





## **2 OVERVIEW OF THE WEST CUMBRIAN NUCLEAR SITES**

### **2.1 Sellafield, including Windscale and Calder**

These sites are owned by the Nuclear Decommissioning Authority and cover an area of 650 acres on the West Cumbrian coast near to the village of Seascale. Nuclear operations have taken place there since the late 1940's. The sites contain a wide variety of clean-up and decommissioning activities alongside the manufacturing and reprocessing of nuclear fuel and the treatment and management of radioactive wastes.

The sites are currently managed by two Site Licence Companies working under contract to the NDA. British Nuclear Group operates Sellafield and Calder, whereas Windscale is currently managed by the UKAEA. Over the next few months the NDA intends to bring together Sellafield, Calder and Windscale into a single site under the management of British Nuclear Group.

### **2.2 The Low Level Waste Repository**

The Low Level Waste Repository lies about four-and-a-half-miles south of Sellafield and is managed by British Nuclear Group. The site receives and disposes of UK low level radioactive waste. It also contains historic plutonium contaminated materials which are being removed from the site for long-term storage at Sellafield.

## **3 SITE END-STATE AND END POINT CONSULTATION**

### **3.1 Definitions**

The **END USE** is the **use** to which a site, or part of a site, will be put when the NDA has finished its business.

The **END STATE** is the **physical condition** of the site at the point at which the NDA has finished its business.

The **END POINT** of a site is the **time** at which this end state is reached.

### **3.2 Range of possible site end states**

- At one end of the range is a pristine site on which there is no radiological or hazardous waste or contaminated ground, and which can be released for unrestricted re-use.
- At the other end of the range is a site which has such a significant amount of contaminated land that it needs to remain under institutional control for the foreseeable future. Ground contamination would be monitored and managed to protect the environment. Access would be restricted to protect the public.



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- In between these two extremes lies a range of possible end states for restricted industrial or commercial re-use such as a science park or new electricity generating plant.

The chosen end states must be consistent with both national and local policy on the potential re-use of sites. This could mean that the end state for a given site may have to change in the future in line with a revised policy.

End uses may be achieved through mixed end states. For example, areas may be delicensed, while other areas remain under the licensing regime. A zoned map (see Sellafield overview) has been produced to show Sellafield in five distinct areas. The Low Level Waste Repository is being considered as a single entity for the purposes of this consultation, although different uses in different areas may be feasible.

### **3.3 The consultation process**

The WCSSG has decided to engage a specialist independent facilitator to manage the consultation process on its behalf. The consultation will be undertaken through the WCSSG website<sup>2</sup> and in workshops to be held in West Cumbria. There are two main phases to the consultation:

#### **- Phase 1 - End Uses**

Stakeholders will identify the uses to which they think the sites should be put and rank them in order of preference.

The Site Licence Companies will then define a range of end states that match the stakeholders' preferred end uses. They will determine what needs to be done to achieve a particular end use while continuing to protect people and the environment. The Companies will also gain an understanding of the long and short-term consequences of achieving each end state.

#### **- Phase 2 – End States**

The second phase aims to understand the acceptability of particular end states to stakeholders. Site Licence Companies will present the implications of achieving each end state, for instance for safety, the environment, costs and length of project. They will also explain why some options will be more feasible than others. Reasons will be given if any options are not feasible.

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<sup>2</sup> [www.wcssg.co.uk](http://www.wcssg.co.uk)



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Two reports will be delivered to the NDA, one from the WCSSG on the acceptability of end states to the community and another from British Nuclear Group and the UKAEA on the feasibility of end states. The NDA will then draw together the results from all UK site stakeholder group consultations and reconcile them with other NDA strategic initiatives and developments in national energy and waste policy. From this they will develop recommendations in their next draft Strategy which will be published for public consultation before being submitted to the Government for approval and adoption.

Given the long timescales involved in the decommissioning of Sellafield and the closure of the Low Level Waste Repository, end states will need to be reviewed periodically to confirm that they remain the best approach. The community will be consulted again at each of these reviews.

#### **4 CURRENT LIFETIME PLAN ASSUMPTIONS ON SITE END STATES**

As mentioned above, Sellafield, Calder Hall and Windscale are to be integrated into a single site. However, assumptions described below are taken from the current separate Lifetime Plans for the sites.<sup>3</sup>

##### **4.1 Sellafield, including Calder Hall**

Current plans are to place low level waste in vaults at Sellafield once the Low Level Waste Repository is full (currently expected to be 2050). In order to do this the River Calder would be diverted around the site and the site would finally be capped by a large volume of soil. The site would then be landscaped, fenced and a groundwater monitoring system put in. This will leave the site under a monitoring regime under indefinite institutional control.

##### **4.2 Windscale**

Contaminated land and water remediation and control will be carried out to achieve the final end state conditions whilst complying with stakeholder, environmental and nuclear site licence requirements. This is currently assumed to be a radiological/industrial brownfield site based on risk assessments and Best Practicable Environmental Option studies. Final restoration of the site is assumed to be undertaken as part of the larger Sellafield site with an identical end state.

##### **4.3 Low Level Waste Repository**

The Repository will focus on clean-up of the site in an environmentally responsible manner, compliant with the NDA clean-up programme and regulatory requirements. The objective is to return the site to an acceptable environmental end state as in the Low Level Waste Repository Lifetime Plan.

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<sup>3</sup> Site Lifetime Plans can be seen at [www.nda.gov.uk](http://www.nda.gov.uk)



## **5 CURRENT KNOWN CONSTRAINTS**

### **5.1 Sellafield, including Calder and Windscale**

The volumes of contaminated land are significant. It is estimated that there may be as many as 20 million cubic metres, a mix of low level waste and intermediate level waste, at Sellafield. To put this into context it is worth noting that the total volume of LLW for the nuclear industry, excluding contaminated land at Sellafield, is 2 million cubic metres.

### **5.2 Low Level Waste Repository**

There are three currently known constraints for the Low Level Waste Repository:

- Limits to the capacity, both radiologically and in terms of volume
- Changes to the conditions for acceptance which may arise out of the review of the Environment Agency authorisation
- Changes arising from the UK National Policy for Low Level Waste

## **FURTHER READING AND USEFUL WEBSITES**

The following documents are available on the NDA website, [www.nda.gov.uk](http://www.nda.gov.uk) or from:

The Nuclear Decommissioning Authority  
Herodus House  
Westlakes Science and Technology Park  
Moor Row  
Cumbria  
CA24 3HU  
Tel: 01925 802001

- 1 NDA Strategy
- 2 Site End State Consultation Process
- 3 Lifetime Plans for Sellafield, Windscale and the Low Level Waste Repository

The following websites may also give useful background information:

- 4 West Cumbria Sites Stakeholder Group at [www.wcssg.co.uk](http://www.wcssg.co.uk) (the report on the consultation on The Future of the Sellafield Site can be seen on this website or can be obtained by telephoning 019467 85802.)
- 5 Committee on Radioactive Waste Management (CoRWM) at [www.corwm.org.uk](http://www.corwm.org.uk)
- 6 The Operations Portfolio/Sellafield area of British Nuclear Group at [www.britishnucleargroup.com](http://www.britishnucleargroup.com)