

# Nuclear Free Local Authorities Secretariat

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## OFFICIAL NFLA SUBMISSION TO NDA DRAFT STRATEGY CONSULTATION

I attach the official submission of the Nuclear Free Local Authorities (NFLA) to the consultation of the Nuclear Decommissioning Authority's (NDA) Draft Strategy.

The NFLA are a member affiliated organisation made up of over 60 Councils from England, Scotland, Wales, Northern Ireland and the Republic of Ireland. Their key objectives are:

- to consider and recommend action which can be taken by local authorities to promote the well-being of their communities by reducing nuclear hazards in or potentially affecting their areas;
- to obtain and provide information and assistance to local authorities that can inform their understanding of the risks from nuclear hazards;
- to consider and recommend action which can be taken by local authorities and others to support and / or enable:
  - efforts to prevent the retention and proliferation of nuclear weapons and technology assisting that proliferation;
  - the safe phase-out of nuclear power in the shortest practicable time;
  - the minimisation of the production of all types of radioactive waste and materials resulting from military and energy applications of nuclear power and the minimisation of all risks to humans and the environment from such waste and other nuclear hazards;
  - energy conservation and the use of renewable sources of energy and other steps to reduce climate change without resort to nuclear power; and
  - sustainable economic development outside the nuclear sector.

### 1. Environmental principles

In setting out the NFLA's views on the NDA's Draft Strategy, it needs to outline its long-held agreed set of environmental principles. The NFLA looks at all nuclear policy consultations in reference to them. They are (1):

- \* 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 or atmosphere) 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

In reference to its official response to the NDA Draft Strategy, the NFLA ask the NDA to be reflective of the above principles. Furthermore, the NFLA also encourages the NDA to consider using the same principles in its radioactive waste management strategy. The NFLA fundamentally believes the NDA Draft Strategy fails to incorporate such environmental principles to allow for its practices to be judged.

Without these principles, the NDA will struggle to develop the highest standards in the nuclear decommissioning industry. It also will have difficulty in showing how its processes maximise the protection of human health and the environment from potentially harmful effects of radiation exposure.

## 2. Executive Summary

In addition to noting the NFLA's summary of its environmental principles above, the other key points of the NFLA's submission are as follows:

- The NFLA believes that the Draft Strategy contains a real incongruence between maximising the NDA's income via reprocessing and land sales for new nuclear build; and delivering a reduction in radioactive risks and hazards.
- In the NDA's Draft Strategy, there is a clear policy to continue to reprocess spent fuel over the next decade. The NFLA believes that this conflicts with the compliance of UK international obligations under the OSPAR Treaty, on the protection of the marine environment of the North-East Atlantic. The likely increase of radioactive discharges into the Irish Sea goes very much against commitments of the UK Government to reduce them to 'near to zero' by 2020.
- The NFLA remains concerned that the NDA will lose key staff to operators developing a nuclear new build programme. The Draft Strategy does not adequately address the pressures on its service that this issue will create.
- The NFLA is extremely concerned that the Draft Strategy does not discuss the most important of the NDA's strategies – what it proposes to do with most of its spent Advance Gas-cooled Reactor (AGR) fuel.
- The Draft Strategy does not provide a public consideration of non-reprocessing options (including dry storage) for Magnox and AGR spent fuel. The NFLA believes analysis needs to be carried out as a matter of urgency.
- The NFLA has remained concerned for many years over the safety of the dangerous High Level Waste (HLW) Tanks at the Sellafield site. The Draft Strategy fails to explain how the NDA will make such HLW liquid wastes passively safe when the budgets and the Sellafield workforce are being so markedly cut back.
- The NFLA has responded to the UK Government on its discussion papers over the management of weapons-grade plutonium and has commented that future transport and export of such material should be curtailed. The NFLA is therefore disappointed that the Draft Strategy continues to promote the idea of transporting weapons-useable plutonium (as plutonium oxide or MOX) around the UK and around the world. The NFLA has consistently argued that plutonium at Sellafield and Dounreay should be immobilised as a waste form as it is an unacceptable and dangerous hazard. It is also at risk from a terrorist attack.
- The NFLA concurs with the Scottish Councils Committee on Radioactive Substances (SCCORS) that the Draft Strategy should discuss the proposed near-surface disposal facility for sleeve graphite at Hunterston in more detail, making clear why this is the best environmental option. The NFLA would not want to see near surface disposal of graphite become the norm thus allowing the diversion of graphite from the proposed UK deep geological waste repository facility in England. It is also concerned that the NDA does not seek to misuse the Scottish Government's policy on higher activity waste in this development.
- The NFLA supports the Scottish Government's policy of minimising the need for the transportation of low-level radioactive waste over long distances. The Draft Strategy needs to provide more detail about how transportation of low level waste in England and Wales can also be minimised. It also advocates greater consistency in national policy for the transportation of radioactive waste across Great Britain.

