

Nuclear Free Local Authorities **RADIOACTIVE WASTE POLICY** Briefing on the Government Review

No. 13, September 2005

Briefing on the Nuclear Decommissioning Authority's Consultation on its Draft Strategy and Draft Environmental Report.

The purpose of this briefing is to provide member authorities with advice to assist their response to the current public consultation on the Nuclear Decommissioning Authority's (NDA) Draft Strategy. The consultation document can be found at: <http://www.nda.gov.uk> The deadline for comments is 11 November 2005.

The NFLA Steering Committee's (NSC) analysis of the NDA Draft Strategy is guided by environmental principles for radioactive waste management (see annex).

ACTIONS

Applying these principles the NSC recommends that the following points be made in any response to this consultation: -

- i) (See para. 21) There should be an open, transparent and independent examination of the justification for continuing to operate the Magnox reactors. If the Department of Environment Food and Rural Affairs is not planning to order such an investigation, it should be ordered by the NDA.
- ii) (See para. 28) The NDA should carry out an open and transparent consultation on the future of THORP. Relevant financial information should be made public as part of the consultation.
- iii) (See para. 30) The NDA's strategy for returning reprocessing waste products to overseas customers implies a large number of High Level Waste (HLW) shipments by sea to Europe and Japan over the next decade. A draft timetable should be made public for discussion.
- iv) (See para. 40) By 30 September 2005 British Nuclear Group (BNG) is required to provide the NDA with comprehensive substantiated, fully developed and costed plans for decommissioning the Sellafield facilities. Without BNG's plans, the NDA's Draft Strategy is incomplete. This is unacceptable. The NDA should, therefore, launch a further consultation exercise after September when BNG's plans are available.
- v) (See para. 43) Dounreay particles, found on beaches and the seabed, represent unauthorized discharges of radioactivity into the environment which is illegal. The NSC believes that the particles should be removed and treated as waste.

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THE LOCAL GOVERNMENT VOICE ON NUCLEAR ISSUES

vi) (See para. 46) The NDA plans to conduct a separate consultation exercise later this year to reach a consensus among local communities on 'site end points'. Given the impact that site end points will have on national radioactive waste management, the NDA should consult as widely as possible, and not just with communities local to their facilities.

vii) (See para. 49) Leaving sites only partially decontaminated will almost certainly result in dilution and dispersal of radioactivity into the environment imposing costs and risks on future generations. The NSC believes that, irrespective of the intended use of a site, decontamination to a level which would allow unrestricted use (excluding areas used for monitorable and retrievable waste stores) should be carried out.

viii) (See para. 55) On-site storage of Intermediate Level Waste (ILW), following the early demolition of reactor buildings, in purpose-built, passively-safe, retrievable, and monitorable stores should be the favoured option. The 25-year strategy should not be dependent on the availability of a deep repository or centralised interim store.

ix) (See para. 57) The NSC strongly objects to any new Low Level Waste (LLW) management proposals which involve a lowering of environmental standards or an increase in risk to health.

x) (See para. 64) The NSC strongly disagrees with an approach which allows continued production of liquid high-level waste (HLW). Ending the production of liquid HLW, which has a major hazard potential, is urgent.

xi) (See para. 65) This mean there is an urgent need to end reprocessing at both Sellafield reprocessing plants, and therefore the production of fresh Magnox fuel at Springfields should end as soon as possible, and certainly well before the currently planned 2007 date.

The analysis supporting these recommendations follows.

Introduction

1. The Nuclear Decommissioning Authority (NDA) is a non-departmental public body, set up in April 2005 under the Energy Act 2004. Part of its remit is to develop a strategy, which must be approved by the Government by 31 March 2006. The strategy will then be reviewed at least once every five years.

2. The NDA has also published a separate Environmental Report which follows guidance published by the Government on the EC Strategic Environmental Assessment Directive. Its approach is intended to describe the current environmental situation ("the baseline") and then say what the significant effects of the Draft Strategy are likely to be. The report concludes that under normal operation the NDA's sites do "*...not represent a threat to our environment, although various localised effects are recognised*". However, it does admit that the assessment identifies "a number of areas where we would have liked more information".

