

# Office for Nuclear Regulation Post Implementation Review 2022

Summary Report

March 2022

## Introduction

1. This document provides a summary of the conclusions and key recommendations of a Post Implementation Review of the Office for Nuclear Regulation (ONR) conducted in accordance with *The Energy Act 2013*. It is published alongside a full report which sets out the detailed findings under the review.
2. The review was led by an independent reviewer supported by a dedicated review team from across the Department for Business Energy and Industrial Strategy (BEIS) and the Department for Work and Pensions (DWP) between August 2021 and March 2022.
3. The scope of work has included documentary reviews and extensive discussion with ONR and over 40 external stakeholders, where open and constructive insights were provided, with considerable enthusiasm, for which the review team are grateful.
4. Sincere thanks are due to ONR for its full co-operation with the review and for their openness in considering areas for improvement.

## Background

5. *The Energy Act 2013* provided for the creation of ONR in 2014 as a statutory public corporation. This recognised the importance of an independent regulator free from government influence, with a clear mandate and accountability for its decision making, and organisational and financial flexibility to manage its operations efficiently and effectively in support of the evolving demands of the sector.
6. The formation of ONR consolidated the UK regulatory approach bringing together many years of experience and skill in successfully protecting society from the risks of nuclear operation, civil nuclear security, and transport of radioactive materials.
7. To date, the majority of ONR's regulatory work has been directed towards maintaining the existing fleet of operating nuclear reactors, fuel cycle facilities, decommissioning, and the safe handling and storage of hazardous waste materials at licensed civil and authorised defence sites. It has also considered the approval of new large-scale reactor designs, such as the HPR1000, and construction of new nuclear facilities, such as Hinkley Point C. Looking forward ONR's regulatory work may expand because of developments in these areas.
8. In addition, ONR's activities will evolve to reflect new investment in Advanced Nuclear Technologies (ANTs), Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs). The volume and timing of these new initiatives is uncertain at the time of writing but will place demands on ONR's capability and capacity.

## Conclusions

9. The objectives of *The Energy Act 2013* are being met and the review has concluded that ONR is effectively delivering its regulatory purposes, enabling the safe and secure use and storage of nuclear materials. The statutory purposes and functions are still required, these being in areas where independence of regulation remains important. Similarly, ONR's form is appropriate to build and maintain its capability and capacity, and therefore carry out its intended functions. We do not propose any changes to the form or function of ONR.

10. As a regulator, ONR is seen domestically and internationally as a strong example of principles-based regulation. It is respected for its technical ability. It generally engages well with stakeholders and its approach internally, and with industry, through the COVID-19 pandemic has been valued. Its stability and commitment to ensuring a high-quality safety culture is welcomed. Its record of making sure that industry operates safely and securely is good and its planned areas of focus are stable and transparent.
11. As an organisation, ONR is eight years old and has been on a journey to set up its own independent infrastructure, corporate functions, and people culture which were either shared or poorly resourced after it was formally separated from the Health and Safety Executive (HSE) in 2014. Several significant initiatives have been identified by ONR to further support its maturity and are key to ensuring capacity and capability for future demand. These activities are focused on enhancing internal capabilities, increasing the efficiency of operations, delivering better value for money, and improving how ONR regulates and engages with its duty holders.
12. The recommendations in this report are aimed at assisting ONR as it develops and delivers these actions to underpin its future capability and capacity. They support its strategy to 2025<sup>1</sup> and its vision of being a “modern, transparent regulator delivering trusted outcomes and value”, as well as minimising potential burdens on and unnecessary costs for duty holders. Also included within the full report there are several less significant suggestions which have been informally discussed with ONR.
13. The successful implementation of these recommendations will be even more critical if the scale and pace of demand on ONR increases. This may impact funding and the prioritisation of projects.

