



Building our nuclear nation:

NDA Group response to
the Nuclear Regulatory
Taskforce Review



Response to the
Chancellor of the
Exchequer's letter
of 13 March 2026

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SIXEP Continuity Plant, Sellafield

Executive summary

The Nuclear Decommissioning Authority (NDA) Group welcomes the recommendations of the Nuclear Regulatory Taskforce (NRTF) Report. We are particularly grateful for the attention that John Fingleton and the rest of the taskforce gave to the regulatory issues that we believe create barriers to quicker and more efficient removal of the liabilities under our responsibility.

The NDA's appetite and ambition for change are high and, encouraged by reciprocal behaviours within His Majesty's Government (HMG) and regulators, we believe that the "radical reset" can be achieved, as long as all involved agree that reform will enable greater pace, proportionality and value for money, whilst maintaining the required standards of safety, security and environmental protection. We are also acutely aware that delay can prolong hazards and increase costs.

Early Success

Building on work already in train, improvement activities are being pursued across the NDA Group this year by taking a more proactive approach to ensuring the current regulatory framework is applied in a more proportionate manner.

Conscious that this work will only be a success if the entire industry is working together, the NDA team is taking a more prominent role to better align the ambitions across the civil – defence interface, as well as with the Department for Energy Security and Net Zero (DESNZ) and the regulators.

The NDA Group supports early delivery of certain recommendations that require legislative change and welcomes HMG's commitment to implementing such reforms by the end of 2027, subject to parliamentary timelines. Timely alignment between legislative reform, regulatory change and organisational implementation plans will be important to maximise benefits and avoid uncertainty or duplication during transition. The NDA Group will continue to identify any potentially beneficial legislative or policy enhancements and communicate them to HMG.

Delivering Change

A schedule of prioritised activities is presented in the table below, along with initial estimates of potential benefits in time and cost. They are broken down into two categories:

- **Quick Wins** - These are activities that can be put into practice quickly and have an immediate impact in terms of delivering savings and efficiencies, while also commencing the cultural shift needed and demonstrating early progress to the workforce, regulators and HMG
- **Radical Reset** - These measures will require longer-term activity, both in terms of planning, external collaboration and delivery, and have the potential to deliver greater long-lasting impact.

Collectively, these opportunities potentially offer:

- Cost savings in the region of billions of pounds

Executive summary continued

- Schedule benefits of many years to decades
- Reduction in regulatory burden through more proportionate, targeted and risk-informed approaches.

Delivering the ambitions of the Nuclear Regulatory Task Force will be challenging and will require sustained commitment, collaboration and alignment across industry, regulators and government to realise the full benefits.

With government support, there is now a genuine opportunity to achieve a radical step-change. The NDA Group is committed to playing a leading role, acting where change is within our control and working collaboratively where wider reform is required. The time is right for change, and we are ready to seize the moment.



Low Level Waste Repository

Phase 1 - Quick Wins

Opportunity	Benefit/Outcome	Potential Cost and Time Saving ¹
Sellafield Limited		
The Remediation of Redundant Facilities, Decontamination, De-planting, and Demolition		
'Remediation 2045' including updating of decommissioning plans for the Windscale Advanced Gas-Cooled Reactor (AGR) and the Plutonium Purification Plant; and use of risk cases at Calder Hall	Increase the pace of decommissioning to reduce lifecycle costs associated with redundant assets	A reduction in the duration of decommissioning of between one to three years across all buildings in the final stages of decommissioning could realise a cost saving in the range of £1.1 billion to £2.4 billion
The Retrieval, Treatment, and Safe Storage of Legacy Wastes		
Potential changes in the Planning framework to allow permitted development would reduce the cost and reduce the schedule risk for new build facilities	Each project has a direct cost associated with submitting many planning applications, so removal of this requirement would save this cost. There are circa 40 new build projects in the Sellafield Limited (SL) plan for which there will be 100s of small, related developments	The costs of preparing these applications vary but a rough lifetime estimate of £2 million to £10 million, which would potentially be avoided
Support EDF Energy's Operating AGR Fleet by the Receipt and Storage of Fuel until the Geological Disposal Facility (GDF) is available		
Disposal of low-level waste graphite at the Low Level Waste Repository (LLWR) to generate capacity in existing intermediate level waste stores to support continued dismantling	Continued receipt, dismantling and storage of oxide fuel provides a revenue stream. Constraints in operational facilities potentially risk the lifecycle management of this material	Revenue ranges from £180 million to £614 million per year
Nuclear Restoration Services		
The Remediation of Redundant Facilities, Decontamination, De-planting, and Demolition		
Implementation of proportionate arrangements for the demolition of Oldbury Turbine Hall	Incorporation of improvements into plans for Turbine Hall demolition scope at Chapelcross, Wylfa and seven AGR sites	Up to 40% cost reduction
Removal of argon inerting capability from Berkeley vaults waste retrieval system (ALARP reset)	More proportionate approach to risk management	~£10 million saving of the remaining operational period
Re-consignment of borderline very low-level waste generated from decommissioning activities	More proportionate approach aligned to the actual hazards posed	~ seven times cheaper than current disposal route

¹The estimated cost and schedule benefits are based on the best information currently available, informed judgement and evidence from improvements already trialled or in delivery. Given the remaining uncertainty, these figures are indicative and should not be relied upon as the sole basis for investment or funding decisions. Any realised efficiencies would be assessed against the relevant cost ranges and may not be reflected directly in future baseline updates.

Phase 1 - Quick Wins continued

Opportunity	Benefit/Outcome	Potential Cost and Time Saving ¹
Nuclear Waste Services		
Implement the transformational programme	Improving pace, cost-effectiveness and delivery certainty	Since 2024/25, Nuclear Waste Services (NWS) expenditure has reduced from £223 million to £199 million, with a further reduction to £173.4 million planned for 2026/27
Group-wide prioritisation of regulatory attention based on risk and hazard (learning from regulatory improvements on LLWR capping)	Reducing the risk that disproportionate regulatory timescales drive the allocation of critical resources away from true NWS / group-wide priorities and thus have a consequential and detrimental impact on other activities and operations	Reduced risk of increased lifecycle costs or levels of regulatory enforcement
Learning from LLWR Environmental Safety Case production and review	More proportionate approach based on risk, hazard and degree of change to Claims, Arguments and Evidence, reducing time and cost of delivery and time and cost of review	10-year review of Environmental Safety Case (ESC) cost ~£30 million to reach point of submission and is predicted to take three to five years for the Environment Agency (EA) to review at a cost of ~£7 million
Risk-informed simplification of Nuclear Site Licence Condition arrangements	The arrangements in place to meet the licence conditions at LLWR assume a high level of risk that is not matched with reality. There is significant opportunity for change and so working with the Office for Nuclear Regulation (ONR), NWS will review our approach and keep, remove, or streamline as required	Reduced compliance cost and schedule burden through simplified arrangements and targeted assurance. Benefits to be confirmed as implementation progresses
Nuclear Transport Solutions		
Modernising Systems and Tools		
Greater reliance on suitably validated computer modelling, rather than full / scaled physical testing	Makes greater use of existing engineering capability to demonstrate compliance and reduce the extent of physical testing required whilst maintaining safety standards	~£100k's per package design
Streamlining the Transport Safety Case Submission process by clarifying responsibilities for individual sections, improving consistency, and reducing delays	Improving coordination across departments will streamline Transport Safety Case submissions and reduce review times	Reduce safety case production timelines by 10-15% through process improvements

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Phase 2 - 'Radical Reset'

Opportunity	Benefit/Outcome	Potential Cost and Time Saving ¹
Group-wide		
Improving Planning Application Process		
Implement Permitted Development Rights (PDRs) for nuclear decommissioning	A simplified planning route while retaining appropriate safeguards	~£3 million per year and reduction from 12 to 24 months to ~3 months per application
Introduce Statutory Undertaker Status and proportionate Compulsory Purchase Powers	Delay avoidance	GDF: preventing one year delay during site characterisation equates to ~£29 million Individual disputes cost £110,000 to £250,000, with potential for 10 to 30 cases over the next decade
Sellafield Limited		
Introduction of a simplified, proportionate, risk-based approach to safety documentation across SL's planned new build portfolio	Reduction in safety case development and assurance effort, acceleration of project delivery and focusing specialist resources on the highest hazard facilities. Proportionate requirements may reduce design, construction and whole life costs, waste generation and future maintenance liabilities, while maintaining compliance with relevant legislation	Estimated lifecycle cost saving of up to 5%, or approximately £1.4 billion, together with reductions in safety assessment, design and construction timescales
Nuclear Restoration Services		
Successful implementation of Guidance on Requirements for Release from Radioactive Substances Regulation (GRR) with environmental regulators	Enables on-site waste disposal	~£6 billion cost over mission lifetime
Delivery of delicensing the Magnox sites under Proportionate Regulatory Controls (PRC)	Delicensing enable decommissioning in more conventional manner	Between £3 billion to £5 billion mission savings
Nuclear Transport Solutions		
Streamlining Processes across NDA Group and into Regulators		
Roll out of the lead regulator model to the transport environment	To ensure that there is one regulatory touchpoint and that regulatory decisions are more streamlined	15-20% cost and 20-30% time reductions assuming that duplication is reduced, but that the underlying technical assessment remains necessary

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Phase 2 - 'Radical Reset' continued

Opportunity	Benefit/Outcome	Potential Cost and Time Saving ¹
Agreement of proportionate and risk-targeted inspection regime	A more proportionate regime would ensure that enforcement is issued only when necessary and that the regulatory burden is decreased	£50,000 - £100,000's per enforcement
Acceptance of risk within HMG for strategically important programmes	Would resolve regulatory conflict to enable Category II nuclear material transportation	£1-5 million in terms of potential standby costs, remobilisation, storage, contract changes, specialist workforce retention and revised security arrangements 6-12 months of time savings, reflecting the possible time needed to escalate, reinterpret requirements, redesign arrangements and obtain fresh approvals for transports
Improving Domestic and International Regulation		
Implementation of risk-based security requirements for Category II / III material transports, removing mandatory Civil Nuclear Constabulary armed escorts where they do not provide a proportionate security benefit	Proportionate security measures would allow Nuclear Transport Solutions (NTS) to reduce cost and complexity of transport whilst maintaining robust safety and security outcomes and avoiding being priced out of the market	10-20% cost savings assuming optimisation – not removal – of security controls 4 – 8 weeks of time savings reflecting less design, assurance, challenge and rework
Update to the maritime and transport Design Base Threat (DBT)	The current DBT is unrealistic against a maritime setting and focuses more on United Kingdom (UK) Licenced sites. Applying assumptions primarily designed for licensed nuclear sites to the movement of vessels and transport operations can produce impractical or disproportionate requirements. A transport-specific DBT could avoid unnecessary physical modifications, additional systems and recurring staffing	£1-3 million per affected asset. Approximately 3 – 6 months saved. Estimate of time savings subject to future project examples

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Introduction

The Nuclear Decommissioning Authority (NDA) Group welcomes Building Our Nuclear Nation and supports His Majesty's Government's (HMG) ambition to create an operational and regulatory environment that enables the safe, secure and efficient delivery of the United Kingdom's (UK) nuclear mission. Collectively, the NDA Group represents the part of the UK nuclear sector with the most extensive experience and understanding of the nature of delivering nuclear activities.

Since the NDA was established, the national strategy for delivery of nuclear decommissioning, reviewed and approved by HMG every five years since 2005², has emphasised the need for proportionality and the NDA Group has worked with both HMG and regulators, together with others in the sector, to improve arrangements. For example, our work to establish more proportionate regulatory controls (PRC) for final stage decommissioning and clean-up commenced over 15 years ago and was consulted on by HMG, including the Devolved Administrations, in 2018, albeit we are yet to secure the final legislation to enable this revised regime to be implemented.

Consequently, the NDA Group was pleased to share its experience as part of the Nuclear Regulatory Taskforce (NRTF) Review. We shared the shortfalls we have recognised within policy, legislation and regulation and which we have been pursuing for some time, for example seeking provision within the

Planning regime for consideration of decommissioning activities. We also explained the challenges we have relating to risk appetite, governance and delivery arrangements – e.g. safety case approaches.

We recognise that the very particular 'culture' of the nuclear industry - driven by not just the very real need for safe and secure management of our nuclear hazards, but also the perceived fear of any 'failing' within the nuclear system being catastrophic – can add delay and procrastination. The NDA Group welcomes the Review's focus on more proportionate, risk-informed and outcome-focused delivery and is committed to delivering improvements within current regulatory arrangements where possible, while working collaboratively with HMG, regulators, defence organisations and industry partners to identify wider opportunities for reform.

