

GROUP 3

ALARA in Radioactive Waste
Disposal

Scope

Disposal Facilities for solid/solidified radioactive waste

Disposal = emplacement of radioactive waste in an appropriate facility,
with no intention of retrieval,
no active controls after a limited period of time

Disposal Issues

- How useful for ALARA at post-closure phase (long-term) is dose estimating/modelling due to the level of uncertainty?
- ALARA is essentially about doing the best we can today (given the available options and resources) i.e. apply the Best Available Techniques
- The application of the Best Available Technique will also get most stakeholders on board & buy-in for the industry as a whole.
- Downside of eliminating a risk-based proportional approach is that it will probably cost a lot more.
- Guidance as to what is the BAT taken from experience (similar to BAT Reference Notes) would be useful in demonstrating ALARA – got it to some extent i.e. NEA (OECD), IAEA, EC.
- Optimisation is an element of the overall decision making process – there are numerous other factors to consider.

Disposal Issues

- Stakeholder engagement is extremely important throughout the process (also required by other legislation, e.g. SEA Directive).
- We know it will fail at some point or new technologies will arise to deal with it – should it therefore be standard to design the waste repository to facilitate the retrieval?
- Would we have to keep updating/assessing the facility for BAT & justify staying-put or modernising or retrieving based on ALARA i.e. economic/social/security/ethical/environmental/safety factors?

Other Issues

- Is a Graded approach representative of ALARA i.e. high risk = higher spend on better safety measures & visa versa. It can only inform the decision/be a reference scheme as social & economic factors will differ.
- a de-minimis level of dose should not be used as a cut-off – optimisation occurs from zero upwards
- ALARA consistent application between waste disposal from nuclear & non-nuclear industry? terms need to be harmonised.
- As social & economic factors differ from country to country or industry to industry, it is impossible to globally harmonise proportional spend.
- What about the environment? – still being investigated.
- ALARA applies over its life-cycle e.g. LLWR in UK requires optimisation of the waste generation to be demonstrated.

Recommendations

- IAEA to address the implementation of ALARA in the safety guides for disposal facilities
- Guidance to be produced for regulators on how to verify that the ALARA principle has been implemented
- Relationship with ALARA and other principles e.g. BAT, SEA, Precautionary Principle, the graded approach, sustainable development should be mapped out.
- Regulators should help & potentially lead on educating the public on the risks from radioactivity & what industry has done to minimise it.
- ALARA network to promote the harmonisation of terminology