Environment Agency Update

Presentation to the Nuclear Advisory Forum (nuleaf) Radioactive Waste Planning Group meeting, 24th January 2023, 10.00 – 12.30

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Content

- Introduction to our role
- Guidance on requirements for authorisation of near surface and geological disposal
- UK nuclear decommissioning and radioactive substances policy consultation
- Guidance on release of sites from radioactive substances regulation

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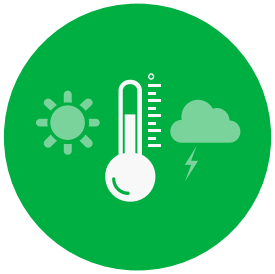
What we do: We protect and improve the environment



We help people and wildlife adapt to climate change and reduce its impacts.

We improve the quality of our water, land and air by tackling pollution.

We work as part of the Defra group to create a better place for people and wildlife.

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Nuclear regulation in the UK

Environmental regulation- environment agencies / Devolved Administrations

Radioactive waste disposals (inc. to air, land and water)

Abstraction & discharges to controlled waters

Conventional waste disposal

Conventional chemical / combustion

ONR Office for Nuclear Regulation

Safety & Security- Great Britain

Nuclear safety

Nuclear site health and safety (conventional health and safety)

Nuclear security

Nuclear safeguards

Transport of radioactive materials

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Our role

- *Environment Act 1995*
- *Environmental Permitting Regulations 2016*
  - Radioactive substances activities
  - Installations (chemical, combustion, etc.)
  - Surface / cooling water discharges

- **Regulating the discharges & disposals on and from nuclear sites**
- **Protection of people *and* the environment**

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Guidance on Requirements for Authorisation 2009

- Explains the requirements that we expect an operator to fulfil in applying to us for a permit to operate such a facility
- Separate documents for near-surface facilities (including landfills) and geological facilities
- Approach proportionate to hazard

Currently updating this guidance

Why update the GRA now?

- The guidance is over 10 years old
- It is out of date in places
- Significant permit applications expected in the next decade
- Necessary to support our engagement with communities as part of the GDF siting process
- Feedback from international reviews: isolation and containment
- It does not meet the requirements of the The Public Sector Bodies (Website and Mobile Applications) Accessibility Regulations 2018.

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GRA update project objectives

- Combine the near surface and geological disposal GRAs whilst being clear how to apply a ‘graded approach’
- To take account of user feedback and lessons learned through our permitting experience
- Achieve clearer alignment with international standards e.g. IAEA Safety Standards and take into account the conclusions from international reviews
- To ensure the guidance is aligned with UK government policy, recognising there are key policy differences between the Devolved Administrations
- Retain a joint approach (EA, SEPA, NRW and NIEA) by developing common text whilst providing flexibility for environment agencies to adopt different publishing strategies

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How will the requirements change?

- The radiological protection standards are unchanged and remain in line with advice from UK HSA and extant policy statements
- We have introduced a number of new requirements and have modified others to:
  - Reflect learning from experience
  - Improve alignment with the GRR
  - Improve alignment with international standards

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How we're involving others

- User feedback gathered 2017
- Multiple rounds of internal consultation
- External consultation with main users on draft requirements 2022
- Consultation on full draft after May 2023

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UK policy

- Planned consultation on consolidated UK policy for nuclear decommissioning and radioactive waste (probably Feb/March 2023)
- Is likely to include clarification of policy regarding near-surface disposal

Department for Business, Energy & Industrial Strategy

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Future disposal?

Potential On-Site Disposal? (OSD)

- Hear from Cathy next on this.

Potential Near-Surface Disposal (NSD)?

- Nuclear Decommissioning Authority (NDA) looking at Near Surface Disposal.
- Near-Surface Disposal Strategic Position Paper