3. The main findings of the Environment Report include (1) more work needs to be done to agree site end dates and the impact of climate and coastal change in determining end states; (2) more work needs to be done to assess the extent of contaminated land, and agree management strategies; (3) radioactive particulates are present in some coastal waters and are important to local stakeholders; (4) future waste arisings and discharges will need further consideration in the development of site-specific integrated waste strategies; (5) the socio-economic impacts of site closure are potentially significant.

4. The NDA now owns 20 nuclear sites previously owned and operated by either British Nuclear Fuels plc (BNFL) or the UK Atomic Energy Authority (UKAEA). Its objective is to decommission and clean up these sites, “safely, securely, cost effectively and in ways that protect the environment for this and future generations”.

5. Unfortunately, amongst the 20 sites owned by the NDA are also several nuclear facilities which continue to be operated, and, therefore, continue to produce nuclear waste for which there is currently no management solution. These include four loss-making, operating Magnox stations, the two Sellafield reprocessing plants and the Sellafield MOX (plutonium fuel fabrication) plant (SMP).

6. The NDA is committed to working openly and transparently and consulting stakeholders. Under the Energy Act 2004, before preparing its strategy the NDA is specifically required to consult:-

“...every local authority whose area includes a designated installation, designated site or designated facility or a locality affected by activities at such an installation, site or facility.” [Schedule 2 para 4(2)(e)]

7. The NDA is, therefore, consulting on its first Draft Strategy, and a Draft Environmental Report.

The NSC response to the NDA’s First Annual Plan

8. The Secretary and Legal Adviser contributed to the Local Government Association Special Interest Group on Radioactive Waste Management and Nuclear Decommissioning (now known as the Nuclear Legacy Advisory Forum [NuLeAF]) response to the NDA’s Draft Annual Plan. This submission raised concerns, in particular, about the failure to produce a justification for the continued operation of Magnox power stations, and the Sellafield Thermal Oxide Reprocessing Plant (THORP) and MOX/plutonium fuel fabrication plant (SMP) for public consultation. The submission stated that:-

“There are concerns amongst some Local Authorities, at the absence of any consultation in the context of the Annual Plan on the merits of continuing to operate plant at Sellafield and elsewhere. On the figures alone, it appears that the NDA considers that it will cost more to run plant than any income that they will generate. The failure to consult in this context contradicts clear expectations raised.”

9. The NSC Legal Adviser also considered that the first Draft Annual Plan should have been subject to strategic environmental assessment. This would mean that the NDA should have set out alternatives to the continued operation of Magnox power stations, the Magnox reprocessing plant, THORP and SMP, and it should have consulted on these. The Legal Adviser, therefore, wrote to Ministers in London and Edinburgh responsible for agreeing the NDA’s annual plan. A complaint of non-compliance with EU law was also lodged with the Commission and this is under current investigation.

Operating Facilities

10. The finalised NDA Annual Plan (2005/06) states that:-

“The NDA is required, by the Government policy as set out in the July 2002 White Paper ‘Managing the Nuclear Legacy’ paragraph 5.24, to set out in our Annual Report and Accounts ‘specific information, consistent with the requirements of commercial confidentiality, on the financial and operational performance of THORP and SMP and the rationale for keeping the plants open’.”

11. The Annual Report and Accounts is, of course, different to the Annual Plan and will not be published until mid-2006. The Annual Plan contains tables which present only a single year’s figures on a cash basis rather than on an accounting or economic viability basis and “...do not provide a suitable basis for assessing commercial viability”.

12. In addition to its Draft Strategy, the NDA has published an Environmental Report. This is intended to comply with the EC Strategic Environmental Assessment (SEA) Directive. Appendix 3 of the Environment Report gives what is called a detailed environmental assessment of the Draft Strategy. This assessment includes an evaluation of some of the operating facilities and the alternatives to continuing with operations. But this cannot be described as a detailed rationale for keeping the plants open.

