

Notes on the SAFESPUR Workshop on Low Level Radioactive Waste Policy, London, 11 May 2005

This workshop on the proposed new UK policy on the long-term management of solid low level radioactive waste (LLW) was the first SAFESPUR forum event on a specific topic. It was attended by about thirty people. The main aims of the workshop were to understand the context and content of the proposed new LLW policy, to learn about SD:SPUR experience of LLW management issues, to identify the practical implications of the proposed new LLW policy, and to identify key messages to the Department for Environment, Food and Rural Affairs (Defra) and the devolved administrations, in time for them to be taken into account as the policy is finalised. The first two aims were met by presentations from Defra and CIRIA; the last two by facilitated discussions.

The Proposed LLW Policy

Katherine Mondon of Defra's Radioactive Substances Division summarised the proposed new LLW policy and the reasoning behind it (see the consultation document and other publications on www.peoplescienceandpolicy.com for full details). A new LLW management policy is needed in the UK because there are difficulties in disposing of LLW now and there is not enough capacity to deal with the LLW that will be produced in the future during decommissioning of nuclear facilities. The proposed policy is intended to be a high level framework that will enable others to provide the LLW management facilities and routes that will be required.

The three primary principles in the proposed policy are: *flexibility*, to enable the most appropriate management method to be used for each type of LLW; a *risk-informed approach* to the selection of the management method for each waste type; and *minimisation* of arisings of LLW and amounts requiring disposal. The government envisages that the Nuclear Decommissioning Authority (NDA) will play a major role in implementing the policy. It expects the NDA to develop new disposal routes for the LLW produced at the sites it is responsible for, and to make these available, as far as practicable, to other waste producers within and outside the nuclear industry. Defra is funding research on how much nuclear and other LLW could and should be disposed of to landfill in future. It is hoped that the new policy will be in place by the end of summer 2006. Defra and the devolved administrations will then hold discussions with regulators about changes to their approaches and guidance.

SD:SPUR Experience

The second presentation was by Mark Bentley, who is the CIRIA project manager for SD:SPUR. Participants in SD:SPUR have interests and experience in issues around the implementation of the proposed new policy. The SD:SPUR guidance promotes the application of the 'waste hierarchy' in a proportionate and risk-informed way. One of its purposes is to assist nuclear sites in their development of 'integrated waste management strategies'. The guidance recognises the importance of minimising arisings of all wastes. It emphasises the need to consider the re-use of buildings, plant and equipment, rather than simply assuming that they will have to be demolished or broken up and dealt with as waste. Minimising arisings of radioactive waste is also a priority, particularly if the 'clean' wastes obtained by segregation or decontamination can be recycled or re-used. On the basis of cost proportionality and risk considerations, there is a preference for dealing with as much LLW as possible as exempt waste or as 'very low level waste' (VLLW), with an emphasis on minimising the amounts of LLW that have to be disposed of to specialised facilities such as Drigg.

Information gathered for SD:SPUR indicates that the nuclear industry is recycling and re-using a much smaller proportion of its waste than the construction industry, and that there are large variations from one nuclear site to another in volumes recycled. Stakeholder concerns mean that, at present, it is very difficult to recycle or re-use any nuclear LLW off-

site, even if its activity levels are below those requiring any regulatory controls. Another problem is that landfill operators are reluctant to take any radioactive wastes, even when exempted from specific regulatory controls. SD:SPUR has also identified a number of inconsistencies in regulatory approaches to LLW management and to management of non-radioactive wastes, and between approaches to LLW and non-radioactive waste management.

Key Messages for Defra

Participants discussed the proposed new LLW policy under three headings: the risk-informed approach, flexibility and waste minimisation. In each case they focused on the possible practical implications of the proposed policy and identified key messages for Defra and the devolved administrations. These messages are summarised below. They are not a formal response to the consultation but, because they were agreed by all participants, it is hoped that they will be useful when finalising the policy.

Risk-Informed Approach

Workshop participants supported the use of a risk-informed approach to the selection of management methods for LLW but had some comments and concerns about how such an approach would work in practice. These were as follows.