Beyond its technical clean-up mandate, the NDA operates under a unique legal duty to generate meaningful economic and environmental benefits for the public. While legislative and regulatory change will be important, the greatest opportunity lies in the cultural, behavioural and leadership shift needed to strengthen accountability and give organisations and individuals the confidence to challenge established ways of working and adopt more proportionate approaches. We are confident that the benefits of

²The most recent Strategy was published in 2026 – available at: <https://www.gov.uk/government/publications/the-nda-group-strategy-effective-from-march-2026>

Introduction continued

delivering this shift will be felt by all stakeholders involved in the delivery of our mission and specifically the communities our sites operate within. The initiatives detailed in this document have been considered in the light of this duty and we will actively track the positive societal impact they will have as our work progresses.

The findings of the NRTF review have validated and reinforced the direction of many in-flight improvement initiatives across the NDA Group, and we welcome the additional leverage this provides in supporting implementation across the NDA Group, HMG and the regulators.

This response to the Chancellor's letter describes how we are addressing this, embedding new ways of working across our group and illustrating with examples the opportunities we are pursuing.

A cross-group implementation programme (the Programme) has been established, led by the NDA Group Chief Nuclear Strategy Officer as Senior Responsible Owner (SRO). Delivery of this Programme provides group-wide co-ordination, with NDA and Operating Company (OpCo) participation.

Three tranches (or phases) were quickly identified:

Tranche 0

'Scoping and Discovery'

Assess recommendations and the initial planning of NDA response

Mobilisation of a dedicated NRTF taskforce as a cross NDA Group Programme

PM steer received

Chancellor's letter received

Tranche 1

'Quick Wins'

Improvements 'in spirit' NRTF recommendations within the current framework and arrangements

Begin work on cultural change recommendations

Communications planning

Input to DESNZ planning

Tranche 2

'Radical Reset'

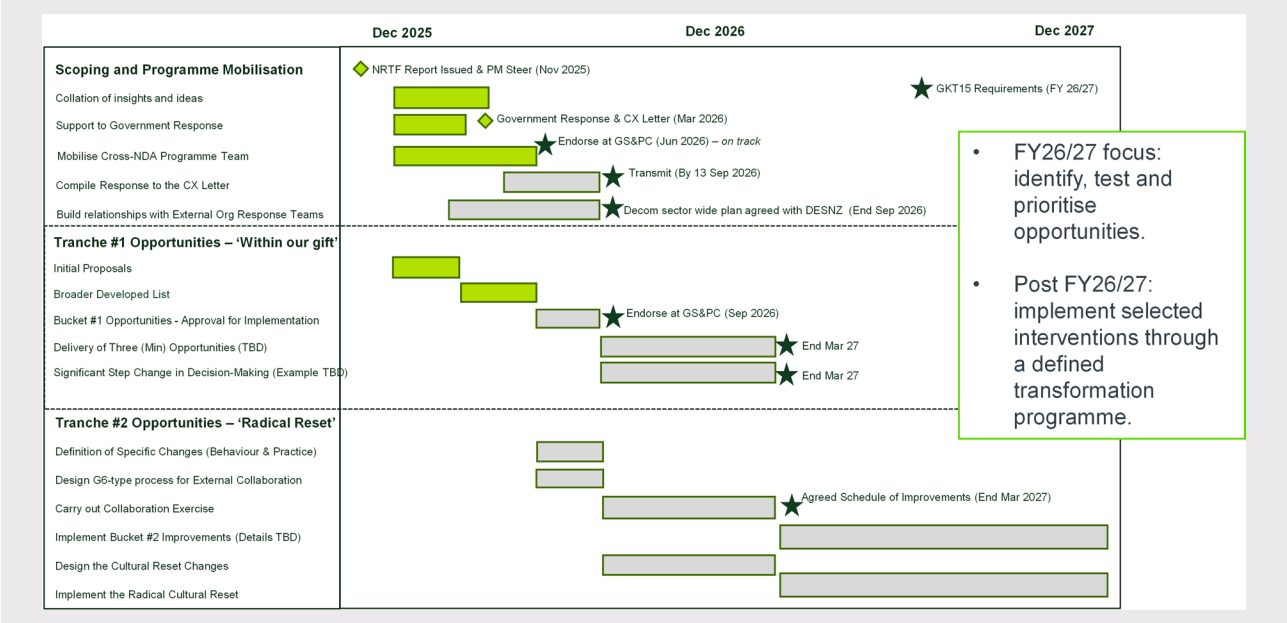
Collaboration between relevant external organisations to agree what to change and how

Initiate changes to policy/legislation/regulation

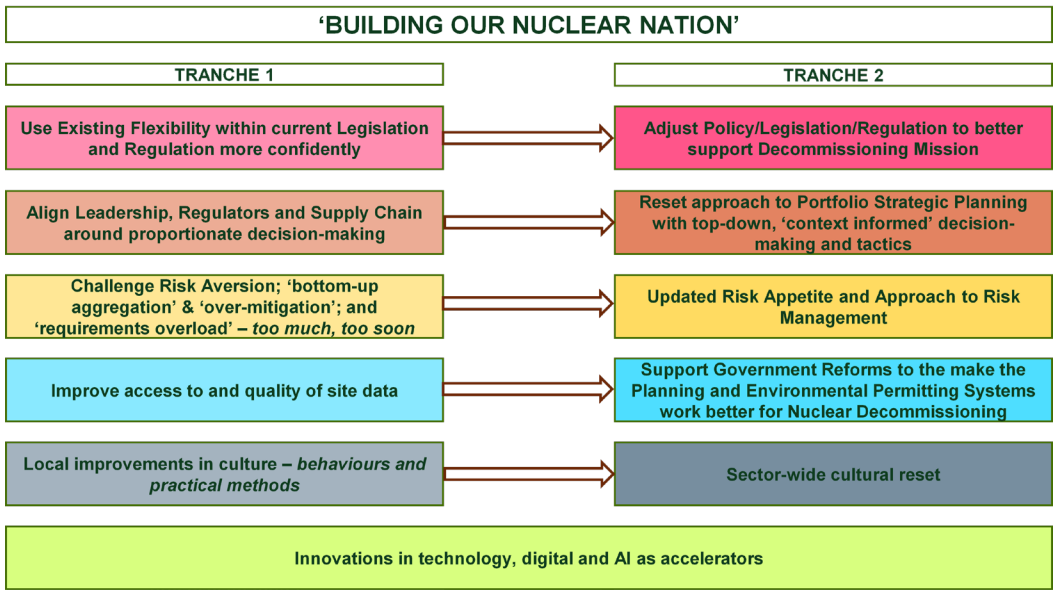
Implement cultural reset - behaviours and working methods

Introduction continued

In addition, an outline schedule was developed:



The first tranche is the delivery focus for FY26/27 and forms most of the improvement initiatives described in the document. Tranche 2 is intended to continue to 'turn up the dial' within the overarching improvement themes (below) and achieve the once-in-a-generation step-change, or 'radical reset', in line with the prime ministerial steer.



Introduction continued

An overview of the NDA Group's structure, objectives and the diverse activities undertaken is set out below. After which, our response to the questions set out in the Chancellor's letter is presented, highlighting how each organisation intends to capitalise on the opportunities afforded by the NRTF review with reference to the improvement initiatives underway across the NDA Group and the expected benefits.

The implementation of the recommendations and the December 2027 target date are not viewed as end points; the NDA Group remains committed to continuous improvement beyond the formal implementation period.

The NDA Group

Organisations responsible for delivering the UK's nuclear decommissioning, radioactive waste management and nuclear transport missions are brought together through the 'One NDA' model. This combines strategic leadership with specialist operational capability across the nuclear lifecycle.

The NDA is the strategic authority responsible for delivering the UK's nuclear decommissioning and radioactive waste management mission on behalf of HMG. As a foundation organisation, it sets strategy, allocates funding, oversees performance and works with HMG and stakeholders to deliver long-term mission outcomes.

Sellafield Limited (SL) is responsible for reducing the UK's highest nuclear hazards, including the retrieval of

waste from legacy facilities and remediation of redundant facilities. It is the site for the receipt and management of spent fuels including supporting operational reactor sites and the Continuous at Sea Deterrent. SL also manages the UK's strategic nuclear materials.

Nuclear Restoration Services

(NRS) delivers decommissioning and environmental restoration across the NDA estate. In addition to decommissioning the first-generation Magnox reactor fleet, its role is expanding as the Advanced Gas-cooled Reactor (AGR) decommissioning programme transfers to the NDA Group.

Nuclear Waste Services (NWS)

provides national leadership on radioactive waste management, including low-level waste (LLW) treatment and disposal services and development of a geological disposal facility (GDF) as the long-term solution for the UK's most hazardous radioactive waste.

Nuclear Transport Solutions (NTS) is the UK's strategic capability for the transport of nuclear materials. As the sole licensed carrier of nuclear materials by rail in the UK and the world-leader in international maritime transport of high-security nuclear cargoes, NTS represents a vital UK strategic asset which underpins the operation of the entire nuclear fuel cycle.

Together, these organisations provide integrated capabilities to deliver the NDA Group's mission to safely and securely address the UK's nuclear legacy.

NDA Group response



Our response is structured around the five key questions outlined in the Chancellor's letter and sets out how the NDA Group is responding to that challenge, combining practical improvements which can be delivered immediately with longer-term opportunities for wider system reform.

1. Improving Timely and Cost-Effective Delivery

The NDA Group has identified three key areas through which it will improve the timely and cost-effective delivery of its mission, while maintaining safety, environmental protection and security as overriding priorities:

- Risk-informed and Proportionate Decision-Making
- Improving Delivery Efficiency
- Exploring New Ways of Working.

These are expanded on below.

Risk-Informed and Proportionate Decision Making

Our estate is diverse. As stated in our Strategy, not everything we do is 'nuclear' and our work with HMG and regulators is helping us to better understand how we might reduce our nuclear footprint, apply more proportionate arrangements and learn from other industries. Where possible, adopting industrial non-nuclear arrangements will help to reduce our costs and increase the pace of transformation of our sites. Dealing with this diversity means being ready to flex and adapt our arrangements according to 'what' we are doing in any place and in recognising that the nature of hazards and risks change over time.

For example, our SL site includes some of the most hazardous facilities in Europe, whilst across large parts of our NRS sites the hazards are

now more typical of conventional industrial settings. As we progress decommissioning, the nature of the dominant hazard changes from radiological to conventional, such as relating to asbestos management and demolition. Put simply, our work under this theme means aligning operations to actual risk and hazard, reducing unnecessary conservatism where risks are already low or well-managed and ensuring regulatory controls remain proportionate to the work being undertaken.

Key activities in this area include:

- Adjusting our group risk appetite
- Adapting how we use our judgments and select engineering standards
- Working collaboratively with our regulators to support risk-informed targeted engagement (RITE)
- Supporting HMG and regulators in finalising the regime for PRC of final stage nuclear decommissioning and clean-up.

Altering arrangements to reduce the level or the nature of scrutiny as hazards and risks change involves both effort and the appetite to do things differently. A common perception is that the most rigorous 'nuclear safety' approach is the 'best'. However, that is not always the case for the lower hazard and risk activities within the nuclear sector.

Maintaining rigorous 'nuclear safety' approaches involve multiple layers of safety and security protections and scrutiny. These are absolutely vital approaches in our management of our most significant hazards, but they are not appropriate for conventional activities, where they can instead act to introduce delays and additional costs to work, thereby prolonging time at risk and perversely creating additional safety issues.

Our ability to adapt our approach to the different circumstances has been limited historically by our collective group Risk Appetite. Therefore, our first key response has been implementing an update to our Risk Appetite, helping to ensure we have greater flexibility to adapt this across the various situations we encounter rather than having a 'one size fits all' approach.

We are using the adjustment in our group Risk Appetite to secure further opportunities for efficiencies. This will allow more flexibility across the NDA Group in how we select and apply relevant engineering standards and practices. Using relevant good practice from wider industry, rather than nuclear standards, may be more appropriate. We will continue to share this learning and experience across subject matter experts within our group and across the sector – e.g., via the Safety Directors Forum, Nuclear Engineering Directors Forum and the Nuclear Industry Group on Land Quality.

SL, NRS and NWS are focusing efforts on working collaboratively on RITE, which is a risk-informed and targeted basis for regulatory inspection

activities. These activities ensure licence conditions are prioritised and applied in a manner that reflects the actual hazards being managed, reducing unnecessary administrative burden and focusing effort on activities that contribute the most to safety and hazard reduction.

NRS is also piloting the decoupling of selected licence conditions from unnecessary management system requirements and reviewing how licence conditions are applied in lower-hazard decommissioning environments. This is intended to reinforce the proportionate application of 'as low as reasonably practicable' (ALARP), support practical judgment and outcome-focused decision-making, preventing the conflation of nuclear and conventional risk and enabling more conventional approaches to decommissioning where this is justified by the actual risk profile.

Work is underway at NTS to integrate audit and assurance activities across the business to deliver a proportionate, targeted and risk-informed inspection regime. This will reduce duplication and focus resources on the most significant safety, security and operational risks, while better enabling innovation in the delivery of transport operations.