13. The alternative to continuing to operate the SMP for the production of MOX is not even evaluated because “there is likely to be little or no significant environmental effects arising from the proposed approach as compared with the baseline”. Magnox reprocessing is not evaluated separately from Magnox generation.

Commercial Business

14. The Draft Strategy states that commercial operations “...divert resources away from our key mission of decommissioning and clean up”. The NSC agrees and believes that commercial operations also detract from public support for the important and urgent task of decommissioning and cleaning up the UK’s nuclear legacy. Whilst commercial operations currently provide around 50% of the NDA’s total annual budget, it is not clear that continuing with any of the commercial operations is economically sensible, and all the operations continue to add to the stockpile of dangerous nuclear waste for which there is currently no acceptable management solution.

15. The Draft Strategy states that taking on new contracts or closing existing facilities is a matter for the Government, although the NDA will inform the decision-making process. The NSC would encourage the NDA to inform the Government about the strength of opinion against accepting new commercial contracts.

Magnox Reactors

16. The Draft Strategy states that the NDA

“will continue to run the operating Magnox sites until their planned closure dates unless any technical problems force or justify closure on economic grounds”.

This is despite the fact that neither the NDA nor the Government has set out a justification for continuing to operate the four remaining Magnox stations: Dungeness A, Sizewell A, Oldbury and Wylfa. The “Managing the Nuclear Legacy” White Paper states that information on the rationale for continued operation will be made available on the same basis as THORP and SMP. (para 5.27)

17. “Justification” is a radiological protection principle which derives from the recommendations of the International Commission on Radiological Protection (ICRP). [See ICRP 60 & 77]. It is essentially the concept of weighing the benefits from a practice against its detriments in order to consider whether a ‘net benefit’ accrues to society.

18. In October 2000 the Government announced that justification decisions would be a matter for the appropriate Secretary of State rather than, as previously, for the Environment Agencies [1]. Ownership of the Magnox stations had transferred from Magnox Electric to BNFL in 1998, so a justification process should have been carried out as part of BNFL’s application for authorisation to discharge radioactive waste from the Magnox stations.

19. The Environment Agency (EA) issued new authorisations for the Magnox stations to be effective from 18 December 2002. At the time EA stated that “Ministers have advised that they are continuing to consider the matter of justification”[2]. The following year, Elliot Morley MP, Minister of State for the Environment said that requests for an independent financial appraisal were under consideration and a decision would be taken as soon as possible [3]. Over two years later we are still waiting for a decision by the Government on the justification for continuing to operate the Magnox stations.

20. Nuclear Economist, Gordon MacKerron has said that:-

“... there can be little public confidence in the idea that Magnox avoidable costs are definitively below the selling price of electricity. Testing this proposition again in a transparent and accountable way would seem to be a necessary condition for any future justification and approval of Magnox operation, and this would in turn require the appointment of genuinely independent experts to carry out the necessary work ...”[4]

21. The NDA appears to have simply accepted BNFL's Magnox closure timetable, which was planned to end with the closure of the Magnox reprocessing plant in 2012. There needs to be an open, transparent and independent examination of the justification for continuing to operate the Magnox reactors. If the Department of Environment Food and Rural Affairs is not planning to order such an investigation, it should be ordered by the NDA.

Thermal Oxide Reprocessing Plant (THORP)

22. The Annual Plan says the NDA will fulfil existing THORP contracts to reprocess spent nuclear fuel for UK and overseas customers. The Government has argued in the past that existing THORP reprocessing contracts must be honoured because:-

“To do otherwise would break existing contractual commitments and Government Undertakings”. [5]

This statement clearly only applies to overseas contracts - not those with British Energy (BE). BE has previously called for an end to its reprocessing contracts. A BE spokesman stated that:

“We simply do not believe in reprocessing because of its huge costs and we want to renegotiate this contract. We are paying six times as much to deal with our spent fuel as American generators do at a time when electricity costs have fallen markedly” [6].