## **Key findings and recommendations**

### ***Vires***

14. Overall, ONR’s vires remain fit for purpose, with several key changes to improve ONR’s ability to deliver its purposes and enhance the efficiency and effectiveness of regulation already under way. These include changes to the *Nuclear Installations Act 1965* and *Nuclear Installations Regulations 1971* to improve powers in relation to decommissioned sites and disposal and waste facilities to enable key developments such as a Geological Disposal Facility.
15. As the government’s net-zero ambitions come to fruition, a stable, safe, and secure supply of nuclear generation is likely to become an increasingly important part of the energy mix. ONR should continue to work with Ofgem and BEIS to assess and inform how security of supply needs could be appropriately considered in nuclear without compromising ONR’s ability to deliver any of its five purposes.

### ***Regulatory approach***

16. The nature of principles-based regulation reinforces the responsibility of duty holders for safety and security and the role of ONR as a regulator in deciding whether risks have been reduced “So

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<sup>1</sup> Office for Nuclear Regulation, *Strategy 2020-25*, 2020.

Far As Is Reasonably Practicable” (SFAIRP) in line with legal requirements, expressed in terms of reducing risks to “As Low As Reasonably Practicable” (ALARP) in ONR guidance.

17. This enabling approach to regulation sees ONR work constructively with duty holders to ensure delivery against identified outcomes, with formal and informal engagements in place to promote early and open conversations around priorities, advice, and ultimately compliance.
18. However, annual stakeholder surveys and our own interviews noted that the autonomy of inspectors, combined with an organisational, but also individual, cautious approach to risk, can lead to differences in how compliance is monitored and enforced. Additionally, ONR messaging at senior levels may not always be clearly communicated or understood at working levels, meaning high-level approaches and objectives are not always reflected in the actions of individual inspectors. Principles-based regulation can create a tendency for duty holders to ‘gold-plate’ solutions by overestimating what is required to reach compliance, resulting in increased time and costs.
19. Whilst we have not been presented with evidence to show this is happening significantly and have seen several examples of where ONR intervention has created better value for money, such as the development of alternative engineering solutions at Sellafield and fit for purpose solutions for 10-dock at Devonport, ‘gold-plating’ was nonetheless raised as a potential risk by several stakeholders. This generally relates to junior staff, who have less experience and confidence in challenging the status quo.
20. In line with the ‘Growth Duty’ under the *Deregulation Act 2015*<sup>2</sup>, ONR is required to consider the economic impacts of activities on individual duty holders and the sector more widely. In 2017 ONR commissioned an external independent report known as the ‘NERA report’<sup>3</sup>, which set out several actions to support ONR in meeting requirements, maximising the efficiency and proportionality, and potentially lowering the costs, of the current regime.
21. ONR is continuing to improve the communication of regulatory expectations and is reaching out to duty holders directly at all decision-making levels to facilitate an open conversation and provide support, with the specific aim of increasing duty holder understanding of where boundaries lie within compliance. This is a significant area, and we endorse this approach.
22. ONR is additionally taking steps to reinforce the effectiveness of existing processes in this area and to develop new guidance, training, and tools. This includes guidance that supports inspectors to actively consider the cost and economic impact of regulatory asks.
23. **Recommendation 1:** Because of the fundamental significance of activities which ensure consistency, proportionality, and value for money, we recommend ONR continues to:
  - ensure a culture of constructive challenge by addressing real and perceived issues around power dynamics between inspectors and duty holders, and organisational hierarchy and decision making
  - review assurance processes to ensure they are robust in resolving consistency issues
  - improve the presentation of case studies and guidance to inform how regulation works in practice and ONR’s role in realising outcomes and success

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<sup>2</sup> *Deregulation Act 2015*, Section 108.

<sup>3</sup> NERA Economic Consulting, *The economic impact of ONR safety regulation: Final Report*, The Office for Nuclear Regulation, 2017.

