

*The Work of the Nuclear Decommissioning Authority (NDA)
and the United Kingdom Atomic Energy Authority (UKAEA)*

**An Inquiry by the
United Kingdom Parliament Trade and Industry Committee**

Memorandum by the
Nuclear Free Local Authorities (NFLA) Steering Committee

Introduction

1. The NFLA Steering Committee has the support of 72 Local Authorities throughout the UK including Glasgow, Edinburgh, Leeds, Manchester and the Greater London Authority. Some of its member authorities host nuclear sites, some are neighbouring authorities concerned about local economic, safety and environmental impacts of future legacy management, others are more widely dispersed and affected, for example, by nuclear transportation or historic (and potentially future) nuclear facility siting issues. All are concerned about potential major nuclear accident consequences and co-operate in the collective community interest to: eliminate the major production cycles that generate radioactive wastes; phase out nuclear generating capacity; and ensure safe management of the radioactive waste legacy.

The Remit and Activities of the NDA

THORP, Magnox Reprocessing & the SMP

2. The NFLA Steering Committee 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 by the NDA to produce a *justification* for the continued operation of Magnox power stations, the Sellafield Thermal Oxide Reprocessing Plant (THORP) and MOX/plutonium fuel fabrication plant (SMP) for public consultation.
3. The NuLeAF 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.”

4. In addition to its Draft Strategy, the NDA has published an Environmental Report. 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. The alternative to continuing to operate the SMP for the production of MOX is not 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. **NFLA Steering Committee is concerned that these commercial activities undertaken by the NDA will result in further costs to the taxpayer.**
5. The Draft Strategy states that commercial operations “...divert resources away from our key mission of decommissioning and clean up”. **The NFLA Steering Committee 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 are projected to 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.

Magnox Reactors

6. 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 station: Dungeness A, Sizewell A, Oldbury and Wylfa. The “Managing

the Nuclear Legacy” White Paper states that information on the rationale for continued operation would be made available on the same basis as THORP and SMP. (para 5.27)

7. Nuclear Economist, Gordon MacKerron has stated 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 ...”.[1]
8. **There needs to be an open, transparent and independent examination of the justification for continuing to operate the Magnox reactors.**

THORP

9. 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”. [2]
10. 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”. [3]
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”.* [4]
11. It has now been revealed that a leak at the THORP plant, which was discovered in April 2005, started in 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. [5]

12. THORP is likely to remain closed for many more months and its projected revenue will be lost to the NDA. 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 activities. It is estimated that the leak will cost the NDA at least £300m in lost revenue this year alone. [6]
13. 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.
14. The Draft Strategy gives life-cycle costs for Sellafield of £31.5bn and 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 public consultation on the future of THORP.** All relevant financial information should be included in such a consultation.
15. 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.
16. 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

17. 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.*"
18. 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?
19. 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.**
20. The NFLA Steering Committee would support the use of SMP to immobilise the UK's stockpile of plutonium as a waste-form.

Prioritisation

21. 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 NFLA Steering Committee has called for this many times over many years but the Draft Strategy does not propose this course of action.

22. 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".
23. Apart from the misnomer of 'disposal' this focus is 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 [7]. 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 [8].
24. The Draft Strategy particularly highlights ageing facilities at Sellafield and Dounreay, with an "ultimate potential for an uncontrolled release of radioactivity". It 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.

Site end states

25. 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 [9]. 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 management costs.

26. The recent Government policy review of decommissioning decided that it is no longer necessarily expected that sites should be restored to green field status [10]. 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.
27. **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.**

Magnox Decommissioning & Radioactive Waste Management

28. 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".
29. The acceleration of Magnox decommissioning is to be welcomed. It is a policy that the NFLA Steering Committee has called for over many years. 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). The Draft Strategy states:
"...the availability of such a repository by 2025 would substantially reduce costs and would ensure the responsible management of ILW by the existing generation."
30. The NDA's position is in danger of pre-empting the current policy consultations by the Committee on Radioactive Waste Management (CoRWM). The NDA has other objectives besides reduction of costs and it is not clear that 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 and forecasts about the rate at which radioactivity would migrate from a repository.

