

# TS4: Timing and Sequencing of Magnox Reactor Decommissioning

**Bradwell LCLC, 6 December 2017**

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# Current Decommissioning Strategy





# Intended Benefits of Strategy

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- Radioactive decay – allows for significant worker access and reduces the category of some radioactive waste from ILW to LLW
- Avoids the need for interim storage of wastes pending consignment to Geological Disposal Facility (GDF)
- Substantial reduction of lifecycle costs (on discounted basis)



# Risks of Current Strategy

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- Loss of skills, knowledge and capability to undertake final site clearance
- Potential loss of records and information
- Reduced supply chain involvement in Magnox decommissioning
- Dominant hazards in later stages of decommissioning will be more conventional than radiological – therefore reduces one benefit of deferred dismantling
- Potential for higher costs resulting from asset deterioration and potential need to acquire knowledge/information before final dismantling
- Taking up land that could be used for other purposes
- Uncertainty over future economic circumstances and regulatory standards



# What has changed?

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- Advances in remote decommissioning show that reactors can be dismantled promptly after shutdown without significant worker access
- Significant experience of handling and packaging ILW at Magnox sites
- Govt. policies on management of higher activity wastes (HAW) aim to investigate alternative disposal options for disposal where Scottish policy does not support deep geological disposal
- New waste routes are available for the disposal of LLW to authorised landfill, the recycling of metals and the interim storage of HAW
- If a shorter period of deferral is preferable, there is an opportunity to avoid expenditure on some C&M preparations at some sites



# Strategy Review

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- As promised in Strategy 3, Magnox have developed and evaluated credible options for the timing of reactor dismantling
- NDA is reviewing if a case can be made to change the existing strategy
- No decisions have yet been made
- NDA review will consider both the Timing and Sequencing of Magnox reactor dismantling across the UK Magnox fleet
- Phase 1 – making a case to change the current strategy – will require Govt. approval
- If the case for change can be made, we will consider which site(s) to accelerate first



# Timing of dismantling

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Factors that most influence Timing include:

1. Knowledge management
2. Supply chain / innovation
3. Early clearance of site(s) to enable release for other purposes, including ‘new for old’ option for nuclear new build
4. Retention of knowledge
5. Avoiding loss of skilled staff
6. Greater investment in UK ‘nuclear’ skills, driving efficiency and ability to develop business within UK or abroad
7. Supporting BEIS Industrial Strategy
8. Greater confidence in UK nuclear overall – more likely for investment and support for new missions
9. AGR and Magnox synergies
10. Ageing of plant and asset condition.



# Sequence of dismantling

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Factors that most influence Sequencing include:

1. Waste management, interim storage or other disposal options
2. Synergies with AGR decommissioning
3. Calder Hall
4. The ability to lead and learn from one site to another
5. Affordability and lifetime costs
6. Local factors – impact on particular sites
7. New missions – new for old
8. Management of ageing assets
9. Availability of resources and the ability to deploy them.



# What we are doing

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- Taking Magnox work and developing a UK perspective – a case for change
- Timing and Sequencing examined in two distinct phases
- Gathering numerical underpinning of Magnox work, particularly waste generation rates, package requirements and effects of plant ageing
- Strategic Enablers:
  - Supply chain, benefits and disbenefits, UK plc contribution
  - Maintenance of sufficient knowledge and skills
  - Savings with continuous approach (no start/stop, efficiencies)
  - Enabling other missions: i.e. release land earlier
- Relationship between 'A' Magnox and 'B' AGR station.



# Stakeholder Engagement

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- We are interested in stakeholders' views, especially which factors are most important to them
- Early and ongoing discussion with SSGs, Local Authorities and NuLeAF
- We intend to undertake the review in two phases:
  - **Timing:** to establish if a case can be made for accelerating reactor dismantling at one or more Magnox site(s);
  - **Sequencing:** to determine which site(s) to accelerate first.
- Plan to publish two papers (on Timing and Sequencing) for public and stakeholder comment
- Currently developing an engagement plan to support both phases of the review
- Timing of both phases and detailed stakeholder engagement plans still to be determined

# Engagement Timeline

Date	Activity/Event	Stakeholders
19 September 2017	National Stakeholder Summit	National stakeholders.
15 November 2017	NuLeaF Radioactive Waste Policy Group	Local Authority planning officers.
4 December 2017	Trawsfynydd Site Stakeholder Group (SSG)	Local community.
6 December 2017	Bradwell SSG	Local community.
6 December 2017	NuLeaF meeting	Local Authority elected members and officers (England and Wales).
7 December 2017	Hunterston SSG	Local community.
14 December 2017	Sizewell SSG	Local community.
15 December 2017	Chapelcross SSG	Local community.
31 January 2018	Berkeley/Oldbury Joint SSG	Local community.
1 February 2018	Wylfa SSG	Local community.
14 February 2018	Magnox SSG Chairs Meeting	Magnox SSG Chairs and Deputy Chairs.
23 February 2018	Hinkley Point SSG	Local community.
Date tbd	Brief Magnox site MPs, MSPs and Welsh AMs	Political.
Date tbd	Publication of Timing Paper for comment	Public.
Date tbd	Workshop to gain stakeholders' views on the factors that influence sequencing of reactor dismantling.	Local Authorities, NuLeaF, SSG Chairs and Vice Chairs, Devolved Administrations, the Regulators.
Date tbd	Publication of Sequencing Paper for comment.	Public.



# Conclusions

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- NDA is considering whether a case for change of strategy can be made.
- Constraints such as resources and affordability will mean fleet wide acceleration not feasible.
- Likely to make case for between one and three sites.
- Will not determine whole sequence as factors may change over time.
- We are interested in stakeholders' views, especially which factors are most important to them
- We will use the feedback to inform both the case for any change in strategy and which sites should be accelerated first.

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