



Site Restoration

Strategy Development Programme Draft for comment

March 2012



Site Restoration Draft Strategy Development Programme March 2012

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Executive Summary

NDA's mission is to deliver safe, sustainable and publically acceptable solutions to managing the UK's civil nuclear legacy. We deliver our mission through others. This requires us to develop strategy and thereby define the client specification for our contractors (Site Licence Companies).

NDA's Site Restoration strategy is our driving strategy and all other strategic themes support or enable its delivery. Site restoration comprises the decommissioning of facilities and the remediation of ground and groundwater (land quality management) to the point where our designated sites are released for other uses (Site End State). This journey will be punctuated by a number of key milestones or decision points (Interim States) that typically mark the progressive reduction in risk to people and the environment.

Many site restoration challenges require tactical solutions, which are provided by SLCs. Some issues are more strategic and resolution requires, for example, a multi-SLC or UK approach, or has implications for policy and / or regulations.

Our Strategy (published in 2011) provides a clear direction of travel for site restoration. In order to provide more detailed strategic guidance to our SLCs we need to answer some difficult questions. We anticipate that this will result in the following five products of strategy development:

- (A) Principles for defining Site End States
- (B) NDA perspective of options for next use of NDA land
- (C) Principles for prioritising restoration projects
- (D) Principles for defining Interim States
- (E) Regulator guidance on institutional controls that apply throughout site restoration journey

Developing these products (and our client specifications) will allow SLCs to optimise the Site Interim and End States and dates that make up site Lifetime Plans. Optimisation will ensure protection of people and the environment, provide value for money and facilitate the release our sites for other uses.

This document describes the questions that we still need to answer (remaining strategic issues and opportunities), and outlines our plan for answering them. By publishing our plan for strategy development we aim to:

- provide reassurance that we have a credible programme for resolve remaining strategic issues; and,
- seek feedback and support from within NDA, the SLCs, regulators and the wider stakeholder community.

1 Introduction

NDA's mission is to deliver safe, sustainable and publically acceptable solutions to managing the UK's civil nuclear legacy. We deliver our mission through others. This requires us to develop strategy and thereby define the client specification for our contractors.

NDA's Site Restoration strategy is our driving strategy and all other strategic themes support or enable its delivery. Hence there is a strong interface with other strategies, particularly Intergraded Waste Management, Spent Fuel and Nuclear Materials.

Site restoration comprises the decommissioning of facilities and the remediation of ground and groundwater (land quality management) to the point where our designated sites are released for other uses (Site End State). This journey will be punctuated by a number of key milestones or decision points (Interim States) that typically mark the progressive reduction in risk to people and the environment.

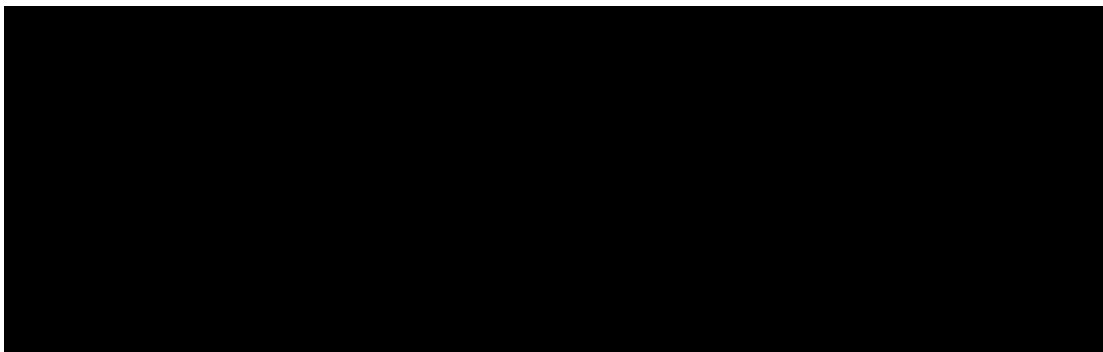


Figure 1: Lifecycle of a typical nuclear site from operations through restoration to its eventual release for other uses

Each of our sites has a Lifetime Plan that describes the way in which Site Interim and End States will be realised. Implicit within these plans is the Site Restoration roadmap, which describes the journey that gets us from where we are now to where we want to be.

To optimise the roadmap requires two key elements:

- knowledge of the site condition, site setting and good practice to inform the tactics of site restoration; and,
- clear strategy from NDA, which tackles issues that our SLCs are not well placed to resolve because, for example, resolution requires a multi-SLC or UK approach, or has implications for policy and/ or regulations.

