

Nuclear Free Local Authorities **RADIOACTIVE WASTE POLICY**

Briefing No. 33 – Dounreay exotic fuels consultation

Prepared for NFLA member authorities, March 2012

NDA CONSULTATION ON EXOTIC FUELS AND NUCLEAR MATERIALS STORED AT THE DOUNREAY DECOMMISSIONED SITE

NFLA RESPONSE TO NDA CONSULTATION

1. Preamble

This briefing provides a copy of the official submission of the Nuclear Free Local Authorities (NFLA) to the Nuclear Decommissioning Authority (NDA) on its public consultation around credible options for exotic fuels and nuclear materials stored at Dounreay. It was developed for the NFLA Secretariat by the NFLA Scotland Policy Advisor.

The NDA published this credible options paper on 7th February 2012 and the consultation closes on 23rd March 2012 – a period of less than six weeks. According to the UK Government's Code of Practice the duration of a consultation exercise should be at least 12 weeks.ⁱ The NFLA has asked the NDA why it has not conducted this consultation to such guidelines.

The NFLA is very disappointed at the short time provided to this consultation, which was also the same with the previous Dounreay consultation on breeder fuel (see NFLA Radioactive Waste Briefing 29 on the NFLA website <http://www.nuclearpolicy.info>). The NDA makes considerable mention of its extensive stakeholder engagement on its website but it appears in these two consultations that it does not wish to actively seek comment to its preferred view of moving large amounts of dangerous radioactive materials across Scotland.

The NFLA Chair, the NFLA Scotland Convenor and the NFLA Secretary had a meeting with officials from the Scottish Government's Radioactive Waste Policy Team on 19th March and noted its concerns over the proposed substantial rail transport of radioactive materials from Dounreay to Sellafield noted in the first consultation. This consultation suggests a potential doubling of such rail transports. A meeting of the Scottish Councils Committee on Radioactive Substances was due to have been held on 23rd March to allow for a NDA presentation on its proposals for such rail transports, but it has had to be cancelled due to the closeness of the upcoming Scottish Councils elections. It will now not be held until the end of June. This allows no opportunity for Scottish Councils to question the NDA over these proposals. Highland Council has had a presentation from NDA staff over the proposals as the site council for Dounreay, but the NFLA believes it is incumbent for all authorities where these rail transports are planned to go through to be fully consulted with.

The NFLA submission response to the NDA's consultation now follows. It has been copied to the Scottish Government for information.

2. Introduction

A sustainable decommissioning policy must be based on a clear set of environmental principles, in particular: the polluter pays principle; the concentrate and contain principle and the proximity principle. The principles agreed by the Nuclear Free Local Authorities are shown in the box below.

At its Annual General Meeting in Hull in October 2004, the Nuclear Free Local Authorities Steering Committee agreed a set of clear environmental principles which should be used for the management of nuclear waste. These are:

- 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.

Paragraph 1.3 of the consultation document says none of the exotics held at Dounreay are considered to be a waste, rather spent fuel or nuclear material, and all are currently potentially 'recyclable'. Whilst it may be possible to down-blend some of the highly enriched uranium to all intents and purposes the unirradiated plutonium should be defined as a waste. The UK's stockpile of plutonium is clearly seen more as a burden than an asset. The UK Government has decided that it will pursue a preliminary policy to reuse the plutonium as MOX fuel mainly because it appears to be the cheapest option, not because plutonium is viewed as a valuable resource.ⁱⁱ

For the irradiated fuels the NDA's proposal would be to reprocess or immobilise this at Sellafield. Spent fuel from nuclear reactors is not defined as "waste" – because it supposedly contains "useful" plutonium and unused uranium. With the demise of the Sellafield MoX Plant – the only civilian facility in the UK making use of plutonium, albeit foreign-owned plutonium, in the NFLA's view it is high time that spent fuel is defined as waste. Reprocessing would breach at least two important environmental principles. Firstly, the waste fuel is not being managed as close to the site where it was produced as possible, so it is breaching the proximity principle. Secondly, by dissolving the material in nitric acid in order to extract plutonium in the reprocessing plant the process will be adding to the discharges of radioactivity from the Sellafield site – diluting and dispersing radioactivity throughout the environment and thus breaching the concentrate and contain principle.ⁱⁱⁱ

3. Security Concerns

Paragraph 1.1 says while this material remains on-site Dounreay will remain a Category 1 site for security purposes. No further explanation is given. It is assumed that this refers to Category 1 of the IAEA guidelines on Physical Protection of Nuclear Material and Nuclear Facilities. Category 1 material requires provision of a 24 hour guard service – probably armed. Where guards are not armed, the guidelines say that 'compensating measures'

should be applied and that the objective should be the arrival of adequately armed response forces in time to counter armed attacks and prevent the unauthorized removal of nuclear material.^{iv}

The materials in question contain weapons-useable and possibly even weapons-grade plutonium, as well as weapons grade uranium.^v Any transports from Dounreay to Sellafield will, therefore, also require Category 1 security which probably means armed guards.

