

Presentation to NDA LLW Strategy Group: LLWR Environmental Safety Case

Dr Richard Cummings

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Environmental Safety Case?

- Environment Agency requirement for disposal
- Guidance on Requirements for Authorisation (the 'GRA') – currently being revised
- ESC = Operational Environmental Safety Case (OESC) + Post-closure Safety Case (PCSC)

Presentation

- Background and importance
- Recent results
- Forward programme
- Links to other sites' programmes
- Links to National Strategy and Plans
- Conclusions

Background and Importance

- ESC (OESC and PCSC) in 2002
- New Authorisation in 2006:
 - Storage only once Vault 8 full
 - Schedule 9 list of improvement requirements
 - Requirement 6 – revised ESC by 1st May 2011
 - Requirement 2 by 1st May 2008
- Trench retrieval?

Requirement 2 (1)

- *‘The Operator shall provide the Agency with a full report of a comprehensive review of national and international developments in best practice for minimising the impacts from all waste disposals on the site. This shall include a comprehensive review of options for reducing the peak risks from deposit of solid waste on the site, where those risks arise from potential site termination events (e.g. coastal erosion and glaciation) and potential human action’*

Requirement 2 (2)

- Decision Document:
 - *‘... adequate information to allow the radiological capacity of the site to be determined ...’*
 - *‘... the outcome of a wide-ranging management study ... that demonstrates the future impacts will be As Low As Reasonably Achievable ...’*

Requirement 2 Submission

- Presents:
 - updated view of the site characteristics, the evolution of the engineered barriers and long-term performance;
 - an assessment of options, to identify and assess ways of managing the long-term impact of the Trenches;
 - an analysis of total ‘radiological capacity’ of the Vaults;
 - information to show that our work is founded on national and international best practice
- Not a full safety case – some results interim, uncertainty not fully addressed
- NDA LLW Strategy not yet available
- Assumes current waste management approach (grouted ISOs etc.)
- Under review by Environment Agency

Performance

- Calculated doses and risks:
 - Much reduced from 2002 PCSC;
 - Mostly below target
- Coastal erosion:
 - Estimated to occur on a timescale of 1000 years;
 - But calculated risk now below target
- (But further work to do)

Radiological Capacity

- Current Conditions for Acceptance of waste sufficiently protective
- Proposes retaining existing disposal limits, pending more detailed review in 2011 ESC

Future Management

- Propose:
 - Institutional control for as long as reasonably practicable
 - Engineered cap optimised against human intrusion and to limit water infiltration
 - Engineered system to optimise hydrogeological performance, of e.g. cut-off walls and vertical drains
- Detriments of large-scale retrieval disproportionate
- Localised intervention probably not necessary – revisit in 2011
- Coastal defences not viable because not passive

Forward Programme to 2011 ESC and Disposal

- Set out and costed in LLWR's new Lifetime Plan (LTP08 RevB)
- Objective is new Authorisation for disposal by 2013
- Work streams
 - Safety Case development
 - Optimisation
 - Inventory and near field
 - Site characterisation
 - Assessment
- Still uncertainty in regulatory position in some important areas, e.g.:
 - Regulation of disposal of radioactive wastes that are also chemically toxic;
 - Coastal erosion

Site Links

- Dounreay New LLW Facility – common issues
- Sellafield – geology and hydrogeology
- On-site Disposal

Links to National Strategy and Plans: Justification

- EA conclusions on 2002 Safety Cases:

‘ ... BNFL has not demonstrated that the wider benefits to the UK from continued LLW disposal on the site outweigh the potential future impacts. ... we expect BNFL to undertake a comprehensive options study that includes a full evaluation of the social and economic impacts of the different options.’

- Peer Review comments on Requirement 2 submission reiterated this view
- LLWR must be justified in a national context through National Strategy and Plans

Links to National Strategy and Plans: Inventory

- Disposal inventory a very important input to ESC
- Disposal inventory assumed in ESC must reflect National Plan – data freeze for assessment in April 2010
- Key radionuclides and waste streams
- Non-radiological data

Conclusions

- Calculated impacts have reduced from 2002
- Work ongoing to obtain an authorisation for disposal linked to requirements of National Strategy
- We need waste consignors' help