

THE HIGHLAND COUNCIL

PLANNING, ENVIRONMENT AND DEVELOPMENT COMMITTEE

17 March 2010

Agenda Item	
Report No	

Scotland's Higher Activity Radioactive Waste Consultation

Report by Director of Planning and Development

SUMMARY

The Scottish Government is seeking a response to its extended policy regarding Higher Activity Radioactive Waste in Scotland that follows its June 2007 Policy statement which supported long-term near surface, near site storage facilities where the need for transportation is minimal. The extended policy gives greater clarity on the aims and objectives of the Policy statement.

Members are asked to note the key issues highlighted in the report and agree to the response to the questions as set out within the Appendix.

The report links to the Administrations corporate objectives on the Environment; specifically to support the above ground storage of intermediate level waste from Dounreay until a Scottish waste strategy is agreed and implemented.

1. Background

- 1.1 In October 2006, following consultation on the options for long term management of higher activity radioactive waste, the UK Government and devolved administrations of Scotland, Wales and Northern Ireland accepted the recommendations made by the Committee on Radioactive Waste Management (CoRWM) that higher activity radioactive waste should be disposed of in a deep geological facility. Until such a facility is available, waste would be suitably treated and stored within facilities that would be suitable for use for a period of up to 100 years.
- 1.2 In its response to that consultation, The Highland Council did not support deep geological disposal but instead preferred the option of long-term interim storage that is sub-surface and built at or near the current location of waste.
- 1.3 In June 2007 the Scottish Government announced that its policy for the long-term management of higher activity radioactive waste arising in Scotland is to *'support long-term near surface, near site storage facilities so that the waste is monitorable and retrievable and the need for transporting it over long distances is minimal.'*

- 1.4 It is the Council's policy to '*...continue to support the above ground storage of intermediate level waste from Dounreay until a Scottish waste strategy is agreed and implemented and object to the use of Dounreay or any other site within the Highlands for a national nuclear waste repository*' (Strengthening the Highlands 2009-11, THC).

2. Scotland Higher Activity Radioactive Waste Policy Consultation

- 2.1 In January 2010 the Scottish Government published its consultation document 'Scotland's Higher Activity Radioactive Waste Policy' with the aim of providing a more detailed statement of policy. This was felt necessary to provide stakeholders with greater clarity on the aims and objectives of the policy. The consultation is therefore seeking the Council's views on the Detailed Statement of Policy, including the aim and principles, the scope and implications of the Policy. It does so by posing 21 questions in total. A response to these questions is contained within the Appendix to this report. The consultation, the full details of which can be viewed at <http://www.scotland.gov.uk/Publications/2010/01/14151207/0>, closes on **09 April 2010**.
- 2.2 The Policy will apply to higher activity radioactive waste arising from the operational and decommissioning activities of the nuclear industry in Scotland as a result of nuclear power or research activities. The Policy will also apply to those in non-nuclear industries in Scotland, most of which generally produce only small amounts of higher activity radioactive waste. It does not cover spent fuel or waste produced by the Ministry of Defence (MOD) other than at the former Defence Establishment at Rosyth.
- 2.3 What becomes immediately evident in reading the consultation document is that rather than just providing more detail, the Policy has been amended to include the possibility of near surface, near site **disposal** as well as near surface, near site storage.
- 2.4 It is not clear from the consultation documentation why disposal is now proposed but it is understood to relate to the activity of the waste; principally short-lived graphite wastes. Graphite wastes constitute the largest group within the current waste inventory (around 45%). Given the relatively short half-life such waste could decay to the point that it would be capable of being reclassified as low level waste within a relatively short period of time i.e. 300 years. In such circumstances, declaring at the outset that it is the intention to dispose of such waste may be a reasonable option. As limited information is made available with regard to activity, it is not clear if the same principle applies to other waste types.
- 2.5 The 'extended' Policy provides definitions of terms such as near site, near surface, storage, period for institutional control (300 years) etc. all of which are consistent with the terminology used in previous recent consultations.
- 2.6 Within industry the concept of 'near surface' is well understood. The definition can include facilities that are located at ground level or at depths down to 'several tens of metres.' However, from the public's perspective this does not convey the true scale of development which in reality could be anywhere around 100m. With deep

geological disposal around 250m, the difference between a near surface and deep geological facility seems confused. The Policy could do more to distinguish between them.