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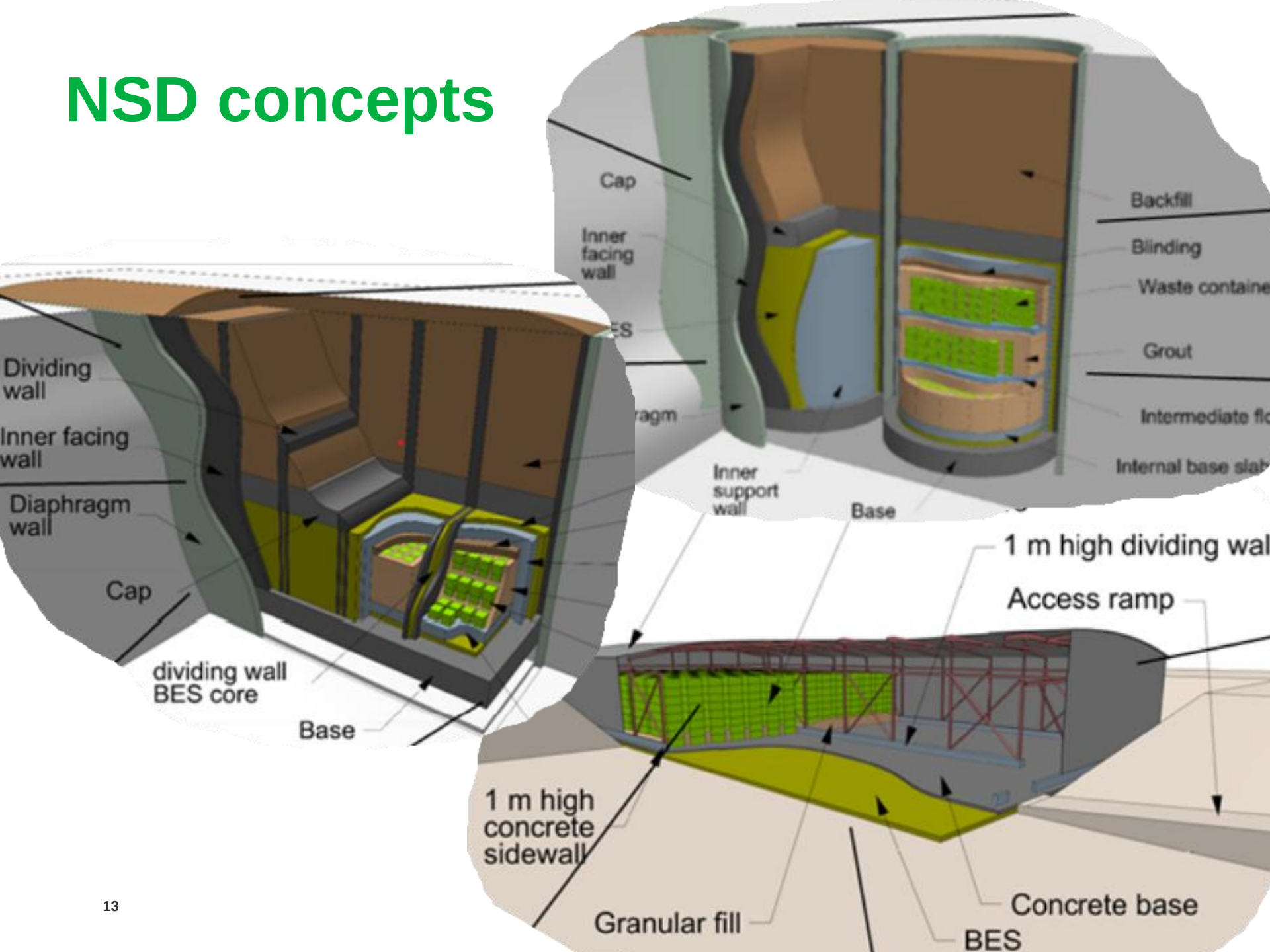
NSD concepts

