Office for Nuclear Regulation

Chief Nuclear Inspector's annual report on Great Britain's nuclear industry

October 2025

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Foreword

I am pleased to present ONR's annual Chief Nuclear Inspector's report covering the nuclear industry's performance in 2024/25. Having rejoined ONR in July 2025, I would like to recognise the wise counsel and direction provided by my predecessor, Mark Foy, during his time as Chief Nuclear Inspector. It has been under his leadership that the industry has once again maintained a level of performance indicative of the high standards of safety, security, and safeguards that we expect across the nuclear sector in Great Britain.

After 35 years of exceptional service to the nuclear industry and 20 years with ONR, Mark will be retiring at the end of October 2025. As I take over from Mark as Chief Nuclear Inspector, I am encouraged by the many improvements secured across the sector that provide evidence of why it is highly regarded around the world. However, as we look to the future and witness the substantial growth in both the civil and defence nuclear spheres, we cannot be complacent.

We have taken a range of enforcement actions during the year to address immediate risks and ensure sustained compliance across all of our purposes. Although there has been a slight fall in the number of incidents that have met our formal investigation criteria, the overall number of events reported to ONR has increased. Whilst this indicates a positive reporting culture, we must ensure that lessons are learned from such events.

A number of themed inspections and assessments carried out throughout the year have provided confidence that progress is being made in areas where we have felt specific improvements have been needed. In cyber security, this includes executive leadership, risk management and assurance activities. For nuclear site health and safety, this includes dutyholders strategically prioritising health and safety visibly and effectively, as the risk profile of the sector changes towards construction and deconstruction activities, which inherently pose higher risks to workers. We will continue to monitor progress in these two areas throughout 2025/26. And whilst the climate change themed inspections spanning 2023 to 2025 have not identified any fundamental safety or security issues, medium and long term resilience improvements are needed, which we will follow-up through future industry engagements.

There have been many highlights throughout the year including the continued collaboration with government, other regulators and international counterparts. Progress at sites under an enhanced or significantly enhanced level of regulatory attention has been positive, with many having a clear roadmap to routine attention. Other notable progress includes:

- Hunterston B was the first Advanced Gas Cooled Reactor to complete defueling;
- we granted the nuclear site licence for Sizewell C;
- withdrawal of 98 regulatory specifications from the decommissioning former Magnox sites delivering both cost and time benefits to the dutyholder and ONR;
- we permissioned a number of high hazard risk recovery activities at Sellafield Ltd to facilitate storage of material recovered from the legacy ponds and silos;
- the Sellafield site was returned to a routine level of regulatory attention for protective security following completion of significant upgrades and successfully demonstrating a demanding cyber/physical security exercise;
- we permissioned the docking of two nuclear submarines at Devonport Royal Dockyard in 9 and 15 docks ahead of required timescales; and
- we permissioned installation of the Unit 1 reactor pressure vessel at Hinkley Point C, the first such activity in the UK for 30 years.

Foreword

Mike Finnerty
Chief Executive / Chief Nuclear Inspector

Such examples illustrate that, by working constructively with industry, we have embedded positive sustainable outcomes, continuing to protect society by securing safe nuclear operations. We will need to embrace an increasingly enabling and collaborative approach, that will be crucial in driving progress and to uphold the strong track record of high standards across the nuclear industry in Great Britain.

1 Chief Nuclear Inspector's review

Chief Nuclear Inspector's review

Nuclear industry performance overview

1.01 The overall performance of the nuclear industry in 2024/25 remained satisfactory, with most of our inspections confirming good levels of compliance. This indicates that, on the whole, the industry continues to meet the high standards of safety, security and safeguards we expect. In comparison to the previous year, performance has remained steady with notable improvements across a number of Ministry of Defence (MoD) sites. Where performance has required our attention, such as at operating reactors and Nuclear Restoration Services (NRS) Dounreay, we have worked with dutyholders to address this throughout the year.

1.02 Dutyholders' reporting of incidents has been consistent during the last five years with a slight drop in the number of significant events from last year (122, down from 136). The significant majority of reports have not required any further action, with only 2.4% leading to preliminary enquiries or an investigation. This is a slight reduction from the 3% that was reported on last year.

