

Nuclear Free Local Authorities (Scotland)

Response to the Dounreay Site End State Consultation

Defining the Dounreay Site End State

Introduction

Nuclear waste issues are of great concern to local authorities, and Nuclear Free Local Authorities (Scotland) believes that consultation on these issues should take place with as wide a group of stakeholders as possible.¹

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. Nuclear Free Local Authorities (Scotland), therefore, believes that a more sensible approach to the consideration of site end states would be for the Nuclear Decommissioning Authority to launch a generalised consultation leading to guidelines on Site End States and the production of guidance on how to identify the Best Practicable Environmental Option (BPEO). Such a consultation would have provided a better opportunity for wide consultation with both local, regional and *national* stakeholders, and would include an agreed set of environmental principle.²

Because this does not appear to have been done, it is particularly worrying that the NDA Guidance to determine site end points seems to restrict consultation to the local area by recommending only consultation with “*the wider community around the site concerned*”.³ Both NFLAs and NuLEAF have previously argued that there is an urgent need for guidance on the nature, role, scope and content of BPEO assessments for decommissioning and how relevant factors should be weighted.⁴

Not only has the NDA left it unclear to the Site Stakeholder Groups how widely they should consult, but the timetable for these Site End State Consultations appears to be very short. Speaker after speaker at the March 2006 Workshop in Manchester complained of the NDA not being ‘in the real world’ and of having unrealistic expectations of their SSGs.⁵ The Hunterston SSG, for example, says it is planning a public consultation exercise – but the plan must be submitted to the NDA by March 2007, leaving very little time for a consultation to be launched, and completed.⁶ Many at the Manchester Workshop also felt that as well as CoRWM’s final report and Government response, the Low Level Waste policy review should also be completed before SSGs are asked to consult on site end states. The Low Level Waste policy consultation was completed in May 2006, but the Government has yet to produce a final report.

¹ Radioactive Waste Policy: Briefing on the Government Review No. 11 August 2004.

<http://www.nuclearpolicy.info/docs/radwaste/C3k.pdf>

²This would cover much more than just the Site End State Definition Process document, NDA, 5th July 2006. http://www.nda.gov.uk/documents/egr015_site_end_state_definition_process_rev_0.pdf

³ <http://www.dounreaystakeholdergroup.org/display.php?doc=70>

⁴ NFLAs (February 2004) Radioactive Waste Policy Briefing No.10 “Government Proposes New Decommissioning Policy”

Local Government Association Special Interest Group on Nuclear Decommissioning and Radioactive Waste Management submission to DTI, 27th February 2004. “Public Consultation on Modernising the Policy for Decommissioning the UK’s Nuclear Facilities”.

⁵ Briefing for CoRWM on NDA’s discussion on site end states held in Manchester at the Midland Hotel on the 23rd March 2006

⁶ Hunterston SSG Minutes 28th August 2006.

http://www.nda.gov.uk/documents/hunterston_a_site_stakeholder_group_sub_committee_meeting_minutes_28th_august_2006_draft.pdf

Nevertheless, NFLA (Scotland) welcomes the opportunity provided by the Dounreay Stakeholder Group to comment on the Dounreay Site End State consultation.

Site End States – some principles

Nuclear Free Local Authorities (Scotland) believes that nuclear waste management policy should be decided according to a set of environmental principle. These principles include:-

1. Waste creations should be minimized and avoided
2. Waste should be concentrated and contained rather than diluted and dispersed
3. The proximity principle.
4. The precautionary principle
5. Inter-generational equity.

Making use of these principles to decide how best to go about decontaminating a nuclear licensed sites would argue for a site end state, which would allow unrestricted use, (apart from the area required for monitorable and retrievable waste stores) irrespective of the intended use of the site in the short-term. Leaving sites only partially decontaminated will result in the dilution and dispersal of radioactivity into the environment and might well cause problems in future and increase overall lifecycle costs. Setting tough standards for decontamination will not only benefit the environment and achieve widespread public support, but will also drive innovation and the development of waste minimisation techniques

The Government's consultation paper on Solid LLW Management⁷ refers (para.10 p12) to the principles that should guide the preparation of waste management plans, i.e. risk informed approach; waste minimisation (by activity and by volume); consideration of all practical options; presumption towards early solutions; proximity; and consideration of future climate change impacts. These principles are generally supported by NFLA (Scotland) though they must be applied with the environmental protection principle of 'concentrate and contain'.