- 2.7 The definition of 'near site' in the context of this Policy does not mean that storage or disposal will be undertaken at each licensed nuclear site. The Policy allows for shared facilities. The Policy expectation however is that the Proximity Principle will be used to define 'near site'.
- 2.8 The Proximity Principle is a key element of EU environmental and municipal waste management policy, introduced in Article 5 of the Waste Framework Directive (75/442/EEC). Essentially the Proximity Principle requires waste to be 'disposed' of in one of the nearest appropriate installations. This limits the environmental impact of transporting waste long distances and helps to ensure that communities take responsibility for their own waste rather than imposing it on others. In the UK context, all forms of waste management are covered, not just disposal. In addition, a key principle is that the waste will be managed as near as possible to its place of production.
- 2.9 The Policy assumption is that there is a higher likelihood of new facilities being located close to the source of the waste. The implementation of this in practice however is likely to be more complex. Some wastes will require specialist facilities that are expensive to provide while others will require more generic lower cost facilities. The Policy could therefore result in facilities for different types of waste being provided at the same site or take the form of a single centralised facility or indeed any combination of such i.e. part centralised or part decentralised. Rather than near site, 'near to a site' would therefore be a more accurate definition since in reality it is likely that transportation will be required between sites for some wastes.
- 2.10 The Policy recognises innovation and the need to maintain and develop skills on how to deal with waste in Scotland. It does not however, actively promote this, rather it considers that this is a matter for waste owners. The innovation referred to includes the treatment of waste and the export of waste for treatment. While facilities are already available outwith the UK e.g. for treating materials such as steels to remove contamination, even if such facilities were available within other parts of the UK it would seem to run counter to the key principles of the Policy in terms of minimising transportation. Moreover, the movement of unconditioned waste in this way is likely to be greater risk to the environment, public health and public confidence.
- 2.11 In summary, the Policy as currently drafted is flexible. It recognises that each waste material may have to be dealt with differently and that it may be inappropriate for each nuclear site to have facilities for each of its own wastes or those for other producers. While the expectation would be for near site management of waste the Policy sets a broad framework for industry to determine the solutions. This means that all options, except for deep geological disposal of course, may be available.

- 2.12 While individual waste producers will need to comply with the policy, the consultation document establishes the need for an overarching Strategy to implement the policy framework. It is proposed that the Nuclear Decommissioning Authority (NDA), as the single largest producer of radioactive waste, develops this. Although the NDA does not own all waste in Scotland this is seen as a positive step to providing public confidence.
- 2.13 Continued stakeholder engagement is a requirement under the Policy. In producing their plans, waste producers and owners will need to consult with local communities as well as the Regulators. This principle will also apply to the preparation of the Strategy. This is considered necessary to maintain public confidence.
- 2.14 The Scottish Government has tasked The Committee on Radioactive Waste Management (CoRWM) to scrutinise the detailed Statement of Policy, the consultation itself and the Strategic Environmental Assessment. It is not clear what CoRWM's involvement may be after that stage, if any. Given that individual producers/owners will be expected to undertake a process of continued stakeholder engagement, it may be more appropriate to have more localised independent scrutiny.

3. Higher Activity Radioactive Waste in Highland

- 3.1 The Dounreay site licence company is the largest producer of radioactive waste in The Highland Council area. As with all Scotland's waste, Dounreay has no high level waste (HLW) i.e. heat emitting waste. All higher activity waste is intermediate level waste (ILW). This waste has arisen mainly from the reprocessing activities. It includes activated/contaminated metals, raffinates and sludges the majority of which is long-lived radioactive waste i.e. waste that has a half-life of more than 30 years but could be several thousands of years.
- 3.2 The current waste management assumption at Dounreay is that this ILW will be disposed of at a deep geological facility when such a facility becomes available - expected to be 2070 at the earliest. Deep geological disposal requires an engineered vault and the emplaced environment, i.e. surrounding rock structure, to shield the radioactivity from the surface. The waste is packaged ready for disposal by mixing it with cement in highly-engineered 500 litre stainless steel drums, each of which has a design life of 500 years. These are then emplaced in the facility and backfilled.
- 3.3 While the majority of waste at Dounreay is long-lived, it is understood that somewhere in the region of 3-5% of the existing ILW at Dounreay would be suitable for near surface disposal i.e. has a short half-life that could decay to the point that it would be capable of being reclassified as low level waste within a relatively short period of time. However, given the low volumes and high cost of construction of such facilities, it is unlikely that this disposal route would be made available at Dounreay for this waste. The fact that Dounreay is not in proximity to other sites which would require and could utilise a disposal facility, would suggest that in terms of the Policy, Dounreay would be an unlikely destination for short-lived wastes suitable for disposal.