BE has also stated that reprocessing *“...has left us with a service we don't need, for a product we don't want, and at a price we cannot afford”* [7].

23. As part of the re-structuring plan for BE, instead of ending the reprocessing contracts which would have saved the company around £250m per year, BNFL simply dropped its prices by around £120 million per year. As BNFL is a publicly owned company, the UK Government is in effect subsidizing BE's reprocessing costs. [8]

24. It has now been revealed that a leak at the THORP plant, which was discovered in April 2005, had been going on since July 2004. The leak rate increased gradually until mid-January 2005 when the pipe in question suffered a complete fracture. Although this leak did not present an immediate danger to the public, sources at the NDA have said that the most economical option may be to keep the THORP plant shut. [9]

25. The Draft Strategy says that the NDA will present its conclusions to the Government on THORP *“in the Autumn when the current technical issues are clearer and the investigation by the Health and Safety Executive's Nuclear Installations Inspectorate is concluded”*.

26. Whatever the outcome of the NII's investigation, THORP is likely to remain closed for many months leaving a huge hole in the NDA's budget. The NDA's plan for 2005-6 shows that, out of a total budget of £2.2 billion, it expected to receive £1.08bn from commercial operations, of which £635.1 million would come from reprocessing and transporting nuclear material around the world. A large proportion of this will be from THORP's activities. It is estimated that the leak will cost the NDA at least £300m in lost revenue this year alone. [10]

27. It is not yet clear how much it would cost to repair THORP, but there have been several calls to NDA Chief Executive, Dr Ian Roxburgh, to cut the NDA's losses and close the THORP plant permanently. With almost all

foreign reprocessing contracts now completed, it would almost certainly be uneconomic to re-open THORP mainly to continue reprocessing spent fuel from BE's AGR power stations. This would unnecessarily produce large volumes of plutonium and uranium for which BE has repeatedly said it has no use.

28. The Draft Strategy gives life-cycle costs for Sellafield of £31.5bn, but life cycle projected revenue for THORP at £5.1bn. These figures are almost completely useless without further information. It is noted that the Draft Strategy document gives 2011 as the current date for the end of THORP reprocessing. This should not be taken as a foregone conclusion. The NDA should be encouraged to carry out an open and transparent consultation on the future of THORP. Relevant financial information should be made public as part of that consultation.

29. The Draft Strategy also states that

"We need to find alternatives to reprocessing AGR spent fuel at THORP as the operating life of THORP is likely to be less than that of the AGRs".

As well as a debate about THORP's finances, there should also be an open and transparent examination of the technical opportunities for the storage of AGR spent fuel, in particular looking at the options for introducing such storage as quickly as possible, rather than waiting until current contracts with BE have been completed. The Draft Strategy says the NDA will commission work to examine the options for the interim storage of spent AGR fuel. These studies need to be made public.

30. The NDA says it will ensure that the return of reprocessing waste products to overseas customers is expedited. The target date for completion of this process is 2016. This implies a large number of HLW shipments by sea to Europe and Japan over the next decade. A draft timetable should be made public for discussion.

Sellafield MOX Plant

31. The Draft Strategy states that the NDA says it will "continue to support the commissioning of the Sellafield MOX Plant (SMP) but its success rests on it meeting sustained production targets."

32. This statement appears to pre-empt an open and transparent examination of the justification for keeping SMP open, as required in the White Paper. As with THORP, the financial information given in the Draft Strategy is insufficient for any conclusions to be reached. It states that the life cycle projected revenue is £0.94bn, but does not give the basis for this calculation. Does this include, for example, just the signed contracts, or does it also include potential contracts represented by letters of intent?

33. The Draft Strategy gives 2016 as the likely date when commercial MOX fuel manufacture will end. However, it does say that if SMP is unable to meet its production targets the NDA will discuss the plants future with the Government, especially in relation to its potential use in the management of the UK's plutonium stock. The basis upon which meeting its production targets is currently considered acceptable should be made clear and discussed with stakeholders.