The UK NFLA Steering Committee expressed concern in its submission to the LLW consultation that using some options for LLW management could result in increased dilution and dispersal, increasing the potential for public exposures, and adding to the burden of radiological risk that is carried by society. NFLA (Scotland) urged the application of the precautionary principle in setting demanding risk targets.

The Proximity Principle

Although the so-called "site-end point" ie when decommissioning work has been completed, has been accelerated from the original 2063 to 2033, it is noted that Intermediate-Level Waste (ILW) and any remaining nuclear fuel, is likely to remain on-site until the period 2047-2066. 2033 is, therefore, now regarded as the Interim End Point. (IEP)

The proximity principle argues for the minimisation of waste transportation. Whilst this principle appears to have been accepted with regard to LLW at Dounreay, it obviously remains Government policy that, at some point in the future ILW should be transported to a "deep geological repository".

The Committee on Radioactive Waste Management (CoRWM) says the creation of suitable facilities "*may take several decades*" and robust interim stores must be built in

⁷ A Public Consultation on Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom, DEFRA, Scottish Executive and others, 28th February 2006, <http://www.defra.gov.uk/corporate/consult/radioactivity-llw/index.htm>

the meantime.⁸ The Committee also warned that there may not be sufficient agreement on deep dumping of waste; there may be technical difficulties in siting or community concerns could make it difficult, or even impossible. CoRWM says we need to build interim stores as a contingency in case the dump is delayed or is a failure. The stores need to be secure, particularly against terrorist attacks. The Committee says there are still uncertainties with regard to the safety of deep geological disposal in general, and there will be uncertainties if and when a specific site is chosen, so there will need to be much more research. [Section 3.1 of the Assessment of End of State Options paper⁹ should have recognised the uncertainty that a new national facility would be successfully brought into operation].

The upshot of CoRWM's recommendations is that Dounreay must plan as if it expects to be the host for robust interim stores for ILW for much longer than just until 2066, as a contingency against failure of deep dumping proposals.

Site End States Guidance

The Government's 2004 policy statement on decommissioning says:-

"Different site end states might be appropriate for different sites, with restoration to unrestricted use not always the best option".

The NDA Guidance for Site Stakeholder Groups on determining site end points¹⁰ also emphasises the need to:

"...take advantage of the more flexible approach available following the Government's recent decommissioning policy review, whereby it is not necessarily expected that sites should be restored to green field status".

This "more flexible approach" allowed for on-site above ground monitorable, retrievable storage, which would not have been compatible with returning the whole of each licensed site to green field status. However, NFLA (Scotland) believes that we should still be striving for a site end state, which would allow unrestricted use, apart from the small area required for waste stores, irrespective of the intended use of the site in the short-term. Flexibility should not be used to encourage giving up on the idea of ever fully cleaning up the nuclear legacy, with different standards of decontamination depending on the intended (short-term) future use of the site – with lower standards (for activity) for sites likely to be developed for commercial or industrial use for example.

The commercial imperative

Nuclear consultant Ian Jackson points out that clean-up standards which might be acceptable to this generation which has benefited from employment on the nuclear site may well not be acceptable to subsequent generations. But, apart from the ethical consideration and the need for inter-generational equity, setting tough but transparent standards for clean-up would also provide a driver for innovation because clean technologies don't just happen by themselves.

In other words, there are sound economic reasons to set high clean-up standards too:-

"...if UK nuclear sites are never finally cleaned up to a standard allowing unrestricted use, then the lifecycle cost might potentially remain open-ended and liabilities continue for ever [and] sites must

⁸ <http://www.corwm.org.uk/content-898>

⁹ <http://www.ukaea.org.uk/downloads/dounreay/option-assessment-workshop.pdf>

¹⁰ <http://www.dounreaystakeholdergroup.org/display.php?doc=70>

*remain under some degree of public sector control ... There will be environmental drawbacks too, as contamination can spread increasing the size of the eventual clean-up problem and increasing costs.*¹¹

Dounreay Stakeholder Panels

Stakeholder Panel Paper No.2 asks various questions:-

(1) Are there other key themes, which you feel, should be addressed from the start?