1.03 Our enhanced regulatory focus on the industry's cyber security capability has supported many dutyholders being able to demonstrate progress towards achieving and maintaining routine levels of regulatory attention. Dutyholders and ourselves recognise the unique characteristics of the cyber security risk, and the need for continued investment to protect against the ever-evolving threat landscape, while leveraging the benefits that innovative and emerging technologies may offer.

1.04 Nuclear site health and safety (NSHS) remained a regulatory priority during 2024-25 as we sought improvements in the management of risks to workers' health and safety across GB nuclear sites, particularly in new build construction and decommissioning work. This is reflective of significantly increased construction and deconstruction activities in the sector.

1.05 We observed a 16% net increase in incident reports since last year. The biggest category was related to incidents that could compromise the effectiveness of the arrangements for emergency preparedness and response on a site. This incident category has a subjective reporting threshold and as a result a large number of minor incidents can dominate reporting data. It will be a focus for our regulatory engagement in 2025/26.

1.06 A major milestone was achieved during the year with the completion of the Chief Nuclear Inspector (CNI)'s Themed Inspection on Climate Change. Following on from the climate change self-assessment undertaken by the industry in the previous reporting year, in 2024/25 we undertook a number of site

inspections. We did not identify any fundamental issues in relation to current safety of nuclear sites against external hazards. However, the Themed Inspection highlighted that work remains for dutyholders to strengthen the resilience of their facilities against the future effects of climate change in the medium- and long-term, which we will monitor through routine regulatory oversight and engagement.

1.07 Safeguards performance remained steady, with the UK meeting all international reporting obligations. The International Atomic Energy Agency (IAEA) provided positive feedback on the UK declarations, noting that the improved submissions facilitated their analysis and strengthened the UK's standing with the IAEA.

1.08 Regulatory highlights of 2024-2025 period:

- Hunterston B became the first EDF Advanced Gas Cooled Reactor (AGR) to complete defueling, with the last flask of fuel leaving site on 20 February 2025. We completed our assessment and confirmed that the site is fuel free. NRS has submitted its site licence application, a sign that an AGR is moving to the decommissioning phase.
- We successfully completed Step 2 of the Rolls-Royce SMR Generic Design Assessment (GDA), and we concluded that there is no fundamental reason why this technology could not be safely built in Great Britain. This was followed by an immediate transition to Step 3 detailed assessment, which is ongoing.
- We granted the nuclear site licence to Sizewell C (SZC) Ltd in May 2024, following a reassessment of the issues from our earlier assessment of the initial application in 2022. Granting of the licence allows the licensee to develop and implement their arrangements for compliance against the licence conditions in sequence with the phases of the project. We worked closely with SZC Ltd throughout the period to establish suitable governance arrangements that facilitated the Financial Investment Decision (FID) in July 2025. Learning from our experience of licensing Hinkley Point C (HPC), combined with our commitment to replication, enabled significant efficiencies during the SZC licensing process.
- We launched our new process for early regulatory engagement for parties seeking to deploy reactor technology in Great Britain. We subsequently completed a range of engagements with Last Energy UK, Moltex Flex, Newcleo, Terrapower and X-energy. These engagements provide advice and guidance ahead of other regulatory processes such as GDA. From feedback we have received, these early discussions are proving beneficial to vendors and are helping shape future regulatory approaches and deployment decisions.

