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Remediation of the Sellafield Legacy Ponds and Silos: An owner's perspective

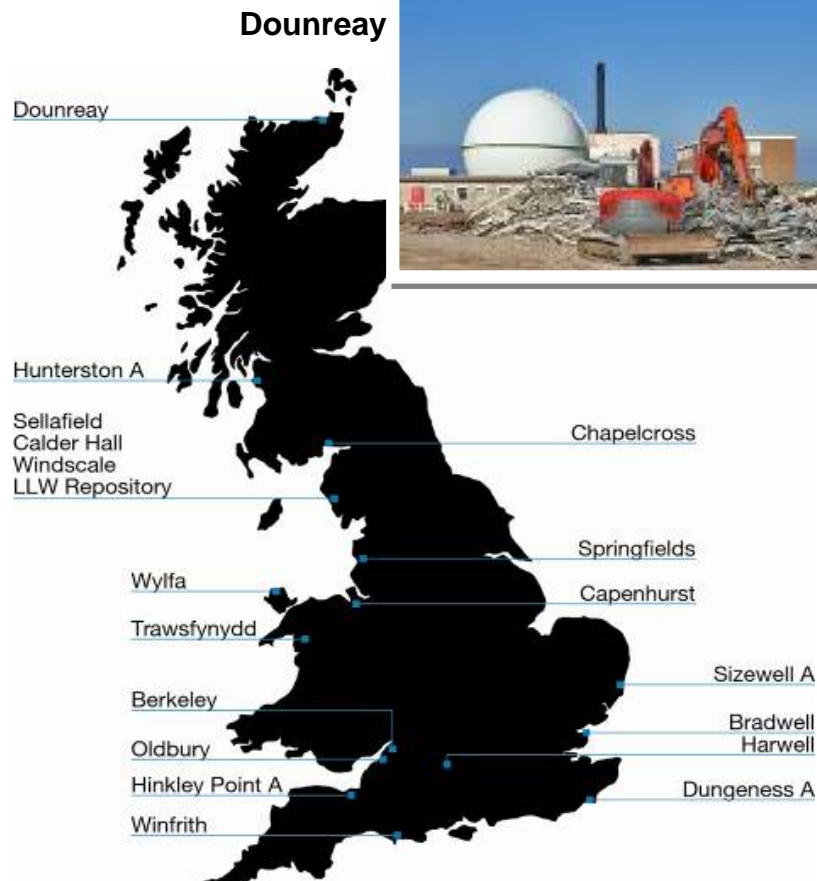
WM2017 Session 22, Monday, 6 March



The UK's Legacy



Sellafield



Magnox

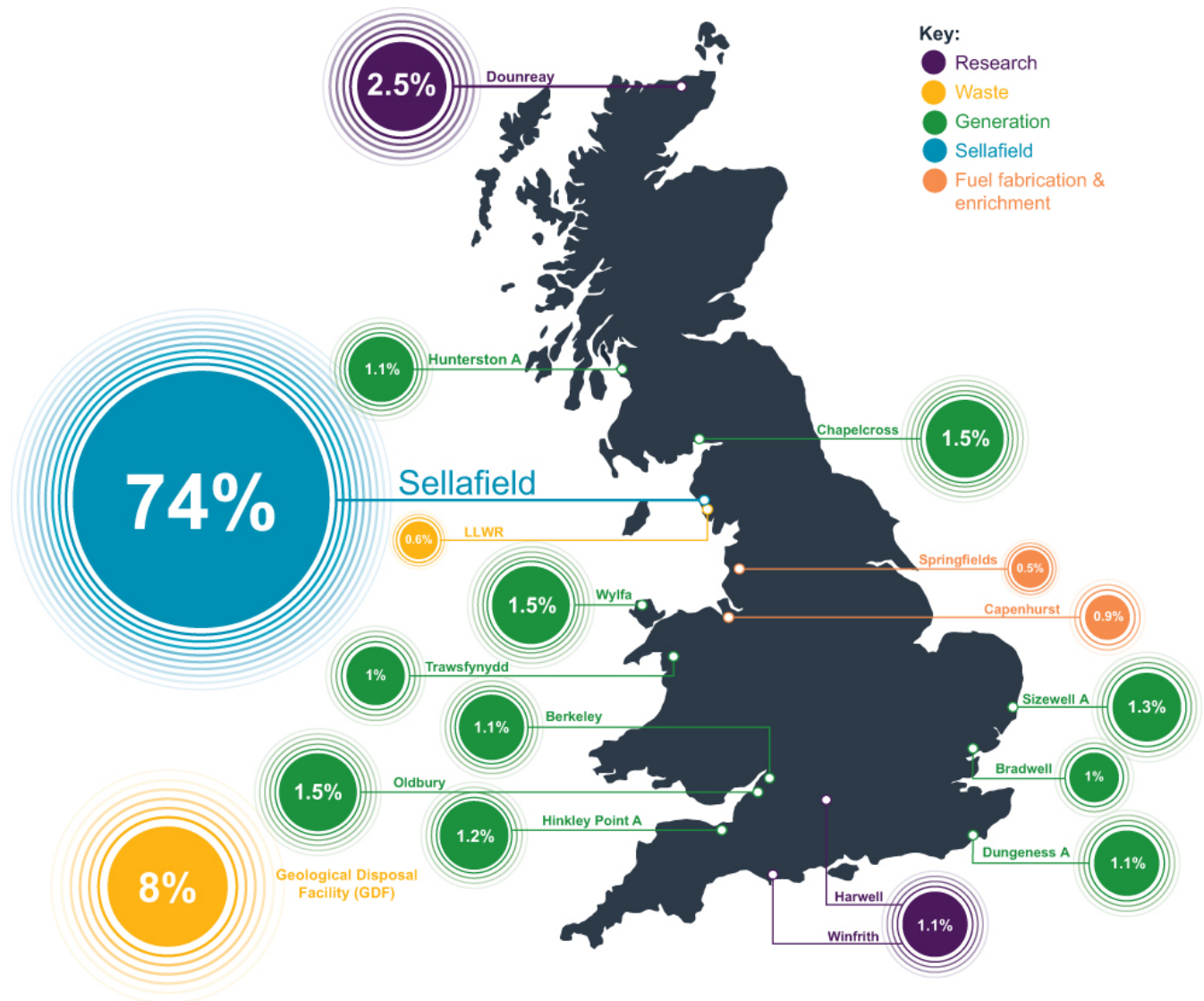


Nuclear provision – latest estimate

Best estimate of the
cost to clean-up
NDA's sites
>£117bn (\$146bn)

120 years

(£95-219bn) range



Legacy Ponds and Silos are at Sellafield



Legacy Ponds & Silos

Pile Fuel Storage Pond

- Operated 1952 – 1970s
- Pile Fuel used for weapons programme
- Later - ad hoc storage facility



First Generation Magnox Storage Pond

- Operated 1962 -1992
- Received fuel from Magnox reactors
- Extended underwater storage led to fuel corrosion, increased radiation levels and poor pond visibility



Magnox Swarf Storage Silo

- Operated 1964 – 2000
- Underwater storage of waste in 6 compartments
- 22 compartments in use by 1983
- 1992 Swarf routed to Magnox Encapsulation Plant
- Continued to accept POCO waste until final tipping in June 2000



Pile Fuel Cladding Silo

- Operated 1952-1968
- Sellafield's oldest ILW storage facility
- Stored fuel cladding from Windscale reactor
- From 1957 accepted decanned Magnox waste from Calder Hall