- The NFLA also supports the Nuclear Legacy Advisory Forum (NuLEAF's) key comments that the Draft Strategy needs to outline in more detail how it will improve local engagement with Councils about site restoration at NDA sites.
- Relating to the above point, the NFLA are concerned about how the NDA aims to consult with local government in the future, given the likely conclusion of the national stakeholder group and little detail on wider debate on major policy areas. The NFLA would be keen to play a role in this process, as a representative body of concerned local authorities. It was disappointed to not be directly contacted by the NDA for a specific consultation event on the Draft Strategy to allow consideration of initial NFLA concerns.

### **3. Size and range of the NDA – statutory duties versus commercial operation**

The NFLA notes that the NDA is one of the largest public agencies in the UK, in terms of expenditure. The NDA's 2009 Annual Report put its annual operating costs at £2.7 billion and its income (from reprocessing and electricity generation) at £2 billion. The NDA has made substantial cuts to its staffing and increased the time periods with which it will decommission nuclear facilities, as part of its response to the Comprehensive Spending Review. However, the NFLA is pleased to note that the NDA's core budget was largely maintained as a result of that Spending Review. It is critical to deal with all the complexities of nuclear decommissioning and radioactive waste management as safely and swiftly as possible, and the NFLA believes that the NDA has the funds to achieve this at the pace it has originally outlined. A number of other points around this area are outlined in section 9 below.

One of the NFLA's primary concerns is the incongruence in the NDA's operation between its statutory duties (the clean-up and decommissioning of the public liabilities it operates) and the pollution effects of its main income streams. The reprocessing of spent fuel from the Sellafield site in particular results in large radioactive discharges and emissions which affect coastline communities across the Irish Sea coastline and beyond (at least as far as Norway). The NFLA remains concerned that such discharges may have a harmful effect on human and animal health in the deposits of low level radiation on the coastline and many miles inland.

The continued operation of the Magnox nuclear reactors for electricity generation furthermore continues to generate higher levels of spent fuel to be reprocessed, continuing the need for radioactive discharges into the marine environment. This deep inconsistency is not addressed in the NDA Draft Strategy.

To provide an important example, when the first NDA strategy for consultation was published in 2005, the NFLA (2) objected to plans for the NDA to continue to operate reactor facilities producing nuclear waste for which there is no management solution. The NFLA also argued that the NDA should have had statutory duties which include environmental and organisational principles, such as that mentioned in section 1 above. Without such statutory duties the NDA has continued to maximise its commercial operation often at the expense of the safe and swift decommissioning of these existing facilities.

The NFLA has reiterated in many meetings of the NDA's National Stakeholder Group that thorough consultation between the NDA and environmental NGOs and the concerns of the wider public remains inadequate. This is in contrast to exhaustive consultation with largely supportive Site Stakeholder Groups and different sectors of the nuclear industry. Though the NDA has a general duty under the Energy Act 2004 to safeguard the environment, there remains no specific duty placed on it to include environmental and health and safety protection principles. As the NFLA feared in 2005, this is continuing to lead to inappropriate methods of nuclear waste management, which are outlined below.

### **4. OSPAR Treaty commitments and reprocessed waste from Sellafield**

A key concern of the NFLA, and particularly its members on the English, Welsh and Scottish coastline and in Ireland, is the continued policy of the NDA (as outlined in the Draft Strategy) to reprocess fuel at Sellafield. Such reprocessing will inevitably lead to increases in radioactive discharges into the Irish Sea over this decade, at a time when the UK Government has given international treaty commitments to reduce such discharges to 'near to zero'.

