

WM2016 Conference Panel Report

PANEL SESSION 14: UK Featured Country - Where Shall We Put the Waste?

Co-Chairs: **John Mathieson**, *Nuclear Decommissioning Authority (UK)*

Eric Knox, *AECOM*

Panel Reporter: **Angie Jones**, *Amec Foster Wheeler*

Panelists:

1. **Bruce Cairns**, *Head of Geological Disposal, UK Department of Energy and Climate Change (UK)*
2. **Juliet Long**, *Legacy and Waste Issues Manager, UK Environment Agency (UK)*
3. **Jim Cochran**, *Radioactive Substances Policy & Nuclear Regulations Unit, Scottish Environmental Protection Agency (UK)*
4. **Dennis Thompson**, *Managing Director, Low Level Waste Repository*
5. **Bruce McKirdy**, *Managing Director, Radioactive Waste Management Limited (UK)*

Bruce Cairns, Head of Geological Disposal, UK Department of Energy and Climate Change

- The UK has been a nuclear nation since the 1940s involved in support of its weapons programme and construction of world's first commercial nuclear station - about to turn 60 years old
- Since the 1970s they have looked at a long-term plan for disposing of nuclear waste
- White Paper issued in 2008 on identifying a deep geologic repository based on voluntarist siting process; strongest candidate to come forward was in Cumbria
- A more recent White Paper suggested using a three step process - national siting, community funding, etc.
- Historical overuse of LLWR near Drigg with a shift in policy in 2007 creating a risk-based approach and promoting recycle and reuse to minimize this

Juliet Long, Legacy & Waste Issues Manger, UK Environmental Agency

- Spoke about options for waste disposal in the UK
 - Several UK permitted sites for disposal - three permitted radioactive waste landfills (one can also receive hazardous waste) and one for NORM
 - Have three incinerators for problematic waste
 - One LLW disposal site has been sited next to Dounreay for its waste
 - No waste disposal site in Wales (or Northern Ireland)
- Huge learning from safety cases associated with landfill siting/operations reported in a document issued recently by NEA
- Radioactive waste disposal key principles
 - Waste treatment (recycle/reuse) before disposal
 - Disposal shall be safe and final
 - Preference is for disposal sooner rather than later
 - Decision should take account of transport considerations and the proximity principle
- Disposability is key as demonstrated by site-specific Environmental Safety Case and not "waste classification"
- We need a sustainable radioactive waste infrastructure

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Jim Cochran, Radioactive Substances Policy & Nuclear Regulations Unit, Scottish Environmental Protection Agency

- United Kingdom of Great Britain and Northern Ireland formed in 1922 with Scotland Act gave Scottish Government the authority's to issue radioactive waste policy
- Scottish National Party is in power in Scotland and campaigns for independence
- In 2011 HAW policy said that radioactive waste should not be out of site and out of mind which was a reference to deep geological repositories
- Policy applies to all operations and decommissioning radiological waste
- Scotland is about to issue implementation strategy for near surface waste disposal for HLW
- Collaborating on solid LLW disposal with same policies as the rest of the UK
- Looking forward
 - Phase 1 will go through 2030
 - focuses on decommissioned power plants
 - Dounreay enters interim state
 - Phase 2 covers 2030-2070 will focus on near surface disposal of HAW
 - HAW will be stored in interim until near surface disposal is available

Dennis Thompson, Managing Director, Low Level Waste Repository

- Shared overview of LLWR that has been used for over 50 years
- Facility success is dependent on good government policy with a good implementing contractor
- LLWR had to change the culture to seek recycle/ reuse and good risk-based decisions over disposal resulting in reduction in volume disposed of
- LLWR is solution oriented focused on characterization, packaging, disposal, treatment, disposal, research, development, support, and advice
- Looked at incentives to help waste generators to make better decisions on disposal - waste diversion rather than waste disposal
- Use single source contract for all waste generators
- LLWR is establishing an international network
- Asked on the good works on reduce waste disposal volumes it is now possible to have another 100 years of disposal capacity

Bruce McKirdy, Managing Director, Radioactive Waste Management Limited

- Gave an overview of his company that is a subsidiary of NDA with a vision to deliver a safe solution for deep geologic disposal
- Three element for success of geological disposal facility
 - Design and safety case
 - Packaging compliant with safety case
 - Site with willing community and suitable geology
- UK-consent based siting
 - Working to identify site by end of 2017
 - 2-yr for detailed siting studies after this
 - 15-20 years for design/ construction
 - Incentives to the community that agrees to host the deep geological repository from day 1 through the 100 year life of operations
 - Next steps
 - Complete the siting process in 2017
 - UK referendum on membership to European Union may distract government that is required to review policy

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- Transition team to deal with the communities in 2017

Co-chair Eric Knox gave a US perspective on waste disposal

- US has history of start/stop of various programs
- LLW disposal started out with compact program representing regions of the US with not all being successful identifying disposal sites
- WCS in Texas is giving option for LLW disposal for private sector
- HLW disposal in Yucca Mountain has been stalled under current administration
- Next US president and administration will tell more about the direction of nuclear disposal

Questions and Answers

- Juliet made a point that radioactive waste disposal routes are about much more than just nuclear waste that is not widely accepted
- German regulator asked Bruce McKirdy about how he plans to work with a community that may change their mind for having a disposal facility
 - He said that they do not have to repay incentive right up into the construction as this would be a disincentive
 - Focusing on building a trusted relationship with the community is what is needed
 - Bruce reiterated this point on building community trust using Canada experience as an exemplar
- US Nuclear Waste Technical Review Board representative spoke on the historical analysis on siting for HLW and spent fuel available on their website. He also asked Jim if the Scottish Government would be opposed to HLW disposal outside Scotland
 - Dounreay is only bespoke (LLW) waste disposal facility with all other waste going to England so this is already working
 - UK Directive guides what they do in Scotland
- Eric Knox made the point that we have to always make the safety case for what we do and build the confidence of the public. The uncertainty in the US Government is making this difficult. How is the uncertainties in Scotland effecting their approach to disposal
 - Independent policy for disposal was not driven by desire to be independent but more based on their belief that HAW near surface disposal needed further evaluation
 - Also did not have the same volume of this waste so had a different situation that warranted potentially a different solution
- Juliet expanded on Eric's questions to state the disposability opportunity must be considered and the private sector investment to deal with their decommissioning waste
- Bruce supported Jim's response and said that others can benefit from the alternative as it is a fit for purpose solutions for this type of waste form. We must be careful not to let the politics get in the way of making good decision
- Question about importing waste for disposal if there was an international need
 - Bruce Cairns explained that the domestic policy in the UK of 1989 banned the import/export of radioactive waste supported also by EU directive
 - This is further supported by the concern that if geological disposal facility was constructed that the UK would be asked to take on international radioactive waste which is not desired
 - Juliet agreed with his thoughts
 - John Mathieson expanded on the IFNEC working group that was considering for international disposal options.