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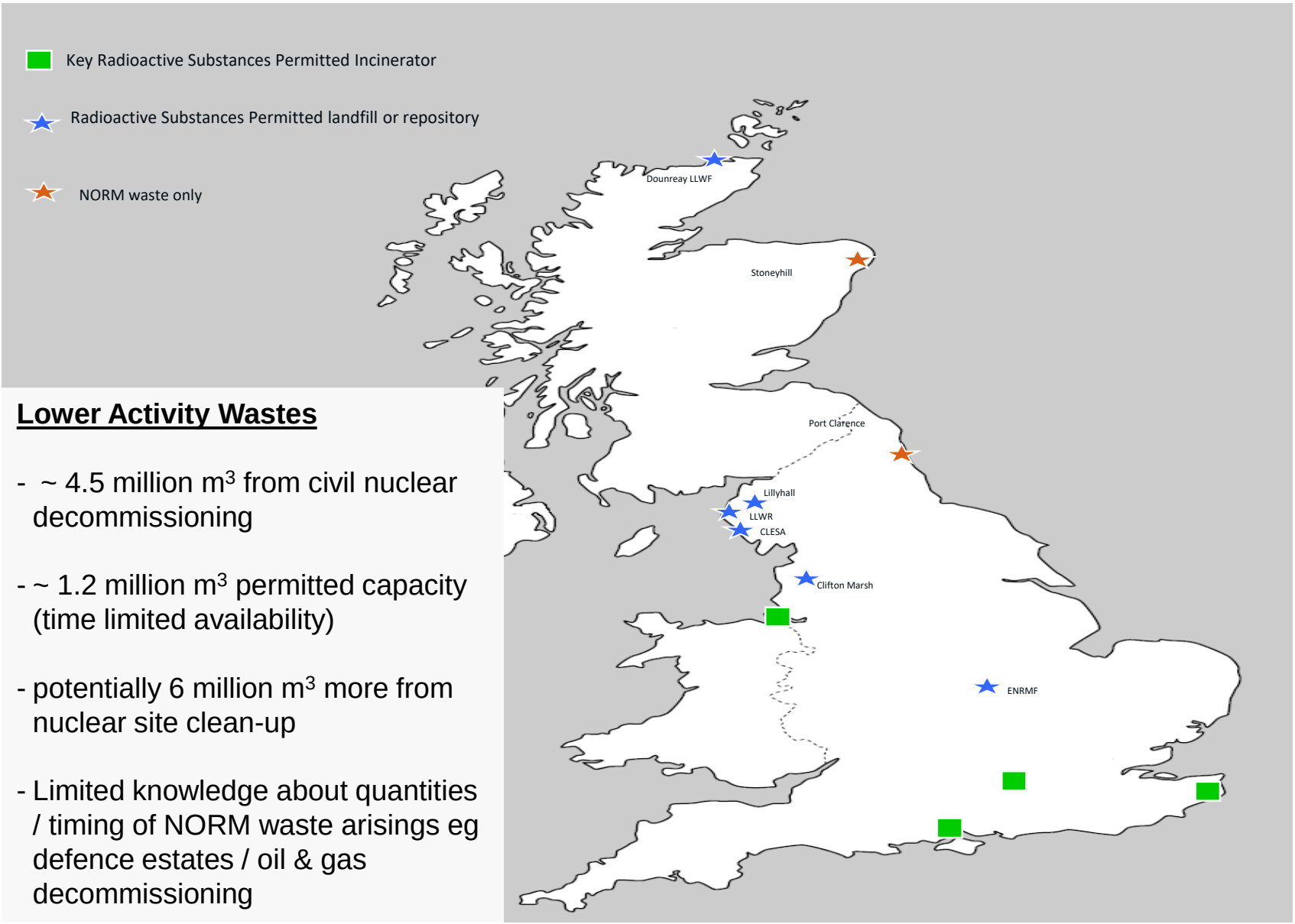

Lower Activity Wastes

- ~ 4.5 million m^3 from civil nuclear decommissioning

- ~ 1.2 million m^3 permitted capacity (time limited availability)

- potentially 6 million m^3 more from nuclear site clean-up

- Limited knowledge about quantities / timing of NORM waste arisings eg defence estates / oil & gas decommissioning

