industry ownership and supervision, regulatory activities to protect the public and international safety. BERR is the sponsoring department for the NDA and HSE. Recent consultations include the

[DBERR Group Title and Address in here]

www.berr.gov.uk/energy/sources/nuclear/index.html

Scottish Executive

The Scottish Executive Radioactive Waste Team #####

Scottish Executive
Radioactive Waste Team
Victoria Quay
EDINBURGH
EH6 6QQ

NDA

As described in more detail earlier in this Guide, the The Nuclear Decommissioning Authority has strategic responsibility for the UK's nuclear legacy and for decommissioning civil public sector nuclear sites "safely, securely, and cost effectively, whilst protecting the environment".

Nuclear Decommissioning Authority
Herdus House
Westlakes Science & Technology Park
Moor Row
Cumbria
CA24 3HU

www.nda.gov.uk/

The Stakeholder Relations team [role description in here] There is a stakeholder portal page at www.nda.gov.uk/stakeholders

The Site Stakeholder Groups have their own portal page at www.sitestakeholdergroups.org.uk

HPA

On 1 April 2005 the National Radiological Protection Board merged with the Health Protection Agency forming its new Radiation Protection Division. The RPD carries out the Health Protection Agency's work on ionising and non-ionising radiations. It provides expert information and has a significant advisory role in the UK. It provides advice to the public as well as Government and its website is a useful resource.

Health Protection Agency
Centre for Radiation, Chemical and Environmental Hazards
Radiation Protection Division
Chilton
Oxon
OX11 0RQ

www.hpa.org.uk/radiation/

Information and advice on radiation at www.hpa.org.uk/radiation/understand/radiation_topics/risks/index.htm#

Ministry of Defence

Defence Estates manages the MOD's built estate and land.

[DE Group Title and Address in here]

www.defence-estates.mod.uk

Defence Equipment and Support (DE&S) acquires and supports equipment and services - including nuclear submarines - through their life cycle, including disposal. Project ISOLUS is a DE&S project to develop and implement – with stakeholder involvement - a solution for the dismantling of the UK's defuelled nuclear powered submarines.

ISOLUS Project Team
Cedar 3a, #3340
MOD Abbey Wood
Bristol
BS34 8JH

www.isolus.org.uk

The naval dockyard web pages are at www.royal-navy.mod.uk/server/show/nav.3109 (Devonport, operated by DML) and www.royal-navy.mod.uk/server/show/nav.3157 (Clyde, operated by Babcock). The Vulcan Naval Reactor Test Establishment operated by Rolls Royce is adjacent to the NDA's Dounreay main site (no web page available).

The Atomic Weapons Establishment has sites at Aldermaston and Burghfield. It has been managed since 1993 on behalf of the MOD by AWE Management Ltd.
www.awe.co.uk

Regulators

Environment Agency

The Environment Agency has responsibility in England and Wales for [EA words in here]. Nuclear matters are overseen by [structure text in here]

[EA Group Title and Address in here]

www.environment-agency.gov.uk

SEPA

The Scottish Environment Protection Agency is SEPA is responsible for regulating the disposal of radioactive waste from nuclear licensed sites and from 'small user' premises such as non-nuclear industrial sites, offshore installations, hospitals, universities and research premises. Nuclear matters are overseen by [structure text in here]

[SEPA Group Title and Address in here]

www.sepa.org.uk/radioactivity/index.htm

HSE

The Health and Safety Executive regulates the nuclear industry through its Nuclear Directorate ND. The Directorate's primary goal is to ensure that those it regulates have no major nuclear accidents. It regulates worker safety and waste management.

HSE Nuclear Directorate
[HSE ND Address in here]

www.hse.gov.uk/nuclear/index.htm

Food Standards Agency

The FSA regulates radioactivity in food. The [group name and remit here] assesses the impact of radiological discharges in the UK on foodstuffs.

[Group name here]
Food Standards Agency
Aviation House
125 Kingsway
London, WC2B 6NH

www.food.gov.uk/

Local Authorities

NuLeAF

The Nuclear legacy Advisory Forum seeks to build capacity within local government to engage effectively with nuclear legacy management and works to represent the views of member local authorities to national bodies.

Nuclear Legacy Advisory Forum
c/o Suffolk County Council
Endeavour House
Russell Road
Ipswich IP1 2BX

www.nuleaf.org.uk/

NFLA

The Nuclear Fee Local Authorities aim is to identify the impact of national nuclear policy on local communities; increase local accountability over national nuclear policy; and, work to minimise nuclear hazards and increase public safety.