- We permissioned the installation of the unit 1 reactor pressure vessel (RPV) at HPC in November 2024 This was the first such activity in the UK for more than 30 years. The RPV houses the reactor core, providing safe containment of nuclear fuel. Our enabling approach ensured ONR completed its work to support timely completion of this major milestone in the construction of the power station.
- We closed the Level 1 Regulatory Issue (RI) on Devonport Royal Dockyard Ltd (DRDL)'s leadership, governance and decision making, which allows us to reduce our regulatory footprint. With confidence in the controls and governance that are in place, we granted permission for the docking of two nuclear submarines at Devonport Royal Dockyard in 9 and 15 docks ahead of the required timescales.
- We withdrew 98 regulatory specifications and approvals from the former Magnox fuelled sites that are being decommissioned by NRS, to ensure our regulation of these sites remains proportionate and efficient. This will help to deliver both cost and time benefits to the dutyholders and ourselves. (see case study 6.1.2)
- Enabling high hazard risk reduction, Sellafield Ltd has achieved a number of important milestones in this period:
  - The retrieval of waste from each of the legacy ponds and silos facilities for the first time.
  - Completion of active commissioning for the Box Encapsulation Plant Product Store-Direct Import Facility (BEPPS-DIF) facility to enable the storage of Pile Fuel Cladding Silos (PFCS) waste packages.
  - The export of fuel bearing material skips from the First Generation Magnox Storage Pond (FGMSP) to the Interim Storage Facility (ISF).
  - Relocation of Dounreay Special Nuclear Material (SNM) within the Sellafield site to a fit-for-purpose medium term storage solution, which indicates good progress against an existing Level 1 RI.
  - We returned Sellafield Ltd to a routine level of regulatory attention for physical security in November 2024 after the site successfully completed a demanding demonstration exercise. It is anticipated that the leadership provided by Sellafield Ltd's CEO and Chief Information Security Officer (CISO) will continue to influence improved cyber security performance, and achieve a move from significantly enhanced to enhanced regulatory attention by the end of financial year 25/26.

Industry progress against 2024/25 CNI themes

Strategic approach to nuclear site health and safety

1.09 In response to variable and declining performance in 2023, nuclear site health and safety was declared a theme of regulatory focus to foster cross-industry leadership to secure sustained improvement. Through our nuclear site health and safety (NSHS) regulatory strategy, we emphasised the strategic importance of prioritising health and safety visibly and effectively, as the risk profile of the sector changes towards construction and deconstruction activities, which inherently pose higher risks to workers. We focused our engagements and interventions across five pillars:

1. Clear leadership, ownership and action on NSHS performance at Board level;
2. Effective use of risk profiling, inclusive of worker safety and health risks, both immediate and long-term;
3. Adoption of leading safety performance indicators allowing early identification of weaknesses in risk controls;
4. Adequacy of dutyholder investigations and cross-industry learning; and
5. Effective discharge of roles and duties under the Construction (Design and Management) Regulations 2015 (CDM 2015).

1.10 To drive this, we completed the reinforcement of our construction site health and safety capability and capacity, and the roll out of enhanced training programmes and experiential learning on NSHS for all of our inspectors, to ensure that our regulatory footprint is utilised efficiently and effectively. Risk intelligence from across our regulatory purposes allowed targeted, interventions inclusive of NSHS.

1.11 Across the sector, we welcomed the Safety Directors' Forum (SDF)'s efforts to strengthen nuclear industry guidance on risk profiling and benchmarking health and safety performance metrics. We have also engaged with Nuclear Engineering Directors' Forum (NEDF) representatives on construction health and safety and CDM 2015, emphasising the importance of licensees and their supply chains actively planning, cooperating and collaborating in driving improvements at management system and project levels.

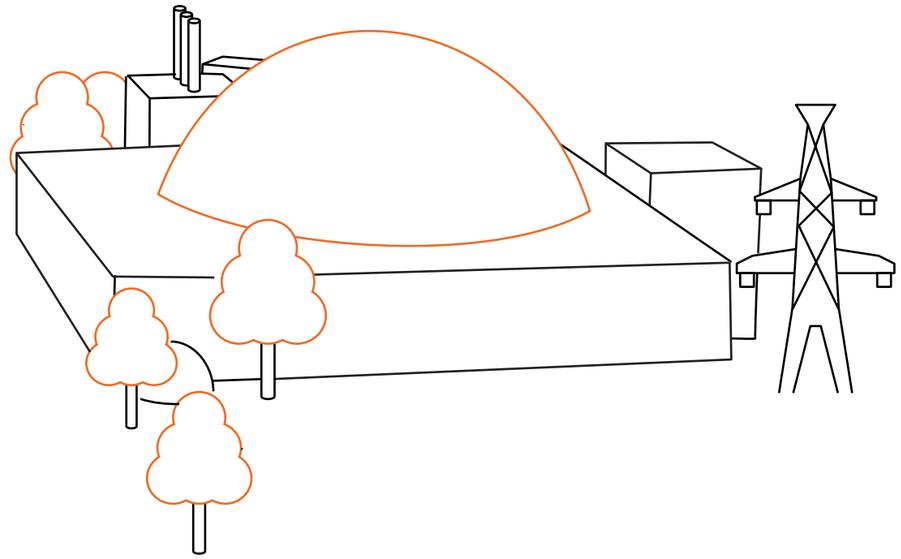
1.12 In 2024/25, we saw a slight decrease in the number of Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) reports compared to 2023/24. While this is an encouraging improvement, vigilance on NSHS remains key and we will continue to monitor this trend.