- 3.4 Although Dounreay would not be able to send its waste to a deep geological facility under the Policy, the existing assumption will allow the drums to be stored on site long-term in purpose built facilities. It may be that some wastes could be transported either for treatment or disposal elsewhere but for the quantities involved this may be too expensive.
- 3.5 There are other producers of higher activity radioactive waste in Highland, in particular HMS Vulcan and Raigmore hospital. While waste from Raigmore may be directed to Dounreay given proximity, the quantities involved will be extremely small. As the Policy excludes MOD waste the position is less clear for HMS Vulcan. The MOD already has a contract with the NDA to send the low level waste (LLW) produced at HMS Vulcan to the new LLW facilities at Dounreay. It is conceivable that a similar contract arrangement could be agreed between the MOD and the NDA for ILW. Even so, it is estimated that Vulcan will produce only around 10% of the ILW that has been produced at Dounreay. Storing this at Dounreay may be preferable to transporting it long distances to a deep geological facility.
- 3.6 It would appear that a practical implication of the Policy for Dounreay is that the waste will need to be located on or near to the site over the long-term. Unless the Policy changes within a few generations the implication is that storage will be 'indefinite' albeit that this does not form part of the Policy definition of long-term. This will require on-going maintenance, monitoring and possibly further new-build. Given the fact that current and future generations will need to deal with this issue, and with the stigma that it may create, consideration needs to be given to long-term community benefit. Not only should this be evident in supporting research and development and maintaining/enhancing the skills base required to implement the Policy, but also in direct financial reward to the host community.

4. Conclusions

- 4.1 The 'extended' Policy is worded to give as much flexibility as possible recognising that each waste material may have to be dealt with differently. It has come as a surprise that the Policy now includes disposal but this is not deep geological disposal, rather disposal for some wastes that are short-lived in terms of their activity.
- 4.2 The Policy is generally consistent with the policy of The Highland Council with regard to the management of radioactive waste at Dounreay. With the exception of Vulcan waste, the waste produced in the area will be covered by the Policy. While transportation of material between sites is likely, for the Dounreay site the key principle of the Policy, that is the Proximity Principle, indicates that it is most likely that its ILW will be stored on-site for many generations to come. Similarly it is unlikely that wastes would be brought to Dounreay from other sites within Scotland. On a practical level, the distances and therefore costs involved may prohibit an alternative scenario in any case.

- 4.3 Having said this, the implementation of the Policy is dependant upon the waste producers and owners and the production of a strong and clear Strategy. This will require and be informed by continued stakeholder engagement. It is essential that The Highland Council continues to engage in the process to ensure that the best interests of its communities are secured

RECOMMENDATION

Members are asked to: -

1. Note the issues outlined in the report and the position with regard to the current policy of The Highland Council.
2. Agree the response to the questions as set out in the Appendix.

Signature:

Designation: Director of Planning and Development

Date: 9 March 2010

Author: David Mudie, Team Leader – Development Management (x 2255)

Appendix

Q1	Have we explained what waste we have in Scotland and how it is managed? Please provide details and evidence to support your response. NO. The waste needs to be further defined by activity to better understand what options or combination of options may be applicable to each site. For example, what percentage of Dounreay waste would be suitable for disposal as opposed to storage?
Q2	Have we explained why we need to define the terms used in the Policy? Please provide details and evidence to support your response. YES. It is understood that the definitions need to be included within the Policy document in order to inform the waste management plans of waste owners and producers.
Q3	Do you agree with the definition of long-term? Please provide details and evidence to support your response. YES. The assumption that the storage facilities themselves will have a building life cycle of 100 years and that there will be a need for institutional control over a period of 300 years is consistent with definitions in other recent consultations/policy documents. There is however a question over the exclusion of 'indefinite' which implies that there is a solution to the long-lived waste beyond the period of institutional control. If so what is this?
Q4	Do you agree with the definition of near surface? Please provide details and evidence to support your response. YES. However, the use of 'several tens of metres' may not convey the true scale of development – up to or around 100m may be more appropriate. It would be helpful for the purpose of the consultation to compare deep geological to near surface to understand fully the concept.
Q5	Do you agree with the definition of near site? Please provide details and evidence to support your response. NO. Given that it is unlikely that every site will have a facility, or at least a facility for each waste stream, and that transportation will therefore be required for some wastes between sites it would be better to qualify this by stating in the policy 'near to a site' or such similar phrase.

