Process to re-define the End State for the Dounreay site



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Dounreay site

- Fast reactor nuclear research site
- Currently decommissioning
- Three reactors:
 - Dounreay fast reactor (DFR)
 - Prototype fast reactor (PFR)
 - Dounreay materials test reactor (DMTR)
- Fuel reprocessing Fuel cycle area (FCA)
- Silos, waste pits, drains, pipelines and contaminated land
- Dedicated LLW disposal facility









The GRR for Dounreay

- GRR is guidance:
 - Optimisation
 - Waste management options
- 2009 site end state based on "no danger"
- Prompted review of the site end state
- Decisions in stages:
 - A "Define credible options"
 - B "Assess and select preferred option"
 - C "Approve strategy"
 - D "Implement strategy"



End state review – Approach

- Approach (spatial subdivision, decisions)
- Information gathering and tools

Stakeholders





End state review – Spatial focus

"Key components are facilities or areas of the site whose individual end state are considered likely to have a direct impact on the definition of the overall site end state"







NRS Nuclear Restoratio

End state review – Tools

- Multiple regulatory regimes (i.e. radiological / non-radiological)
- Specific guidance not always available
- Groundwater impacts





Services

End state review – Integration (I)

- Identification of local end states (key components)
- Improvement on Gate A strategic site end state options list
- Integration of local end states to determine the strategic SES options





Stakeholders – Key focus

- Environmental sustainability (resource use)
- Intergenerational equity (liabilities for future generations)
- Maximise opportunities for future use of the site (including early release of areas of site)
- Industrial and general nuisance
- Avoid increase in site footprint (limit number of vaults)



Stakeholders – Preferred option





Dounreay – Implementation (I)

- LLW pits:
 - Uncertainties
 - Influence on overall decisions
- Period of control
- Future use of the site:
 - Existing infrastructure
 - Clean-up targets





Dounreay – Implementation (II)

- Integration with Lifetime plan
- Ongoing communication with key stakeholders
- Maintaining key assumptions
- Maintain waste management plan
- Management system





Conclusions

- This is one step along the way
- Characterisation is key
- Need to deal (and manage) significant uncertainties
- Approach and tools are important
- Link to ongoing plans and work



Image taken from Nuclear Decommissioning Authority Strategy effective from March 2021 (gov.uk)



Image: Image:

Thank you!