1.13 Our focus on NSHS will continue in 2025-26 as we progress the planning and intelligence gathering needed to inform our next CNI Themed Inspection, which will focus on NSHS and fire safety across selected sites during 2026-27.

Cyber security

1.14 In 2022 we promoted cyber security as a theme of regulatory focus to coincide with the introduction of the sector-wide Civil Nuclear Cyber Security Strategy, demonstrating our commitment to this. Our sustained focus during the last year has seen the conclusion of several strands of work related to the strategy, which have assessed the adequacy of:

- Executive leadership for cyber security (including governance arrangements and the prevailing organisational cyber security culture); achieved through the completion of a targeted campaign of board level engagements, followed by a series of thematic interventions focused at the boardroom and their role in driving cyber security risk reduction;
- Risk management and cyber protection capabilities, with prioritised focus on highest category sites and where interfaces exist between operational and information technology; delivered through an enabling and collaborative series of assessments to determine the potential safety consequences arising from exposure to a cyber security event, and;
- Independent assurance activity undertaken by dutyholders as part of evidencing the adequacy



of arrangements within their approved security plans; achieved by setting clear expectations within regulatory guidance that encourages the employment of suitably qualified and experienced specialists to undertake intelligence-led assurance activity, which provides confidence that security arrangements are adequate to defend against the continuously changing threat environment.

1.15 Regulatory intelligence gathered through our thematic inspection activity has enabled us to gain a deep understanding of cyber security capability at both the dutyholder and sector-wide levels. To maintain this focus, and enable delivery of the commitments made within the sector-wide strategy, I will retain cyber security as a dedicated theme throughout the strategy's duration (2025/2026).

1.16 This recognises our continued role in driving further improvements in this area and delivering an overall uplift in the civil nuclear sector's cyber security defence and recovery capability. In the year ahead, we will prioritise:

- Ensuring our regulatory framework remains fit for purpose; achieved by ensuring cyber security expectations are adequately aligned with other critical national infrastructure, internationally recognised good practice, and supports any broadening of regulatory focus to include resilience across the civil nuclear sector.
- Raising dutyholder awareness of emerging technology and cyber security risk. Part of our continued effort to enable dutyholders to prepare for and embrace innovative solutions and advances in technology in a mature and risk informed manner, through the production of clear advice and guidance.
- Supporting dutyholders to return to routine regulatory attention for cyber security; delivered through proportionate and enabling regulatory engagement by suitably qualified and experienced cyber security inspectors with prioritised focus on supporting delivery of 'route to routine' plans that address compliance gaps in areas of greatest cyber security risk.

CNI themed inspection on climate change

1.17 The Chief Nuclear Inspector's (CNI) themed inspection on climate change was commissioned in response to scientific evidence that the UK climate may be changing at a faster rate than anticipated. The inspection started in 2023 with the aim of seeking assurance that the nuclear industry:

- Understands and has taken account of recent climate change projections in relevant safety cases and hazard definitions.
- Is able to demonstrate that activities are and will remain safe and secure in the future, subject to the reasonably foreseeable effects of climate change.
- Has effective arrangements to monitor and review climate change information to determine if additional measures are needed to ensure that activities remain protected in the future.

1.18 The inspection had a positive response from the nuclear industry and identified areas of good practice as well as constructive learning for industry and ONR.

