

## **A NEW APPROACH TO NUCLEAR CLEAN UP IN THE UK**

T. Selby  
LMU

### **SUMMARY**

Exciting and far reaching changes are being made to nuclear clean up operations in the UK. A new body – the Nuclear Decommissioning Authority (NDA) – is to be set up to provide strategic direction and control for decommissioning and cleaning up civil public sector nuclear sites (so called ‘legacy sites’). The current estimate for cleaning up the 20 ‘legacy sites’ is around £50bn, over a timescale that stretches well into the next century. The aim is for the NDA to take responsibility on 1 April 2005 for the range of sites currently operated by BNFL and UKAEA and to drive forward decommissioning and clean up using cost reimbursable performance based incentivised contracts. Competition is at the core of the Government’s proposals but it won’t be competition for competition sake. Competitions will be used where the NDA believes that by changing the portfolio of contractors, improvements in performance can be delivered. Though initial contracts (probably of varying periods) will go to the incumbents, it is expected that the NDA may want to hold early competitions - especially for some of its simpler sites. All this needs to be delivered within the existing robust regulatory framework where high standards of safety, security and environmental performance are the norm. The NDA will also need to – and be seen to -provide good value to taxpayers who will fund the clean up programme.

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### **INTRODUCTION**

This paper provides an insight into the UK Government’s proposals for a new, more focussed approach to nuclear clean up. It:

- explains some of the background to the Government’s thinking;
- discusses some of the main challenges confronting the UK;
- explains the preparatory work currently in progress;
- discusses the use of competition to drive improvements in performance;
- emphasises the importance of safety, security and environmental performance;
- briefly discusses the proposed contract model;
- sets out next steps.

Legislation is currently going through the UK Parliament that will allow the NDA to be established later this year and for it to become fully operational on 1 April 2005. On that date the NDA will take responsibility for some 20 nuclear licensed sites currently operated by BNFL and UKAEA. These include operational, defuelling and decommissioning Magnox reactor sites, former research sites, nuclear chemical plant and a low-level waste disposal facility. The Joint European Torus (JET) project (Fusion research) is also included. On 1 April 2005 BNFL will be restructured with its legacy sites (and nuclear legacies) going to the NDA and a new BNFL

company, wholly focussed on commercial activities, being formed. The UKAEA liabilities (though not the sites) will also transfer to the NDA at the same time.

The NDA will operate within the existing robust regulatory framework. The independent Nuclear Installations Inspectorate (NII) - part of the Health & Safety Executive (HSE) - regulates safety on nuclear sites. Similarly, the independent Environment Agency (EA) for England and Wales and the Scottish Environment Protection Agency (SEPA) for Scotland, regulates the environment on nuclear sites. The Office of Civil Nuclear Security (part of the DTI) is responsible for regulating physical protection and data security at nuclear sites.

Competition is central to the Government's policy. But it won't be competition for competition sake. And there is no prescribed agenda or timescale for competitions. However, the NDA will use competition to drive improvement in performance. The incumbents, BNFL and UKAEA, will get the first contracts from 1 April 2005 because there would be no opportunity for the NDA to complete a competition beforehand. The challenge for them is to perform so that they can become NDA contractors of choice. It is entirely possible that, early in its existence, the NDA will want to hold some competitions. This will be needed to satisfy EU procurement law and to give the NDA the experience of holding successful competitions. One of the key early challenges for the NDA, in my view, is to demonstrate publicly that it intends to make a difference. One obvious way to do that is to start competing sites. It seems to me that the NDA is unlikely to want to cut its 'competition teeth' on one of its large and complex sites. It may, therefore, choose a simple site first eg a defuelled reactor site, a former research site or the low level waste facility at Drigg. [Note: These examples are illustrative only and it will be for the NDA to determine its own competition timetable and the order in which sites are competed.]