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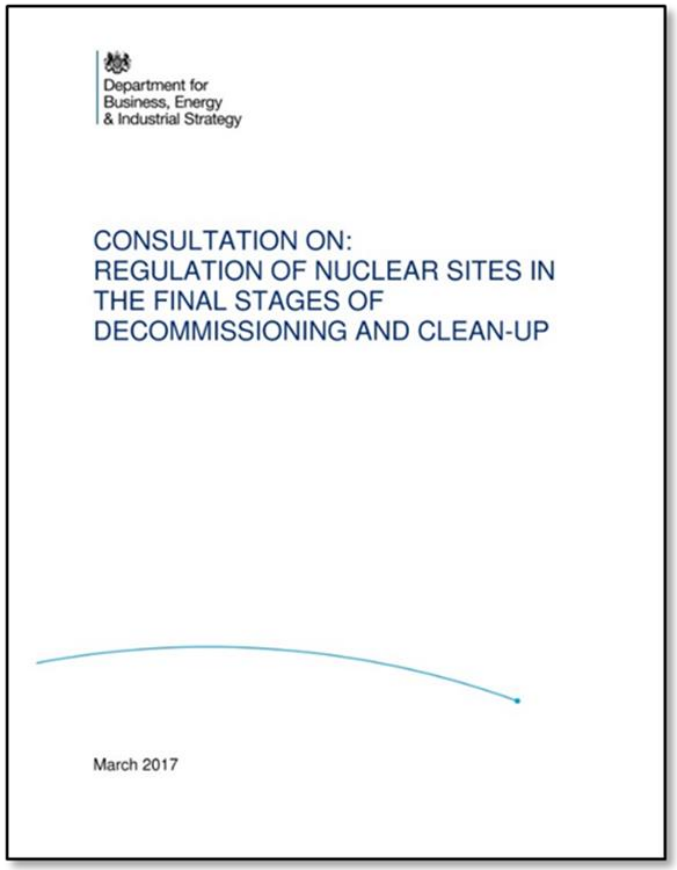
The challenge


Department for Business, Energy & Industrial Strategy

CONSULTATION ON:
REGULATION OF NUCLEAR SITES IN THE FINAL STAGES OF DECOMMISSIONING AND CLEAN-UP

March 2017

ONR Office for Nuclear Regulation

Setting expectations for achieving release from regulation

- Published joint environment agencies guidance (GRR) clarifying our expectation that operators should optimise decisions on how best to manage radioactive wastes

- Development included an industry trial – lead & learn approach
- Governance in place between the 3 environment agencies and industry – engage with range of stakeholders