34. The NSC would support the use of SMP to immobilise the UK's stockpile of plutonium as a waste-form.

Prioritisation

35. The Draft NDA Strategy states that the NDA will:-

"...focus on the reduction of potential high hazards, especially at Sellafield. This is our number one clean up priority."

Reducing the volume of liquid High Level Wastes (HLW) is the single most important activity for reducing hazards. The obvious first step in reducing this hazard would be to end the production of new liquid HLW - in other words to end reprocessing of spent nuclear waste fuel. The NSC has called for this many times over many years but the Draft Strategy does not propose this course of action.

36. The Draft Strategy states that the main focus

“...is to retrieve the radioactive waste that is currently being stored in an untreated form, in ageing facilities, and condition it to put it in a passively safe for long term storage or disposal”.

37. Apart from the misnomer of ‘disposal’ this focus is to be welcomed. According to Nirex, almost 90 per cent of Britain's hazardous nuclear waste stockpile is so badly stored it could explode or leak with devastating results at any time [11]. A report by two government advisory committees (The Radioactive Waste Management Advisory Committee and the Nuclear Safety Advisory Committee) revealed that up to 24 nuclear storage sites around the UK house volatile material that could explode on contact with water, spontaneously combust in the air, or leak [12].

38. The Draft Strategy particularly highlights ageing facilities at Sellafield and Dounreay, with an “ultimate potential for an uncontrolled release of radioactivity”.

39. British Nuclear Group (BNG) is required to provide the NDA with comprehensive, substantiated, fully developed and costed plans for decommissioning the Sellafield facilities by 30 September 2005. The Draft Strategy highlights in particular the need for BNG to produce plans to enable the retrieval of degraded Magnox spent fuel in pond B30 at Sellafield. It says that the NDA will discuss with the Government the implications for its funding when fully detailed plans are available from BNG.

40. Without BNG's plans, the NDA's Draft Strategy is incomplete. This is unacceptable. The NDA should, therefore, launch a further consultation exercise after September when BNG's plans are available.

42. The NDA appears much happier with UKAEA's plans. It says that “[p]lans exist or are well advanced for the decommissioning of the legacy facilities at Dounreay”. The Draft Strategy says the NDA will continue to work with UKAEA to speed up hazard reduction. It also says it will ensure there is adequate monitoring of particles, but fails to commit itself to the removal of particles.

43. The Draft Strategy states that the Dounreay Particles Advisory Group (DPAG) will publish its final report on the hazard posed by the particles early in 2006. A consultation exercise on the Best Practicable Environmental Option for dealing with the particles will follow publication of the report. The particles represent unauthorized discharges of radioactivity into the environment which is therefore illegal. The NSC believes that the particles should be removed and treated as waste.

Site end states

44. The Draft Strategy states that the NDA plans to consult and seek consensus with stakeholders, including local communities, on site end states. Large volumes of lower level wastes are expected to arise during decommissioning. The former head of the Government's Liabilities Management Unit, Alan Edwards, estimated that these volumes could be sufficient to fill 15 facilities the size of Drigg [13]. Thus, discussion about site end states will raise a large number of issues. There is likely to be pressure, for example, to increase the amount of wastes going to landfill sites, as well as pressure to lower standards for site remediation in an attempt to reduce volumes of waste generated and their associated disposal costs. There could also be pressure to allow increases in discharges of liquid radioactive waste into the marine environment to allow the decontamination of metals earmarked for recycling [14].

45. The recent Government policy review of decommissioning decided that it is no longer necessarily expected that sites should be restored to green field status [15]. The NDA plans to conduct a separate consultation exercise later this year to reach a consensus among local communities on site end points. The Draft Strategy says that the full extent of contaminated land at its 20 sites is not well understood, and will be an important factor in determining the final end state.

46. Given the impact that site end points will have on national radioactive waste management policy, the NDA should consult as widely as possible, and not just with communities local to their facilities.