## **BACKGROUND**

So how did we get here? Well, by the emerging conclusions from two Government led reviews coming together at the same time. Let me briefly explain. Concurrent, but separate reviews looking at the future of both BNFL and UKAEA were reaching completion. On the former the issue revolved around whether as some stage it might be possible to pursue a Public Private Partnership (PPP) for BNFL. In the case of UKAEA (which is a Non Departmental Public Body) a normal five yearly (quinquennial) review of performance etc and the need for its continued existence. The common thread was nuclear liabilities, especially the so called legacy liabilities dating back to the 1950s and 1960s and arising from the 'cold war' effort. The questions revolved around how the legacy liabilities should be managed, who should pay for them and how could nuclear clean up be given greater focus and impetus. Ministers concluded that:

- the cost of cleaning up the legacy sites would have to be met by the taxpayers;
- a national strategic approach was required;
- this would have to be done within the existing robust regulatory framework and high standards of safety, security and environment performance would have to be maintained;
- the generation who created the problem should take the responsibility for getting on with nuclear clean up; and
- a new body should be created to provide the necessary strategic direction and control to the clean up programme.

On 21 November 2001, Patricia Hewitt Secretary of State for Trade and Industry (DTI) made a Statement to the UK Parliament in which she announced that the Government intended to establish a new strategic body - then called the Liabilities Management Authority (subsequently changed to the Nuclear Decommissioning Authority (NDA)) – to take responsibility for the liabilities and the sites on which they exist. She said that the Government intended to produce a ‘White Paper’ setting out its proposals for dealing with the nuclear legacy and to bring forward, when the Parliamentary timetable allowed, the necessary legislation to create the NDA. This announcement was widely welcomed on all sides, including by NGOs and ‘Green Groups’.

The chronology of events since then looks something like this:

- 4 July 2002 - “Managing the Nuclear Legacy: A strategy for Action” White Paper published;
- 24 June 2003 - Draft Nuclear Sites and Radioactive Substances Bill published;
- 26 November 2003 - The Queen announces to both Houses of Parliament that Energy Bill (including NDA clauses) in Government’s programme for 2003/04 session;
- 27 November 2003 - Energy Bill published and introduced into the House of Lords (Upper House);
- 11 December 2003 – 2<sup>nd</sup> Reading of Bill in the House of Lords;
- 27 January 2004- House of Lords Committee stage on NDA clauses completed
- Date to be determined – 2<sup>nd</sup> Reading in House of Commons.

## **THE LEGACY**

This comprises 20 sites and facilities developed from the 1940s onwards and includes four former research reactor sites, 11 magnox power stations - operational, defuelling and decommissioning – spent fuel and reprocessed material and wastes and the operational plant for dealing with them. The legacy sites are spread around Great Britain and include both Sellafield and Dounreay. The legacy tag applies to those liabilities on civil public sector sites and includes some MoD liabilities. The legislation going through Parliament leaves open the possibility that the NDA could in future be asked to deal with other nuclear liabilities.

## **THE CHALLENGES**

They are significant and include:

### **Scale of the task**

The origins of the legacy lie in the cold war effort so go back some 50 years or so. The imperative then was to develop the nuclear deterrent so housekeeping and cleaning up discarded radioactively contaminated materials was not as high a priority as it is today.

### **Diversity of the task**

There are many one-offs and uncertainties. There are significant differences between Magnox reactor types and the associated facilities also differ from site to site; and there is considerable

uncertainty about the nature and type materials that were put into ponds and silos back in the 40s, 50s and 60s. The absence in many cases of reliable records is also a key factor.

### **Timescales involved**

Probably 50 to 100 years or more. Though that means career opportunities not only for this generation but the next one(s) too, the real challenge is how to sustain the skills base over such a long timeframe. There is, and will continue to be, a crucial need for high quality technical and managerial skills - though not just from the nuclear sector. It also means that greater efforts need to be made to accelerate clean up activities where that is feasible.

### **Rising costs**

Insufficient control and direction in nuclear clean up has led to a lack of public confidence in the process. In turn this has led to rising costs to the taxpayer. It will be some time before a really reliable estimate of the cost of dealing with the liabilities will be known. Currently the estimate is £47.5bn of which Sellafield alone accounts for £27.6bn.