Inspection phases

1.19 The CNI Themed Inspection on Climate Change was divided into phases across a two-year period.

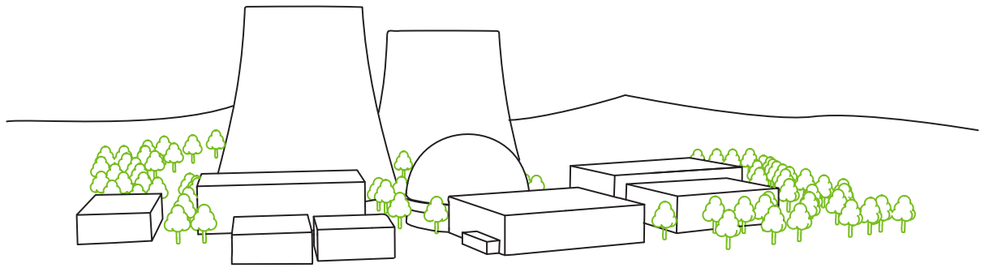
Phase 1 – Self-assessment questionnaire (Financial year 2023-24)

1.20 We requested 14 dutyholders for 32 sites to complete a self-assessment questionnaire, providing information on their arrangements and resilience in relation to climate change effects. The outcome was described in the previous CNI report.

Phase 2 – Site-based inspections (Financial year 2024-25)

1.21 Sites were selected for inspection, informed by the self-assessment questionnaires and other factors such as nuclear safety risk, and operational lifetimes, to provide a representative sample of different facilities across the GB nuclear industry.

1.22 Five inspections were undertaken between June and October 2024 to provide greater insight into how licensees are managing climate change effects and associated risks. The Environment Agency



and the Defence Nuclear Safety Regulator (DNSR) attended relevant inspections, which contributed to sharing learning and effective collaboration between regulatory bodies.

1.23 We formed an overarching judgement from each inspection as to whether our regulatory expectations in relation to climate change had been met.

Conclusions

1.24 The CNI Themed Inspection on Climate Change did not identify any fundamental issues in relation to the current safety of nuclear sites against external hazards. However, dutyholders will need to complete work to strengthen the resilience of their facilities against the future effects of climate change in the medium- and long-term. A summary of findings is available on our website (summary of our findings)[1].

1.25 As a result of the inspection, my predecessor sent a letter to all licensees communicating the outcome of the inspection and our expectations regarding climate change. We will follow up on the findings through risk-informed and targeted activities in relation to external hazards, to ensure dutyholders complete the work required to make facilities resilient against the future effects of climate change.

1 The final CNI inspection report on climate change fell outside of this reporting period but was issued before this report, hence its inclusion.

Areas of industry and regulatory focus

Regulating national infrastructure priorities

1.26 As the independent nuclear regulator we are conscious of the need for the UK to maintain energy security, the government's aspirations to achieve net zero and the need to deliver successful major investment in defence nuclear. We will continue to regulate in an enabling manner, working constructively with new build developers, the MoD on naval nuclear propulsion and strategic weapons programmes, and with EDF on its lifetime extension ambitions. We will continue to embrace an ever more enabling and collaborative approach, which will ensure the industry achieves the required standards of safety and security in the most practical way.

1.27 We welcomed the establishment of the independent Nuclear Regulatory Taskforce to consider ways to speed up the delivery of new nuclear projects and the opportunities it presents. We look forward to providing further regulatory expertise and evidence to help inform the taskforce's final report.

1.28 We continued to engage with Great British Nuclear (GBN)[2] to provide regulatory advice relating to its technology selection process and preparations for establishing development companies (prospective nuclear site licensees/operators). We have also used these engagements to understand GBN's schedules and priorities and will take an enabling approach to the regulation of its proposed projects while protecting workers and the public by upholding safety standards. Our engagements also ensure that GBN's decision-making and our regulatory strategy towards future nuclear projects are aligned, and informed by the significant learning from the regulation of HPC, SZC and international operational experience.

1.29 In the area of AGR lifetime extension, and having consideration for handing over a viable asset to NRS for decommissioning, we have been influencing EDF to allocate sufficient effort and resource to support effective plant stewardship. Part of this includes ensuring those involved have the capability and capacity to carry out their role and look after those systems that they have responsibility for. As a result of our approach, EDF has reviewed and bolstered resource in key areas. Their strategy addresses this key aspect to underpin lifetimes and hand over a viable asset to NRS.