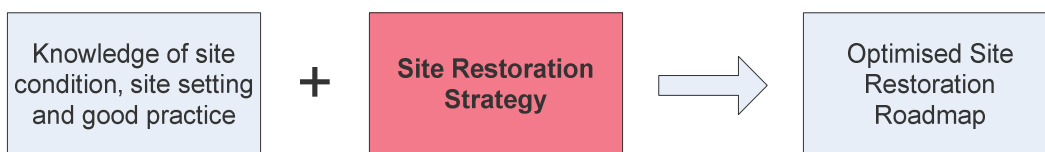


Figure 2: Ingredients of an optimised Site Restoration roadmap

1.1 Summary of current Site Restoration Strategy

In the most recent version of NDA's Strategy (published in 2011 [1]), the headlines from the Site Restoration strategy are as follows:

- Site Restoration Strategy focuses on **reducing risks to people and the environment** with the objective of restoring the NDA estate **as soon as reasonably practicable** and **releasing sites for other uses**.
- Our strategy is to employ **pragmatic, risk-based restoration objectives** that balance the benefits and detriments of different restoration standards. Accordingly, our preference is to restore our sites to a condition suitable for their **next planned use**.
- Our preference is for Site End State definitions to remain flexible until planning commences for the final stages of restoration, which for the majority of our sites is decades away. For these sites the emphasis is on defining **Interim States** as shorter-term restoration objectives. We will **review Site End States only if and when required**.
- Facilities and land contamination can be made safe to remain **in-situ** or removed for management (*e.g.* treatment, disposal) elsewhere (**ex-situ**). Both are credible options, each with benefits and detriments depending on the specific case.
- Restoration can be **continuous** until the Site End State is achieved or can be **deferred** by placing a facility, parts of a facility or an area of land in such a condition that it can be safely stored and maintained until restoration can recommence to achieve the next interim or end state. Again, both are credible options, each with benefits and detriments depending on the specific case.
- **Where risks are intolerable we will take urgent action to reduce them.** Where the risk is less significant our approach takes greater account of other relevant factors.
- We will ensure that the **net level of risk will not increase in the long-term**, *i.e.* we will take due account of asset management.
- Where risks have been reduced, there is still work to be done in order that we can complete our mission, demonstrate this, and release land for other uses.
- We recognise that to deliver the risk reduction that is core to our mission, we **may need to accept short-term increases in risk**.

2 Document purpose

Our Strategy II provides a clear direction of travel for site restoration. We need to answer some difficult questions before we can refine the client specifications and provide more definitive instructions to our contractors.

This document describes the remaining strategic issues and opportunities, and outlines our plan for resolving them. Also, although not strategic in nature, it describes our role in helping SLCs with their quest to improve knowledge of the site setting, site context and good practice.

By publishing our plan for strategy development we aim to:

- provide reassurance that we have a credible programme for resolving remaining strategic issues; and,
- seek feedback and support from within NDA, the SLCs, regulators and the wider stakeholder community.

3 Case for Change – What is the Problem?

Issues and opportunities associated with the current Site Restoration Strategy are listed below:

- Our strategy recognises that both in-situ and ex-situ management solutions are credible. To select a preferred option requires us to balance the impact of intervening and generating waste against the impact of leaving something behind. To inform future reviews of Site End States, we need to agree with stakeholders when it is appropriate to leave something behind, and what evidence is required to substantiate the preferred option.

On-site waste disposal also leaves something behind. We need to be clear about the impact that such solutions have on Site End States.

- Following on from the above, our strategic preference is to restore our sites to a condition suitable for their next planned use. This would ensure that we get value from the restoration work we do, and recognise that restoration beyond this point has potential to do more harm than good [2].

This level of restoration may not be enough for all institutional controls (management arrangements and regulatory controls) to be revoked. It is important that appropriate institutional controls are in place to ensure continued protection of people and the environment into the future. However, we believe that in their current form the controls could discourage reuse of the site by others, and risk development of neighbouring “greenfield” land instead.

- Our strategy recognises both continuous restoration and deferred restoration as credible options. The process of selecting a preferred option can create



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tension between technical and socio-economic factors both at a site and across the NDA estate.

- If restoration is deferred at a facility or site, this is in effect an Interim State. Stakeholders will require reassurance that the state is stable and appropriately controlled, and delivers some form of benefit.
- We have an opportunity to introduce consistency in the way in which Interim States are described.
- It is common sense to state that we will take urgent action to reduce intolerable risks. It is more difficult to prioritise restoration projects when their influence on risk is less significant. Again, this introduces tension between technical and socio-economic factors both at a site and across the NDA estate.

In recognition of the above, our Strategy commits NDA to:

- further underpin the strategic options of in-situ and ex-situ restoration;
- review Site End States in consultation with stakeholders if and when required;
- discuss with Government and regulators the role of institutional controls in managing residual contamination;
- further underpin strategic options of continuous and deferred restoration, and capture the circumstances and conditions that may lead to a change from continuous to deferred restoration or *vice versa*;
- develop our strategy for Interim States;
- develop a set of relevant factors for consideration during decision-making.