In its joint paper (3) to the OSPAR Commission (which is attached as Appendix 1), the NFLA and the local authority marine pollution organisation KIMO International, put forward the view that the NDA policy of reprocessing marine will almost certainly make it impossible for the UK to reach its OSPAR Treaty obligations. The NDA has suggested its plans will enable the UK to meet its obligations under the OSPAR Treaty to ensure discharges of radioactive substances “*are reduced to levels where concentrations in the marine environment above historic levels ... are close to zero*” by 2020. (4) However, under the NDA’s Draft Strategy, this is increasingly doubtful and the NDA admits it may not be possible and “*If not, then we need to move to a contingency plan – i.e. agree **not to meet OSPAR deadline or put in place a different strategy***” (5).

The NFLA is extremely concerned with this admission, and it expects the Irish Government, the Norwegian Government and the Scottish and Welsh Governments are likely to share such concerns. In considering the NFLA’s submission to the consultation on the NDA Draft Strategy, the NFLA requests that the NDA consider the KIMO / NFLA’s joint paper in its entirety and review its reprocessing strategy accordingly.

## **5. Staff leakage from decommissioning to nuclear new build**

At interface meetings with the NDA, NFLA Secretariat staff and NFLA members have continued to reiterate concerns that an ambitious new nuclear build programme could have a harmful effect on nuclear legacy management and decommissioning.

A key problem across the nuclear industry is a shortage of technical and engineering staff to undertake critical tasks. With the announcement by the UK Government of its wish to see utility companies develop up to 10 new nuclear reactors over the next decade, it is likely that such companies are going to have to offer highly competitive salaries to attract an adequate number of staff to develop these complex engineering projects.

With a similar skill-base in the nuclear legacy and decommissioning sector, it is inevitable that a potentially large percentage of staff could be attracted from the NDA to such projects, at a time when the training of new staff at UK universities is only just beginning to develop in larger numbers. The NFLA are concerned that the NDA Draft Strategy does not adequately address this concern. On a related matter, the NDA has been asked to undertake a number of tasks which provide facilitative support to new build, such as the sale of NDA land to new build operators and the recent request of the Nuclear Industry Association for research into the storage, transport and ‘disposal’ of spent fuel from prospective new nuclear reactors (6). The NFLA is concerned all such work creates large amounts of new radioactive waste with which to manage, at a time when the NDA is clearly stretched dealing with the current legacy burden.

Should a large amount of NDA staff be attracted or diverted to working or assisting with a new build programme then the potentially negative effects on nuclear legacy management need to be more fully incorporated and detailed in the Draft Strategy.

## **6. Other concerns with radioactive waste management**

### **a) Spent Magnox and oxide fuels**

The NFLA agrees with the NDA that the most important practice is to deal safely with the management of spent Magnox and oxide fuels. However, the NFLA notes that, though the NDA’s Strategy Overview section states that the “*...most appropriate management approach...*” is used, there is no discussion of what these ‘appropriate’ methods for dealing with spent fuel actually are. Without such a definition, the NFLA cannot judge the NDA’s assessment adequately. Similarly, the section of the Draft Strategy on spent fuel makes the claim: “*The most cost-effective solutions for Magnox and oxide fuels will include continued and extensive use of our existing reprocessing and storage facilities*”. Again, no evidence is presented to show that reprocessing is the most cost-effective means of spent fuel management, and the NFLA would be keen to challenge such evidence.

The NFLA does though note that the Draft Strategy confirms that the Thermal Oxide Reprocessing Plant (THORP) at Sellafield is not expected to complete reprocessing until 2020. The NFLA is extremely disappointed that Thorp will be in operation for at least a decade after the earlier suggested closure date. For coastal communities on the east coast of Ireland, the west coast of Scotland, the Northern Isles and across as far as Norway, are going to receive another decade of radioactive contamination and all the ensuing health concerns that this will involve. Thus, in large sections of the document there is not enough clarity in the NDA's statements, while, often hidden away in the text, are devastating statements like the continued use of Thorp.

#### **b) Approach to Radioactive Waste Management**

Again, the Draft Strategy states that the NDA should adopt a "flexible approach to waste management" but it is impossible to discover what this means in practice. As noted in Section 1 above, the Draft Strategy fails to discuss the basic environmental principles by which the NDA's practices could be assessed. As it stands, the Draft Strategy appears to permit

- (a) spreading low-level waste to various UK landfill sites
- (b) increasing the dilution and dispersal of radioactivity throughout the environment by maximising the reprocessing of spent fuel, and
- (c) encouraging the decontamination of metals resulting in dispersal of radioactive contamination.

