

Land Quality Management

Topic Strategy Summary

November 2009

Current Position

Credible options identified for comment

Ongoing Work

Selecting preferred option and developing view of successful land quality management

Position at Strategy II

View of successful Land Quality Management to inform case-specific decisions being made by SLCs

Land Quality Management

Related documents:

2006 NDA Strategy

UK Nuclear Industry LLW Strategy,
Consultation document, June 2009

LLW Strategic review, 2009, LLW Repository
Ltd

Background

Preventing the contamination of ground and groundwater is the first rule of protecting land quality; prevention is better than cure. However, we recognise that leaks and spills do occur and have occurred in the past at NDA sites, leading to the contamination of ground or ground water with radioactive or non-radioactive substances existing in, on or under land at levels above the natural and artificial background levels typical of the area. Therefore, the Land Quality Management (LQM) strategy will articulate the preferred strategy for managing this contamination to protect people and the environment, which includes protection of groundwater as a resource in its own right.

LQM comprises actions to assess, characterise, control, monitor, remediate or remove contamination in, on or under land.

Topic Strategy scope and boundaries

The LQM strategy relates to the management of any contaminated ground or groundwater for which NDA or our Site Licence Companies are deemed responsible under relevant statutory provisions until the declared Site End State is reached and NDA's mission is complete. The strategy considers management of radioactive and non-radioactive contamination once it is in the ground or groundwater until the material is determined and managed as waste (discussed in Integrated Waste Management strategies). The first principle of LQM is to prevent contamination of ground and groundwater in the first place. However, the actual activities required to prevent contamination of ground or groundwater, e.g. prevent leaks from facilities and manage gaseous or liquid discharges, are more appropriately covered in the strategy for Asset Management and for Low Level Waste (Liquid and Gaseous Discharges strand) respectively.

Within these boundaries, the LQM strategy needs to consider how land quality will be managed to protect people and the environment as well as the rate at which the Site End State will be achieved.

Topic Strategy objective

To ensure the optimum approach to safe LQM across the NDA estate.

Topic Strategy Interfaces

The LQM strategy interfaces with a number of other Topic Strategies in addition to the majority of the enabling strategies. The most notable interfaces are:

- Site End States because the proposed Site End State defines the land quality that must ultimately be achieved.
- Decommissioning and Clean-up because site restoration strategies must be consistent. For example, the relative timing of decommissioning and clean-up activities may impact requirements for control and monitoring of land contamination, and may risk (re)contaminating land.
- Integrated Waste Management topics because the waste management hierarchy influences the approach to LQM. Also, a robust understanding of the proportion of ground and groundwater that could be excavated and sentenced as waste will inform the development of national solutions and the infrastructure required for waste management; vice versa, plans for managing land quality are influenced by national solutions for waste management and the availability of waste routes.

Land Quality Management

Topic strategy credible options

The credible options for managing land quality to protect people and the environment are:

1. Manage contamination in-situ without intervention (e.g. via Monitored Natural Attenuation)
2. Manage contamination in-situ with intervention (e.g. via enhanced control or attenuation)
3. Manage contamination ex-situ to allow excavated material to be reused / recycled
4. Manage contamination ex-situ as waste in accordance with the appropriate waste management strategy and regulatory framework

The credible options for the rate at which the Site End State (or interim state) is achieved are:

1. Accelerate land quality management to achieve the Site End State as quickly as possible
2. Manage land quality to achieve the Site End State at a rate that represents lowest short-term cost
3. Manage land quality to achieve the Site End State at a rate that represents greatest overall value to the UK taxpayer

All of the above credible options are dependent on the land being characterised adequately so that the consequences of implementing a specific option are understood.

Current Topic Strategy

The 2006 NDA Strategy guides Site Licence Companies to:

- accelerate characterisation of land;
- develop fully costed and robust long-term management plans;
- create and maintain appropriate records; and,
- monitor contamination whilst plans are being developed.

The 2006 Strategy also references the role of the Regulators who will subject plans to independent scrutiny and exercise powers as necessary to protect people and the environment.

Strategy maturity and risks

The 2006 NDA Strategy is being implemented; all SLCs have an improved conceptual model of land quality and have developed or are developing land quality management plans.

It is evident that the volume of land estimated to be or have potential to be radioactively contaminated exceeds the Low Level Waste (LLW) disposal capacity available nationally at present. As such sentencing and managing all this land as waste (radioactive or non-radioactive) would be a considerable challenge, and represents a significant risk to the proposed UK Nuclear Industry LLW strategy that is out for consultation at the time of writing. The waste management hierarchy is at the heart of the LLW strategy, and flows through to the management of land quality.

Stakeholders and engagement to date

Key engagement has taken place with stakeholders attending the NSG, which has informed the position that land must be characterised adequately, *i.e.* to a level that informs decision-making. In addition, NDA has been engaging with Regulators for some time to achieve a



Land Quality Management

common understanding of successful LQM to avoid NDA Strategy inadvertently misaligning with expectations of key stakeholders. SLC views have been incorporated via the Inter Industry Group for Contaminated Land Management and Site Restoration Issues (IIG-CL), which meets quarterly.

Forthcoming stakeholder engagement

Future meetings of IIG-CL and ongoing work with Regulators will refine the view of successful LQM. Stakeholders attending the NSG in March 2010 will have an opportunity to influence this work. In parallel, the credible options for managing land quality will be subject to a Strategic Environmental Assessment from an estate-wide perspective. The outcomes will be published for consultation.

Position at Strategy II

The optimum approach to managing land quality (preferred option) is case-specific (specific to the nature and extent of the contamination, as well as the site setting), which limits how directive NDA Strategy can be. Therefore, by the publication of Strategy II, it is anticipated that we will have developed a view of successful LQM aligned to the credible options that will inform case-specific decisions being made by Site Licence Companies.

To mitigate strategic risks, Strategy II will emphasise the need for LQM to protect people and the environment in a manner that makes best use of available resources, including appropriate application of the waste management hierarchy.

Summary position

The strategy is currently at Stage A (credible options) in the SMS.

For more information on stages of strategy development, see the Strategy Management System Short Guide available at: <http://www.nda.gov.uk/strategy>