In the absence of guidance from the NDA on the environmental principles which should underpin the site end state determination process, DSG should look at these.

(2) Do you have any views on the strategy to leave conditioned ILW and some packaged nuclear fuel on the site for a period of time after the IEP until transfer routes become available?

NFLA[Scotland] believes that Dounreay should plan as if it expects to be the host for robust interim stores for ILW for much longer than just until 2066, as a contingency against failure of deep dumping proposals.

(3) Do you have any views on a strategy that leaves residual quantities of radioactive and inactive contaminated soil on site if the regulators agree that the residual risk is well below regulatory safety limits?

This is presumably asking about leaving contaminated soil on part of the site which is expected to be de-licensed. NFLA [Scotland] has some serious concerns about HSE criteria for de-licensing. HSE believes that a fatality of 1 in a million per year would be a broadly acceptable risk to a member of the public, as long as the nuclear operator applying for de-licensing is also able to show that the residual risk has been reduced to As Low As Reasonably Practicable (ALARP). However, the ICRP has recently proposed criteria for both radiation dose and concentrations of radioactivity, which imply a somewhat lower risk threshold. In the simplest case the ICRP has proposed a minimum dose constraint of 10 microsieverts which is equivalent to a risk of fatality of one in two and a half million – much lower than HSE's proposed nuclear de-licensing criteria.¹²

(4) Do you have any views on a strategy that offers long-term monitoring arrangements continuing for some years after the decommissioning work is complete?

This is essential for any part of the site not returned to a pristine condition. Even for parts of the site which meet de-licensing criteria in 2033, it may be found later that they no longer meet the ALARP principle, because technology improves and standards become more stringent.

(5) Do you have any views about the importance or otherwise of a continuing nuclear site license?

Whether or not the site remains licensed is a bit of a human construct. NFLA [Scotland] believe that we should still be striving for a site end state, which would allow unrestricted use, apart from the small area required for waste stores irrespective of the intended use of the site

¹¹ Nuclear Engineering International, February 2004, 'Decommission Improbable' by Ian Jackson. <http://www.jacksonconsult.com/downloads/NEI.pdf>

¹² For more detail see: Radioactive Waste Policy: Briefing on the Government Review No. 11 August 2004. <http://www.nuclearpolicy.info/docs/radwaste/C3k.pdf>

in the short-term. What is important is maximising the effort to achieve unrestricted use, but continuing management of areas where this may not be immediately possible. Continuing monitoring will also be important, along with the application of the precautionary principle in dealing with any residual contamination.

(6) Are these the right high level options? Should any other options have been investigated? Do you consider any of these options as “non-starters”?

The options appear to be about right.

(7) Are you comfortable with the approach to site end use in this site end state consultation?

NFLA (S) is not comfortable with the idea that a future use of a site might help to determine the amount of decontamination work carried out. Whilst the proximity principle means that waste and contaminated soil should remain on the site, it is important that as much of the rest of the site – apart from those areas required to store waste or contaminated material – should be restored for unrestricted use.

(8) Does the BPEO study seem a fair and common sense approach to this issue? Are you confident that your views will be taken into account in deciding the BPEO for the Dounreay site end state?

As discussed earlier, it would have made more sense to begin the consideration of site end states with a generalised consultation leading to the production of guidance on how to identify the BPEO.

Deciding between the options.

There is no mention in the consultation document of contamination off the licensed site. NFLA (Scotland) agrees with Shetland Islands Council, which argued in its response to the particle consultation that Dounreay could not be said to have achieved a Site End State until the end of an agreed and acceptable programme for retrieving, managing and monitoring both onshore and offshore particles. If particles are still coming ashore, or are still being identified offshore the Dounreay site cannot be said to have reached an End State. This can only be reached once an agreed and acceptable programme for dealing with the particles has been completed. Throughout the Particles Steering Group discussions questions have been raised about how the particles legacy would be dealt with beyond the "end state" date. This issue should not be avoided simple because the particles are technically outside the licensed site.