We have established groups to discuss complex delivery challenges, align perspectives and support timely decision-making on nationally important hazard reduction activities. The 'Group of Six' (G6) at SL and 'Decommissioning Eight' (D8) at NRS provide opportunity to bring duty holders, regulators and HMG together

for collective focused discussions on compliance matters and to tackle challenging issues.

Our collaborative approach helps to collectively resolve issues, constraints and impasses, as well as enabling opportunities to be pursued where multiple organisations have an interest. For example, SL is using the G6 to accelerate high hazard and risk reduction from its legacy facilities. NRS is using the D8 to progress applications for on-site waste disposal under Guidance on Requirements for Release from Radioactive Substances Regulation (GRR).

NRS is also using active projects at Winfrith, Trawsfynydd and Harwell to promote more proportionate implementation of GRR processes, shorter determination times and clearer expectations for evidence requirements and regulatory decision-making. In parallel, NRS is supporting development of Permitted Development Rights (PDRs) and associated planning guidance to reduce unnecessary planning-related delays and enable more efficient decommissioning, restoration and land reuse.

Our national Senior Strategy Oversight Group, held in support of the Memoranda of Understanding between NDA and our regulators, allows for collective consideration of national strategic issues. It is being used to ensure collective oversight of our response to the NRTF as well as ongoing initiatives such as establishing PRC for final stage decommissioning and clean-up.

As we have described in our Strategy, we have worked with HMG and our regulators for some time to secure

more PRCs for the decommissioning activities taking place towards the end of the lifecycle. Once available this new regime, consulted on by HMG and the Devolved Administrations in 2018, will enable release of our sites from the nuclear licence at an earlier stage, helping to ensure that more conventional regulation and arrangements can be applied. We have estimated that our ability to do this should save billions from our nuclear provision and also allow earlier reuse of our sites. Current efforts are focused on supporting the Department for Energy Security and Net Zero (DESNZ) in considering the final legislation required for the regime, working with our regulators on the guidance that will be required and ensuring our own readiness to apply the regime to improve our mission delivery.

Improving Delivery Efficiency

Within the NDA Group, each organisation recognises the importance of challenging itself to improve delivery efficiency.

NWS is implementing a company-wide transformation programme comprising 34 improvement projects focused on improving pace, cost-effectiveness and delivery certainty. These projects include simplifying site licence arrangements, applying proportionate emergency arrangements, using operational benchmarking and optimising assets to support clearer investment choices and more effective use of capacity. More information is provided in the case study in Appendix 1.

At SL, delivery efficiency is being improved by increasing the use of proven technologies and techniques for demolition activities, standardised designs and the development of

modular safety cases alongside wider safety case improvements. These measures are intended to reduce rework, support greater consistency, simplify delivery and enable resources to be focused on activities that add greatest value to safe delivery.

NRS is improving delivery efficiency through a coordinated programme of regulatory, commercial and cultural reform designed to enable faster, safer and more cost-effective decommissioning. NRS is driving significant, specific efficiency benefits through system improvements by modernising systems, increasing automation and integration and reducing manual workarounds, administrative effort and cycle times through better tools and connected systems / data. In addition, NRS is investing in transformation programmes, one of which is the regulatory reform programme, covered further below.

NTS is working closely with organisations across the defence and civil sectors to ensure that transport is considered earlier and treated as a key factor in delivery planning. This will support more effective delivery by reducing the need for retrospective solutions and rework, which are often costly and can delay projects.

To enhance the national delivery of the transport of nuclear and radioactive materials, NTS is identifying how best to support the supply chain and maintain the necessary levels of technical expertise. This is to ensure that critical transport services remain available to support decommissioning, waste management, defence and future nuclear programmes without becoming a delivery constraint.

Furthermore, a supplier assurance programme has been implemented to identify and prioritise critical suppliers. This will improve overall efficiency by enhancing visibility of supply chain dependencies and enabling assurance resources to be targeted more effectively towards higher-risk suppliers.

Exploring New Ways of Working

Across the NDA Group we recognise that there is potentially significant strategic value in the de-licensing of parts of, or whole, sites where hazards have been reduced to levels that no longer warrant the application of nuclear site licence arrangements. It is an enabler rather than an end, helping us reduce the costs of doing work on our sites and informing an overall reduction in our national nuclear footprint as we think differently about how we use our sites. Most importantly perhaps, it enables earlier reuse of our sites by others. However, the greatest strategic value is likely to be realised when de-licensing is combined with a more proportionate approach to risk management, regulatory oversight and delivery models. Details of the potential costs savings of the work done in this area can be found in the answer to question 5.

Examples of our applying more proportionate arrangements are outlined below.

Across the NDA Group, we are working to place the ownership of risk in the right hands. Rather than assuming all ownership needs to be in the hands of the 'nuclear operator', we are enabling ownership of risk to sit with the party best placed to mitigate and control it. Where the supply chain is best positioned to manage risk, they do so; where responsibility rightly sits

with the nuclear operator then they retain ownership and accountability. Our application of this at SL has resulted in adopting supply chain led approaches to dismantling and demolition where the supply chain has greater experience. Examples include the management of asbestos hazards and trialling new dismantling techniques.

In addition, both SL and NRS are seeking to apply relevant good practice to demolition, since the demolition of inert buildings is not in itself 'nuclear'. Where we can, both SL and NRS are actively exploring opportunities to undertake such activities on our licensed sites but under conventional health and safety arrangements.

As a global shipper of nuclear materials, NTS works to identify improvements in domestic and international transport regulations through collaboration with UK and international regulators, the International Atomic Energy Agency and the World Nuclear Transport Institute. For example, NTS is working with regulators to reduce the timelines associated with obtaining nuclear transport package licences, enabling faster deployment of transport capabilities and reducing licensing-related costs. Through collaborating with HMG and regulators to define and enact proportionate security arrangements for nuclear material shipments, NTS is aiming to reduce cost and complexity whilst maintaining robust safety and security outcomes. This will support the development of a scalable and commercially successful UK High Assay Low Enriched Uranium supply chain.

The Plutonium Immobilisation Programme (PuIP), one of the NDA Group's most significant future hazard reduction programmes, provides an early opportunity to demonstrate

the practical application of the NRTF recommendations. As a pathfinder programme, PuIP is being designed around the principles of proportionality, integration and evidence-based decision-making from the outset. By bringing technical, regulatory, commercial and delivery considerations together early, the programme is building the evidence needed for future decisions, avoiding unnecessary complexity and duplication and creating the conditions for faster, more confident delivery.

NRS is exploring new ways of working through a mix of culture change, innovation and practical trials, including simplifying processes, governance and decision-making, improving digital systems and targeting a 20% productivity gain through smarter working. This is supported by the activity to build a high-performance culture, with workshops, facilitators and more than 100 culture champions helping teams develop shared language, behaviours and practical tools for everyday work.

NRS is also encouraging ideas at every level through Innovation Month and the Bright Ideas portal, testing new approaches on real work such as Dounreay's mast-climbing platforms, which improved access and productivity and saved an estimated £140,000 compared with traditional scaffolding. Collaboration is also central to this approach, with more than 350 colleagues contributing to enterprise asset-management workshops and regulatory reform and other transformation projects aiming to improve delivery over the next five years. These initiatives are being coordinated through the 'Culture Hive', which brings together innovation, improvement, safety, human performance and high-performance culture to support and embed new ways of working.

2. Process and System Reform

Internal Improvements

We have recognised that there are inefficiencies in many aspects of our work, in particular relating to the way our processes, governance arrangements and systems are set up and applied. The NRTF noted this issue across the sector and this reinforced our intent to deliver on the following in-flight initiatives:

- Unity – a portfolio of group-wide initiatives
- Enhancement of the NDA Group Strategic Planning Capability.

Together, these initiatives will improve cross-group portfolio management via a new Group Operating Model (GOM), moving us to a more integrated four-pillar, whole-group structure. It provides strategic oversight of group and OpCo initiatives, ensuring alignment to group priorities and the GOM and coordinating delivery of our Spending Review (SR) commitments. By simplifying governance, reducing duplication and functional overheads, standardising approaches across the NDA Group and tracking delivery of SR benefits and savings targets, Unity aims to improve efficiency and free-up OpCos to focus on mission delivery.

Additional 'radical reset' changes identified through the Programme will be integrated with existing transformation initiatives to deliver coordinated and enduring change across the NDA Group.

The NDA Group Commercial Function continues to work to streamline commercial governance, approvals and assurance processes to ensure effort is focused on areas of greatest risk and value, while avoiding

duplicate review activity under robust controls. We are embedding a more proportionate, risk-based approach to procurement and contract management, aligned to the Procurement Act 2023 (PA23), enabling decisions to be taken at the appropriate level and reducing unnecessary process burden. In parallel, we are strengthening cross-group collaboration and the standardisation of commercial processes, practices and systems to improve coordination, share expertise and accelerate delivery outcomes.

Across the NDA Group, safety, environmental and regulatory arrangements are being reviewed to ensure they remain proportionate to the hazards and risks being managed. This includes benchmarking and simplifying safety case processes where radiological risks are demonstrably low, retiring or reducing nuclear safety case requirements where there is no longer potential for off-site consequence and applying proportionate decommissioning risk cases, environmental cases or conventional health, safety and environmental arrangements where appropriate. The aim is not to reduce standards, but to ensure that the level of evidence, scrutiny and regulatory engagement is commensurate with risk, avoiding unnecessary complexity, duplication and delay while maintaining robust safety, security and environmental protection outcomes.

This approach is being implemented through a range of regulatory reform initiatives across the OpCos. Within NRS, an integrated regulatory reform programme is advancing priorities

including RITE, proportionate application of ALARP, licence condition reform, planning reform, GRR and innovation in conventional decommissioning.

NRS are also looking at benchmarking safety case processes across NRS Sites and Dounreay and assessing opportunities to simplify safety case requirements where radiological risks are demonstrably low. They will work with SL to share learning and align the approach across the NDA Group.

They are also using RITE to pilot the decoupling of selected licence conditions from unnecessary management system requirements and reviewing how licence conditions are applied in lower hazard decommissioning environments.

Within NWS, work is underway with the Office for Nuclear Regulation (ONR) to develop more proportionate site licence and regulatory arrangements aligned to actual hazard profiles, alongside rationalisation of mandatory training, competence and Suitably Qualified and Experienced Person requirements so that controls are targeted to the role, hazard and activity rather than applied universally. The NWS reform programme is also simplifying change management, baseline processes, information management workflows and compliance documentation to reduce hand-offs, clarify approvals and remove avoidable administrative burden. Improved regulatory and customer engagement models, streamlined NDA information requests, better data and reporting, more effective use of existing systems and improved knowledge management will support faster, evidence-based decision-making while maintaining appropriate controls, assurance and human oversight.

At SL, internal processes continue to be simplified to remove delay and complexity, to eliminate "gold-plating" and align more closely with regulatory expectations. The "Remediation 2045" initiative is actively testing simplified delivery arrangements for decommissioning. Further details are provided in the case study in Appendix 1.

Group-wide investment in digital tools is also enabling faster approvals, improved configuration control and more data-driven decision-making. This also ensures clearer ownership of decisions and improved Executive / Board oversight to ensure accountability and timely progress. Further details are provided in several case studies in Appendix 1.

Similar mission-focus and investment is being applied to technical research and development into innovative technologies through NDA's Grand Challenges for Technical Innovation (GCfTI) programme. Further details are also provided in Appendix 1.

SL is also making changes to the safety case process to allow Nuclear Safety Cases to be retired where there is no longer a potential for off-site consequence. Where appropriate, a Decommissioning Risk Case will be used to manage ongoing risks during decommissioning, enabling a more proportionate and flexible approach to individual tasks and increasing the speed of delivery.

NTS has conducted a review of its processes and is seeking to improve the quality of Transport Safety Case submissions to the regulators and limit unnecessary information.

Work with other carriers throughout the decommissioning estate is

underway to identify areas where disproportionate internal processes, legislation or regulatory approach have been applied. This will contribute to the provision of concise and pragmatic arguments to HMG and the regulators on what processes, systems and guidance need to be altered to encourage a more proportionate approach, including opportunities to reduce unnecessary delays associated with transport package approvals and licences.

NTS is also modernising systems and tools to drive capability, efficiency and effectiveness. Examples include exploring the potential use of computational package drop test modelling to reduce reliance on costly physical testing while ensuring package performance and safety. The case study in Appendix 1 provides further details.

External Improvements **The 'Lead Regulator' Model**

The NDA Group supports exploration of the 'lead regulator' model recognising the potential for greater strategic collaboration, improved pace and coordination, resolution of conflicting or misaligned requirements, reduced administrative burden and lower operating costs across the nuclear sector.