31. 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*”.
32. It is the view of the NFLA Steering Committee 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.**
33. 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.
34. The Draft Strategy is concerned that the cost of Low Level Waste (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 “...*seek new, more cost effective solutions for the disposal of the rising quantities of LLW*”. The NFLA Steering Committee is concerned that **any new LLW management proposals maintain current health protection and environmental standards.**
35. The Draft Strategy says that it may be more acceptable to provide a replacement to the Drigg facility at or close to Sellafield. **The NFLA Steering Committee 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 and the proximity principle.**

Plutonium & Proliferation

36. 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 that should be declared a waste. It is part of the remit of CoRWM to make recommendations to the

Government about this. Arrangements also have to be made, according to the Strategy, for the repatriation of foreign owned plutonium as MOX fuel. The Draft Strategy also suggests that the NDA will discuss the possibility of selling UK plutonium to an overseas MOX manufacturer.

37. The NFLA Steering Committee is deeply concerned about the proliferation implications of transporting weapons-useable plutonium around the world, in any form. The NFLA Steering believes that **all plutonium as Sellafield should be converted to a waste form whether it is UK or foreign owned, by negotiated agreement with its owners.** The NDA estimate plutonium disposal will cost around £10 billion but there is no explanation of how this figure is arrived at.

Competition

38. 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 [11]. These concerns have recently been repeated by a former Sellafield site director [12]. **The NDA should formally publish the NuSAC advice along with its response explaining why it does not agree.**

Finance

39. The total estimated life cycle cost of operations, decommissioning and clean up has increased from £48bn (estimated in 2002) to £56bn in 2005 based on the life-cycle baselines. The NDA is now expected to announce that this figure has risen again, possibly to £70bn. The Draft Strategy warns that costs could increase, 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.
40. 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 NFLA Steering Committee believes that **waste management decisions should be driven primarily by environmental considerations and not by the need to drive down costs.**

41. 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 suggests the NDA’s funding mechanism is influencing its decisions about whether or not nuclear waste generating facilities should continue operating or not. It is the NFLA Steering Committee view **that whether or not to continue operating waste producing facilities should be driven by environmental rather than financial considerations.**

The compatibility of current plans for the NDA and UKAEA with any increased reliance on nuclear power generation

42. Past policy towards nuclear generation and waste management practices have together created a substantial environmental and financial burden on society. For reasons set out above, the NFLA Steering Committee does not believe the NDA should itself should engage in its current commercial practices as these detract from its nuclear legacy clean up task. Any increased reliance on nuclear power generation will ultimately be underwritten by the taxpayer and, if past experience is a guide to future practise, potentially create new significant environmental and financial liabilities that could be placed upon the NDA, or a successor body. Therefore the NFLA Steering Committee **does not consider the NDA’s main organisational task is compatible with any increased reliance on nuclear power generation.**

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Notes

- [1] Letter from Gordon MacKerron to David Chaytor MP 18th October 2003.
- [2] "Managing the Nuclear Legacy" DTI, July 2002 para 5.18
- [3] Nuclear Giant in Spent Fuel Switch. James Freeman and Catherine MacLeod. Herald 15th November 2001.
- [4] Nucleonics Week (2001) BE Blames Reprocessing Charges for Higher UK Operating Costs. Vol. 42 No. 46. page 6. 15th November.
- [5] Close Nuclear Leak Plant for good says Sellafield, by Oliver Morgan, Observer 15th May 2005
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- [8] RWMAC and NuSAC (June 2002) "Current arrangements and requirements for the conditioning, packaging and storage of intermediate level radioactive waste".
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- [9] Alan Edwards speaking at the 6th Irish and UK Local Authorities Standing Conference on Nuclear Hazards, 25th March 2004, Glasgow.
- [10] The Decommissioning of the UK Nuclear Industry's Facilities, DTI, September 2004.
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- [11] "Privatising Nuclear Clean-up risks public safety", by Rob Edwards, New Scientist 19th February 2005: <http://www.newscientist.com/article.ns?id=mg18524874.500>
- [12] "Privatising Nuclear Clean Up 'will cause accidents'", by Rob Edwards, Sunday Herald, 22nd January 2006: <http://www.sundayherald.com/print53688>