

UK Nuclear Industry Low Level Waste Strategy

17 November 2009

Introduction

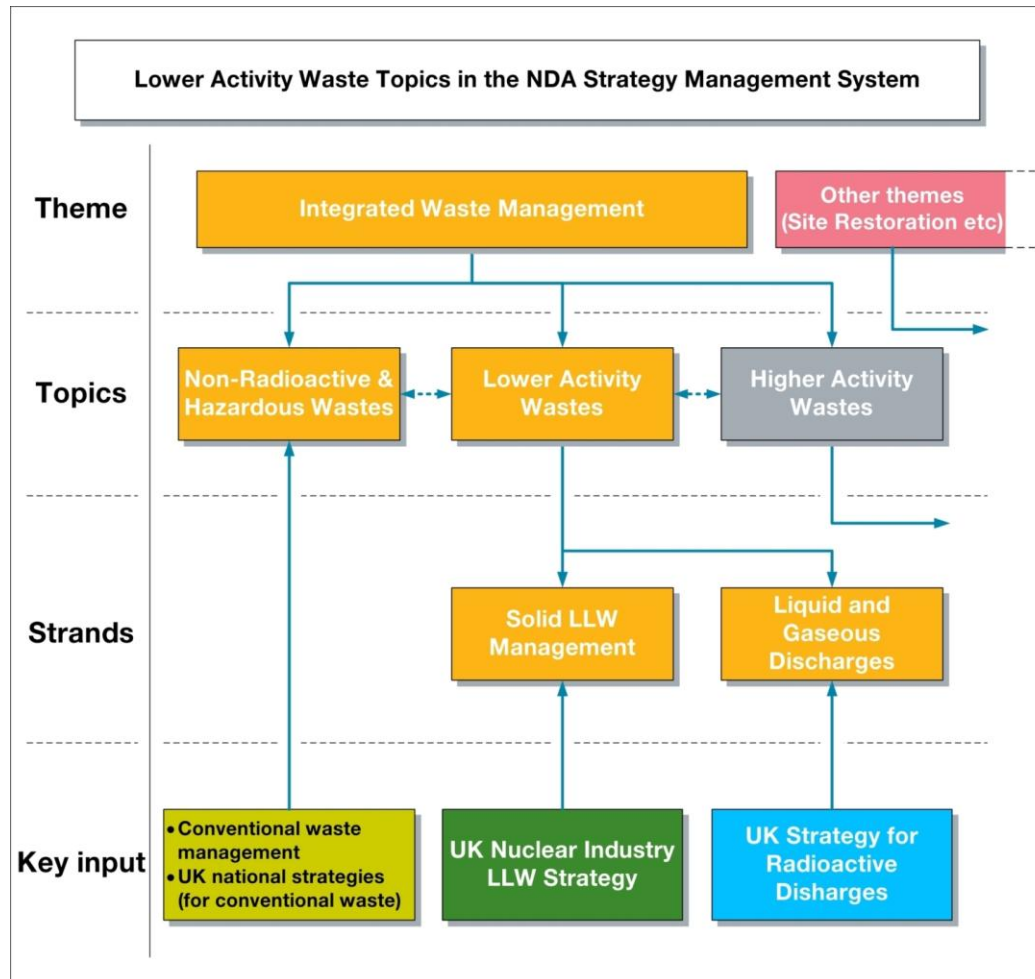
- Consultation from:
5 June 09 to 11 September 09
- Extended to 30 November 09
- Ensure input from Local Authorities
- 14 consultation questions
- 52 responses to date

**UK Strategy for the
Management of Solid Low
Level Radioactive Waste from
the Nuclear Industry:**

UK Nuclear Industry LLW Strategy

Consultation Document April 2009

Link to Strategy Management System



Q1: Avoidance and characterisation

- Approach support by >95% of respondents, focus on top of waste management hierarchy (WMH) welcomed
- Respondents recommended:
 - separating out discussion on waste avoidance from waste characterisation and segregation
 - staged approach to waste avoidance: avoid creating waste; avoid creating radioactive waste, etc.
 - Request that any work to develop standardised procedures for characterisation and sentencing of waste should involve Regulators
- All proposed work areas supported; greatest support shown for programmes to improve characterisation and sentencing of material

Q1: Avoidance and characterisation

- Final strategy will adhere more rigorously to terminology of WMH
 - Strengthen text on waste avoidance in line with recommendations
 - Distinguish between avoiding waste being sentenced to LLWR and avoiding waste generation in the first place
- Work areas will be listed separately for waste avoidance, characterisation and segregation