We have committed to work with regulators and HMG to develop and test the new arrangements to ensure that our various needs are catered for across reasonably foreseeable scenarios. One area of particular interest is the transition away from nuclear regulation to radiological and conventional safety and environmental protection, with the aim of preventing the conflation of nuclear and conventional risk. For

some years we have worked with HMG and the regulators through the PRC Steering Group on this topic and it has highlighted some of the potential overlaps in regulatory vices, for example relating to issues of land quality management and responsibilities for environmental impact assessments on nuclear sites. Adequate access and alignment to the information supporting 'risk-informed and proportionate decision-making' (Question 1) will be vital to this too.

For NTS currently the ONR, Office of Road and Rail, Department for Transport, the Environment Agency (EA) and the Maritime and Coastguard Agency all have a role in the regulation of nuclear materials and radioactive materials transportation. Given this complex regulatory landscape, creating a single, expert regulatory touchpoint could reduce duplication, improve consistency in inspectors' decision-making and enable constructive challenge by duty holders where appropriate. This will also facilitate a proportionate and risk-targeted inspection regime which will simplify regulatory burden and allow any overlapping powers to be streamlined. It is necessary for the model to be scaled to the rest of the transport industry as well to ensure that transportation benefits equally from the model as nuclear licensed sites.

More broadly, the Programme is preparing to lead a 'G6-type' collaboration exercise, commencing in Q3 of FY26/27, to examine and agree which of the radical reset opportunities within Tranche 2 should be pursued, in the following areas:

- Risk Management
- Technology Development

- Engineering Design and Substantiation
- Safety Cases
- Environmental Cases
- Security Cases
- Waste Management; Disposability Requirements; Alternative End States
- Land, Planning and Environmental Application
- Policy / Legislation / Regulation Realignment
- People and Culture.

This will integrate the new definition of the Tolerability of Risk for the nuclear sector (Rec. 6) and updated regulatory guidance (Rec. 7).

DESNZ, ONR and EA have given their commitment to participate in this exercise.



NDA Group employees

3. Responding to cultural issues identified by the review

The NDA Group recognises that lasting improvement depends as much on behaviours and culture as it does on changes to regulation, governance and practical methods.

The history and construct of the NDA Group mean that 'culture' operates at multiple levels across the organisation. There is a shared group culture, shaped by common values, leadership expectations and mission outcomes; organisational cultures within individual OpCos reflecting their specific missions and operating environments; and local site cultures, where day-to-day behaviours and decisions are experienced by the workforce. Sustainable cultural change therefore requires action and alignment across all three levels.

The foundations for this already exist across the NDA Group. The One NDA Handbook establishes a common set of cultural principles and expectations that apply across the NDA Group, providing a shared framework for collaboration, accountability and delivery. These principles are reinforced through the NDA Group Leadership Standard, which defines the leadership behaviours, expectations and standards required to deliver the mission consistently across all organisations. The NDA Group will build upon these established foundations as part of its response to the NRTF review.

The NDA is refreshing its Risk Appetite Framework to provide greater clarity on acceptable risk balance and to support more consistent, proportionate and risk-informed decision-making across the NDA Group. NB This will be revisited once the output from Recommendation 6 – Tolerability of Risk – is published by the Nuclear Innovation Research Advisory Board (NIRAB). Demonstration on the use of the new Risk Appetite Framework is being reinforced through a leadership development activity focused on strengthening accountability, judgement, constructive challenge and outcome-focused behaviours, supported by wider cultural improvement activities.

The NDA Group has established leadership development programmes aligned to the Leadership Standard, including the Leadership Academy for senior leaders and the Future Leaders programme for emerging talent. Together, these programmes create a common leadership language, strengthen capability and support a more consistent employee experience across the NDA Group. They provide an established platform for reinforcing the behaviours needed to support cultural change, including accountability, constructive challenge, collaboration and proportionate, risk-informed decision-making. In parallel, existing resource mobility arrangements, including permanent moves, temporary secondments and placements with

external organisations across HMG, regulators and the wider nuclear sector, support the sharing of expertise, organisational resilience and cross-sector learning. As part of the NRTF response, there is further opportunity to use these arrangements to break down organisational silos, strengthen a group mindset and accelerate the shift towards a more collaborative, open and outcome-focused culture.

The NDA is leading the sector's response to the cultural and behavioural challenges identified through hosting the September 2026 'NRTF response – Leading Lasting Cultural Change' event. This will bring together HMG, regulators, industry and delivery organisations to explore sector-wide cultural challenges and opportunities, identify practical actions to support lasting cultural change and consider lessons from prior initiatives that have not delivered enduring outcomes.

Unity, the NDA Group's transformation portfolio, is coordinating delivery of the future GOM, the transition to a more integrated four-pillar, whole-group structure and the combined response to the 2025 SR. As a key enabler of the cultural and behavioural changes identified by the Review, Unity provides the opportunity to reassess how the NDA Group operates, strengthen alignment across the NDA and OpCos and simplify the way work is delivered. Through the development of the GOM, the simplification of governance and the transformation of enabling functions; Unity is helping to reduce organisational complexity, clarify accountabilities and create a more integrated and mission-focused NDA Group. By refocusing OpCos on mission delivery, while standardising and streamlining support activities across

the NDA Group, Unity supports the conditions for greater empowerment, collaboration, constructive challenge, innovation and more effective decision-making.

The NDA Group is exploring the potential for a group-wide culture programme to support the cultural changes identified by the NRTF. Aligned with existing OpCo culture initiatives, it could provide a common framework and toolkit to support new ways of working, encourage challenge and innovation and help break down cultural barriers that can inhibit collaboration, learning and the adoption of more proportionate approaches.

Alongside these group-wide initiatives, individual OpCos are implementing activities tailored to their own organisational and site-specific contexts.

SL remains committed to sustaining a strong, open and learning safety culture while improving the pace and affordability of delivery. It is using the Nuclear Industry Safety Culture Inventory to provide evidence-based insight into cultural strengths and areas for improvement, including leadership effectiveness, accountability and psychological safety. SL is also developing its Target Operating Model (TOM) to clarify accountabilities, improve organisational resilience, make better use of assets and resources and demonstrate that more can be delivered with less.

As part of this work, SL has established a Culture and Capability workstream to define the culture required to deliver the TOM and to align supporting systems, processes and behaviours. This builds on existing

cultural interventions, including psychological safety, employee voice, frontline engagement and the People Accelerating Decommissioning programme, which enables those closest to decommissioning work to identify barriers, challenge established ways of working and turn ideas into practical improvements.

NTS is strengthening its safety and organisational culture by assessing how risk decisions are made across operational, tactical and strategic activities, reviewing risk governance and contributing to the wider NDA Group work on risk appetite. Its Health, Safety, Security and Sustainability Culture Survey will establish a baseline of cultural maturity and identify targeted improvement actions to ensure it remains aligned with organisational objectives, values and regulatory expectations.

NRS has acknowledged the NRTF's findings on complacency, risk aversion and status-quo behaviours and is taking a whole-system approach to culture change. This includes a new Culture Strategy, continued rollout of the High-Performance Culture programme, site-based activation activity, a Culture Panel to provide

independent challenge and assurance and a Culture Hub to improve visibility of expectations, interventions and feedback. NRS is also strengthening risk-intelligent decision-making by reviewing risk appetite, empowering those closest to the work to make informed judgements and aligning safety, security and operational risk processes to reduce duplication and delay.

NWS is focusing on shifting from a process-driven culture to one that balances safety, delivery and value. Its actions include a leadership and behavioural reset to reinforce accountability and constructive challenge, clearer expectations for risk-informed judgement, simplified governance and delegations to move authority closer to delivery teams and improved learning and feedback mechanisms so lessons are captured once, shared effectively and translated into practical improvements.

Taken together, these actions are intended to create a culture across the NDA Group that remains firmly grounded in safety, security and environmental protection, while enabling greater pace, proportionality, learning and delivery focus.

4. Commercial and contractual reform

The NDA Group continues to explore and exploit opportunities to strengthen commercial incentives and contractual mechanisms to support the timely and efficient delivery of major projects and programmes. This includes greater use of outcome-based specifications, milestone-linked performance measures and incentive structures that reward early delivery, innovation, effective risk management and demonstrable value creation. Where appropriate, contracts will continue to be reviewed to ensure that commercial arrangements encourage collaborative behaviours and alignment between client and supplier objectives, rather than solely focusing on transactional delivery.

In parallel, the NDA Group is seeking to strengthen contract management capability and the use of performance data to provide earlier visibility of delivery risks and emerging issues. This will support more proactive intervention, informed decision-making and the timely resolution of barriers that may otherwise delay project outcomes. Enhanced governance and performance monitoring arrangements will also help to ensure that contractual incentives remain effective throughout the contract lifecycle and continue to support delivery priorities.

Recognising the scale and complexity of many NDA Group projects and programmes, particularly within the nuclear decommissioning environment, there is also an increasing focus on adopting

contracting approaches that promote integrated delivery and shared accountability. This includes continuing to encourage early supplier engagement, collaborative planning and mechanisms that align commercial reward with the successful achievement of programme outcomes. By embedding these principles within future commercial strategies and contractual arrangements, the NDA Group aims to improve delivery certainty, accelerate project outcomes where possible and secure greater value for taxpayers while maintaining appropriate levels of governance, safety and risk management.

The NDA Group adopts category management principles across its portfolio to maximise the benefits of scale, reduce duplication and standardise requirements where appropriate. This includes aggregating similar packages of work across sites so that suppliers can apply lessons learned, deploy proven methodologies and invest in capability and innovation that can be leveraged across multiple projects. Together, these measures are expected to improve productivity, reduce cost, increase repeatability and accelerate delivery.

NRS is focused on earlier and more collaborative engagement with the supply chain to develop outcome-focused commercial models that improve delivery certainty, encourage innovation and align incentives across the project lifecycle. In parallel with

this, NRS is strengthening Strategic Supplier Relationship Management (SRM), contract management and end-to-end supply chain oversight to build deeper partnerships with key suppliers, improve transparency, identify risks earlier and actively manage performance against programme outcomes. This is supported by wider improvements to project delivery and commercial capability, use of the procurement models available under PA23 and robust assurance and governance arrangements aligned to project scope, risk and delivery objectives. With a growing portfolio of work, there is an increased focus to aggregation of similar packages of work across NRS sites, enabling suppliers to apply lessons learned, deploy proven methodologies and invest in capability and innovation that can be leveraged across multiple projects. This approach is expected to improve productivity, reduce costs and accelerate delivery through greater repeatability and efficiency.

NRS has further increased focus on supplier engagement with the introduction of new forums, supported by the NRS Executive Team. These create an opportunity for the two-way sharing of information and learning, to support the delivery of improved outcomes.

NTS contractual arrangements are being reviewed and strengthened to align incentives with safe, timely and efficient delivery. This includes greater use of outcome-based contracting, target-cost and pain / gain share mechanisms and performance indicators linked to schedule, productivity, cost, quality, risk management and collaborative behaviours. Where appropriate, longer-term framework and alliance arrangements will continue to

be used to encourage supplier investment in capability, innovation and productivity improvements across multiple projects and sites.

Early contractor involvement is being enhanced so that suppliers can help shape practical, deliverable specifications, improve constructability, reduce uncertainty and support more reliable delivery performance. Risk allocation is also being reviewed to ensure that risk sits with the party best placed to manage it, avoiding unnecessary conservatism, inefficient risk transfer and cost inflation.

SL is reshaping contracts to better align incentives with outcomes and rewarding performance while balancing risk allocation to reduce cost inflation. The Overarching Acquisition Strategy strengthens resilience and supply chain capability through to 2040 by using collaborative delivery models and early supplier engagement.

SL's new Supply Chain Strategy has a strong emphasis on standardisation and simplification of processes, requirements and commercial approaches to reduce duplication, improve consistency for suppliers and shorten lead times. The strategy supports earlier market engagement, better competition where appropriate and more predictable delivery and greater innovation - all of which contribute to time and cost reduction while maintaining safety and quality.

SL has also recently commenced a series of Chief Executive Officer (CEO) led engagements with the supply chain. These "Supplier Summits", hosted by the CEO and attended by their Executive team, play a key cultural role and provide an opportunity for the supply chain to

feedback where we could improve as a client and drive value for money in delivery.

Finally, SL like NRS, is enhancing SRM, contract management and end to end supply chain oversight, including close working with strategic suppliers (who account for over 70% of their annual supply chain spend), to ensure performance is actively managed and aligned to programme outcomes.

NWS is also reviewing and modifying contractual arrangements to strengthen alignment with delivery outcomes. This includes moving away from input and compliance-based measures towards delivery against scope, time and cost, supported by measurable outcomes and realised benefits. Incentive mechanisms will reward efficiency improvements, innovation, simplification and early or on-time delivery against agreed milestones where value can be clearly evidenced.