NFLA Secretariat
Town Hall
Manchester M60 2LA

www.nuclearpolicy.info/

Industry

British Energy

British Energy Group Plc

Systems House
Alba Campus
Livingston
EH54 7EG

www.british-energy.com

NIA

The Nuclear Industry Association is the trade association and information body for the UK civil nuclear industry.

Nuclear Industry Association
Carlton House
22a St James's Square
London
SW1Y 4JH

www.niauk.org

Non-Governmental Organisations

Greenpeace

Greenpeace UK's nuclear issues team campaigns on.....

Greenpeace Ltd
Canonbury Villas
London N1 2PN

www.greenpeace.org.uk/nuclear

Friends of the Earth

Friends of the Earth's climate change team campaigns on.....

Friends of the Earth
26-28 Underwood Street
London N1 7JQ

www.foe.co.uk

Low Level Radiation Campaign

The LLRC campaigns on.....

The LLRC is represented on the SAFEGROUNDS Steering Group.

LLRC
The Knoll
Montpellier Park
Llandrindod Wells
Powys LD1 5LW

www.llrc.org

Other Information Sources

To be completed through consultation. Will probably include:

ENDS Report - monthly journal for environmental policy and business in the UK.
www.endsreport.com/

No 2 Nuclear Power – campaign website opposing new nuclear build, but with useful resources pages. www.no2nuclearpower.org.uk

The Virtual repository of Nuclear Information – subscription website giving access to independent information and news on international radioactive waste management.
www.thevirtualrepository.info

Radwaste.org - the primary purpose of this US site is to provide links to reference sources for radioactive waste management professionals but the information is more generally useful. www.radwaste.org

N-base – free access database of newspaper articles on the UK nuclear industry and related issues. Also publishes weekly e-mail briefings for subscribers. www.n-base.org.uk

News websites from The BBC, Guardian,

References

1. Hill, M D (2005). *The UK Regulatory Framework for Contaminated Land on Nuclear licensed Sites and Defence Sites, Version 4. A paper for the SAFEGROUNDS Learning Network.* CIRIA, London. Available from <www.safegrounds.com/guidance.htm>
2. Collier, G D (2005). *Community Stakeholder Involvement. A report prepared within the SAFEGROUNDS project, Version 2.* CIRIA, London. Available from <www.safegrounds.com/guidance.htm>
3. Penfold (2007). *SAFEGROUNDS Guide to the Comparison of Land Management Options, DRAFT.* Available from <www.safegrounds.com/current_consultations.htm>
4. HPA (2006). *Dose Criteria for the Designation of Radioactively Contaminated Land.* Health Protection Agency, 2006. Available from <www.hpa.org.uk/publications/2006/rce-2/default.htm>.
5. Smith (2005). *Assessment of Health and Environmental Risks from Contaminated Land. A paper from the SAFEGROUNDS Learning Network.* CIRIA, London. Available from <www.safegrounds.com/guidance.htm>
6. Hill, M D; Penfold J S S; Walke, R C; Egan, M J; Collier, G D, Kruse, P; Smith, G M & Towler, P (2007). *SAFEGROUNDS Good Practice Guidance for the Management of Contaminated Land on Nuclear and Defence Sites, Version 2. DRAFT.* Available from <www.safegrounds.com/current_consultations.htm>

Glossary and Acronyms

This section comprises a short glossary and list of acronyms used in this report. Fuller glossaries relevant to radioactively contaminated land are available.

- A full Glossary of Terms is included in the Main Guide
- Environment Agency www.environment-agency.gov.uk/subjects/landquality/113813/1442829/1443603/1443609/

ALARA	As low as reasonably achievable
AWE:	The Atomic Weapons Establishment
BPEO	Best Practicable Environmental Option
CoWRM	Committee on Radioactive Waste Management
Defra	Department for Environment, Food and Rural Affairs
LLWR	The facility for LLW operated at Drigg, near Sellafield
EA	The Environment Agency for England and Wales
FSA	The Food Standards Agency
HSE	The Health and Safety Executive
IRRs	Ionising Radiations Regulations (1999)
ISOLUS	Interim Storage of Laid-Up Submarines
NIA65	The Nuclear Installations Act 1965
NDA	Nuclear Decommissioning Authority
NGO	Non-Governmental Organisation
RSA93	The Radioactive Substances Act 1993
SEPA	The Scottish Environmental Protection Agency