- complete all identified actions in the 2017 *NERA report*, with an urgent focus on embedding new processes and behaviours as business-as-usual, given the ‘Growth Duty’ came into effect in 2017
24. ONR is currently completing its annual stakeholder survey which will be considered by the Board shortly to understand where stakeholder concerns persist.
25. **Recommendation 2:** Using these insights we recommend the Executive Director of Operations presents to the ONR Board and relevant government departments, by December 2022, on how ONR is ensuring significant improvements in consistency, proportionality, and value for money, across regulatory purposes. Assurance should be provided that planned work is sufficient to drive at least a 10 percentage point increase in stakeholder survey consistency and proportionality ratings by 2025 in line with ONR’s *Stakeholder Engagement Strategy 2020-25*<sup>4</sup> commitments.

### ***Corporate capability and ways of working***

26. When ONR was established in 2014, the capacity and capability to provide the corporate functions essential to run a public corporation were minimal. Based on the ‘ONR Essentials for Vesting Programme’ ONR secured a small number of staff, seconded from HSE for up to two years, to cover finance, governance, HR, and communications. This was not sufficient for ONR to operate fully as an organisation independent of the civil service, and it remained dependent on legacy services from HSE and/or other arrangements (such as contractors). Other critical corporate functions such as IT, procurement, security, commercial and risk management, programme and project management, and policy were minimal, non-existent or dependent on legacy arrangements.
27. It has therefore been necessary for ONR to establish core functions leading to significant growth across its corporate services in the last eight years which, alongside sustained increases within the regulatory divisions, ensure ONR has adequate capability and capacity to deliver its mission.
28. Government should learn from this experience, ensuring plans for vesting arm’s length bodies are appropriately informed by an awareness of the scale of resource independence requires, including additional technical and corporate requirements, so that future bodies are vested with adequate resource from the start.
29. In line with its strategy, ONR is investing significantly in a number of projects and initiatives to modernise and improve effectiveness. These provide the opportunity for new efficiencies and value for money with the correct structures in place to monitor performance and benefits realisation; taking advantage of this opportunity will be key to achieving agreed savings in its budget over the next spending review period.
30. **Recommendation 3:** To ensure benefits from resources and new systems are maximised, we recommend ONR develops an enduring approach to identifying opportunities and consolidating efficiency across the organisation, with findings reported to the Board at regular intervals. The initial report in financial year 2022/23 should reflect findings from current organisational reviews and benchmarking of structure, capability, and capacity, as well as performance and talent management reviews and business-as-usual project reviews.

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<sup>4</sup> Office for Nuclear Regulation, *Stakeholder Engagement Strategy 2020-25*, 2020.

31. ONR has committed to developing the senior leadership team over the last two years to ensure a structure that supports its maturity as a regulator. 2021 saw several significant changes, bringing in fresh perspectives as well as ensuring appropriate capacity to support the new combined Chief Nuclear Inspector / Chief Executive post. The review has concluded that no changes are required to the composition or remits of the senior leadership team at this time.
32. **Recommendation 4:** ONR's Board is continuing to review the impact of recent organisational changes. In doing so, we recommend the Board consider, by the end of 2022, the resilience of the new structure (and certain roles) against sudden or prolonged, internal or external, events that could impact business continuity and the timely realisation of ongoing projects. ONR should make suggestions for further improvements and share the findings openly with both BEIS and DWP.
33. We have been impressed by the swift realignment by ONR to remote working at an early stage of the COVID-19 pandemic, which we have benefitted from in completing our review remotely. In terms of the inspection programme, ONR switched to carrying out certain routine inspections and tasks remotely, ensuring critical regulatory work continues without putting individual health at risk. Stakeholders spoke positively of ONR's approach, commenting that the balance between on site and virtual working has been effective and efficient.
34. We welcome ONR already embedding the successes of its COVID-19 response into ongoing ways of working for all parts of the organisation. This will secure efficiency gains, as well as benefitting the recognition of needs of the industry and establishing innovative, more proportionate ways of collaborating with third parties engaged in forthcoming industry projects.