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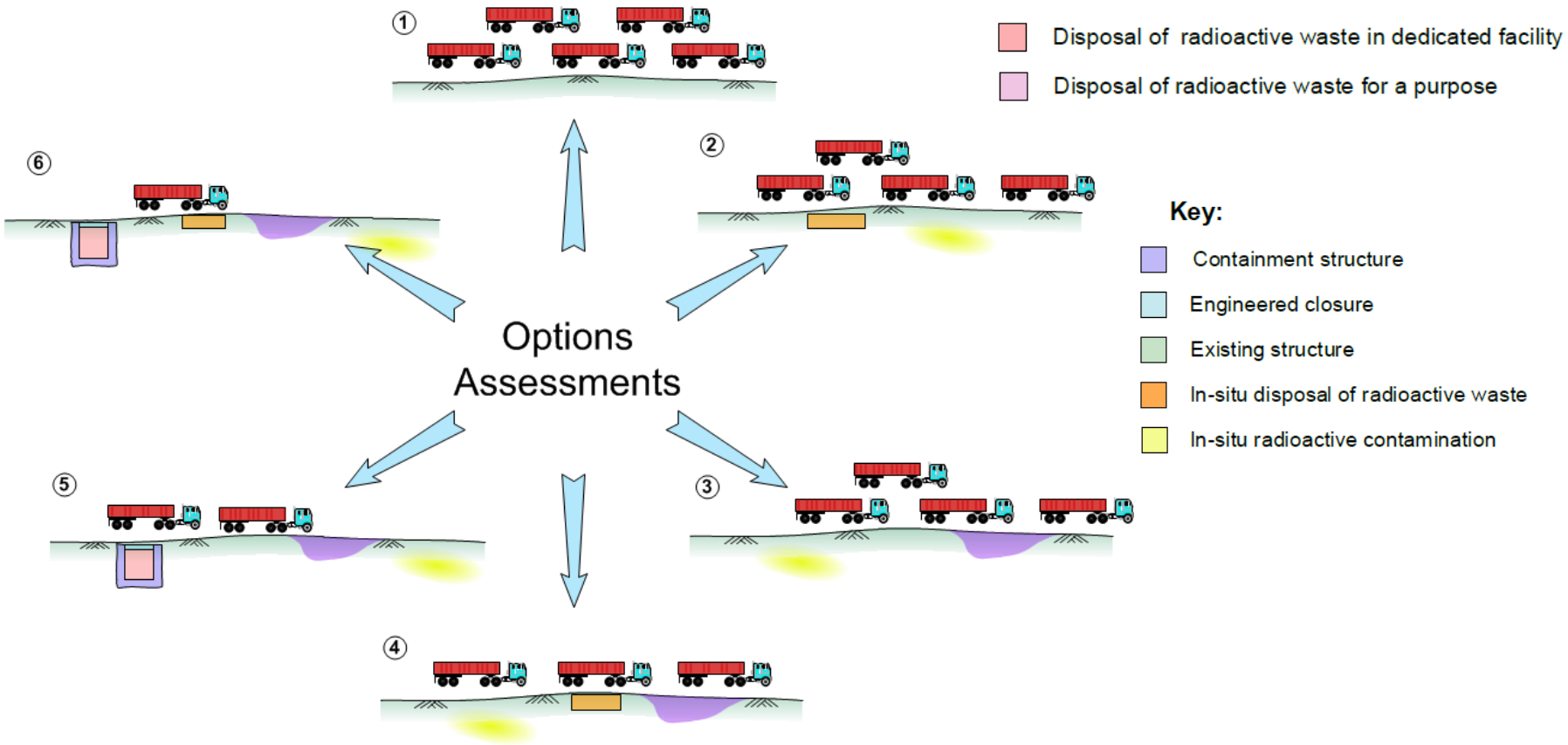
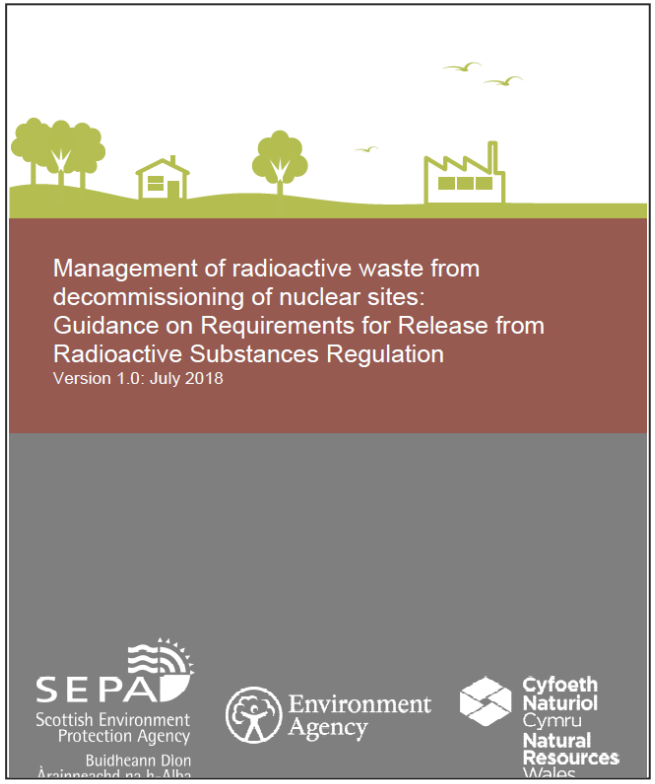
GRR: optimisation of waste management

- Systematic options assessment
- Balance of factors including range of stakeholder views
- Promote integration of sustainability factors and waste management



Two key deliverables

- Radiological protection criteria consistent GRR & GRA
- Conditions added to Operator permits requiring:
  - Site Wide Environmental Safety Case (SWESC)
  - Waste Management Plan (WMP)