NWS is strengthening interfaces between technical, commercial and delivery teams so requirements are clearer earlier and suppliers

can be mobilised more effectively. It is also streamlining procurement and contract processes to reduce delays, simplify governance and improve the speed and consistency of commercial decision-making. Make-versus-buy assessments and zero-commitment frameworks are being used to optimise capability across the NDA Group and enable work to be let swiftly once requirements are sufficiently defined.

Collectively, these improvements and reforms are intended to create a more predictable and investable pipeline of work for the supply chain, enabling suppliers to develop specialist capability, invest with confidence and support more efficient delivery across the nuclear decommissioning programme. They respond directly to the NRTF finding that current arrangements can suffer from a lack of incentives aligned with public value and delivery outcomes, while ensuring that delivery improvements remain underpinned by robust safety, security, environmental and regulatory standards.



Construction work at Sellafield

5. Expected benefits and savings

The NDA Group can deliver significant time and cost benefits by reducing unnecessary complexity, accelerating decision-making, improving delivery pace and predictability and adopting a more proportionate approach to lower-hazard activities. This will be achieved through earlier and more effective regulatory engagement, risk-informed governance, clearer scope definition, strengthened critical path management and the targeted retirement, simplification or consolidation of nuclear safety cases where the residual hazard no longer justifies the full application of nuclear site licence requirements.

Cost and productivity benefits will arise from reduced rework, simplified governance, earlier supplier involvement and greater use of specialist supply chain expertise. Together, these measures will improve efficiency, release scarce technical resources and support more cost-effective delivery while maintaining safety, quality and regulatory standards.

Pilot Cases

SL has identified that faster and more efficient delivery is likely to generate net benefits across the multi-decadal programme, even where savings are realised through redeployment of scarce specialist resources rather than immediate in-year reductions. The examples below illustrate how proportionate, risk-informed approaches can reduce complexity, improve productivity and avoid delay.

At Calder Hall, applying conventional health and safety legislation, rather

than developing a 'nuclear' safety case under the Nuclear Site Licence Conditions, could deliver significant time and cost savings by reducing the complexity of the demolition approach. Building on this, there is an opportunity to move from a Nuclear Safety Case to a Decommissioning Risk Case, reducing the work required before decommissioning tasks begin and enabling decisions to be made closer to the work face. Initial trials indicate that this can improve work face productivity and increase the pace of decommissioning, although delivery will depend on access to scarce Radiation Protection Specialists and other critical skills.

The same principles can also be applied through bespoke, risk-informed solutions. For example, the use of floating pontoons at the First Generation Magnox Storage Pond (FGMSP) enabled fuel retrieval and export to continue, reducing significant time and cost delays while recognising the intolerable condition of the facility. Wider opportunities may also exist to apply conventional health and safety legislation to new-build stores and existing facilities where there are no off-site consequences, potentially removing the need for a nuclear safety case to be delivered through the standard suite of nuclear site licence conditions.

For dismantling and demolition, recognising the lower risk profile of activities and making better use of supplier experience could reduce both cost and schedule. Initial trials as part of "Remediation 2045"

have confirmed this potential and decommissioning plans are being revised to reflect the learning. Earlier decommissioning would also avoid long-term maintenance and asset refurbishment requirements, with Asset Management Plans being updated to understand the impact on prioritisation and affordability.

As mentioned earlier, PRC could deliver significant savings across our sites. As we set out in the Strategy published earlier this year, it could mean that by 2050 most of our NRS Magnox reactor sites will have been delicensed and decommissioning will be delivered in more conventional ways. If HMG is able to provide the final legislation required, we hope to apply the new regime from early in 2030, potentially to allow our lead and learn reactor at Trawsfynydd to be decommissioned this way. Our expectation is that, with this regime enabling savings of up to 40% for some of our activities, we might secure billions off our nuclear provision, both in reducing the cost of our doing work and by increasing the pace of our work, as well as through avoiding the unnecessary generation of millions of cubic metres of waste from our sites.

Further NRS case study work (Appendix 1) has identified additional efficiencies from the proportionate implementation of GRR and land-release arrangements, reduced planning delays through planning reform measures and PDRs and lower safety case and maintenance burden for conventional decommissioning activities. NRS is continuing to assess how these principles could unlock wider strategic benefits

across the estate, including for reactor deconstruction and waste management.

One NRS Case Study (Appendix 1) relates to the proposed removal of the argon oxy-reduction requirement from Berkeley Vault 3, where argon inerting was introduced following a 2017 pressurised sludge can event, to prevent a highly unlikely hydrogen detonation scenario. The case study seeks to revalidate and progress the ALARP justification for removing this control, based on improved understanding of the very low fault frequency, the disproportionate cost and operational burden of continued argon use and the wider safety and delivery impacts associated with maintaining the system. The intended outcome is to support a more proportionate, risk-informed safety case position that maintains appropriate regulatory confidence while reducing unnecessary cost, complexity, schedule risk and operational constraints.

The NDA Group is working with DESNZ and the Ministry of Housing, Communities and Local Government (MHCLG) to establish dedicated nuclear decommissioning PDRs. These would allow defined decommissioning, remediation and restoration activities to follow a simplified planning route while retaining appropriate safeguards. NDA analysis suggests average direct planning savings of around £3 million per year, or a 60% reduction in planning-related costs for NRS. The main benefit is faster delivery, with approvals taking around three months under PDRs compared with 12 to 24 months for full applications.

This would reduce delays and contractor standing time and enable earlier hazard reduction. Case studies include the SL Electrical Distribution Network Upgrade Project, where PDRs avoided around £300,000 of costs.

The NDA Group is also engaged with DESNZ and MHCLG to implement Statutory Undertaker Status and proportionate Compulsory Purchase Powers to reduce land, planning and access constraints on nationally important programmes. Evidence shows that the absence of equivalent powers has caused prolonged negotiations, higher legal costs, added staff resource and programme uncertainty. Individual disputes have cost £110,000 - £250,000, with 10 to 30 significant land or access disputes possible over the next decade. The greatest value is avoiding major programme delay: GDF analysis indicates that preventing one year of consent or access delay during site characterisation could save around £29 million. These powers would provide a credible statutory backstop, protect operational land, improve certainty and reduce delivery risk.

Biodiversity Net Gain (BNG) reform could reduce cost and complexity across NDA decommissioning programmes. The NDA Group is working with DESNZ and the Department for Environment, Food and Rural Affairs (DEFRA) on a more proportionate approach for decommissioning, remediation and restoration, recognising that the current regime was designed for conventional development rather than environmental clean-up and hazard reduction. Evidence to HMG shows that the existing framework

can create major costs, delays and liabilities, with one case study identifying BNG costs exceeding £8.5 million. Reform would reduce unnecessary regulatory burden, avoid duplicate controls, support estate-level biodiversity management and remove incentives to suppress naturally regenerating habitats, improving environmental outcomes and delivery certainty.

The NDA Group is working with DESNZ and the EA to create a proportionate mechanism for stockpiling suitable demolition and excavation materials for future beneficial reuse while maintaining environmental safeguards. Analysis shows that reuse of soil, concrete, rubble, aggregate and granular materials can reduce costs by 25-78%. Current recycle-and-repurchase arrangements cost around £111 per tonne, compared with £65 for inter-site reuse and £26 for direct onsite reuse. Reusing FY24/25 bulk inert material could have saved around £1 million, while applying the approach to Low Level Waste Repository (LLWR) capping could save around £18 million. The proposal would also reduce demand for virgin aggregates, waste disposal and transport costs, improve sequencing and support lower taxpayer cost.

Through the Programme, the NDA Group is working with DESNZ and MHCLG to introduce enhanced Secretary of State consultation and call-in arrangements for nationally significant nuclear decommissioning developments. The aim is to improve planning certainty for major hazard reduction, waste management and site restoration projects by ensuring they are considered in their national

context. Although likely to be used infrequently, these powers would improve consistency, strengthen confidence for regulators and delivery organisations and reduce the risk of local planning delays. Avoiding even a six to twelve months delay on major programmes could save millions while accelerating hazard reduction, restoration and mission delivery.

Broader Business Improvements

Since 2024/25, NWS expenditure has reduced from £223 million to £199 million, with a further reduction to £173.4 million planned for 2026/27, whilst continuing to deliver critical outcomes and maintain the required safety, quality and regulatory standards.

NTS is reviewing its safety case methodology to reduce unnecessary complexity and support more effective delivery. A more pragmatic approach should reduce the volume of documentation required, improve the likelihood of cases being developed 'right first time' and lessen the burden on technical teams.

Earlier regulator engagement is a key enabler of this approach. By engaging across a range of projects at an earlier stage, NTS can support the timely challenge of unnecessary complexity and ensure regulatory decisions are informed by the operational context in which they will be applied. This should enable faster, better-informed decisions, particularly where new approaches are being adopted.

The NDA is working with DEFRA to improve environmental data sharing with new nuclear developers. We have developed a group-wide Geographic Information System which is being used to curate environmental data collected by the NDA Group for onward sharing with DEFRA who will make this data available to developers. This will reduce duplication, time and cost from new nuclear projects.

The NDA is also strengthening its land governance arrangements, producing a Group Spatial Plan and working with DESNZ to make faster, definitive land release decisions where land is of interest to new nuclear developers.

Specific support from Government

This is pitched as a 'once in a lifetime' opportunity for transformational change – to 'radically reset' the whole of the nuclear sector. Many of the issues identified are well known and, despite several improvement initiatives in the past, the issues have persisted for decades and continue to do so. If it was going to be easy, it would have been done long ago.

However, the time is right: the mood is optimistic; HMG has the incentive and appetite; and the Prime Minister has issued a 'call to arms'. These circumstances potentially provide a powerful catalyst and environment for success this time – the Programme believes that this moment needs to be seized individually and collectively across and beyond the NDA Group.

Learning from past endeavours will be key. One obvious difference this time is the extent of involvement from HMG and the clear expectations set on the regulators and other external organisations. Whilst this is positive, it does also demonstrate the scale of the challenge and the need to work effectively across so many organisational boundaries, both within and beyond the NDA Group. On this basis, the following enablers are deemed critical:

- A clear, co-ordinated and integrated schedule, so that activities can be choreographed appropriately with the input from the necessary stakeholders and organisations
- Sustained alignment, appetite, direction and resilience across senior leaders to sustain the full journey, without being pushed off course by competing initiatives nor held back by the weight of the past
- Senior leader support to working collaboratively across corporate boundaries, the creation of 'safe' environments for employees to think radically and being open-minded to entirely new ways of working
- Alignment of legislative, regulatory and organisational change to maximise benefits and minimise uncertainty during transition
- Investment in skills, capability and innovation to support long-term cultural and behavioural change across the sector.

Next Steps

The NDA Group supports reform to improve delivery outcomes and risk-informed decision-making whilst maintaining the required standards of safety, security and environmental protection. As a decommissioning organisation, we recognise that delay can prolong hazards and increase costs.

Over the next 12 months, the NDA Group will focus on implementing the priority actions identified in this response, maturing the evidence base for further reform and demonstrating the benefits that can be achieved through more proportionate, risk-informed approaches to delivery.

Alongside this, we will work with DESNZ, regulators and sector partners to develop the longer-term changes required to deliver sustainable improvement, including those requiring legislative, regulatory or policy reform. Through the NDA-led programme, we will support alignment across the civil and defence nuclear sectors and help ensure that individual initiatives

contribute to a coherent programme of change.

The opportunity now is to convert the ambition of the Review into practical improvements that deliver measurable benefits. Delivering the full ambitions of the Nuclear Regulatory Task Force will be challenging. Success will depend on maintaining momentum, determination and resilience, strengthening collaboration across organisational boundaries and remaining focused on reforms that improve delivery outcomes.

With government support, there is now a genuine opportunity to achieve a radical step-change. The NDA Group is committed to playing a leading role, acting where change is within our control and working collaboratively where wider reform is required. The time is right for change, and we are ready to seize the moment.

Appendix





Appendix 1 - Case Studies

Berkeley Vault 3 Argon Removal ALARP Review and Implementation

Relevant to the Nuclear Regulatory Review (NRR), this case study places emphasis on proportionate, risk-informed 'as low as reasonably practicable' (ALARP) decisions and avoiding disproportionate controls where the risk reduction achieved is not justified by the cost, operational burden or wider safety impact.

Berkeley Vault 3 contains containerised waste, including pressurised sludge cans. Following the observation of a can projectile in 2017, a fault scenario was identified in which gas released into the waste pile during a chain reaction of sludge could cause depressurisation events which could lead to hydrogen detonation with sufficient energy to challenge vault integrity. Although consequences were low, argon inerting was introduced to reduce oxygen levels and prevent a postulated detonation fault.

The initiative is to revalidate and progress the ALARP case to allow for the removal of the requirement for argon inerting. The opportunity for change arises from improved understanding of the fault frequency, operational impact, argon usage, cost and schedule consequences. Reviews in 2023 and 2024 indicated that continued argon use may not be ALARP, and the NRR provides renewed emphasis on proportionate ALARP decisions.