1.30 We have targeted conventional safety compliance within EDF to gain the necessary confidence that they have implemented adequate arrangements to keep staff safe on site. Our focus has included electrical safety, process safety, building fabric and work at height (including dropped objects).

2 The use of Great British Nuclear (GBN) reflects this reporting period. The name change to Great British Energy – Nuclear occurred post the reporting period.

Lifetime extensions and long term operation for existing reactors

1.31 EDF requested we review the technical and safety case considerations of its lifetime review paper and supporting documentation, which were intended to support its decision on whether to seek further life extensions for the operating AGR power stations.

1.32 Our review was informed by our risk-informed and targeted engagements (RITE) policy, targeting whether the scope of EDF's own lifetime review was reasonable and captured the expected technical challenges and risks arising from any lifetime extension.

1.33 Our review did not identify any significant new issues to prevent potential life extensions of the operating AGRs. However, our review highlighted a number of issues and matters not fully covered in EDF's lifetime review paper including, steel structural integrity with the boilers and hot box dome, corrosion management of insulated components operating beyond design life and sufficient consideration of plant obsolescence and shortage of spares. Many of the findings and challenges are subject to normal regulatory attention as part of regulating the current operations of the AGR fleet. Although these are not considered a blocker to potential life extensions, we expect EDF to manage and resolve these issues as part of its lifetime management of the AGRs.

1.34 We wrote to EDF outlining the conclusions of our review. This letter highlighted what was required to achieve safe extended operation, which includes EDF's ongoing active management and oversight including, sufficient suitably qualified and experienced resources and the need for significant investment in safety case development and plant stewardship. Our review agreed that graphite risks represents a significant challenge to EDF for lifetime extensions, and stressed the continued need for engagement with us on related topics. We also expressed support for EDF's need for ongoing investment to manage risks from climate change and non-stationary hazards over the remaining life of the stations. It signals to EDF the nature of our regulatory interest and the potential areas we might target during the period of operation.

1.35 In December 2024, EDF announced it was extending the generating lives of the four remaining operational AGRs:

- Heysham 1 and Hartlepool have been extended by one year each, to March 2027; and
- Heysham 2 and Torness have been extended by two years each, to March 2030.

1.36 We were also requested by EDF to provide a view of their work to establish the feasibility of a long term operation (LTO) lifetime extension at Sizewell B (SZB), the UK's only pressurised water reactor (PWR). In this case, EDF is proposing a life extension from 2035 to 2055. ONR's review did not identify any issues of significance that would preclude LTO at SZB, although our detailed feedback identifies some potential gaps in EDF's assessment of the technical and safety risks.

1.37 We will continue to engage with EDF in an enabling manner in relation to lifetime extensions, and ensure it fully addresses the issues highlighted by our reviews, anticipating they may have further ambitions beyond these timescales. This requires careful consideration given the ageing effects across the operating AGR stations and the changing demographic of EDF's workforce.

AGR transition

1.38 Hunterston B is the first EDF AGR to complete defueling with the last flask of fuel leaving site on 20 February 2025. Fuel free assessment is now complete and Nuclear Restoration Services has submitted its site licence application, a sign of AGRs moving to the decommissioning phase. Following confirmation that no fuel remains on site, the regulation of Hunterston B has now been transferred to our decommissioning fuel and waste sub-directorate, which has the expertise to ensure continued proportionate regulation of a decommissioning power station.