Q2: Re-use and recycling

- Three areas common to a number of responses:
 - The need for guidance on opportunities for re-use
 - The importance of the legal framework that these opportunities need to be implemented within
 - A preference for re-use within the nuclear industry was stated in a number of responses
- In response we will:
 - Maintain focus on Waste Management Hierarchy and ensure there is sufficient attention paid to these higher levels in the hierarchy
 - Include an action to develop guidance on implementing these opportunities
 - Consider including preference for re-use within the industry, HOWEVER, this is not necessarily the case for recycling

Q3: Compaction

- LLW compaction was nearly universally accepted by consultation responders for waste volume reduction and preserving disposal capacity at LLWR
- Several recommendations for technical innovation were provided:
 - Series waste compaction (e.g. fly ash compaction)
 - Supercompaction for improved volume reduction
 - Non-cylindrical containers for improved packaging
- No amendments to the strategy are envisaged based on the consultation to date

Q4: Metal treatment

- Most responders agreed with the benefits of metal treatment, including preservation of natural resources, re-use in industry and preserving LLWR capacity
- Some concerns were expressed over the cost-effectiveness of metal treatment
 - Views expressed that metal recycling should only be initiated if determined to be less than the cost of direct disposal
 - Alternative views expressed that cost should not be the only criterion, with important benefits for NDA from metal recycling
- NDA supports the strategy position that metal treatment and recycling are essential to success of LLW Strategy and envisage no amendments

Q5: Thermal treatment

- Many responders expressed concerns about the potential safety and environmental risks from air and water discharges, with pollution prevention and control a key topic for the strategy
- Early stakeholder and community engagement was deemed critical to the success of any thermal treatment project
- The UK Nuclear Industry LLW Strategy views incineration as one tool among many for waste treatment and volume reduction of LLW and is consistent with the waste management hierarchy
- NDA supports the strategy position on thermal treatment and no amendments to the strategy are envisaged based on the consultation to date
- However, NDA recognises the need for comprehensive stakeholder engagement, and the revised strategy will include key principles for stakeholder engagement for adoption throughout the NDA estate

Q6: Waste Management Solutions

- Waste management solutions largely available in the supply chain or in the nuclear estate – Concerns relating to 3rd party management of LLW away from nuclear sites
- Solutions must be underpinned by robust decision making processes – with stakeholder acceptance
- Where there are technology gaps – NDA and waste producing organisations are working with LLWR and industry to identify and implement work programmes
- Efficient implementation of the WMH using UK or internationally available technologies supported by inter-site transfer or trans-frontier shipment
- Robust forecasts and forward programme to enable the supply chain to invest necessary
- Support to the supply chain through the provision of waste management, treatment and disposal services (rather than invest in centralised services)

Q7: Optimise use of LLWR

- Development of an optimised approach to management of LLWR was needed.
- Received strong and counter views re. radioactive wastes not suited to disposal at the LLWR (i.e. VLLW) - OSD vs. some responses commenting that the benefit and use of VLLW disposal could be further developed.
- Disposal options considered on a case by case basis which includes In-situ disposal; Specified landfill or incineration, locally, regionally or nationally (e.g. VLLW); On-site or adjacent to site disposal (e.g. decommissioning rubble) or other near surface facilities, locally, regionally or nationally.
- Industry is required to work with all stakeholders to develop alternative disposal capacity to robustly meet the technical and regulatory criteria for disposal.

Q7: Optimise use of LLWR contd...

- Role of the NDA and its waste producers to strengthen our offer of support to all local and national stakeholders in explaining our role and potential risks and impacts.
- Responses proposing initiatives to further support and optimise disposal capacity at the repository will be assessed to maximise their implementation and impact.

Q8: Packaging

- Almost every responder provided one or more key considerations for new packaging solutions
 - Protection to the public, workers and the environment
 - Compliance with transportation regulations and compatibility with existing infrastructure at nuclear facilities
 - Ensuring safety and environmental protection implications are addressed in Environmental Safety Case for LLWR
- NDA believes that packaging solutions need to be integrated and centrally-managed to ensure uniform standards and designs and to maintain economies of scale
- NDA supports the strategy position on new packaging solutions and no amendments to the strategy are envisaged based on the consultation to date

Q9: Transport considerations

- Many respondents agreed with the position presented in the consultation documents that the impact of LLW transport on local communities is unlikely to be substantial in the majority of cases (although it may be in specific cases).
- The transport of LLW and other radioactive materials is likely to remain a key area of interest for local communities and other stakeholders in the UK.
- A number of respondents felt that communities where waste is generated should take responsibility for its management as they had the social and economic benefit of the activities which generated it.