Below: Sludge cannisters being removed from Berkeley vaults.



IMPACT

Regulatory burden

The initiative could support a more proportionate regulatory and safety case position by removing a control that appears disproportionate to the low-frequency risk being managed, while maintaining appropriate technical justification, Dangerous Substances and Explosive Atmospheres Regulations 2002 consideration, Nuclear Safety Committee engagement and regulator briefing.

Cost saving

Potential avoided argon operating costs are estimated at approximately **£1.5 million to £3 million** per year, with the higher estimate associated with 24/7 working. Earlier lifecycle estimates for the argon system were **£600,000**, with an upper bound of **£2 million** but later projected system costs were approximately **£10 million**. The business impact assessment also indicates that a **£100 million** consequence multiplied by a 1 in 100,000 event frequency equates to around £1,000 over the project, compared with ongoing argon costs of up to **£3 million** per year.

Other benefits

Removal of the argon requirement could:

- Reduce operational constraints
- Improve throughput
- Avoid significant schedule delays
- Reduce the risk of extending the site critical path by many years
- Reduce system complexity associated with argon, vent and radiation monitoring interfaces
- Remove asphyxiant hazards associated with argon
- Reduce routine tanker movements
- Avoid argon discharge estimated at approximately 1.2 million litres per year when operational.

CASE STUDY



Proportionate Regulatory Controls for Final Stage Decommissioning and Clean-up (PRC)

PURPOSE

Nuclear Regulatory Taskforce (NRTF) Recommendation 22 seeks to complete the Proportionate Regulatory Controls (PRC) regime, enabling parts of nuclear sites to leave Nuclear Site Licence regulation earlier where hazards have been reduced to agreed thresholds. The objective is to apply regulatory controls proportionate to the remaining risk while maintaining safety, security and environmental protection.

basis for earlier delicensing while ensuring appropriate containment and control of residual radioactivity.

What Has Been Delivered So Far?

1. Development of the PRC Policy Framework

- The Nuclear Decommissioning Authority (NDA), Her Majesty's Government (HMG), the Office for Nuclear Regulation (ONR) and the environment agencies have worked for several years to develop a regulatory model for the final stages of decommissioning.
- Extensive policy development, evidence gathering, impact assessment and consultation activities have been completed, including the 2018 HMG consultation on proportionate controls (including Devolved Administrations).
- HMG, including Scottish government, has continued to support our ambition for this, most recently in approving the aspirations we set out in our latest Strategy (published 2026).

2. Decommissioning Exclusion Criteria (DEC)

- NDA and HMG worked to secure international agreement on the technical criteria to define when sites or parts of sites can leave nuclear liability arrangements.
- Exiting the third-party nuclear liability regime using the DEC provides the

3. Energy Act 2023 Amendments

- Sections 303 and 304 of the Energy Act 2023 amended the Nuclear Installations Act (NIA) to enable earlier removal of installations from Nuclear Site Licence control where specified criteria are met.
- This represented the first legislative step in implementing PRC – the most significant change to nuclear legislation since the creation of the NIA.

4. Evidence and Demonstration Work

- The NDA Group has developed site-based case studies and reactor delicensing scenarios to demonstrate the opportunity and test these with regulators and HMG.
- Work has informed regulator understanding, ONR guidance development and broader HMG consideration of implementation options.

5. NRTF and HMG Engagement

- NDA has consistently engaged with the Department for Energy Security and Net Zero (DESNZ), devolved administrations, ONR, the Environment Agency (EA), Natural Resources Wales (NRW) and the Scottish Environment Protection Agency (SEPA), the Health and Safety Executive and Planning Authorities (via Nuleaf).
- Recommendation 22 is now embedded within the NDA Group proportionality programme and HMG's wider NRR agenda.



Proportionate Regulatory Controls for Final Stage Decommissioning and Clean-up (PRC)

What Remains To Be Done?

Legislative Completion

The primary legislation exists, but the regime is not yet fully operational.

Remaining work includes:

- Commencement of Energy Act provisions.
- Secondary legislation, principally amendments to Environmental Permitting arrangements
- Equivalent arrangements in devolved administrations where required
- Provision of suitable powers for environmental regulators to regulate sites following earlier delicensing.

Further work is required to:

- Finalise guidance for regulators and operators
- Clarify interfaces between ONR, environmental regulators and other regulators
- Ensure consistency across England, Wales and Scotland
- Establish proportionate implementation arrangements and appeals mechanisms.

EXPECTED IMPACTS

Regulatory Burden

Significant reduction

PRC should enable final-stage decommissioning activities to be regulated through conventional health, safety and environmental frameworks rather than Nuclear Site Licence arrangements where appropriate. This removes unnecessary regulatory overhead and simplifies decision-making.

Cost

Potentially very significant

Evidence developed by NDA and NRS indicates:

- Earlier delicensing opportunities across much of the NRS estate
- Reduced licence administration and compliance costs
- Shorter programme durations.
- Reduced expenditure on remediation activities (approx 40% cheaper).

One scenario identifies the possibility of delicensing a site around **40 years earlier than current plans**, with avoidance of long-term licence overheads cited as a major source of benefit.

Waste Generation

Step-change reduction

PRC supports more proportionate end states and can reduce:

- Excavation of lightly contaminated materials
- Disposal of large volumes of low-hazard waste
- Demand on radioactive waste disposal capacity
- Packaging and transport requirements.

Carbon Footprint

Likely significant reduction

Reduced remediation, excavation, packaging, transport and waste disposal activities are expected to decrease lifecycle carbon emissions associated with decommissioning projects.



Proportionate Regulatory Controls for Final Stage Decommissioning and Clean-up (PRC)

EXPECTED IMPACTS

Safety and Risk

Improved overall risk management

PRC will maintain safety and environmental protection standards, but will enable improvements in safety and environmental protection by:

- Earlier hazard reduction
- Earlier reactor dismantling and site clearance
- Shorter periods of industrial, conventional and radiological risk
- More risk-informed regulation aligned to remaining hazards.

Key Message

Most of the policy, technical evidence and primary legislation are already in place. NRTF Recommendation 22 is now primarily about completing the remaining secondary legislation and regulatory guidance needed to make PRC operational. The prize is potentially transformative: earlier delicensing, reduced regulatory burden, lower cost, less waste, lower carbon emissions and faster hazard reduction while maintaining high standards of safety and environmental protection.

Strategic Benefits

- Potential to delicense a substantial proportion of the NDA estate by 2050 creating wider public and industry confidence in the United Kingdom (UK) nuclear industry
- Greater pace of mission delivery
- Enabling earlier reuse of sites
- Avoiding need for additional national radioactive waste disposal infrastructure
- Better alignment between regulation and actual risk
- Supports broader NRTF objectives on proportionality, innovation and efficiency.



CASE STUDY

Permitted Development Rights for Nuclear Decommissioning

This case study is relevant to NRTF Recommendation 23e and the wider objective of reducing unnecessary planning burden, accelerating hazard reduction and improving delivery certainty through more proportionate planning arrangements.

The NDA Group has been working with DESNZ, MHCLG and planning specialists across the estate to develop a dedicated Permitted Development Right (PDR) regime for nuclear decommissioning activities. The proposal recognises that many decommissioning, remediation and environmental restoration activities currently require individual planning applications despite often having limited environmental impact and being undertaken to deliver nationally important hazard reduction and clean-up objectives. Analysis undertaken across NDA sites identified that the existing planning regime can introduce significant cost, delay and inconsistency, particularly where comparable activities are treated differently by different planning authorities. The preferred approach is the creation of a dedicated nuclear decommissioning PDR class, allowing predefined categories of low-risk decommissioning, remediation and supporting works to proceed through a simplified prior approval process while maintaining appropriate environmental and planning safeguards.

IMPACT

Regulatory burden

Under current arrangements, many decommissioning projects require full planning applications, supporting environmental assessments, consultation exercises and extended determination periods. This can create a significant burden for both NDA organisations and local planning authorities. Evidence submitted to DESNZ identified between 46 and 134 planning applications per year and it is expected to be a similar range for many decades across NRS and Sellafield (SL) alone that could potentially benefit from a dedicated PDR regime. Typical determination periods for full planning applications are between 12 and 24 months, compared with approximately three months under a PDR prior approval process. The current approach results in duplication of effort, increased administrative burden and unnecessary delays to activities whose primary purpose is environmental remediation, hazard reduction and site restoration.

Cost saving

Analysis undertaken for the NDA planning workstream indicates that a dedicated nuclear decommissioning PDR regime could deliver direct planning and application cost savings of approximately **£2-6 million per annum** across the NDA estate through reduced planning application costs, supporting studies, consultancy inputs and local authority processing costs. Individual project examples have identified planning-related costs in excess of **£70,000 per application**, compared with approximately **£5,000** for a prior approval process. In addition, project teams would avoid significant internal resource costs associated with preparing planning submissions, managing consultations and responding to planning conditions. For larger programmes, the indirect financial benefits arising from acceleration of project delivery are expected to be considerably greater than the direct planning savings.



Permitted Development Rights for Nuclear Decommissioning

IMPACT

Other benefits

The most significant benefit of PDRs is improved programme certainty and accelerated delivery. Reducing approval times from up to two years to approximately three months can remove major critical-path delays, enabling earlier hazard reduction, faster site restoration and more efficient deployment of contractors and specialist resources. The reforms would also:

- Create greater national consistency
- Provide clearer expectations for regulators and planning authorities
- Reduce the risk of local planning decisions constraining nationally important decommissioning activities
- Improve confidence in long-term programme planning.

Together, these benefits support faster delivery of the NDA mission, lower overall programme costs and better value for the taxpayer, whilst maintaining appropriate environmental protections and local oversight.



Demolition work at Sizewell



CASE STUDY

Stockpiling Exemptions for Reuse of Demolition Materials

This case study is relevant to NRTF Recommendation 23a and the wider objective of enabling circular economy principles, reducing waste management costs and accelerating decommissioning through proportionate environmental permitting.

The NDA Group, working jointly with DESNZ and the EA, has been developing a regulatory solution to enable the long-term stockpiling of suitable demolition and excavation materials pending future beneficial reuse. Current regulatory arrangements often require materials such as soil, concrete, rubble, aggregate and granular fill to be disposed of, recycled commercially or managed through landfill-style permitting routes, even where there is a clear future reuse requirement within the NDA estate. This creates unnecessary cost, increases demand for virgin materials and constrains efficient delivery of long-term decommissioning programmes. Recent discussions between NDA, DESNZ and the EA have established a credible route towards a bespoke exemption, Regulatory Position Statement or similar permitting mechanism specifically designed to address the long timescales associated with nuclear decommissioning.

IMPACT

Regulatory burden

Current environmental permitting arrangements generally limit the ability to retain materials for future reuse over the decades-long timescales typical of nuclear decommissioning. This can force organisations to dispose of materials that will subsequently need to be replaced through procurement of virgin aggregates. Existing approaches require additional permit applications, waste transfers, recycling arrangements and landfill-style controls that are often disproportionate where the material has a clear and foreseeable beneficial future use. The proposed reforms would provide a controlled mechanism for extended stockpiling whilst maintaining appropriate environmental safeguards and regulatory oversight.

Cost saving

Analysis undertaken across the NDA estate demonstrates significant financial benefits from retaining and reusing suitable materials. Current recycle-and-repurchase arrangements cost approximately **£111 per tonne**, compared with approximately **£65 per tonne** for inter-site reuse and around **£26 per tonne** for direct onsite reuse. Recent NDA analysis found that if the approximately **22,000 tonnes** of bulk inert material recycled during FY24/25 had instead been reused within the NDA estate, savings of approximately **£1 million** could have been achieved. Looking forward, the requirement to source approximately **400,000 tonnes** of material for LLWR capping presents a potential saving of approximately **£18 million** if suitable NDA-generated materials can be reused instead of being recycled or disposed of and subsequently replaced with virgin aggregate. Site-specific studies identified savings of approximately **£2.3 million** through reuse of demolition material between the Sizewell sites and approximately **£2.8 million** through reuse of stockpiled materials at Dounreay rather than disposal.



Stockpiling Exemptions for Reuse of Demolition Materials

IMPACT

Other benefits

Beyond direct financial savings, stockpiling reform:

- Supports a more circular approach to decommissioning by reducing demand for virgin aggregates, minimising waste disposal, reducing transport requirements and lowering carbon emissions associated with material movements
- Would also improve programme flexibility by allowing materials to be retained until required, freeing up constrained waste management routes and enabling more efficient sequencing of demolition and restoration activities
- Would avoid situations where potentially valuable resources are treated as waste simply because future reuse falls outside current stockpiling timescales, which is a maximum of three years.

Collectively, the reforms support faster site restoration, improved environmental outcomes and more efficient delivery of the NDA mission whilst maintaining appropriate environmental protection and regulatory control.