### ***Improving organisational efficiency and effectiveness – Project Management***

35. The Board recognised, in Autumn 2021, a historic tendency to manage initiatives as projects which created unnecessary process and added cost and time to the delivery of activities which, in some instances, could be better managed as business-as-usual. As a result, ONR undertook an exercise to re-prioritise activities, focusing on what could be delivered as core business and what was additional and necessary to deliver its 2020-25 Strategy successfully.
36. Since vesting, significant progress has been made to build internal capability including the creation of a Project Management Office (PMO) and recruitment of project management professionals. However, there are still a number of issues with the application of processes across the project life cycle.
37. **Recommendation 5:** To improve the efficiency and efficacy of change management and project delivery going forward, we recommend that ONR, by March 2023:
  - updates the project mandate template to include a high-level initial analysis of alternative delivery options and articulation of monetised and non-monetised benefits, noting further detail to be included in business cases
  - finalises and implements updates to benefits management processes, embedding them throughout the project lifecycle to drive positive behaviours and consistency
  - continues to keep paperwork throughout the organisation under review, embedding a culture of 'less is more' where appropriate

### ***Improving organisational efficiency and effectiveness – Risk Management***

38. During 2021, ONR took a number of steps to improve and formalise its approach to risk management, and senior leaders and the Board are continuing to consider and improve the approach to risk.
39. In reviewing the risk management framework, we identified a disconnect in ONR's risk appetite statement, operational behaviours, and internal messaging around wider organisational priorities and commitment to continuous improvement. Risk management and particularly a clear description of the organisation's risk appetite can be a very effective management tool to describe "what really matters around here" and drive changes to risk culture when embedded fully within the organisation.
40. **Recommendation 6:** We support the Board in their improvements to organisational risk management and further recommend that ONR:
- reviews and revises current risk management training by March 2023, to ensure staff understand how to improve risk taking through the implementation of effective risk management techniques
  - discusses with the Board by July 2022, how it currently communicates its risk appetite within the organisation, identifying opportunities to improve messaging and highlight how risk will be built into decision making
  - commissions a risk maturity analysis by its internal auditors or other external specialists to review risk at a strategic level by March 2023

### ***Improving organisational efficiency and effectiveness – Financial Administration***

41. ONR's regime aims to recover costs fairly, equitably, and promptly across all duty holders. However, the current charging system has challenges which create a degree of complexity for all stakeholders concerned. A particular aspect is that expenditure of a capital nature can only be charged to duty holders once the asset is in use and over the period of its useful economic life. This creates a need for working capital finance, provided by DWP, to support cash flow.
42. ONR's financial accounting responsibilities are guided by the *DWP/ONR Framework Document* which clearly defines accounting responsibilities between ONR and DWP. During the review, we noted that some challenges have arisen between ONR and DWP due in part to the complexity, timeliness, and inflexibility of securing working capital loan financing with DWP and HM Treasury.
43. **Recommendation 7:** We recommend DWP and ONR ensure lessons learnt from the past year are embedded at all levels, with a continued focus on efficient and effective ways of working. This should include:
- development of additional guidance alongside *the DWP/ONR Framework Document* during its 2022 review, to provide a consistent framework within which ONR can prepare and submit business cases, and DWP can support approvals, in line with HM Treasury requirements and public funding procedures. This should clearly describe the nature of financing required, how it impacts ONR's operational delivery, the type of funding available, and the requirements, processes, and timescales for loan approvals
  - an assessment of current financing arrangements by March 2023, alongside the consideration of charging arrangements in **Recommendation 8**, confirming the 'art of the possible' within the current framework and any unintended impacts and relevant solutions including legislative change if necessary

44. In 2019, ONR undertook an analysis of alternative charging models, considering the approaches of other publicly funded organisations. It was concluded that a new model would be required to meet the specific needs of the ONR regime, requiring not only an overhaul of ONR’s internal processes, but also potentially legislative change of current Fees Regulations. Following this, ONR is continuing to scope options for alternative charging arrangements, as well as functional process improvements.
45. **Recommendation 8:** We recommend by March 2023 that BEIS, DWP, and ONR explore the scope for alternative charging arrangements, identifying what can be improved within the current legal framework, and what will require legislative change to current Fees Regulations to realise benefits for ONR and duty holders. This should be considered alongside the recommended assessment of financing arrangements in **Recommendation 7**.