The NFLA believe the NDA should state clearly that its key mission is to protect human health and the environment and it should try to inspire public confidence in its mission. The Draft Strategy should be underpinned by a clear set of environmental principles, such as those mentioned by the NFLA above. They should also include the principle of sustainable development and the Precautionary Principle.

Only by clearly adopting such principles can the public be reassured that critical issues of human health and public safety are being fully addressed.

#### **d) Land Quality Management**

In Section 3.11 the NDA suggest "*leaving parts of a facility in place and regarding them as having been disposed of (in-situ)*". In section 3.12, the NDA notes in-situ "management" but does not clarify if this means 'disposal', 'storage' or some other form of management. NFLA's long-held view is that all radioactive waste should be stored above ground and should be both monitorable and retrievable. The recent sale of NDA-owned land should therefore not have been released for the use of new nuclear build, as new stores of radioactive waste will inevitably be stored on it in the future.

The NDA should only release land by demanding that the highest possible standards are maintained by the purchasers of such land.

#### **e) Life extensions of Magnox stations and spent fuel**

The NFLA note that 80% of the estimated critical group dose from Sellafield's liquid discharges is attributable to **Magnox reprocessing** (20). The NFLA would have liked to have seen this plant to have closed down already, but the Draft Strategy notes that, due to technical problems, it is now unlikely to close before 2016. (7)

The NDA has just negotiated with the Nuclear Installations Inspectorate a life extension of the Wylfa plant until December 2012, and is seeking to extend the life of Oldbury to mid 2012. This is in complete variance with the NDA's first strategy document which stated that both plants would be closed by 2008. As spent fuel from Wylfa and Oldbury is likely to be reprocessed, the NFLA sees this as another example of the NDA ignoring its international commitments under OSPAR. It also notes the coincidence between these plants now closing just as new nuclear reactors on these sites will be developed – another example of nuclear decommissioning and new nuclear build becoming entwined together.

Furthermore, due to earlier technical problems at the Sellafield Magnox reprocessing plant it is unlikely that it can be closed by even as late as 2016. The life extensions to the Oldbury and Wylfa Magnox reactors are likely to increase pressure on the Sellafield reprocessing plant, pushing its closure date closer to 2020.

Exactly the same can be said for the Sellafield THORP plant, where severe technical problems means that the NDA Draft Strategy suggests it will not have completed its reprocessing until 2020, some 10 years after its original closure date. How can such life extensions reassure the NFLA that the NDA is serious about meeting its international treaty obligations? Indeed, it suggests more that the desire to maximise NDA income takes a higher priority over public health and safety.

The NDA's current strategy is to continue to reprocess overseas and UK spent fuel - which it is contractually committed to reprocess - and then to cease reprocessing. However, it remains unclear what the NDA plans to do with the spent fuel from British Energy's seven AGR stations. The NDA strategy has been to reprocess 50% of this and store the rest. In March 2010 a NDA discussion paper suggested that all such spent fuel should actually be reprocessed. If this was to take place, there would require either major refurbishment of Thorp, the need for new international contracts for reprocessing or building a new plant. The NFLA advocates that none of these options are taken forward.

All of these developments trouble the NFLA. They also highlight that the Draft Strategy is not informing the public of what the NDA actually plans to eventually do with the spent fuel. The NFLA and other organisations will now have to wait at least another 18 months before the NDA publishes a report on contingency options for spent fuel, such as interim dry storage or the drying of wetted fuel. For many years the NFLA has waited for this information and is disappointed to again be kept waiting. The NFLA believe this is an unwelcome delay.

#### **k) Low Level Waste and its transportation**

The NFLA, and other groups such as SCCORS and NuLEAF, remain highly concerned that a number of private waste management firms are pushing forward with attempts to bury low level activity radioactive waste in landfill sites, despite opposition from local Councils. Cumbria County Council has been concerned with the potential use of landfill sites at Keekle Head and Lillyhall for low level waste, from the likes of Sellafield, by the companies Sita and Energy Solutions (8). Councillors in Northamptonshire have also rejected a planning application to use a landfill site at King's Cliffe for low level radioactive waste. In this case the company Augean has appealed and it is currently going through a detailed public inquiry (9).