Contaminated Land

47. The Draft Strategy says that both Dounreay and Springfields have significant amounts of contaminated land, although neither site is on the same scale as Sellafield. There is an estimated 20 million cubic metres of contaminated land at Sellafield with three plumes of radioactive material moving through the groundwater on site. The extent of contamination at many other sites and the future risks it poses to the workforce and the public still has to be identified.

48. Options identified in the Draft Strategy include leaving contamination in situ where there is no threat to people or the environment, and containment through barriers to avoid further spreading. The Environment Report identifies three options for dealing with contamination: (1) leaving it in situ (2) digging it up and disposing it as waste at appropriate facilities or (3) Digging up only highly contaminated areas. The issues raised by contaminated land have been dealt with in NFLA Radioactive Waste Policy Briefing No.11 (August 2004) see http://www.nuclearpolicy.info/Radwaste_Briefings/radwaste_briefings.html Environmental Principles would argue for the highest possible standards and a presumption in favour of digging up contamination, but storing it on-site, rather than transporting it to a 'disposal site'.

49. Leaving sites only partially decontaminated will almost certainly result in dilution and dispersal of radioactivity into the environment imposing a burden of risk on future generations. The NSC believes that, irrespective of the intended use of the site, decontamination to a level which would allow unrestricted use (excepting areas used for monitorable and retrievable waste stores) should be carried out. The NSC believes that setting tough standards for decontamination will drive innovation and waste minimisation. If contamination is left in situ, the NSC would argue that the new HSE Criterion for Delicensing Nuclear Sites – which sets a risk limit of 1 in a million per year – is much too lax. The June 2004 ICRP proposal of 1 in 100 million would be more appropriate.

Magnox Decommissioning

50. The NDA Strategy seeks to "accelerate significantly the decommissioning of Magnox stations". The current approach would take up to 125 years before reactor buildings are demolished and sites are finally cleared, whereas the NDA is now saying that it will attempt to achieve full decommissioning and site clearance in less than 25 years. This, however, will be "subject to long term waste management arrangements being available".

51. The acceleration of Magnox decommissioning is to be welcomed. It is a policy that the NSC has called for over many years. BNFL's previous strategy involved leaving the demolition of reactor buildings to future generations. However, the Draft Strategy appears to make the implementation of the 25-year strategy dependent on the introduction of a centralised storage or 'disposal' policy for Intermediate Level Waste (ILW). This is unnecessary (See para. 55 below)

52. The NDA says it will encourage the Government to take early decisions following the delivery of the Committee on Radioactive Waste Management's (CoRWM's) recommendations in July 2006. Its preference for a deep geological repository is clear. The Draft Strategy says that

“...the availability of such a repository by 2025 would substantially reduce costs and would ensure the responsible management of ILW by the existing generation.”

53. The NSC would question whether it is appropriate for a non-departmental public body to be pre-empting policy consultations by the Committee on Radioactive Waste Management (CoRWM) in this way. The NDA has other objectives besides reduction of costs and it is questionable whether a deep repository does represent responsible management by the existing generation. This would depend, at the very least, on specific proposals for a deep repository at a specific site; the rate at which radioactivity leaks out from a repository and the extent to which we can rely on predictions about the rates of leakage.

54. The Draft Strategy makes it clear that the NDA “...would not want any of our interim storage facilities to be considered as providing a long term management solution (i.e. several hundred years) since they were not designed to fulfil such a function”.

55. It is the view of the NSC that the on-site storage of ILW, following the early demolition of reactor buildings, in purpose-built, passively safe, retrievable, and monitorable stores should be the favoured option. The 25-year strategy should not be dependent on the availability of a deep repository or a centralised interim ILW store.

56. The Draft Strategy says that the NDA will evaluate the options for national and regional stores to take advantage of economies of scale. This implies that, even if CoRWM decides against a deep repository for ILW, there will be more transports of ILW from the current locations to regional or national stores. This underlines the need to take account of the views of all stakeholders, including those on potential transport routes, as well as those local to the NDA’s facilities.