NFLA (Scotland) agree, subject to the need for Dounreay to plan to host ILW stores beyond 2066 as a contingency, with the Internal Stakeholder Panel that Option 5 appears to be an appropriate goal, but there may be a question-mark over its achievability – there should be further consultation when more information is known. The thrust of Option 4 is broadly acceptable. Deciding exactly where to draw the line between the two options will depend on further information about the practicality of, for example, cleaning up contamination beneath buildings.

In general, NFLA (Scotland) would support excavation and management of contaminated soil, rather than capping, provided this can be done without dispersing radioactive contamination around the site.

NFLA (Scotland) also supports the general thrust of both panels that every effort short be made to de-license as much land as possible, as quickly as possible, but only if the risk factors proposed under HSE De-licensing Criteria are made much more stringent. In any event the

use of the ALARP principle should be strictly enforced. NFLA (Scotland) does not support the unrestricted use of land which is still contaminated.

A BPEO should be the best **environmental** option, so greater weight should be given to environmental and public health criteria than to cost criteria. It is however encouraging to note that the difference in costs between options involving early de-licensing (in a few decades) and de-licensing in several hundred years were relatively small (compared with the total cost of decommissioning the site).

It is not clear from the consultation document, or any of the accompanying literature, why Options 3 & 4 score the same on cost, and intergenerational equity, and indeed all other criteria apart from regulatory acceptance. Nor is it clear, for example, why options 4 and 5 score the same on reduction of hazard, local employment, and the environmental criteria. Some of these similarities between options need to be teased out for further consultation.

There is no mention of the HMS Vulcan site in the consultation document. There needs to be some clarification given about how any decommissioning on that site might affect the Dounreay Site End State?

Criteria

NFLA (Scotland) agrees (with one External Panel Member) that transport issues will require greater attention. Transport is not scored in the consultation document. It is also sympathetic to the view expressed by another panel member that the licensed site should not be extended to accommodate the LLW facility. Whilst NFLA (Scotland) has argued for the storage of LLW on the Dounreay site, rather than transporting it off-site, it would be a pity if the views of the local community could not be met within this objective.

Summary and Conclusions

1. The NDA should have launched a more general UK-wide consultation on site end states and Best Practicable Environmental Options before asking the Site Stakeholder Groups (SSGs) to consult on site end states. NFLA (Scotland) would ask DSG to request that the NDA urgently launches a consultation on the nature, role, scope and content of BPEO assessments for decommissioning and how relevant factors should be weighted.
2. NFLA (Scotland) is concerned that the speed which the NDA is requiring SSGs to carry out this consultation and the lack of clarity about how widely consultation should be carried out, will lead to consultations being restricted to the immediate locality around the nuclear sites.
3. NFLA (Scotland) believe that nuclear waste and decommissioning issues should be decided upon according to a set of environmental principles. These principles would argue for a site end state, which would allow unrestricted use, (apart from the area required for monitorable and retrievable waste stores) irrespective of the intended use of the site in the short-term. NFLA (Scotland) would therefore support options which involve maximum restoration.
4. NFLA (Scotland) believe the aim should be to de-license as much of the site as quickly as is acceptable, provided, of course, this does not involve releasing contaminated land.
5. However, this should not be taken to infer support for the transport of waste and contaminated material offsite. Indeed NFLA (Scotland) believes that Dounreay should prepare to be host for waste stores beyond 2066 as a contingency against failure of proposals to build a centralised waste dump.
6. Nor should support for unrestricted use be taken as support for the HSE's high risk targets for de-licensing. NFLA (Scotland) would not support the return of land, still

- contaminated to the maximum levels proposed under the HSE's De-licensing Criteria, to unrestricted use.
7. NFLA (Scotland) is nervous about the need for "flexibility" emphasised in recent Government policy documents on decommissioning. Whilst this does now allow for on-site storage of radioactive waste in monitorable and retrievable stores, it should not be used to encourage giving up on the idea of ever fully cleaning up the nuclear legacy, with different standards of decontamination depending on the intended (short-term) future use of the site.
 8. Dounreay should not be said to have achieved a Site End State until the end of an agreed and acceptable programme for retrieving, managing and monitoring both onshore and offshore particles.
 9. Taking into account the above points, and subject to the need for more information about the excavations proposed, NFLA (Scotland) agrees that Option 5 is the appropriate goal.

January 2007

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