In both cases, local communities have been extremely alarmed at the potential health and safety risks from such practices, but these are being over-ridden by commercial priorities. The NFLA would have liked to see more detail in the NDA Draft Strategy, and the NDA's Low Level Waste Strategy, discouraging such practices and the increased volume of radioactive waste transportation that would be required with them.

Furthermore, a recent SEPA consultation has also seen Magnox North (on behalf of the NDA) apply to 'dispose' decommissioned waste from Chapelcross. This waste is going to places as diverse as Cumbria, Dorset and Germany (10). In the NFLA's view, the NDA Draft Strategy should be encouraging reductions in the transportation of such waste, as Scottish Government policy advocates, rather than seeing such disappointing examples of long-distance waste transportation.

### **7. Plutonium management**

The NFLA has taken an active role in the Government's review in 2009 of long-term options for the management of weapons-grade plutonium – the UK has the largest stockpile of this material in the world. In commenting on DECC's discussion papers on what the future strategy should be on plutonium management, the NFLA has put forward its view (11) that such materials should be treated as waste and eventually immobilised. The NFLA is disappointed that the positive engagement on these issues in 2009 appears to have stalled in 2010. The NFLA encourages the NDA to take this matter up with the UK Government.

The NFLA believes unwanted plutonium should be blended down or otherwise immobilised and managed as waste. The material should remain under international safeguards until it can be shown that it would be impossible to reuse it. All immobilisation options mentioned in the NDA's plutonium credible

options paper should be investigated further and tested against environmental principles, including in particular proliferation resistance, and other criteria such as cost, dose levels to the workforce and the highest levels of health and safety. The NFLA acknowledges the difficulties for DECC and the NDA in this option, but feel that it is the most sensible and practical choice available.

The NFLA also notes that the Sellafield MOX plant (SMP) was developed to manufacture 120 tonnes of mixed plutonium and uranium oxide fuel every year, for overseas customers, but has only managed to produce about 10 tonnes in 8 years at a cost to the taxpayer of more than £1bn. In May 2010, the NDA announced a deal with ten Japanese utilities to reprocess 12 tonnes of Japanese owned plutonium stored at Sellafield into MOX fuel and ship it back for use by the Japanese nuclear industry. (12) The NFLA is disappointed such shipments have resumed and encourages the NDA to review this policy.

Transporting weapons-useable plutonium around the UK or around the world, whether as plutonium oxide or as MOX fuel, is inherently hazardous. The Government's National Security Strategy puts an attack from a terrorist organisation using nuclear materials as one of the highest risks facing the UK. Transporting this type of material by sea is inevitably dangerous and opens such shipments up to the possibility of a terrorist attack. It is the NFLA's view that the NDA Draft Strategy should state that all plutonium stored at Sellafield and Dounreay be immobilised as a waste form.

## **8. The Scottish Government's approach to high activity radioactive waste management**

The Draft Strategy makes very little mention of the different approach being developed to radioactive waste management in Scotland. Unlike the policy in England and Wales, in which the NDA have been asked to provide the technical assistance in developing a deep waste repository, the Scottish Government's draft policy on radioactive waste management has opted for a near site, near surface 'disposal'. From discussion with Scottish Government officials, the NFLA also understands the Scottish Government's final policy will prefer the storage of radioactive waste rather than its 'disposal'. Providing a safety case can be met, such waste would be both monitorable and retrievable. If this is to be the final policy, the NFLA would support this welcome and sensible development.

In the event such a policy is adopted the NDA is left with potentially having to manage radioactive waste in two distinctly different ways – one advocating a deep underground solution and one that is on, or near surface. The Draft Strategy needs to outline in some detail how the NDA will tackle this issue, and it should also reconsider its own overall waste management strategies on the monitorability and retrievability of stored radioactive waste.

The NFLA Scotland Policy Advisor has also made the NFLA aware of a worrying development at the Hunterston site which relates very closely to this issue. In August 2010, Magnox North (a wholly-owned NDA subsidiary) issued a press release (13) which stated that it was assessing the technical viability of, developing a permanent disposal facility which would be located "several tens of metres" below ground for graphite waste at the Hunterston A site. The NFLA understands early work on this proposal started in September 2010. A feasibility study assessing options for the design of a near-surface facility and possible locations on site is also taking place. The NDA Draft Strategy does not discuss this proposed facility – the NFLA would like some clarification from the NDA as to why it is not included in the document.