Q6	<p>Do you agree with the definition of storage? Please provide details and evidence to support your response.</p> <p>YES. The definition of storage is consistent with definitions used in other consultations/policy documents.</p>
Q7	<p>Do you agree with the definition of disposal? Please provide details and evidence to support your response.</p> <p>YES. The definition of storage is consistent with definitions used in other consultations/policy documents.</p>
Q8	<p>Do you agree with the definition of monitorable? Please provide details and evidence to support your response.</p> <p>NO. The Policy document does not define the term. The Policy document refers to the fact that this is a matter for Regulators. This doesn't seem to be helpful to waste owners/producers who are likely to require some indication of what this should constitute to be able to inform their waste management plans. It would be helpful from the general public perspective to have an indication, in easily understood language, what this is likely to mean in practice.</p>
Q9	<p>Do you agree with the definition of retrievable? Please provide details and evidence to support your response.</p> <p>YES. Retrievability is an inherent concept of storage but conversely not intended for disposal.</p>
Q10	<p>Do you agree with the definition of the need for transport over long distances is minimal? Please provide details and evidence to support your response.</p> <p>NO. It appears to be stating that the Proximity Principle will apply and as such transport over long distances will be minimal but it is not clear as to whether this is a key principle of the Policy or not. It would benefit from further clarification.</p>
Q11	<p>Do you wish to propose any other definitions? Please provide details and evidence to support your response.</p> <p>NO.</p>
Q12	<p>Have we explained the implications of the Policy? Please provide details and evidence to support your response.</p> <p>YES.</p>
Q13	<p>Do you agree with the application of the Waste Hierarchy? Please provide details and evidence to support your response.</p> <p>YES. While the waste directive does not apply to radioactive waste, the principles should as a matter of good practice.</p>

Q14	<p>Do you agree with transport of the Waste for treatment? Please provide details and evidence to support your response.</p> <p>YES. However, the transport of unconditioned waste is not without its risks to the public and environment. If it is to be accepted as a matter of principle by the public in general – then the clear positive economic advantages would need to be presented.</p>
Q15	<p>Do you agree with export of the Waste for treatment? Please provide details and evidence to support your response.</p> <p>NO. While it is understandable that facilities that lie outwith Scotland may be exploited to achieve volume reduction and an element of recycling (particularly of metals) sending waste out from Scotland would be contrary to the Proximity Principle as it is applied to the Policy. It also does not encourage innovation and the fostering of skills and research and development in this country that the Policy also seems to seek.</p>
Q16	<p>Do you agree with the need to develop a Strategy to implement the Policy? Please provide details and evidence to support your response.</p> <p>YES.</p>
Q17	<p>Do you agree that the Nuclear Decommissioning Authority should be responsible for developing the Strategy to implement the Policy? Please provide details and evidence to support your response.</p> <p>YES. The NDA is an agency of government. As it is the majority nuclear waste industry waste owner it needs to consider the issue in any case. While it is not the only waste producer, the other nuclear industry operators (i.e. BNFL) are likely to transfer their liabilities at decommissioning to the NDA at some point in the future anyway. Non-nuclear industry producers can still operate within the context of the Policy and Strategy.</p>
Q18	<p>Do you agree with the proposal to review the application of the Detailed Statement of Policy 10 years after it is published? Please provide details and evidence to support your response.</p> <p>YES. This is a realistic timeframe for any projects underway/likely to be underway in the next few years.</p>
Q19	<p>Have we adequately explained the Regulatory Framework for managing the Waste in Scotland? Please provide details and evidence to support your response.</p> <p>YES.</p>
Q20	<p>Does the Proposed Detailed Statement of Policy include all relevant issues? Please provide details and evidence to support your response.</p> <p>NO.</p> <p>It does not include MOD waste. The Highland Council is particularly interested to know what happens to ILW arising from HMS Vulcan.</p>

	<p>In addition, who will monitor the stakeholder engagement with regard to the Strategy? Will it be CoRWM or can some other body with a more localised emphasis be employed to scrutinise this stage of stakeholder engagement?</p>
Q21	<p>Should the Proposed Detailed Statement of Policy include anything else? Please provide details and evidence to support your response.</p> <p>YES. It should explore more on the socio-economic side of the equation – particularly looking at inter-generational equity or inequity as may be the case. For example it should include a statement on Community Benefit. While the arguments for benefit packages to communities hosting disposal facilities are well understood, the Policy could effectively consign some waste in some locations to ‘indefinite’ storage i.e. at Dounreay. The Highland Council would argue that this imposition on a community would require some form of financial compensation.</p>