4 Strategy Development Programme and Products

In order to further develop our Site Restoration strategy and respond to the commitments made in our Strategy, we propose to develop five key products:

- (A) Principles for defining Site End States
- (B) NDA perspective of options for next use of NDA land
- (C) Principles for prioritising restoration projects
- (D) Principles for defining Interim States
- (E) Regulator guidance on institutional controls that apply throughout site restoration journey

These products are described in more detail below and the draft programme for development is presented in Figure 3.

(A) Principles for defining Site End States

We want to make sure that if and when Site End States need reviewing, these reviews take place in a robust and consistent manner.

We will establish the ground rules for comparing the potential benefits and detriments of different restoration targets such that a Site End State can be optimised accordingly. This will include establishing with stakeholders when it is appropriate to leave something behind (*e.g.* via in-situ or on-site disposal) and the evidence required to substantiate this approach.

(B) NDA perspective of options for next use of NDA land

Strategy II expresses our preference to restore our sites to a condition suitable for their next planned use. Therefore, to inform future Site End State reviews, NDA intends to articulate its perception of what the next use of our sites might be. This needs to reflect other areas of strategy development, for example concerning waste consolidation and on-site waste management.

We will also take the opportunity to identify and where appropriate articulate nearer-term opportunities for releasing parts of sites for other uses.

This piece of work will involve conversations with local authorities in respect of local area development plans and will engage other local stakeholders, if and when the time is considered to be right.

(C) Principles for prioritising restoration projects

This product will describe the technical and socio-economic factors that influence the optimal pace of progress in site restoration, *i.e.* deciding when continuous restoration is necessary and when restoration projects can and / or should be deferred.

The product will include discussion of how we measure progress (metrics) and a description of the strategic tolerances for each metric, *i.e.* capture the circumstances and conditions that may lead to a change from continuous to deferred restoration or *vice versa*. By defining when the pace of progress is too slow, we are in effect identifying a priority.

(D) Principles for defining Interim States

While the exact nature of Interim States will be site-specific, strategic direction will be developed for those Interim States that mark a significant change in the pace of restoration, e.g. the start of a managed deferral or quiescent period.

This product will describe the evidence that must be in place to justify any period of deferral. The evidence should reassure stakeholders that deferring restoration of a facility or site has some benefit, and that the condition of the facility or site will be both stable and appropriately controlled.

With reference to the above, we will ensure consistency in the way in which Interim States are described. We aim to define a generic site restoration roadmap against which sites can indicate their progress.

(E) Regulator guidance regarding institutional controls that apply throughout site restoration journey

This product will clarify the institutional controls that apply at each stage of the restoration journey. In particular, it will explore the nature and extent of restoration required for withdrawing some or all institutional controls. If it is appropriate for some controls to remain in place beyond the Site End State, we will clarify the nature of these controls and the influence of these controls on future use of the site.

The product will also describe the extent to which record keeping (maintaining records of site history) can be considered an institutional control, e.g. records held nationally by the land registry.

Aspects of this product will take the form of regulatory guidance, which are not within NDA's gift to deliver.

5 Driving Change – Benefits Realisation

The desired **Outcome** of the Site Restoration strategy development programme is clear:

Outcome:

A set of optimised site Lifetime Plans and roadmaps founded on a clearly articulated NDA Site Restoration Strategy. Once established, ongoing review will ensure continued development and improvement of both strategy and plans.

The **Benefit** that we seek is also clear:

Benefit Statement:

Site Interim and End States and dates are optimised to ensure protection of people and the environment, provide value for money and facilitate the release of our sites for other uses.

And the approach to **Realising the Benefit** is well established:

Benefits Realisation:

A key element in achieving the strategic outcome is our Site Strategic Specifications. This is the means by which we translate strategy into requirements, which in turn influences the ongoing development of lifetime plans. The tangible benefits (*i.e.* restoring our sites and releasing them for other uses) will then be realised through NDA's client capability to select the right site contractors and manage the delivery of contracts for site restoration.

5.1 Supporting delivery

Although not strategic in nature, in order to help realise the benefits of strategy development, NDA will support SLCs with the following priority work areas:

Characterising and documenting the site baseline

We will develop reporting requirements for describing the status of land, the status of assets and the restoration journey that the site will undertake (roadmap). SLCs must have the information required to make informed decisions (select the preferred option) for site restoration.

Improving efficiency and efficacy of site restoration projects independent of strategy development

The efficiency and efficacy of site restoration (including site characterisation, risk assessment, decontamination, dismantling and remediation) can be improved independent of strategy development. This could be realised by SLCs working together for example to:

- define research and development projects of mutual benefit;
- share good practice and lessons learned;
- develop codes of practice.