This near-surface facility would be for the 'disposal' of sleeve graphite waste. Such a facility would be developed seemingly as an alternative to the existing above-ground storage facility already at Hunterston. As the NFLA Scotland Policy Advisor has commented to the NFLA, Magnox North (i.e. the NDA) makes little mention in the Press Release of monitoring or retrievability. It simply says the disposal facility would be in line with Scottish Government policy to: "... support long-term near surface, near-site storage or disposal facilities so that the waste is monitorable and retrievable and the need for transporting it over long distances is minimal." (14) An above-ground Intermediate Level Waste storage facility large enough for sleeve graphite wastes already exists at Hunterston. Placing this waste in a near-surface disposal facility implies there may be plans to import waste to the Hunterston storage facility from outside of the area. It also suggests the NDA may have plans to potentially misuse the Scottish radioactive waste management policy, which is of real concern to the NFLA.

## 9. Funding issues and decommissioning

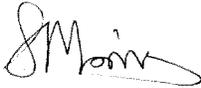
Given regular reported incidents of accidents and incidents at nuclear facilities across the UK, the NFLA remains concerned of the major economies to its staffing and work recently made by the NDA.

800 workers have been made redundant at Sellafield, which is particularly concerning given the extent of high risk waste practices that need to be resolved at this site (15). Job cuts at Dounreay, the other major site of plutonium storage, and the announcement by the NDA of extending the time period for decommissioning at this facility, is equally worrying (16).

The NDA appear to have come out of the Comprehensive Spending Review relatively unscathed. The NFLA now hope the NDA can use this financial certainty to move more swiftly in speeding up its decommissioning work at the highest risk facilities. The NFLA also urges the NDA to widen its stakeholder dialogues more effectively with environmental NGOs and the wider public.

I hope the NDA can consider seriously all the points made in this detailed response. If you require any clarification on any of the issues raised please contact me using the details at the top of this letter. References and the appendix of the joint NFLA / KIMO report on radioactive discharges follows below.

Yours sincerely,



Sean Morris  
NFLA Secretary

(sent on behalf of all NFLA members and the NFLA Steering Committee)

## REFERENCES

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[http://www.sepa.org.uk/radioactive\\_substances/publications/other\\_reports/magnox.aspx](http://www.sepa.org.uk/radioactive_substances/publications/other_reports/magnox.aspx)
- (11) NFLA response to DECC's plutonium management discussion papers.  
[http://www.nuclearpolicy.info/docs/decc\\_plutonium\\_letter\\_2.pdf](http://www.nuclearpolicy.info/docs/decc_plutonium_letter_2.pdf)
- (12) See "Japanese attempt to rescue Sellafield MoX Plant", NuClear News No. 19, June 2010.  
<http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo19.pdf>

- (13) Magnox North Press Release 18<sup>th</sup> August 2010 <http://www.magnoxnorthsites.com/news/2010-08-18/hunterston-a-site-graphite-pathfinder-project->
- (14) Magnox North Press Release 18<sup>th</sup> August 2010 <http://www.magnoxnorthsites.com/news/2010-08-18/hunterston-a-site-graphite-pathfinder-project->
- (15) Whitehaven News 6th October 2010 <http://www.whitehaven-news.co.uk/news/hundreds-more-to-go-at-sellafield-1.765908?referrerPath=home>
- (16) Dounreay Site Restoration Ltd. 27<sup>th</sup> August 2010 <http://www.dounreay.com/news/2010-08-27/new-site-closure-plan-begins-to-take-shape>

## Appendix 1

### Joint NFLA / KIMO report to the OSPAR Commission on reprocessing

22<sup>nd</sup> July 2010, NFLA Policy Briefing Number 77

Paper to the OSPAR RSC, Stockholm, 12<sup>th</sup> – 15<sup>th</sup> July 2010

Submitted by KIMO International in association with NFLA UK and Republic of Ireland