Demolition work at Oldbury

CASE STUDY



Proportionate Compliance Demonstration for Lower-Risk Transport Packages

This case study is relevant to the NRR, with emphasis on proportionate, risk-informed regulation and avoiding unnecessary cost and delay where robust engineering evidence can demonstrate compliance whilst maintaining safety standards.

For lower-risk transport packages and contents, greater reliance on validated computational analysis and engineering justification may provide a proportionate means of demonstrating compliance. This could reduce the need for costly physical testing campaigns while maintaining regulatory confidence in the safety of package designs.

As computational modelling and analysis already form a core part of the package design and development process, the necessary software, expertise and supporting evidence are often already in place. This presents an opportunity to make greater use of existing engineering capability to demonstrate compliance, potentially reducing the extent of physical testing required while maintaining safety standards.

IMPACT

Regulatory burden

The initiative could support a more proportionate compliance demonstration for lower-risk package designs by enabling greater use of validated computational analysis, engineering substantiation and existing design evidence, reducing reliance on extensive physical testing where this is not necessary to maintain safety confidence.

Cost saving

Potential avoided costs could be significant. Physical drop test campaigns alone may exceed **£100,000** for relatively small package designs and can rise substantially for larger or heavier packages, potentially approaching **£500,000** where prototypes need to be transported to specialist overseas testing facilities. Reduced reliance on physical testing could therefore release financial and technical resources for higher-risk priorities.

Other benefits

A more proportionate approach could:

- Reduce months of planning and execution associated with physical test campaigns
- Lessen the demand on specialist personnel
- Reduce scheduling risk
- Make better use of computational modelling capability that is already embedded in package design and development.

This would maintain safety standards while improving timely and cost-effective delivery.





CASE STUDY

First Generation Magnox Storage Pond (FGMSP) Floating Pontoon Skip Retrieval Initiative

The FGMSP solution is an example of challenging traditional nuclear thinking and adopting a simpler, proportionate solution to achieve hazard reduction. This addresses the principles of reducing unnecessary complexity and excessive conservatism in nuclear decision-making and adopting proportionate, outcome-focused regulation.

The FGMSP is one of SL's highest hazard legacy facilities, where the ongoing mission is to retrieve fuel, skips and sludge to reduce long-term nuclear risk. Historically, the movement of skips within the pond has relied upon the Skip Handler Machine, a crane system operating on rails above the pond. However, degradation of the crane rail support structure resulted in the equipment becoming unavailable, creating a significant challenge to maintaining retrieval operations and progressing hazard reduction activities.

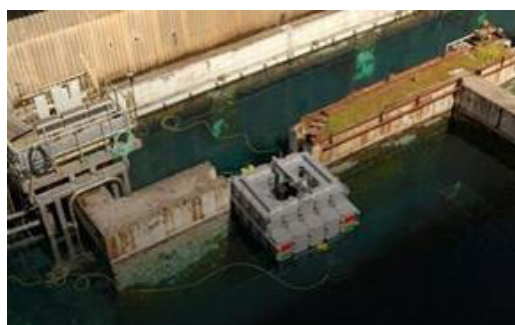
To address this challenge, SL developed and trialled an innovative floating pontoon and buoyancy solution capable of lifting, transporting and repositioning skips underwater. The approach uses commercially available, off-the-shelf technology adapted for use within a nuclear environment, providing a simple and cost-effective alternative to traditional handling methods. The initiative removes reliance on a single item of ageing equipment and demonstrates a new approach to supporting pond retrieval operations.

IMPACT

Although the floating pontoon was not developed as a direct replacement for the Skip Handler Machine, it provides a proven alternative capability that can support retrieval operations during periods of equipment unavailability. By introducing an additional method of moving skips within the pond, the initiative reduces reliance on a single-point failure and improves operational resilience, helping maintain progress towards hazard reduction and decommissioning objectives.

The use of simple, modular and off-the-shelf equipment also reduces the need for complex bespoke engineering solutions, limiting the generation of additional waste and minimising the material and resource demands associated with large scale replacement infrastructure.

Furthermore, enabling continued retrievals supports SL's regulatory commitments by accelerating the removal of radioactive inventory from the pond and reducing the duration for which nuclear hazards remain on the site.





First Generation Magnox Storage Pond (FGMSP) Floating Pontoon Skip Retrieval Initiative

IMPACT

Additional Benefits

- The removal of a significant single-point failure within the FGMSP retrieval process, introducing resilience and flexibility into operations, reducing dependence on ageing infrastructure and providing an alternative means of handling materials within the pond
- Demonstrates a culture of innovation by drawing upon proven techniques routinely used in other industries and adapting them for the nuclear sector. This represents a potential paradigm shift in how retrieval operations can be delivered across SL, creating opportunities for wider application of the technology to future decommissioning challenges
- Directly supports SL's mission to reduce environmental and radiological hazards by maintaining the pace of inventory retrieval. By enabling continued movement of skips and waste packages, the technology helps accelerate hazard reduction while providing a simpler operational solution that can be deployed rapidly and efficiently.

Key Outcome

The FGMSP Floating Pontoon Initiative has transformed a significant equipment challenge into an opportunity for innovation, providing a resilient, cost-effective and scalable method of supporting hazard reduction and accelerating decommissioning progress across one of SL's most important legacy facilities.



CASE STUDY

NWS Transformation Programme: Delivering Improvement within Current Arrangements

NWS has undertaken a strategic review of its structure, priorities and ways of working to improve delivery efficiency, reduce organisational burden and focus resources on activities that deliver the greatest mission value. The programme was developed in response to increasing financial pressures, the need to improve productivity and a desire to create greater capacity for delivery while maintaining safety, quality and regulatory standards.

Strategic relevance

This programme demonstrates that significant improvements can be delivered through organisational leadership, cultural change and simplification within existing arrangements. It also provides practical evidence that proportionate, risk-informed and outcome-focused approaches can remove inefficiency while maintaining safety, quality and regulatory standards.

This case study illustrates that organisations can achieve substantial improvements through self-driven transformation, with further benefits available where proportionate, outcome-focused approaches are adopted more widely across government, regulators and the nuclear industry.

IMPACT

Regulatory burden

The programme has demonstrated that significant reductions in organisational burden can be achieved through simplification of governance, reporting requirements, business processes and assurance arrangements while maintaining appropriate levels of safety, quality and regulatory compliance. The experience provides practical evidence that more proportionate arrangements can improve delivery performance without reducing standards.

Cost saving

The transformation programme has contributed to reducing expenditure from **£223 million to £199 million**, with a further reduction to **£173.4 million** planned, alongside a reduction in headcount from approximately **1,200 to 850**. These savings have been achieved while protecting priority delivery commitments and maintaining required regulatory, safety and quality outcomes.

Other benefits

The programme has:

- Reduced organisational complexity and administrative burden
- Improved delivery focus by prioritising activities that provide the greatest mission value
- Simplified governance, reporting and decision-making arrangements
- Improved use of data, digital systems and automation
- Reduced meeting burden and streamlined business processes
- Strengthened benefits management and accountability for delivery improvements
- Created capacity to focus resources on hazard reduction and strategic mission delivery
- Demonstrated the value of proportionate, outcome-focused approaches
- Provided practical evidence that wider adoption of similar approaches could unlock additional benefits across the nuclear sector through further reductions in burden, increased productivity and faster delivery of mission outcomes.



CASE STUDY

Sellafield First Generation Reprocessing Plant (FGRP) Medium Active North (MAN) Cell - Enhanced Safety and Productivity

This case study is relevant to NRR recommendations concerning the reset of Safety Cases, avoiding unnecessary conflation of nuclear and radiological risks, and developing an organisational culture capable of delivering radical improvements in efficiency and effectiveness.

The Medium Active North Cell contained more than 15 tonnes of low-level waste, primarily contaminated metals, requiring retrieval and disposal. The activity was selected as a pilot to test a different model for the safe delivery of work.

The pilot demonstrated that a simplified, risk-informed safety framework, combined with empowered frontline decision making, can reduce regulatory and administrative burden. This increased operational productivity and improved workforce engagement, while maintaining robust safety performance.



IMPACT

Regulatory burden

The initiative demonstrated that work can be delivered safely through a proportionate, risk-informed approach rather than reliance on complex procedural controls and extensive documentation. The move from Nuclear Safety Case to Decommissioning Risk Case simplified safety arrangements, reduced administrative burden and shifted accountability towards competent frontline decision-making.

Cost saving

Productivity increased from less than 30% to greater than 60% and was sustained throughout the 12-month pilot. Simplified safety arrangements reduced the resources required for safety case implementation and maintenance, while enabling the operations teams to work at a pace aligned with operational conditions.

Other benefits

- The increased workforce ownership of safety and work delivery led to improved workforce morale, engagement and accountability
- A reduced administration and paperwork burden saw increased time spent in undertaking front-line work
- There was faster operational decision-making at the point of work and we demonstrated alignment between safety and productivity.

This all provided a scalable model for future decommissioning activities.



CASE STUDY

AI across the NDA Group

These case studies are relevant to Recommendation 41 in the NRR, which calls for a nuclear digital strategy that accelerates the take-up of digital technologies, including artificial intelligence (AI), to modernise approaches to whole-life safety and regulation.

Robotics and AI

Safer inspection, monitoring and safety and regulation.

Many nuclear environments present challenges associated with radiation, contamination, confined spaces, ageing infrastructure and difficult access. Robotics and AI offer a means of collecting evidence and carrying out selected activities remotely, reducing the need for people to enter hazardous or constrained environments.

Across the NDA Group, robotics, autonomous systems, advanced sensing, machine vision, digital twins and AI-enabled analytics are being explored and applied to inspection, survey, infrastructure monitoring and condition assessments.

These technologies can strengthen the quality, consistency and traceability of evidence used to support operational planning, asset management, safety cases and regulatory discussions, while enabling work to be planned and delivered more effectively.



IMPACT

Regulatory burden

This approach can provide higher-quality inspection records, monitoring data and traceable digital evidence to support safety cases, regulatory submissions and assurance activities.

Cost saving

Remote and autonomous activity can reduce complex access arrangements, repeat inspections, temporary works and manual surveys, while improved evidence can support earlier and better-targeted intervention.

Whole-life safety and regulation

The approach enables safer collection of information across the asset lifecycle and provides richer evidence for risk-informed decisions about operation, maintenance, decommissioning and waste management.

Other benefits

- Reduces workforce exposure to hazardous environments
- Improves safety through enhanced monitoring and inspection
- Increases operational efficiency and repeatability
- Improves the quality and consistency of inspection data
- Supports predictive maintenance and condition monitoring
- Can accelerate decommissioning and waste-management activity
- Strengthens the use of digital evidence in safety and regulatory decisions.

Alignment to RECOMMENDATION 41

Demonstrates how robotics, autonomous systems and AI can modernise nuclear operations, improve safety outcomes and strengthen the evidence available for proportionate regulatory decisions.

CASE STUDY



AI across the NDA Group

NDA Group AI roll-out Responsible enterprise adoption of artificial intelligence

The NDA Group AI roll-out is establishing a coordinated approach to the adoption of AI capabilities across the group. This includes Microsoft 365 Copilot, AI assistants, intelligent automation and emerging AI-enabled operational tools.

The programme is focused on achieving productivity and decision-support benefits while maintaining appropriate governance, security, assurance and human oversight. Adoption is being developed proportionately, with lower-risk, high-value use cases providing the foundation for more complex operational and technical applications.

The roll-out is supported by policies, guidance, training, governance arrangements and assurance processes intended to enable responsible adoption at scale and to create a consistent approach across group organisations.



IMPACT

Regulatory burden

This approach supports more efficient preparation and review of regulatory documentation, safety reports, technical summaries, assurance evidence and governance records, with human review and accountability retained.

Cost saving

AI-assisted drafting, research, summarisation and information retrieval can reduce administrative effort and allow specialist staff to focus on higher-value technical and operational activity.

Whole-life safety and regulation

The approach creates the governance, skills and technology foundations needed to apply AI consistently and safely across the lifecycle, rather than through fragmented or isolated adoption.

Other benefits

- Improves workforce productivity and effectiveness
- Increases consistency of documentation and reporting
- Accelerates information analysis and decision support
- Reduces administrative burden on technical specialists
- Supports digital and AI skills development across the workforce
- Provides a scalable foundation for intelligent automation
- Establishes a controlled pathway from experimentation to wider deployment.

Alignment to RECOMMENDATION 41

This case study establishes enterprise-scale AI adoption across the NDA Group and shows how AI can support the modernisation of safety, assurance, regulatory and operational activities.



CASE STUDY

AI across the NDA Group

DANI programme Digital Assistant for Nuclear Information

The NDA Group holds substantial volumes of safety, engineering, operational and regulatory information across multiple organisations, sites and systems. Locating and interpreting relevant evidence can be time-consuming and can depend on individual knowledge and experience.