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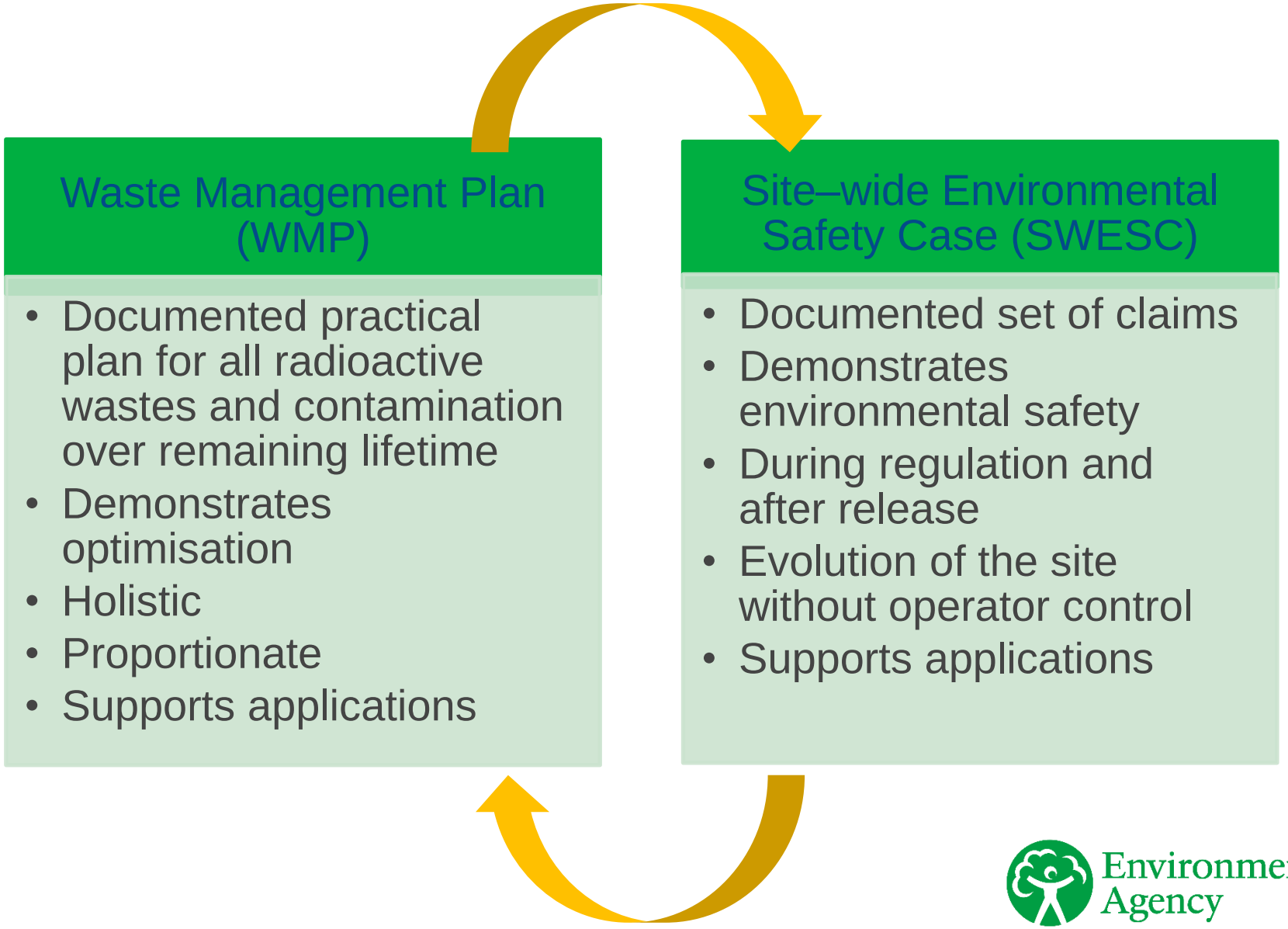
Two key deliverables for GRR



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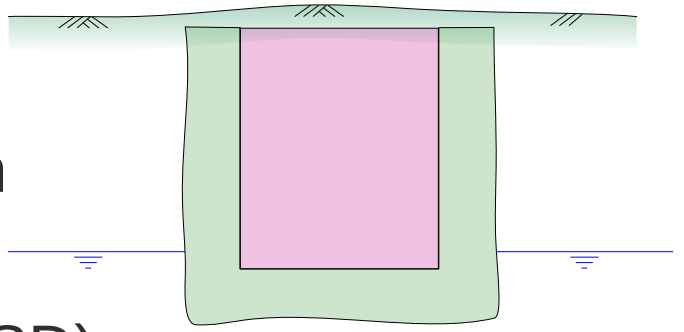
Value in the WMP & SWESC

- ‘End State’ thinking embedded early
- Holistic range of factors considered in decision making
- Collation of environmental and waste management arrangements in one place
- Powerful demonstration of site environment & waste management options for stakeholders
- Increased confidence in achievability of End State delivery e.g. underpinning provided

Integrated management of decommissioning arisings



- GRR encourages integrated approach to waste management
- It sets criteria for On-Site Disposal (OSD):
  - In situ disposal
  - Disposal for a purpose – re-use of waste for e.g. void filling
- Recognise volumes of non-radioactive demolition material are significant
- Retention and re-use of materials on sites may offer a more sustainable route to ‘End States’