#### 1. Background

- 1.1 OSPAR's strategic objective is to prevent pollution of the maritime area from ionising radiation through progressive and substantial reductions of discharges, emissions and losses of radioactive substances, with the ultimate aim of concentrations in the environment near background values for naturally occurring radioactive substances and close to zero for artificial radioactive substances.
- 1.2 OSPAR will ensure that by the year 2020 discharges, emissions and losses of radioactive substances are reduced to levels where the additional concentrations in the marine environment above historic levels, resulting from such discharges, emissions and losses, are close to zero.
- 1.3 When making assessments and adopting programmes and measures in relation to radioactive substances, including waste, the Contracting Parties should take account of technical feasibility and OSPAR will develop programmes and measures which ensure the application of BAT/BEP including, where appropriate, *clean technology*. [Emphasis added]
- 1.4 The general indication that there is a reduction in average marine concentrations of the selected radionuclides associated with the nuclear industry is, therefore to be welcomed (See RSC 10/2/Info.1-E), although the remobilisation of radionuclides from Irish Sea sediments as a result of past discharges is a particular concern.
- 1.5 However, the general downward trend in emissions from the Sellafield nuclear facility in the United Kingdom may have had more to do with technical problems than specific measures designed to reduce radioactive discharges. Efforts to resolve these technical problems are continuing, so levels of discharges could increase again. And discussions about the management of future spent fuel arisings are continuing in the UK, with the option of extending reprocessing still firmly on the table.
- 1.6 The UK Government is also continuing with 'facilitative actions' designed to promote the construction of new nuclear reactors. Up to ten sites around the UK's coasts may soon be designated for new nuclear construction with resultant emissions to the environment of the North-east Atlantic.

#### 2. Evaluation of UK plans – reprocessing.

- 2.1 The discovery that a quantity of highly radioactive liquor had leaked onto the Feed Clarification Cell floor in April 2005<sup>1</sup>, led to Thorp being shutdown for nearly two years. More recently the limited evaporator capacity available for treating reprocessing effluents from oxide fuels, has placed heavy restrictions on Thorp throughputs.<sup>2</sup> Thorp was closed for seven months during 2009.<sup>3</sup> The current restriction on Thorp throughput means that the date for completion of the reprocessing programme and the assumed closure of Thorp has been pushed beyond 2011. It is now likely to be at least 2016/17 – probably closer to 2020 - before it has completed its commercial contracts.
- 2.2 The older of the two - the Magnox Reprocessing Plant - reprocesses spent fuel from Britain's first generation Magnox reactors, only two of which remain operational. The plant had been scheduled to close at the end of 2012 as part of the UK's strategy to meet its OSPAR commitments but now isn't expected to close until 2016 due to poor plant performance.
- 2.3 So both the Magnox Reprocessing Plant and THORP have been operating at a fairly low level for at least five years. THORP is currently operating but only at a low throughput. In the financial year 2009/10 it is expected to reprocess around 200 tonnes of spent fuel and around 300 in 2010/11 compared with the design throughput of 700 tonnes per year. It will not be able to raise throughput until a new evaporator opens around 2013/14. The Magnox reprocessing plant will probably remain open until around 2016/17. As a consequence, although discharges are low at the moment, they are likely to peak again between 2013 and 2016. Remembering there is likely to be a lag of around 5 years after reprocessing ends before discharges are reduced, the UK cannot possibly meet its commitments to achieve close to zero concentrations by 2020.
- 2.4 The UK Nuclear Decommissioning Authority (NDA) has now produced a new paper<sup>4</sup> which discusses options for the management and ultimate disposition of spent oxide fuel, including both overseas spent oxide fuel, for which the NDA has commercial contracts to reprocess, and spent oxide fuel from the AGR power stations owned and operated by British Energy (BE).
- 2.5 The NDA is now carrying out a 'lifecycle assessment' to decide whether spent oxide fuel should be declared a waste; reprocessed or stored for a while before a final decision is made. The options being considered include reprocessing all AGR spent fuel – not just the fuel currently contracted for reprocessing. Since the lifetime of the AGR power stations may extend beyond the predicted lifetime of Thorp, this would require either major refurbishment of Thorp and associated plant, new contracts with overseas reprocessing facilities or the building a new reprocessing plant. Another option is to reprocess as much of the oxide fuels as possible by operating Thorp for as long as practicable.
- 2.6 The document does say that as part of the options evaluation environmental factors will be analysed including potential impacts on UK radioactive discharge strategy.
- 2.7 It should also be noted that the UK Government currently has no defined policy regarding future use of reprocessed uranium and plutonium. However it is planning to launch a public consultation in the autumn on proposals for plutonium management. The outcome of this is, according to the NDA, key to decisions "*on whether to pursue an aggressive reprocessing strategy, or adopt a long term storage-only approach and, if so, whether the fuel should be retrievable once 'disposed'.*"