The DANI programme applies artificial intelligence, natural-language search, knowledge management and information-retrieval technologies to make organisational knowledge easier to access and use. It provides a secure foundation through which staff can identify relevant information, lessons learned, procedures and technical documentation more efficiently.

By improving the accessibility and reuse of trusted information, DANI supports more informed and timely decision-making across the nuclear lifecycle and provides a practical route to modernising the way evidence is assembled, reviewed and applied.



IMPACT

Regulatory burden

DANI supports more efficient preparation of regulatory submissions, safety cases and assurance activity by improving access to existing evidence and organisational knowledge, while retaining appropriate review and accountability.

Cost saving

DANI reduces the time spent searching for information, recreating previous work and manually collating evidence. Better reuse of existing knowledge can reduce duplicated effort across the NDA Group.

Whole-life safety and regulation

DANI improves the ability to find and apply relevant lessons, operating experience and technical evidence throughout the asset and decommissioning lifecycle.

Other benefits

- Improves access to critical nuclear knowledge
- Supports retention of organisational memory as the workforce changes
- Accelerates learning and knowledge transfer
- Improves consistency of safety and regulatory decision-making
- Enables faster retrieval of lessons learned and operating experience
- Strengthens collaboration and reuse across NDA Group organisations
- Provides a foundation for future AI-enabled safety and regulatory capabilities.

Alignment to RECOMMENDATION 41

This case study demonstrates the practical deployment of AI and digital technologies to modernise knowledge management, evidence gathering, operational decision-making and regulatory support.

CASE STUDY

Grand Challenges for Technical Innovation



Purpose

Grand challenges are mission-focused initiatives which tackle complex issues through innovation and collaboration. The NDA's Grand Challenges for Technical Innovation (GCfTI) were published in 2020, providing long-term aspirations out to 2030. These were designed to clearly articulate desired outcomes, accelerate the development of key technologies and encourage creativity in addressing them. Challenges included ambitious aims for 2025, with a myriad of benefits already delivered.

The GCfTI have proven effective in driving innovation at the NDA, with all interim aims achieved at a threshold level by 2025. Progress against these challenges has not been uniform but provides confidence we can progress to achieve all GCfTI by 2030.

Grand Challenges Themes

Theme	Interim Aims (2025)	Our 2030 Aspirations
Challenge 1 Reducing Our Waste and Reshaping the Waste Hierarchy	70% of all initial characterisation will be undertaken in-situ with results available within 24 hours	50% of waste, produced from decommissioning and clean-up, being recycled Over 70% reduction in the generation of 'secondary wastes' - particularly those associated with decontamination
Challenge 2 Intelligent Infrastructure	All external monitoring of buildings should be carried out remotely	All new buildings to be self-monitoring and energy neutral by 2030 with a 50% lifetime cost reduction
Challenge 3 Moving Humans Away from Harm	Remote decommissioning of glove-boxes	A 50% reduction in decommissioning activities carried out by humans in hazardous environments
Challenge 4 Digital Delivery	Accurate and up to date 3D virtual models (such as digital twins) exist for all key NDA sites	All data captured at source which is then used to drive decisions, planning and training

Some key innovations contributing to the aims and aspirations of these four challenges are listed below.

Reducing Our Waste and Reshaping the Waste Hierarchy

2025 Aim

- Radiation and 3D mapping – CARMA, an autonomous robot platform, has been used to characterise and monitor large areas of floor space for fixed or migrating contamination [9].
- Remote hydrogen detection – Hydrogen generation rate is a good way to determine how waste is evolving. Using Raman spectroscopy to detect low concentrations of hydrogen at a distance has been successfully developed and trialled [9].
- Autonomous Sort and Segregation (AutoSaS) – Initiated through a competition call for an autonomous method of sorting and segregating waste, technological developments were showcased in 2023. The next phase will see further demonstrations [10].

CASE STUDY

Grand Challenges for Technical Innovation



2030 Aspirations

- Sustainable cement – Testing alternative cement mixtures for ability to encapsulate water. One geopolymer showed capacity to double the waste water contained in a container, offering a route to reduce secondary waste [11].
- Sizewell A concrete used at Sizewell C – Over 15,000 tonnes of concrete from the demolition of a turbine hall will be recycled for use in construction of sub-bases at Sizewell C [12].

Intelligent Infrastructure

2025 Aim

- Light Detection and Ranging (LiDAR) scanning – SL was first in the world to mount a LiDAR scanner on a remotely operated vehicle robot for use in high-radiation areas [13], with the unmanned aerial vehicle (UAV) team winning a Nuclear Manufacturing Award for their work on remote inspections [14].
- AI for defect recognition – NRS is trialling AI to improve inspections of ageing cladding and roofing, protecting infrastructure across the estate. Remote building surveys are now standard where appropriate.

2030 Aspiration

- CO2 Emission – Scope 1 and scope 2 carbon emissions reduced by 34% since 2019/20 [15].
- Remote Monitoring of Sensitive Sites – The RMSS project has resulted in development of advanced security systems, including unmanned ground vehicles and aerial drones. This autonomously detects and responds to security breaches [16].
- Self-monitoring waste – Smart sensors were attached to waste packaging, successfully streaming live temperature and pressure data from inside. Over seven years, these have evolved from prototypes to embedded sensors [17].
- Chapelcross – Construction of a green energy hub is planned at the Chapelcross site. The net-zero focused development is designed to bring clean industry and high-value jobs to the region [18].

Moving Humans Away from Harm

2025 Aim

- Risk reduction of glovebox operations (RrOBO) – RrOBO was successfully deployed to clean two legacy gloveboxes, controlled remotely by an operator.
- AmCam – A handheld radiometric device which produces live video and real-time count rate from a gamma detector, now used routinely to aid glovebox decontamination [9].

2030 Aspiration

- Autonomous HGVs – The first ever autonomous delivery of a waste package on site using one of our HGVs adapted for use as an autonomous platform.
- Robotics and AI Collaboration Forum – Collaboration between NDA, the UK Atomic Energy Authority, SL, the University of Manchester and AWE, to develop remotely operated solutions for decommissioning [19].
- Camdroid – A compact inspection camera allowing inspections of previously inaccessible infrastructure has been demonstrated. The device delivers high-resolution images and video using a 19mm port in concrete up to 1m thick [20].
- Quadruped integration – Spot the quadruped robot has been increasingly deployed across the NDA to undertake tasks requiring human dexterity, removing need for personnel to enter high-risk areas [21].
- AutoSaS – Scheduled for deployment at Oldbury in 2028 and developed across the NDA Group. The system autonomously sorts and segregates radioactive material, a traditionally labour-intensive process.

CASE STUDY

Grand Challenges for Technical Innovation



Digital Delivery

2025 Aim

- LiDAR – Additional use of LiDAR technology for site surveys, the same system used for coastal erosion monitoring, steam line design, and building information modelling (BIM) integration.
- BIM – This has been combined with a site digital twin to generate a combined 3D model of the LLWR.
- Micro-UAV – Technology represents a step toward accessing and inspecting legacy nuclear infrastructure through restricted access points. Micro-UAVs were able to operate beyond visual line of site in dark, enclosed, GPS-denied environments [22].
- Trawsfynydd technology – Pioneering digital modelling, waste management, laser-cutting innovations, use of BIM, reality-capture tools, and robotics to improve data accuracy and reduce human exposure in high-hazard areas.

2030 Aspirations

- Virtual training environment – We have deployed several virtual reality training tools, including simulating generic glovebox operations for immersive training, allowing operators to use and test different procedures [9].
- Shaft and Silo Project at Dounreay – Adoption of BIM to create a digital twin and single source of truth for a complex, multi-supplier programme. Clashes, sequencing, and changes can be tested virtually before construction.

IMPACT

Regulatory burden

Accelerating the uptake of digital and innovative technologies to apply modern approaches to whole-life safety and regulation takes too long. Acquisition of better inventory and characterisation data without needing human intervention.

Cost saving

The GCfTI have increased momentum in our innovation, helping in the delivery of more than **£300 million in savings from over 200 innovations** since 2020, including several 'world-firsts'.

Other benefits

- Help to inform research and development investment decisions
- Maximise value for money and accelerate progress against NDA's mission
- Ensure that technical progress is not siloed but contributes to broader organisational objectives
- Helps stakeholders understand how specific projects contribute to overarching goals, strengthening cross-group alignment of innovation and enhancing transparency and engagement
- Facilitate shared learning across sites and foster a culture of continuous improvement
- Help to shift mindsets and working practices across the group, encouraging cross-disciplinary collaboration and forward-thinking approaches
- Provide funding for the development of technical solutions, sustaining a more diverse and vibrant supply chain capable of developing novel solutions
- More extensive collaboration, both across government and internationally
- Introduce remote technologies to dramatically reduce the risk to personnel.

Appendix 2 - Abbreviations, acronyms and glossary

Abbreviation	Meaning
AGR	Advanced Gas-cooled Reactor
AI	Artificial Intelligence
ALARP	As Low as Reasonably Practicable
AutoSaS	Autonomous Sort and Segregation
BIM	Building Information Modelling
BNG	Biodiversity Net Gain
CEO	Chief Executive Officer
D8	'Decommissioning Eight' (NDA, NRS, ONR, EA, SEPA, NRW, DESNZ and UKGI collaborative forum)
DANI	Digital Assistant for Nuclear Information
DBT	Design Base Threat
DEC	Decommissioning Exclusion Criteria
DEFRA	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
EA	Environment Agency
FGMSP	First Generation Magnox Storage Pond
G6	Group of Six (NDA, Sellafield Ltd, ONR, EA, DESNZ and HSE collaborative forum)
GCfTI	Grand Challenges for Technical Innovation
GDF	Geological Disposal Facility
GOM	Group Operating Model
GRR	Guidance on Requirements for Release from Radioactive Substances Regulation
HMG	His Majesty's Government
LiDAR	Grand Challenges for Technical Innovation
LLWR	Low Level Waste Repository
MHCLG	Ministry of Housing, Communities and Local Government
NDA	Nuclear Decommissioning Authority
NIA	Nuclear Installations Act
NRR	Nuclear Regulatory Review
NRS	Nuclear Restoration Services
NRTF	Nuclear Regulatory Task Force
NRW	Natural Resources Wales

Appendix 2 - Abbreviations, acronyms and glossary continued

Abbreviation	Meaning
NTS	Nuclear Transport Solutions
NWS	Nuclear Waste Services
ONR	Office for Nuclear Regulation
OpCo	Operating Company
PA23	Procurement Act 2023
PDRs	Permitted Development Rights
PRC	Proportionate Regulatory Controls
PuIP	Plutonium Immobilisation Programme
RITE	Risk-informed Targeted Engagement
RMSS	Remote Monitoring of Sensitive Sites
RrOBO	Risk Reduction of Glovebox Operations
SEPA	Scottish Environment Protection Agency
SL	Sellafield Ltd
SR	Spending Review
SRO	Senior Responsible Owner
SRM	Supplier Relationship Management
TOM	Target Operating Model
UAV	Unmanned Aerial Vehicle
UK	United Kingdom

Appendix 2 - Abbreviations, acronyms and glossary continued

Term	Definition
Within Current Arrangements	Improvements deliverable within existing legislative, regulatory and governance arrangements
'Radical Reset'	Longer-term opportunities requiring wider system change and cross-sector collaboration
Risk Appetite Framework	NDA Group framework supporting proportionate and risk-informed decision-making
Category II/III Transport	Classification for nuclear material and other radioactive material that dictates what security measures must be taken to protect the material.
Decommissioning Risk Case	A proportionate approach to managing risks associated with decommissioning activities where a full Nuclear Safety Case may no longer be required
Low Consequence Methodology	Approach used to apply proportionate controls where hazards and consequences have reduced
G6 Arrangements	SL initiative that brings together six organisations - the NDA, SL, ONR, EA, DESNZ and UK Government Investments - to discuss complex delivery challenges and agree coordinated approaches, helping to enable timely decisions on legacy hazard retrievals and reduce delays arising from differing organisational perspectives.
D8 Arrangements	NRS' equivalent initiative to the G6, with two additional environmental regulators – SEPA & NRW – to make up the eight organisations
Unity	Portfolio of group-wide initiatives aiming to improve efficiency and pace of mission delivery by simplifying governance, reducing duplication and functional overheads and standardising approaches across the NDA Group.
Remediation 2045	An ambitious SL initiative to deliver purposeful decommissioning at pace, shifting focus from managing legacy risks to permanent elimination.
One NDA Handbook	A reference guide that captures the spirit of 'One NDA' and what that means in terms of the benefits sought and how these will be realised. It also describes the culture and the types of relationships that will realise the full potential of the change.
NDA's Leadership Standard	A shared framework that defines clear expectations for how leaders inspire, deliver, and collaborate across the UK's nuclear clean-up and remediation mission.