Low Level Waste (LLW) Management

57. The Draft Strategy complains that the cost of LLW disposal at Drigg is very high by international standards, and that Drigg will not be able to take all future arisings from decommissioning and clean-up operations. The NDA says it will consider whether there are more cost effective solutions for LLW other than the disposal facility at Drigg, and the decision not to send LLW from Dounreay to Drigg means that Drigg can no longer be regarded as the long-term national LLW repository. The NDA says it will “...seek new, more cost effective solutions for the disposal of the rising quantities of LLW”. Clearly any new LLW management proposals which require reduced health protection or environmental standards should be strongly resisted.

58. The Draft Strategy says that the Environment Agency’s (EA) review of the Drigg radioactive waste discharge authorisations may have implications for the future of the facility. EA states that the Drigg site could be destroyed within 500 years or less as a result of rising sea levels caused by climate change. In its submission to the EA, the NSC has questioned whether further disposals of LLW at Drigg should be permitted.

59. The Environment Report lists several options for LLW including: extending Drigg; building another facility like Drigg; building regional ‘disposal’ facilities and building ‘disposal’ facilities at each site. The NSC believes that environmental principles argue for local storage of LLW. Disposal is a misnomer and eventually results in the dilution and dispersal of radioactive waste.

60. The Government is currently carrying out a LLW policy review, separate from the CoRWM review of management options for ILW and HLW. The NSC and Cumbria County Council have both called for this LLW Review to be completed before any decisions are taken on the Authorisations for Drigg. The review is expected to conclude by Summer 2006.

61. The Draft Strategy says that it may be more acceptable to provide a replacement to the Drigg facility at or close to Sellafield. The NSC supports the development, by the Government, of a new LLW management policy based on a clear set of environmental principles, including: the polluter pays principle, the concentration and containment principle and the proximity principle.

62. The EA's review of Drigg's authorisations has made the replacement of Drigg much more urgent than previously thought. A sustainable decommissioning policy based on environmental principles implies a policy of on-site, monitorable and retrievable storage for LLW as well as ILW. Clearly, when planning stores on any existing nuclear licensed site, the implications of climate change, sea level rises and coastal erosion will also need to be taken into account.

High Level Waste (HLW) Management

63. The Draft Strategy states that it regards liquid high-level waste as a major hazard potential and the NDA will continue to treat the reduction programme as a high priority. However, the Draft Strategy regards the programme of liquid waste reduction agreed between the NII and BNFL as adequate.

64. The NSC strongly disagrees with this approach and believes that ending the production of further liquid HLW is more urgent. This can be achieved by keeping THORP shut and by closing the Magnox reactors as quickly as possible – thus limiting any need for further Magnox spent fuel reprocessing.

65. Given the urgent need to end reprocessing in both the Sellafield reprocessing plants, production of fresh Magnox fuel at Springfields should end as soon as possible, and certainly well before the currently planned 2007 date.

Radioactive Discharges

66. The Environment Report says aerial and liquid discharges of radioactivity are generally expected to follow a downward trend, although decommissioning activities “may result in temporary increases in discharges”. The NDA should ensure that any increases in discharges are not avoidable breaches of the ‘concentrate and contain’ principle. There may be, for example, financial pressure to decontaminate metals so that they can be recycled, or a perceived benefit from treating some materials so that they can be reclassified as LLW rather than ILW. Such ‘decontamination techniques’ usually involve the use of liquids which subsequently add to radioactive discharges. In the view of the NSC these are highly unsatisfactory methods of decommissioning which breach the concentrate and contain principle and should be challenged.

Plutonium

67. The Draft Strategy states that the NDA will discuss with and advise the Government what proportion of UK plutonium should be held as strategic stock for future energy use, and the proportion which should be declared a waste. It is part of the remit of CoRWM to make recommendations to the Government on this. Arrangements also have to be made, according to the Strategy, for the repatriation of foreign owned plutonium as MOX fuel. However, the Strategy also, alarmingly, suggests that the NDA will discuss the possibility of selling UK plutonium to an overseas MOX manufacturer.