- Ad hoc waste until 1968



What they look like today

PFSP



FGSMP



MSSS



PFCS



LP&S Risks are “Intolerable”

INCREASING **RISK** TO PEOPLE AND THE ENVIRONMENT

Intolerable

- Risk is the overriding factor in decision-making
- Urgent action is required

Tolerable

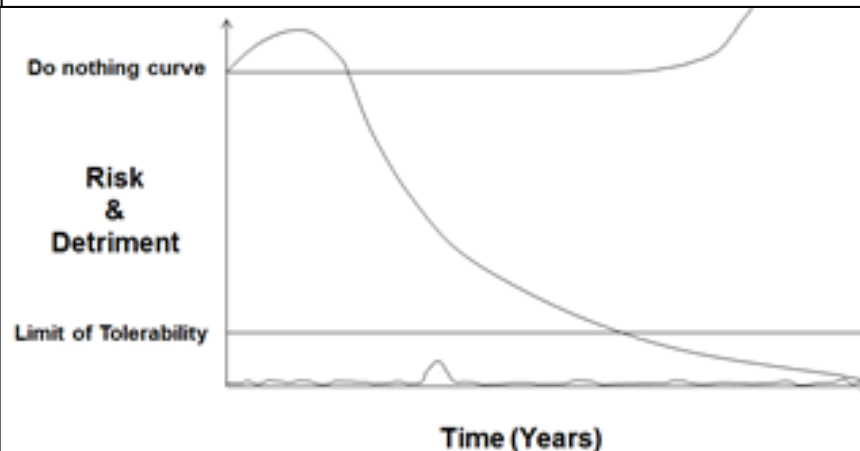
- Risk and hazard reduction are key considerations
- Options appraisal considers a broad range of factors

Broadly Acceptable

- Driver is mission completion
- Options appraisal balances a broad range of factors

INCREASING **FLEXIBILITY** OVER TIMING OF REMEDIAL ACTIONS

- These must be reduced
 - Retrieving the waste is our highest priority, but
- There are great challenges and extensive uncertainties
 - “Traditional” nuclear approach was not working – solutions taking too long and were too difficult to implement
- A new – risk based - approach was needed:
 - Brings together Owner, Operator, Regulators, Govt. with a common purpose – deliver risk reduction
 - Focusses on safety objective of waste retrievals
 - Takes advantage of innovation & “agricultural” approaches
 - “The best way to finish a job is to start it” – don’t theorise too much
- Progress is now being made!



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