### **Government Strategy**

The strategy necessarily has a number of strands:

- A new body – the NDA – to drive forward decommissioning and clean up;
- A policy framework that is joined up. We need a coherent approach to clean up and managing radioactive waste safely including long-term management arrangements. The UK has a low level waste facility but no disposal routes for intermediate or higher level wastes. A process is in place to look at the options for long term management arrangements;
- Common purpose with Regulators who are keen to see an accelerated approach to clean up within the existing robust regulatory framework;
- Reliable baseline plans, based on the USDOE model - including a national baseline - to drive work forward;
- Security of funding to support delivery of the clean up programme. Discussions currently taking place with the Treasury on this issue;
- Incentivised contracts for clean up contractors;
- Competition to improve performance – but not change for change's sake;
- Open and transparent relations with stakeholders. A good deal of effort is going into this area.

### **Delivery**

So how is the strategy being delivered? In April 2002, the DTI set up a Liabilities Management Unit (LMU) with a clear remit to prepare the ground for the NDA. The LMU is a unit within the DTI and has no authority other than through the DTI. It comprises people from the UK private and public sectors and following a competitive tendering process, Bechtel was engaged in the role of partner contractor to provide US best practice. There are currently just over 30 people in the LMU.

The LMU's remit was set out in the White Paper. It is required to "prepare the ground for the NDA" by:

- Acquiring a detailed knowledge and understanding of BNFL and UKAEA liabilities and arrangements for managing them;
- Working with BNFL (and UKAEA) in developing KPIs and monitoring performance;
- Taking action to promote competition for nuclear clean up work;
- Developing strategies for contracting and procurement;
- Establishing common methodologies for estimating the costs of legacy clean up;
- Establishing close working relationships with the nuclear regulators.

### **Progress**

There has been considerable progress on the policy/legislative front as can be seen from paragraphs 5 to 7 above. Similarly, the LMU has made significant progress including:

- 20 site assessments completed. The aim was for the LMU to learn about the liabilities on each site and the current arrangements for managing them.
- Draft NDA procedures prepared and rolled out across all legacy sites. All sites now working to common procedures and this will greatly assist in getting to a more accurate liabilities cost estimate.
- First Lifecycle Baselines (LCBLs) prepared by sites and reviewed with the LMU. Good first attempt but process and baselines still immature. But importantly, the exercise proved that we could develop a national baseline. Second iteration due in the summer 2004.
- First Near Term Work Plans (NTWPs) currently being prepared by sites. LMU will review on site-by-site basis in late March. Second iteration in a year's time will form the basis of the first contracts with the NDA from 1 April 2005.
- Catalogue of assets and liabilities compiled.
- Draft contract strategy and model developed. The NDA will have the final say on both the strategy and the contracting model. Currently envisage that NDA contracts will be with site licence companies (SLCs).
- Good working links with BNFL and UKAEA established. The incumbents are beginning to understand that they will soon no longer be owner/operators but contractors to a knowledgeable and demanding customer.
- Very close working relationships with nuclear regulators established.
- Triangular discussions between LMU, Regulators and site operators in their infancy but working well. Opportunity to road test the proposed Memorandum of Understanding between the NDA and the nuclear regulators.
- Two rounds of Regional National Stakeholder events held and a third being planned. Also a National event with another being planned. Very good response and reaction with plenty of interest/views expressed. Draft NDA Stakeholder Engagement Framework published for consultation
- Supply chain engaged. Considerable interest from home and abroad, especially from the US. Two national Tier 1 events plus three regional Tier 2 events held to explain the draft

contracting strategy/model etc. Around 400 attendees at two National events and a similar number at the Tier 2 events.