### ***Improving organisational efficiency and effectiveness – IT Capability***

46. Like many comparable organisations, ONR is continuing to upgrade its IT and information systems. This includes targeted technology projects, upgrading core IT infrastructure and ensuring cyber resilience.
47. During 2022, considerable progress is planned on a significant IT project, Well Informed Regulatory Decisions (WIReD), which is intended to modernise delivery and data processes within the inspectorate. The efficiency and effectiveness arising from successful implementation are key to ONR’s future operations. Progress is closely monitored by the Board and ONR’s Audit and Risk Assurance Committee and has recently been subject to an independent internal review.
48. **Recommendation 9:** Building on the successful changes made following an internal project management focused review of WIReD, we recommend that a very brief initial (‘fatal flaw’) review be carried out by an external IT delivery specialist by September 2022. By April 2023 the same specialist should be invited to carry out a lessons learnt review. The terms of reference should be focussed on a high-level confirmation of key drivers such as go live, user testing and training procedures and be designed to confirm overall confidence on quality and value for money.
49. **Recommendation 10:** Additionally, to aid in realising IT and digital projects (such as WIReD), we recommend ONR considers co-opting a C-suite IT specialist to its Audit and Risk Assurance Committee for at least the financial year 2022/23. This would provide deep specialist support and ONR’s Chief Information Officer and Chief Information and Security Officer with a sounding board.

### ***Enabling innovation and future of the sector***

50. ONR seeks to encourage innovation through:
- ensuring the regulatory system is flexible and outcomes focused
  - enabling greater experimentation, testing, and trialling of innovations under regulatory supervision
  - supporting innovators to navigate the regulatory landscape and comply with regulation
51. Collaborative approaches taken by ONR and duty holders have led to a number of successes and proves the capability of both parties to work together successfully to foster innovation,



while still ensuring the high standards of safety and security required in the UK. For example, the use of specialist divers to clear radioactive waste from spent fuel storage at Sizewell A, and structural integrity remote inspections using mobile and fixed cameras at Hinkley Point C. However, despite this there remain challenges around ensuring ONR is agile at a time of transition where its operating environment is constantly evolving.

52. ONR has made strong progress in implementing programmes to develop its capability and capacity to regulate SMRs, AMRs and ANTs. However, some stakeholders noted that incorrect external perceptions of ONR's approach to risk could stifle innovation by making duty holders believe the status quo was not open to challenge or enabling innovation.
53. **Recommendation 11:** The realisation of ONR's planned Innovation Hub is critical to unlocking internal and external opportunities for innovation and should continue to be prioritised for launch by March 2023. This could build on models used by other regulators such as Ofgem's 'fast, frank, feedback' and the Civil Aviation Authority's 'sandbox', to create an environment where innovation can flourish in line with ONR's principles and the needs of the nuclear industry.
54. **Recommendation 12:** We further recommend ONR continues to improve its external communications on innovation, continuing to champion existing relationships with industry groups and academia, and directly sharing real world examples of ONR's role in supporting innovative approaches, technologies, and applications through easily accessible means such as a new area of the website dedicated to case studies. This is an ongoing action with any updates to the website to be completed as part of current plans to refresh the website by March 2024.
55. One of the key drivers of ONR's formation, according to the Stone Review,<sup>5</sup> was to ensure appropriate resource to enable the efficient operation and management of the Generic Design Assessment (GDA) process.<sup>6</sup> Independence has afforded ONR greater control over its resources however the GDA has been criticised for being costly and onerous, typically taking up to five years to complete. ONR refreshed the process in 2020 to take account of lessons learned from previous GDAs and flexibilities needed to enable the assessment of innovative Advanced Nuclear Technologies, introducing a three-step approach envisaged to be completed in four years or less.
56. The pace of the GDA process in part relies on the maturity of requesting parties and their design as well as quality documentation. Where quality submissions are made at the start of each GDA step there are opportunities for efficiency gains shortening the amount of time it takes to complete the process. ONR seeks further opportunities for efficiency through bilateral engagement with other international nuclear safety regulators and cooperation via the Nuclear Energy Agency's Multinational Design Evaluation Programme. In addition, ONR is actively considering, as part of the International Atomic Energy Agency's Nuclear Harmonisation and Standardisation Initiative, how it can better cooperate, and harmonise, its processes with other international regulators to avoid duplication and enhance its knowledge of similar designs.