- It is essential to consider all risks to people and the environment when selecting LLW management methods. The consultation document tends to focus on radiological health risks to the public. What are needed are more holistic approaches that cover radiological and non-radiological risks to the public, workers and the environment.
- The policy should state more clearly who is responsible for implementing risk-informed approaches to LLW management. Waste producers and consignors will be unable to do this until new management routes and disposal facilities are available and until there is information about the risks of using these for various types of LLW. There is also a need for more information about the risks of current routes and facilities, in a form suitable for use in 'best practicable environmental option' (BPEO) type studies.
- There is a need to produce simpler risk information for the general public, with examples and context. Without this they may find it hard to make informed judgements about the acceptability of proposed LLW management options.
- To make policy self-consistent, the Exemption Orders made under the Radioactive Substances Act, Schedule 1 of the Act itself and the definitions of VLLW and LLW should be revised using a risk-informed approach. The derivations of all the numerical criteria in legislation and elsewhere should be transparent.
- There seems to be a lack of 'joined-up thinking' about waste disposal routes. For example, there is LLW that would be classed as 'hazardous' on the basis of its non-radiological characteristics but because it is radioactive it cannot go to landfills designated for hazardous wastes. This seems anomalous. Other examples are short-lived intermediate level radioactive waste and LLW that is not suitable for near-surface disposal. Neither of these types of waste seem to have been considered in enough detail by the Committee on Radioactive Waste Management (CoRWM) or in the LLW policy review.

Flexibility

Workshop participants agreed that it is desirable for there to be more flexibility so as to better match types of LLW to management methods but they were concerned about how this flexibility could be achieved.

- It is not clear in the consultation document who will establish new LLW management routes and facilities or when or where they will do this. The government appears to expect the NDA, private operators and local authorities to carry out various actions but it seems reluctant to offer incentives or practical support.
- There is a need for viable and appropriate markets for recycling and re-use of waste materials. Some of these markets will have to be internal to the nuclear industry and may involve more transport of waste than might be thought ideal. The policy document should recognise that it could be better to recycle some wastes on a regional or national basis within the nuclear industry than to dispose of them close to the sites where they arise.
- More emphasis should be given to making use of national and international experience and precedents, including those from outside the field of radioactive waste management. The consultation document seems to take a rather parochial view.
- Stakeholder acceptance of a range of LLW management options is essential if there is to be real flexibility. It may be necessary for the government to 'champion' some options.
- Rigorous regulation is needed to eliminate proposed options that offer no real advantages over current practice. Government should ensure that regulators are prepared for the implementation of the new policy and resourced adequately.
- At present there is a tendency for each waste producing site to act in isolation. Some options will only be viable if adopted by several sites. It is unclear how co-ordination between sites will be achieved, especially outside the nuclear industry but also within it.
- Establishing new LLW management options will take time and money. This should be recognised in the policy document. Contractual timescales may need to be lengthened to deal with establishing new options. For example, five years would not be enough to identify a need for, gain permission for and construct a new disposal facility.

Waste Minimisation

It is a long-standing principle that waste arisings and volumes of waste for disposal should be minimised. Participants agreed that its increased application to LLW is desirable but felt that there are a number of aspects that need further work.

- Waste minimisation must be sustainable. The minimisation principle, and the waste hierarchy, should be applied via BPEO and 'best practicable means' (BPM), not as standalone objectives. It is also important to remember that waste minimisation is only one aspect of sustainability.
- Re-use of buildings, plant, equipment etc is an important aspect of waste minimisation. It should be mentioned specifically in the new policy.
- It may be necessary to make LLW disposal artificially expensive in order to encourage recycling and re-use. In particular, the availability of new LLW disposal facilities on nuclear sites could discourage site owners/operators from serious consideration of other, perhaps more expensive, LLW management methods, even

though such methods have environmental advantages. The government may need to require the NDA to introduce other incentives for recycling and re-use, for example via key performance indicators for its contractors.

- There may be conflicts between some types of endpoint for nuclear site decommissioning and waste minimisation. For example, achieving greenfield status over all or most of a site maximises the volumes of waste to be dealt with. These types of conflicts will have to be resolved when achieving integration between decommissioning, waste management and contaminated land management strategies at nuclear sites.
- Incineration is not, by itself, a complete waste disposal method, because it produces ash that has to be disposed of by other means. This ash contains almost all the activity in the original waste.
- As well as minimising overall waste volumes, there are usually considerable advantages in minimising the volumes of higher activity LLW. The policy should mention that 'declassification' should be undertaken as part of waste minimisation.

Conclusions

The workshop was a valuable opportunity to learn about and consider the proposed new LLW policy and to provide feedback to Defra. It is the right time to develop new policy and participants generally welcomed what has been published for consultation. Implementation of any new policy will take time and stakeholder engagement will be key. Changes to legislation and regulatory guidance will be needed to complete the implementation. It is also important that, in due course, the government restates the UK policy on managing all radioactive wastes. Revising Cm 2919 piece by piece has the potential to lead to inconsistencies, omissions and confusion.

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