Q9: Transport considerations contd...

- NDA Response:
 - We recognise that while the impact of LLW transport on local communities is unlikely to be substantial in the majority of cases the transport of LLW and radioactive waste in general is a key area of interest to stakeholders.
 - We do however recognise the specific issues associated with road transport through the village of Drigg and the significant effort and capital expenditure by LLWR to address this.
 - We believe that UK transport legislation and regulation are sufficient to ensure the safety of radioactive waste transports within the UK.

Q10: Road vs. Rail

- Preference expressed for alternatives to road travel to be used where practical (including rail and transport of large items by sea).
- Significant number of respondents pointed out impracticalities in the use of rail in particular cases.
- Several respondents commented the strategy should not foreclose the use of new or existing waste management facilities which do not have access to the rail network.

Q10: Road vs. Rail

- NDA Response:
 - We recognise the preference for both rail and sea travel due to perceived impact of rail travel on the climate change, disturbance and safety impacts of transport
 - Less flexible nature of rail travel (including variable access to rail infrastructure) is likely to mean that the use of rail transport is unlikely to be reasonably practicable in all cases (specific proposals will need to be considered on a case by case basis)
 - Need to consider relevant considerations holistically in making choices about waste management and transport including stakeholder concerns and presumption towards early solutions

Q11: Use of landfill

- Significant number of respondents raised concerns about public acceptability
- Some preference for onsite or adjacent to site implementation of VLLW disposal, often making reference to proximity principle.
- Others expressed support to the proposed strategy, with some explicit support for the use of landfills for the disposal of appropriate wastes
- Several responses related to the regulatory framework

Q11: Use of landfill contd...

- NDA Response:
 - Landfill disposal will be retained as one the range of disposal options
 - Combine disposal sections into one to ensure no preference stated – emphasising local issues
 - Ensure issues around public acceptability are effectively captured
 - Provide information on considerations of the “proximity principle”
 - Ensure the regulatory framework that disposal works within is effectively captured
 - Restate the need for high standards, both technical and management, in the implementation of the strategy
 - Emphasise further the desire to reduce reliance on disposal and also recognise the critical value of landfill capacity to other users.

Q12: On site disposal

- Strong preference for onsite disposal in some responses, often linked to public acceptability
- Equally strong reservation with respect to legacy issues (impact on site end state etc)
- Many recognised opportunities of scale around regional role for onsite disposal facilities – others strongly against this idea
- Case-by-case assessment of these opportunities remained robust

Q12: On site disposal contd...

- In response we will:
 - Continue to include the option of onsite disposal in the range of options
 - Combine disposal sections into one to ensure no preference stated – emphasising local issues
 - Ensure issues around public acceptability are effectively captured
 - Continue to emphasise the potential impacts of onsite disposal
 - Include commentary on the benefits associated with onsite facilities accepting waste from elsewhere and the potential opportunities around reactor decommissioning wastes, noting that waste from other sites is rarely popular with stakeholders

Q13: Encouraging right behaviours

- The responses acknowledged our responsibility both contractually and strategically in the management and disposal of radioactive waste.
- Responses commented that a degree of flexibility in the treatment and disposal options are made available so as to not preclude any solution to the sites.
- VLLW/controlled burial & re-use or re-cycling of waste materials has to be based on cost benefit / optioneering.
- Any targets / metrics need to reflect relative maturity of sites clean-up and operational programmes.
- Multi-year initiatives and fully encompassing behaviours that will deliver the maximum application of the waste management hierarchy.
- We will scope and initiate a programme of work to determine effective targets that extract maximum benefit and encourage the application of the WMH and waste diversion targets and encourage right behaviours.

Q14: Risk and mitigation

- Many responses agreed with the risks captured in the consultation document
- Risk considered not effectively captured document was ability of supply chain to deliver
- Significant number of responses raised issues around the waste inventory and contaminated land issues
- Note – the final document is unlikely to include risks and mitigation as this needs to be a live process
- In response to the comments:
 - Advise how risk management will work for the LLW strategy
 - Confirm in final strategy issues around contaminated land
 - Provide further commentary on efforts to improve the inventory

Commentary

- Majority of respondents were very supportive of Waste Management Hierarchy
- Stakeholder engagement and information management key elements to be further developed
- Other key areas raised (not captured elsewhere to any great extent)
 - Integrated waste management
 - Opportunities for managing other “boundary wastes” (i.e. ILW, reactor decommissioning wastes)
 - Community benefit
 - Cost models and demonstrating value for money
 - International experience
- Strategy remains open (until 30 November) – further responses will be considered in light of those already received.