There are already expected to be around 50 rail movements over the next 4-5 years to transport the “breeder material” from Dounreay to Sellafield. These are likely to require armed guards. If we add to that the 30 to 60 journeys to transport this material to Sellafield from 2014 to 2020, we will have a constant stream of security sensitive transport with armed police travelling between the far north of Scotland and Cumbria for the remainder of this decade.

4. Reprocessing Irradiated Fuels

According to the consultation document if the irradiated fuels are transferred to Sellafield it has not yet been decided whether they will be reprocessed or immobilised.

As highlighted by the John O’Groat Journal there is no appraisal of the litany of problems that have beset reprocessing at Sellafield, the NDA simply concludes that sending irradiated fuels for reprocessing in Cumbria will cause “no meaningful change in Sellafield site hazard profile.”^{vi}

The THORP reprocessing plant is scheduled to close in 2018 as part of the UK’s strategy to meet its OSPAR¹ commitments. In NFLA’s view reprocessing this material would run counter to the UK Government’s commitments to this international treaty organisation and represent a failure to implement Best Available Techniques for spent fuel management. A detailed break-down and justification for predicted increases in discharges of radioactive substances as a consequence of these reprocessing plans should be provided to the OSPAR Commission before any reprocessing is undertaken.

5. The Alternative Option - Immobilisation

There is no discussion in this document about immobilisation options – only reference to for the unirradiated fuels processing for long term storage and storing prior to decision on final disposition route and for irradiated fuels storage prior to immobilization at Dounreay and eventual disposal. Further research should be carried out on immobilizing this material at Dounreay in a way that can reduce security concerns, such as by mixing it with other wastes.

6. Conclusions

- This consultation exercise has been very poorly executed. The consultation period is much too short and the information provided is very patchy.

¹ The Convention for the Protection of the Marine Environment of the North-East Atlantic, known as OSPAR, has a 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. 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.

- With the demise of the Sellafield MoX Plant it is high time that spent fuel and plutonium are classified as waste.
- The NDA's proposals will breach at least two environmental principles – the proximity principle and the concentrate and contain principle.
- Whether or not the proposal includes reprocessing of the irradiated fuels in the THORP is unclear. If it does will mean an increase in discharges from Sellafield at a time when it is already failing to make progressive a substantial reductions in discharges and achieving close to zero by 2020, in accordance with to the UK international commitments.
- It appears likely that the 30-60 or so transports from Dounreay to Sellafield would need to be accompanied by armed police for security reasons. Added to the 50 rail journeys to transport breeder fuel to Sellafield this is going to mean constant armed shipments between now and 2020 travelling the length of Scotland.

The NFLA strongly opposes the proposals to transport this material to Sellafield on both security and environmental grounds.

7. References

ⁱ <http://webarchive.nationalarchives.gov.uk/+http://www.bis.gov.uk/files/file47158.pdf>

ⁱⁱ Long-term management of the UK's civil plutonium accumulation. DECC website (accessed 22nd March 2012)

http://www.decc.gov.uk/en/content/cms/meeting_energy/nuclear/policy/plutonium/plutonium.aspx

ⁱⁱⁱ For further discussion see NFLA Scotland's Response to the Dounreay Site End State Consultation, January 2007

http://www.nuclearpolicy.info/docs/consultations/NFLA_Dounreay_End_State.pdf

^{iv} Assessing the Risk of Terrorist Attacks on Nuclear Facilities, POST Report 222, Parliamentary Office of Science and Technology, July 2004 See Box 3.2

<http://www.parliament.uk/documents/post/postpr222.pdf>

^v Assessing the Risk of Terrorist Attacks on Nuclear Facilities, POST Report 222, Parliamentary Office of Science and Technology, July 2004 Para 9.9 page 86

<http://www.parliament.uk/documents/post/postpr222.pdf>

^{vi} "Not fuel and not waste – so what is it?" John O'Groat Journal, 5th August 2011

<http://www.johnogroat-journal.co.uk/Features/The-Free-Press/Not-fuel-and-not-waste-so-what-is-it-03082011.htm>