

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

No 12, May 2005

Briefing on the Committee on Radioactive Waste Management (CoRWM) 2nd Consultation Document: *How Should the UK Manage Radioactive Waste?*

Introduction

1. CoRWM is tasked to report to Government by July 2006 with recommendations on future UK policy for the management of higher level radioactive wastes. The purpose of this briefing is to provide NFLA members with advice when responding to the second phase of CoRWM's consultation on future policy. Note the deadline for responses is 27 June. The consultation paper can be found at www.corwm.co.uk.
2. The main aim of this consultation is to agree short-listed radioactive waste management options for detailed assessment between August 2005 and March 2006. The short-listed options identified in the first round of public consultation from a long-list of 15 options are: long-term interim storage, near surface disposal of short lived wastes, deep geological disposal, and phased deep geological disposal. The consultation paper also asks how the merits of each can be assessed; whether options should be combined; and what are the hurdles to implementation.

NFLA response to CoRWM's first consultation

3. The NFLA Steering Committee (NSC) supports CoRWM in its options short-list. It also recommended in its January 2005 response to the first round of consultation:

In general we consider (CoRWM's) planned approach to be about right. However, when the focus moves to the short-list it will be very important for a wide discussion of how best to interpret the criteria and how judgements should be made about how each option performs against each criteria.

NFLAs believe that nuclear waste management decision-making will be an ongoing process, at least over the next two centuries. Our view is CoRWM's recommendations should address the need for further research both on the best way to contain nuclear waste into the far future, and on the views of the public as they change in response to changes in society and technological developments. This may mean not recommending a single option, but rather a series of choices which will need to be made as the results of research become available.



THE LOCAL GOVERNMENT VOICE ON NUCLEAR ISSUES

CoRWM should be aware of the lack of resources within local authorities to scrutinise in depth and comment on CoRWM's work. This creates avoidable risks for the CoRWM process because many local authorities are still not being drawn into it. Local government networks can help to remedy this deficiency if they are enabled to do so.

Environmental Principles

4. The NSC response to the first CoRWM consultation also set out in some detail the principles that should guide option selection as follows:

4.1 'Disposal' and intergenerational equity

Whilst NFLAs recognise that, ethically speaking, the ideal would be to deal with the nuclear waste 'problem' as soon as possible, and not leave a problem for future generations, we do not believe this is technically possible. Plans for underground 'disposal', for example, rely on dilution and dispersion of radioactive waste in groundwater, rivers and seas. It does not get rid of the problem, but merely replaces one current problem with a future problem. Our scientific understanding of the deep geological environment is not sufficiently advanced to be able to predict with a sufficient level of confidence what the future outcomes might be. For example there would be a huge level of uncertainty about radiation doses to the public living on the surface in future. Where there is uncertainty, NFLAs believe we should take a precautionary approach.

*NFLAs believe that the best we can offer to future generations is a choice about how our nuclear legacy is managed. A below ground repository would leave a legacy of a nuclear waste dump gradually releasing radioactivity into the environment. Unless the waste is retrievable, this would cut off options for future generations. When CoRWM comes to assess waste management options with regard to intergenerational equity, it should measure the level of **choice** each option offers to future generations.*

4.2 Concentrate and contain, rather than dilute and disperse

NFLAs reject waste management options that which require new or additional radioactive discharges into the environment. Waste should be concentrated and contained (i.e. stored safely on site – or in the case of small users as close to the site of production as possible) rather than discharged into the environment. Waste processing and packaging techniques which involve discharges into the environment should be avoided wherever possible. This may have implications for the Radioactive Waste Inventory. For example NFLAs have opposed the incineration of certain radioactive waste streams and believe these should be packaged and stored instead.

4.3 The waste minimisation principle

This principle means we should carefully manage existing waste in such a way as to minimise the production of secondary waste. But it also applies to the production of future nuclear waste.

NFLAs believe that public consensus with regard to nuclear waste management will be difficult to achieve while the (civil and military) nuclear industry continues to produce nuclear waste. Calling a halt to reprocessing and deciding now that there will be no new nuclear power plants or nuclear weapons built in the UK is a pre-requisite to obtaining public acceptance of any long-term nuclear waste management proposal.

4.4 The proximity principle and nuclear transports

Nuclear waste is at its most vulnerable to accidents or a deliberate malicious attack whilst it is in transit from one site to another. For this reason, the transport of waste should be avoided wherever possible. In the case of small-users, waste should be managed as close to the site of production as possible.

4.5 Waste monitorability and retrievability

Radioactive waste should be stored in a 'passively safe' state. It should be constantly monitored and, in case any problems arise in future, it should be retrievable so that the waste can be re-packaged if necessary. For the foreseeable future, NFLAs see storage of nuclear waste as the least-worst method of nuclear waste management, and the only one which can begin to meet the principles of sustainable development. 'Disposal' is not technically feasible. Monitorable and retrievable storage will at least offer future generations a choice about how nuclear waste is managed. The implications of September 11th will need to be taken into account, and any stores will need to be designed with the possibility of terrorist attack in mind. It may be that sub-surface stores will have benefits over above ground storage in terms of safety and security with legitimate accessibility without compromising the ability to monitor and retrieve the waste. However, the political and financial difficulties of retrieving waste from a sub-surface store in the future, should a problem arise, also need to be taken into account. There should be a thorough assessment of various storage options to establish where the balance of advantage lies between above ground and slightly below the surface stores.