### 3. Evaluation of UK Plans - New Nuclear Reactors

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<sup>1</sup> See Nuclear Installations Inspectorate report at: <http://www.hse.gov.uk/nuclear/thorp.htm>

<sup>2</sup> Wearing Thin: Sellafield's High Level Waste (HLW) evaporators in trouble again. Cumbrians Opposed to a Radioactive Environment (CORE) Briefing 06/09. 23<sup>rd</sup> October 2009  
<http://www.corecumbria.co.uk/newsapp/briefings/briefsmain.asp?StrNewsID=268>

<sup>3</sup> Thorp to close for Seven Months, CORE Press Release 3<sup>rd</sup> June 2009  
<http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=261>

<sup>4</sup> Topic Strategy: Oxide Fuel, NDA March 2010 (Doc No. SMS/TS/C2/G0/001)  
<http://www.nda.gov.uk/documents/upload/Draft-Oxide-Fuel-Topic-Strategy-gate-0.pdf>

- 3.1 In July 2009 the UK Government published its revised Radioactive Discharges Strategy.<sup>5</sup> The earlier 2002 strategy was written in the context of a declining UK nuclear industry, but the new strategy allows for expansion. The revised strategy cannot, therefore, deliver the UK's commitments to OSPAR.
- 3.2 In November 2009 the UK Government launched a consultation on its Proposed Regulatory Justification decisions on new nuclear power station designs (AP1000s and EPRs).<sup>6</sup>
- 3.3 On liquid and gaseous discharges of radioactive waste paragraph 4.123 – 4.126 (of Volume 2 on AP1000s and Volume 3 on EPRs) attempt to reconcile the fact that the UK is committed to a progressive reduction of radioactive discharges into the marine environment with the construction of new reactors. Paragraph 4.126 states that:

*“The Secretary of State acknowledges that new nuclear power stations will continue to make liquid and gaseous discharges which will require continued regulation and is satisfied that there is an effective regulatory regime in place to ensure that such discharges will remain within limits agreed with the regulators.”*

- 3.4 Unfortunately the UK's 2009 Radioactive Discharges Strategy fails to quantify the potential discharges from new reactors. It boldly states:

*“Based on what energy companies have said, it is possible a programme of new nuclear build could exceed current generating capacity during the timeframe covered by this Strategy. On the basis of the low levels of discharges from current LLWRs in the UK and abroad, such a programme, on a purely illustrative basis, would not prevent the UK from achieving the objective of the OSPAR RSS.”*

It is impossible to see how a programme of new reactor construction can meet the objective of “*progressive and substantial reductions of discharges ...with the ultimate aim of concentrations in the environment ...close to zero for artificial radioactive substances*”.

#### 4. **Action requested from the OSPAR RSC**

RSC is invited take note of the information provided above and to request the UK:

- a) to provide to RSC a detailed break-down and justification for predicted increases in discharges of radioactive substances as a consequence of existing reprocessing programmes and a failure to implement Best Available Techniques for spent fuel management;
- b) to assure the RSC that it will not extend the life of the Thorp plant or plan the construction of a new reprocessing plant;
- c) to justify the construction of new nuclear facilities involving increases in releases of radioactive substances, and explain how this meets its OSPAR commitments.

#### 5. **Outcome from the RSC meeting**

The meeting noted the report and the requested actions.

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<sup>5</sup> UK Strategy for Radioactive Discharges, DECC, July 2009

[http://www.decc.gov.uk/Media/viewfile.ashx?FilePath=What%20we%20do\UK%20energy%20supply\Energy%20mix\Nuclear\radioactivity\1\\_20090722135916\\_e\\_@\\_@\\_dischargesstrategy.pdf&filetype=4](http://www.decc.gov.uk/Media/viewfile.ashx?FilePath=What%20we%20do\UK%20energy%20supply\Energy%20mix\Nuclear\radioactivity\1_20090722135916_e_@_@_dischargesstrategy.pdf&filetype=4)

<sup>6</sup> [http://www.decc.gov.uk/en/content/cms/consultations/reg\\_just\\_cons/reg\\_just\\_cons.aspx](http://www.decc.gov.uk/en/content/cms/consultations/reg_just_cons/reg_just_cons.aspx)