We will establish working groups as appropriate to facilitate working together.

6 Stakeholder engagement

Strategy development will require focussed stakeholder engagement. Engagement with key stakeholders will primarily occur through existing arrangements, *e.g.* standing meetings with Government and Regulators, and meetings with planning authorities co-ordinated via NuLeAF and SCCORS.

As the Site Restoration Strategy Programme develops it is envisaged that separate issue-specific workshops will be required and involve engagement at a local or regional level. Specific topics may also be discussed at National Stakeholder Events. All engagement opportunities will be captured and detailed via the National Engagement Plan.

7 References

- [1] NDA 2011 Strategy <http://www.nda.gov.uk/strategy/>
- [2] NDA, 2011. Site End States Preferred Option (Gate B) <http://www.nda.gov.uk/documents/upload/Site-End-States-Preferred-Option-March-2011.pdf>

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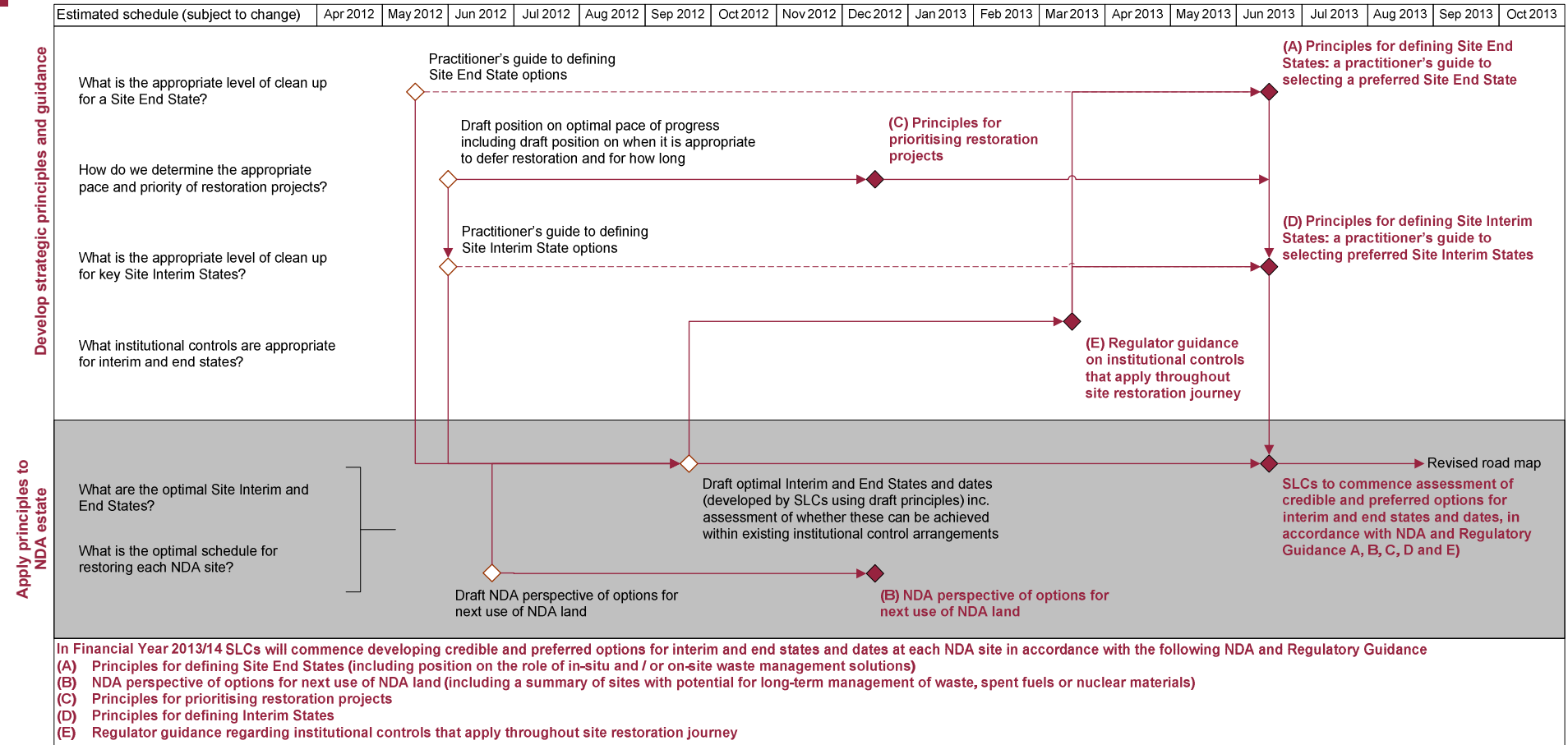


Figure 3: Draft programme of strategy development (subject to change)