68. In view of the proliferation implications of transporting weapons-useable plutonium around the world, either in the form of MOX fuel or as plutonium oxide selling and /or powder, The NSC believes that all plutonium as Sellafield should be converted to a waste form whether it is UK or foreign owned, by negotiated agreement with the owners. The NDA estimate plutonium disposal will cost around £10 billion but there is no explanation of how this figure is arrived at.

Competition

69. The government's nuclear safety advisory committee (NuSAC) has expressed "serious concerns" about the plans for contractorisation of decommissioning work, fearing that financial pressures will encourage the companies to cut corners and increase risks [16]. The NuSAC advice was released to New Scientist under

Freedom of Information legislation. The NDA should formally publish the NuSAC advice along with its response explaining why it does not agree.

Finance

70. The total estimated life cycle cost of operations, decommissioning and clean up has increased from £48bn (estimated in 2002) to £56bn based on the life-cycle baselines. The Draft Strategy says this figure could increase further, particularly if reprocessed uranium and plutonium are declared a waste. On the other hand, the NDA hopes that innovation will start to drive down costs.

71. In the Autumn, plant operators will submit the third iteration of the life-cycle baseline plans. This will give the NDA a more accurate picture about costs. The Draft Strategy says the NDA is required to reduce costs by 10% by 2010, and to make annual efficiency gains of 2% from 2006/7. Contractors have been asked to make 7% savings this year and 5% next year.

72. The Draft Strategy says that “achieving a rapid decision on rationalising interim ILW storage and LLW disposal” are key elements in driving down costs. The NSC believes that waste management decisions should be driven primarily by environmental considerations and not by the need to drive down costs.

73. The Draft Strategy also says that over the next five years the level of Government funding will need to increase as commercial income decreases. There may also be unforeseen closures:-

“The uncertainty over the future of THORP and SMP, and any earlier than foreseen Magnox closure, could lead to a significant shortfall in commercial revenues”.

This raises the unfortunate probability that the NDA’s funding mechanism is colouring its decisions about whether or not nuclear waste generating facilities should continue operating or not. Decisions about whether or not to continue operating waste producing facilities should be driven by environmental rather than financial considerations.

Notes

- [1] Letter from Environment Minister, Michael Meacher, 16th October 2000, to the Chairman of the Environment Agency, Sir John Harman.
- [2] EA letter to respondents to its consultation, 8th November 2002.
- [3] Letter from Elliot Morley MP, Minister of State for Environment & Agri-Environment, to Greenpeace, dated 14th July 2003.
- [4] Letter from Gordon MacKerron to David Chaytor MP 18th October 2003.
- [5] "Managing the Nuclear Legacy" DTI, July 2002 para 5.18
- [6] Nuclear Giant in Spent Fuel Switch. James Freeman and Catherine MacLeod. Herald 15th November 2001.
- [7] Nucleonics Week (2001) BE Blames Reprocessing Charges for Higher UK Operating Costs. Vol. 42 No. 46. page 6. 15th November.
- [8] See for example "Taxpayers pick up reprocessing bill in £2 billion British Energy bail-out" ENDS Report December 2002.
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Annex: Environmental Principles for the Management of Nuclear Waste adopted by the NSC at its October 2004 meeting in Hull:

- * the idea that radioactive waste can be "disposed" or be rejected in favour of radioactive waste management
- * any process or activity that involves new or additional radioactive discharges into the environment be opposed, as this is potentially harmful to the human and natural environment
- * the policy of 'dilute and disperse' as a form of radioactive waste management (i.e. discharges into the sea) be rejected in favour of a policy of 'concentrate and contain' (i.e. store safely on-site)
- * the principle of waste minimisation be supported
- * the unnecessary transport of radioactive and other hazardous wastes be opposed
- * wastes should ideally be managed on-site where produced (or as near as possible to the site) in a facility that allows monitoring and retrieval of the wastes