### **Next Steps**

The key next step is for the legislation satisfactorily to complete its passage through Parliament. We believe that this is on course for Royal Assent by the Summer Recess (late July). At that stage it will be possible for real progress to be made in physically building the NDA so that it can be operational from 1 April 2005. In the meantime further preparatory work will be undertaken in the following areas:

- **NDA location:** the NDA's HQ will be located in West Cumbria. A preliminary search for possible short and longer-term premises is underway. The NDA is also likely to have some staff located both close to Sellafield and close to Dounreay. In addition a location (probably in the South of England) will be required for the NDA team looking after southern sites. It is envisaged that around half of the NDA's staff will need to be in its HQ.
- **Sizing the NDA:** we currently think that in the steady state the NDA will need just over 200 staff. However, as a contingency, we are looking at the minimum staffing requirement for an operational NDA on 1 April 2005. The expectation is that all NDA posts will be competed for openly.
- **NDA Appointments:** An advertisement has already appeared in UK newspapers for an adviser to the DTI who, on the Energy Bill receiving Royal Assent, would become the NDA Chair. The process for further key appointments should start in due course.
- **Bidding for funds:** A process is underway within DTI to secure the necessary funds from the Treasury to pay for clean up in the three fiscal years starting 1 April 2005. This is part of the Government's normal comprehensive spending review process.
- **NDA Contract model:** The NDA will determine its own contract model and contracting strategy. However, we will continue to develop the draft model that envisages the NDA contracting with a site licence company (SLC), which would be a 'transferable entity'. The SLC could have one or more 'parents'. If more than one 'parent' a special purpose vehicle (SPV) is likely to be required. As noted earlier, however, the first NDA contracts will go to the incumbents - BNFL and UKAEA.
- **Strategic Issues:** There are likely to be both policy and technical issues that need to be addressed. Some will be within the NDA's purview to resolve, some will be for individual sites to resolve and some – especially policy issues, eg interim storage of ILW and HLW pending availability of a long term management facility – will need to be dealt at a national Government level. We are currently refining a list of those strategic issues that have already come to light through the LCBL and other processes.

### **UK Regulatory Regime**

The UK's nuclear safety, security and environmental regulatory regimes are both rigorous and robust - and independently enforced by strong regulators. The regime is generally permissive in nature rather than prescriptive. There are three principal regulators:

- The Health & Safety Executive's Nuclear Installations Inspectorate (NII) is responsible for the health and safety of workers on licensed nuclear sites and those people off the site that may be affected by its operations.
- The Environment Agency (for England and Wales) and the Scottish Environmental Protection Agency (for Scotland) authorise liquid and aerial discharges to the environment.
- The Office for Civil Nuclear Security (OCNS) (part of DTI) regulates physical protection and data security at civil nuclear sites.

The regime is different in a number of ways to that operated in the USDOE complex. Any aspirant contractor, at any level, is therefore strongly advised to get to know the UK system. UK regulators are happy to explain their respective roles and responsibilities.

## CONCLUSIONS

There is little doubt that the UK's approach to cleaning up legacy sites is in the process of fundamental and far-reaching change. There are both opportunities and risks. This can be unsettling for some and a huge challenge to others. There are significant culture shifts to be negotiated. A major change management programme is underway. And it's really exciting.

There are few industry sectors that can boast a full 'order book' for many decades to come. Even fewer that can offer the wide range of interesting and challenging job and career opportunities that will arise. And many industries can claim that they are making an important difference to the environment – but the nuclear clean up sector certainly can.

None of this will be realised without the full support and commitment of the workforce, both current and future ones. Serious actions need to be put in hand to ensure that the skills needed to deliver the clean up programme are there when they are required. This is unlikely to happen by itself – and the NDA will need to play an important role in this regard. Stakeholders, especially those who live close to legacy sites, will need to be properly engaged. They will expect to have a voice and be listened to. And the public will need to have confidence that the NDA is delivering, through its contractors, clean up programmes that are safe, secure, that protect the environment for current and future generations and that provide good value to the taxpayer. They will rightly expect and tolerate nothing less.

Follow further progress by logging on to our website at [dti.gov.uk/nuclearcleanup](http://dti.gov.uk/nuclearcleanup).