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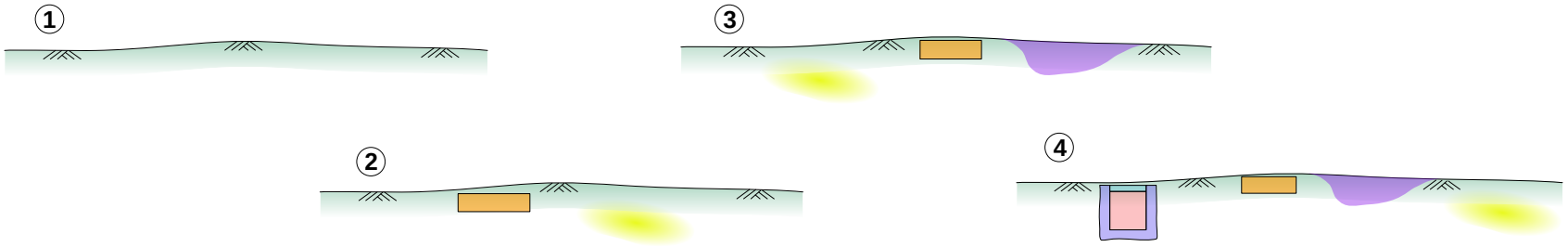
OSD considerations

- More radioactivity remaining on site - limited by site wide environmental safety case (SWESC);
- Later release of site from radioactive substances regulation (longer period of control);
- Less transport of radioactive waste for off-site disposal;
- Less clean material imported to the site for void filling;
- Lower potential for large volumes of radioactive waste from remediation of on-site contamination;
- Lower dependence on off-site disposal capacity……..



- Less radioactivity remaining on site;
- Earlier release of site from radioactive substances regulation (shorter period of control);
- More transport of radioactive waste for off-site disposal;
- More clean material imported to the site for void filling;
- Higher potential for large volumes of radioactive waste from remediation of on-site contamination;
- Higher dependency on off-site disposal capacity……..

Optimised waste management scenarios:

1. Site with all radioactivity removed
2. Site with in-situ disposal and contamination
3. Site with contamination, in-situ disposal and disposal for beneficial purpose
4. Site with dedicated disposal facility, in-situ disposal, disposal for beneficial purpose and contamination

Key:

- Radioactive waste disposed in a facility
- Radioactive waste disposed of in-situ
- Radioactive waste disposed of for a purpose
- Containment structure (purpose built or suitably adapted existing structure)
- Engineered closure
- Radioactive contamination

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Anticipating applications ~late 2023

- Winfrith propose to apply for on site disposal of two reactor basements (in-filled with engineered closure). Site restoration to acid heathland with public access.
- Trawsfynydd propose to apply to NRW (EA supports) for OSD of the Ponds Complex.
- Surrender applications also on the horizon

Photo credits: Magnox flickr

Winfrith, SGHWR in construction (1963) and recent

Challenges & changes

- Evolving legislation & policy
- Moving from an operational to a ‘End State’ focus – broader range of issues
- Need for multi-disciplinary teams of specialists
- We are looking to optimise across legal and regulatory regimes with different standards and approaches
- Maintain consistency of environmental outcomes across Industry (level playfield)
- Promoting sustainable outcomes with good stakeholder engagement

How does planning interact with the environmental permitting that may be required for on-site disposals during decommissioning?

- Permitting and planning regimes are separate processes and applicants can choose the order in which to apply for them
- Where appropriate, the planning authorities will seek input from the relevant environment agency on planning applications
- Regular, open dialogue and information exchange between operator, planning authority, environment regulator planning specialists and the nuclear regulator, along with other relevant stakeholders will help navigate the process

Future support and further engagement?

- We will contribute to the ‘national narrative’ – clearly set out the organisations, roles and processes for achieving sustainable decommissioning
- We continue to work to resolve and navigate technical & regulatory challenges
- Acknowledge it is a complex picture
- Aiming for the best outcomes whilst protecting people & the environment
- How can we best engage and support?

More Information

- Link to GRR guidance
- GRR Technical Training: YouTube or NSAN
- RSR collection on GOV.UK – Updated Principles, ‘How to comply’, forms etc.
- Joint Regulators’ Statement of Common Understanding to achieve harmonised regulation