Short listed radioactive waste management options

5. The four main options that CoRWM have short listed are those that the NSC has agreed should go forward for assessment.
6. CoRWM asks of the long-term interim storage option:

The definition has been changed and clarified. We therefore invite feedback on this option, on the two intentions, and on CoRWM's proposal that it should be short-listed.

The NSC supports long-term (300 years+) interim storage going forward for full assessment. The costs and benefits of the two 'intentions' (i.e. deciding *now* what comes after interim storage, or leaving the decision open for the future) should also be assessed. Of the six identified variants below, by applying the criteria detailed above, the NSC supports where practical option iv or vi. for assessment, but recognises this may not be appropriate at all sites. Some will be at risk of flooding from rising sea levels and coastal erosion within a 300 year time frame. Regional protected storage arrangements that minimise transportation

may in some instances be necessary. We do not support development of a centralized interim storage facility.

- i. Interim store, above ground, centralised, unprotected (i.e. no special hardening against terrorist attack)
- ii. Interim store, above ground, centralised, protected as far as practicable
- iii. Interim store, above ground, at current location of waste, unprotected
- iv. Interim store, above ground, at current location of waste protected
- v. Interim store, underground, centralised, protected by ground cover
- vi. Interim store, underground, at current location of waste, protected by ground cover.

7. CoRWM asks of near surface disposal of short-lived wastes:

Specific views on near-surface disposal for short-lived wastes were not sought in the first round of consultation. CoRWM now invites feedback on the proposal to short-list this option.

The NSC understands that the bulk of the waste inventory is mixed short (i.e. up to 300 years) and long lived (i.e. many thousands of years) radioactive material. However, it is understood that only a small proportion of the current waste inventory can be separated in this way (without incurring excessive costs). In future the NSC agrees that more effort should be made to separate short from long lived wastes.

In principle the NSC finds on site secure and monitorable decay storage acceptable and it should go forward for further assessment. The NSC does not support disposal for the reasons set out above (e.g. because of the loss of institutional control).

8. Of the two deep geological disposal options (phased or immediate) CoRWM asks:

We would welcome your views on whether there are other forms of deep geological disposal that we should consider.

The NSC does not support deep geological disposal or phased deep geological disposal because it is effectively a commitment to relinquishing institutional control and consenting to long term dilution and dispersal of radioactive wastes that will remain hazardous to life for tens and hundreds of thousands of years. That said, the NSC supports a full open and transparent assessment of these geological options alongside other short listed options.

Borehole disposal for some wastes has been raised as an option. The NSC would not object to the costs and benefits of this option being assessed. Some waste streams containing recoverable fissile materials that pose a proliferation or terrorist acquisition risk do require security measures to ensure they remain inaccessible. The pros and cons of management options for different waste streams need very careful consideration.

Note: The NSC is deeply concerned to hear reports that the CoRWM process may be subverted at the highest government levels to establish a new policy favouring deep disposal (BBC 'PM' Programme, Radio 4 16 May 2005). UK Nirex Ltd is already open in its support for phased deep geological disposal. The NSC is concerned that institutional

momentum is favouring the deep geological disposal options (phased and immediate) and that this could undermine the public credibility of the CoRWM process.

9. CoRWM asks for views on the management of the reprocessed uranium and plutonium stockpiles.

The strongly held view of the NSC is that these materials should be designated wastes and not recycled through a new generation of nuclear reactors only to create more radioactive waste for future generations to manage. 5% of the plutonium stockpile is contaminated and unsuitable for burning in reactors. A waste management route will in any event have to be identified for that material. The NSC supports research on techniques for managing separated civil plutonium and reprocessed uranium as wastes in future.

Assessment Methods

10. CoRWM asks of the process for assessment:

*Do you have any concerns about this process for assessing the options?
Is CoRWM proposing to involve specialists, stakeholders and citizens to do the right tasks?
Are there any other ways in which CoRWM should involve people?*

The NSC supports CoRWM's methods for involving people in the assessment process and it supports the process designed to undertake an assessment. As CoRWM says "The success of multi-criteria analysis (MCA) is dependent on the information provided." A valid question is raised by the BNES Young Generation Network in their response to this consultation about the amount of information a Citizens Panel can be asked to assimilate quickly from a 'standing start'. The issues are complex and whilst panelists come without any 'baggage' they are open to influence from the specialists they encounter. As with MCA, what goes in will substantially determine what comes out.