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<sup>5</sup> T. Stone, *Nuclear Regulatory Review Private Advice and Reasoning, Observations by Tim Stone for the Secretary of State for Energy and Climate Change*, 2008.

<sup>6</sup> The GDA is an upfront, non-site-specific assessment of a generic Nuclear Power Plant (NPP) design. It is a joint process between ONR and the EA who work together to assess NPP designs to ensure that they are safe, secure, and environmentally acceptable. The objective for GDA is to provide confidence that the proposed design is capable of being constructed, operated, and decommissioned in Great Britain in accordance with the standards of safety, security and environmental protection required.

57. **Recommendation 13:** To find further efficiencies, we recommend ONR completes a benchmarking exercise against comparable international regulators by March 2024 at the latest, to ensure processes and timescales are commensurate. ONR should continue to support agile learning to ensure it can reflect and learn early, applying improvements to GDAs that may be running in parallel.
58. In addition to current work with the developer of Sizewell C, NNB GenCo (SZC) Ltd, and Rolls Royce SMR Ltd there are other projected and potential demands on ONR such as new Advanced Modular Reactor technologies, the decommissioning of Advanced Gas-cooled Reactors, geological disposal, and other ongoing decommissioning projects. The availability of skilled and experienced resource may be a constraint on ONR, and industry more generally, especially for SMRs where there are several innovations in the design of a common foundation and engineering methodology, as well as build and operational processes which are novel within nuclear.
59. Future industry demands are by their nature uncertain and will at times place significant demands on staff resource planning. ONR has considered various operational scenarios and resource projections for the next five years. These show that there may be excessive demands placed on resources, caused by the pace of activities, such as multiple GDAs running in parallel, new site licensing requests and potential impacts of the AUKUS deal. Resource gaps may be filled by actions arising from the efficiency improvements recommended above and/or from recruitment. This includes improving contingent capability to meet short-term constraints and to mitigate against the impact of an ageing inspectorate profile. This should continue to be an area of focus and ONR should work closely with government to understand evolving ambitions and any resource implications if demand accelerates.
60. **Recommendation 14:** We also recommend ONR explores additional opportunities for secondments, considering exchanges with government and other stakeholders such as the Nuclear Advanced Manufacturing Research Centre (NAMRC), enabling knowledge and expertise to be shared in a way that develops skills holistically. This must be done in a way which maintains ONR's integrity and impartiality, including through careful consideration of outside interests. ONR should report to the Board by March 2023 on secondment opportunities and how they will be operated.

## Next Steps

61. The team have worked closely with ONR, DWP and BEIS throughout the review, and have discussed the findings and recommendations to ensure a common understanding.
62. ONR should consider the findings and recommendations of the review, identifying a delivery plan and agreeing with BEIS and DWP the key milestones against which progress can be tracked. Where appropriate, DWP and BEIS sponsorship teams should support ONR with the delivery of the recommendations. A formal review of progress should be completed and published within 24 months of publication.