The NSC is concerned that, at the time of writing, the list of sites identified by UK Nirex Ltd in the 1980s as potentially suitable for geological disposal have still not been released. We are now some 16 years on from the NSC's first appeal for publication of this information. The CoRWM Chair has written to UK Nirex Ltd calling for the site information to be released by early June 2005 to minimise disruption to the CoRWM process. The NSC supports the request of the CoRWM Chair. We anticipated that release of the site information will draw more communities into CoRWM's policy development process and that the process will be all the more robust for that. The NSC is now working with UK Nirex Ltd on a 'managed process' to release the information and pressing Nirex to meet the CoRWM Chair's deadline.

11. CoRWM ask of the assessment criteria below:

Are any issues missing which should be included – either as separate criteria or within these proposed criteria? If yes, what are they and why are they important? Should any of the criteria (or issues within the criteria) be removed? If so, which one(s) and why?

Assessment Criteria

1. Human health and safety: What is the impact of this option on human health?

This could be divided into ‘public’ and ‘worker’ safety. Currently different radiological protection standards apply.

2. Impact on the natural environment: What is the impact of this option on the natural environment?

This is an important assessment criteria and should be considered in conjunction with 3 and 4 below.

3. Impact on local and regional economies: What is the impact of this option on the economy of the host community and the surrounding region?

This is an important assessment criteria. Radioactive waste management can bring jobs and money into a local economy, but it might drive other jobs and money out, and it may militate against alternative developments.

4. Impact on local and regional society: What is the impact of this option on the quality of life in the host community and the surrounding region?

This is an important assessment criteria. Quality of life judgements are a combination of factors including perception. The process by which siting decisions are derived will affect a community. Questions of community benefit, to offset disbenefits, must be addressed. Whether a community supports the process of site selection, or whether it is imposed in the face of community opposition, will affect a community’s judgement about whether its quality of life has been materially affected.

5. Burden on future generations: What will be the distribution of burden (cost, effort, detriment) between the present generation and future generations?

This is important but must be considered in conjunction with the next question.

6. Flexibility: How much flexibility is allowed to future generations?

This is an important assessment criteria. Future generations must be empowered to effectively manage this hazardous legacy.

7. Security: How vulnerable is this option to acts of terrorism?

Security is an important assessment criteria.

8. Need for transport: To what extent does the option manage the waste close to its current location?

The proximity principle is an important assessment criteria.

9. Cost: What are the likely financial costs of this option?

This is an important assessment criteria. Waste management must meet all present day regulatory requirements and demonstrate that containment, security and institutional control can be maintained for a given time frame.

10. Implementability: What level of difficulty (technical, regulatory, legal, and planning) is there in implementing this option?

These are important assessment criteria. In the NSC's view the aim of CoRWM should be to recommend options *and how they can be 'derisked'*. Meeting the most stringent technical, regulatory, legal, and planning controls to provide reassurance and demonstrate implementability is vital. Where there may be technical, regulatory, legal or planning uncertainty, or dispute, future programme implementation bodies should accept the broader, not the narrower, interpretation of such requirements.

CoWRM also asks:

a) What risk to health and safety might be 'acceptable'?

Generally a risk of one in a million is acceptable, but as the Committee Examining the Radiation Risks of Internal Emitters (CERRIE) concluded last October, risk could be underestimated or over estimated tenfold. There is no scientific consensus on dose/risk estimates. In these circumstances it is responsible to take a precautionary approach.

b) Is it fair that one community (or a small number of communities) should bear the burden of radioactive waste management?

On site storage ensures the burden is shared but not equitably.

c) How important is the principle that waste should be managed over the long-term close to where they are currently located?

The NSC's support for this view is evident from comments above.

d) Is it fair that future generations should bear a large part of the burden of radioactive waste management?

It is not fair but it is inevitable. Geological disposal buries a problem rather than deals with it. All barriers will eventually breakdown.

e) How important is it that wastes are retrievable?

It is very important, or there is no intergenerational equity, flexibility, or choice for future generations.

f) What part should financial cost play?

Resources must meet all present day regulatory requirements, *with a contingency for more stringent anticipated requirements*, and demonstrate that containment, security and institutional control can be maintained for a given time frame.

In addition to these above issues the NSC considers, as already reported in its response to the first round of CoRWM's consultation, that there is an ongoing need for further research both on the best way to contain nuclear waste into the far future, and on the views of the public as they change in response to changes in society and technological development.

Options Combination

12. The NSC agrees that a 'one size fits all' approach will not address the complexity of the problem to be addressed. The requirements for acceptable future fissile material management, heat generating HLW and spent fuel, and long and short lived ILW will differ. 300 years from now society might decide that short lived ILW in interim storage can safely be disposed to landfill, or it might decide to continue to isolate and monitor depending on the standards that apply at the time.

Hurdles to implementation

13. Much as CoRWM will wish to keep its work separate from considerations about any new nuclear build programme, or continued avoidable waste generation at THORP, or as a result of operation of the Sellafield MOX (plutonium based fuel) plant, these matters will not be separated out by the public. The public want to know the radioactive waste problem is bounded not open ended.
14. Other serious concerns about a level playing field for consideration of each short listed option and the extent to which CoRWM is being left to get on with its job have been articulated above.