Innovation

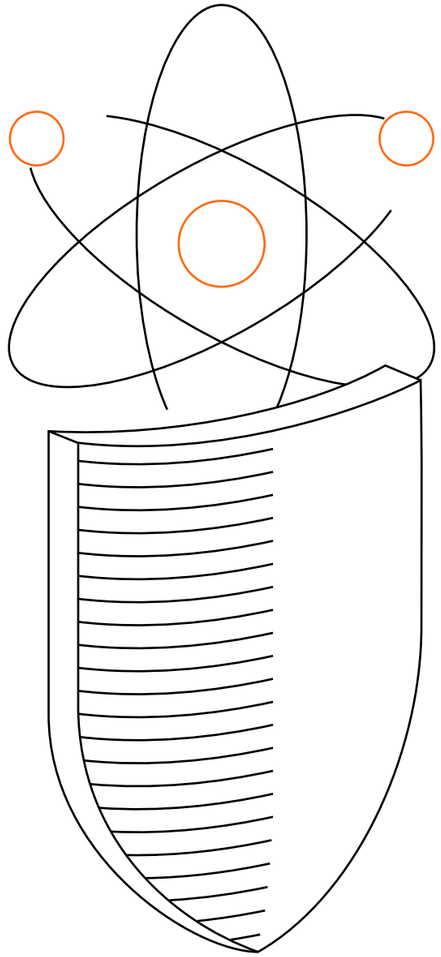
1.39 In 2024/25, we have seen positive progress in the GB nuclear industry on the benefits offered by innovation, both in terms of delivering efficiencies and accelerating risk reduction at legacy facilities and, supporting UK government growth's agenda. The industry has consistently driven innovation by developing cutting-edge technologies, enhancing product features, and improving processes to meet evolving market demands. Across the Nuclear Decommissioning Authority (NDA) estate there have been benefits from the adoption of robotics (including active demonstrators, use of mobile robotics in active environment and implementation of drones for inspection), which ONR has supported, delivering operational efficiencies and reduction of risks/ dose update to personnel.

Safeguards

1.40 Nuclear safeguards are measures to verify that countries comply with international obligations not to use nuclear materials from civil nuclear programmes for non-peaceful purposes.

1.41 The GB nuclear industry has continued to make nuclear material accountancy declarations to us, under GB safeguards regulation. We have carried out detailed analysis and regulatory information gathering, using our nuclear material accountancy system to manage these submissions. This enables us to meet the UK's international nuclear material accountancy reporting obligations to the IAEA under the Voluntary Offer Agreement.

1.42 We have continued to support the GB nuclear industry in the facilitation of IAEA safeguards activities at the facilities they have selected, ensuring the IAEA achieves its objectives and demonstrating the UK's full adherence to the Voluntary Offer Agreement.



1.43 The GB nuclear industry has provided good responses to our safeguards engagement associated with updated national guidance for the production and submission of information in compliance with the Additional Protocol (AP) between the UK and the IAEA. Declarants demonstrated commitment and transparency in their safeguards submissions under the AP, describing numerous projects and nuclear fuel related international research and development activities. The IAEA provided positive feedback on the UK declarations, noting that the improved submissions facilitated their analysis and strengthened the UK's standing with the IAEA.

1.44 The GB nuclear industry has continued to provide appropriate information for us to prepare submissions of the UK's international bilateral safeguards reporting requirements under the Nuclear Cooperation Agreements. We have supported UK government, providing technical advice and guidance as part of the UK delegation at the Nuclear Cooperation Agreement Group (NCAG) meeting. This demonstrates the UK's continuing commitment to international nuclear safeguards and compliance with international safeguards agreements.

1.45 We have continued to work closely with Government as it reviews and prepares updated safeguards regulations, providing feedback and advice based on our learning from the first four years of UK safeguards regulation. We have focused

on ensuring continued efficient and proportionate safeguards regulation in the UK, delivered through our assessment, inspection, targeted engagement, and enforcement activities. The updated regulations will be put to public consultation in the near future.

1.46 We have undertaken stakeholder engagement to ensure that our activities are transparent to operators, government, the IAEA and the public.

1.47 Our safeguards team has continued to provide advice and guidance to government on matters including its high-assay low enriched uranium (HALEU) programme, the Nuclear Fuels Programme (NFP) and the AUKUS nuclear submarine programme partnership between Australia, the United Kingdom, and the United States.

1.48 We are part of several European working groups (Implementation of Safeguards, Training and Knowledge Management, Safeguards for Final Disposal, and Material Balance Evaluation), and attend relevant IAEA expert consultancy meetings. The influencing of international guidance development, sharing learning and ideas, and providing advice and guidance on safeguards in these areas, enables our safeguards specialists to support the development of international guidance and practices that will support the GB nuclear industry in terms of consistency and transparency of regulatory expectations.

Nuclear Site Health and Safety

1.49 NSHS remained a regulatory priority in 2024-25 as we sought improvements in the management of risks to workers' health and safety across GB nuclear sites, particularly in new build construction and decommissioning.

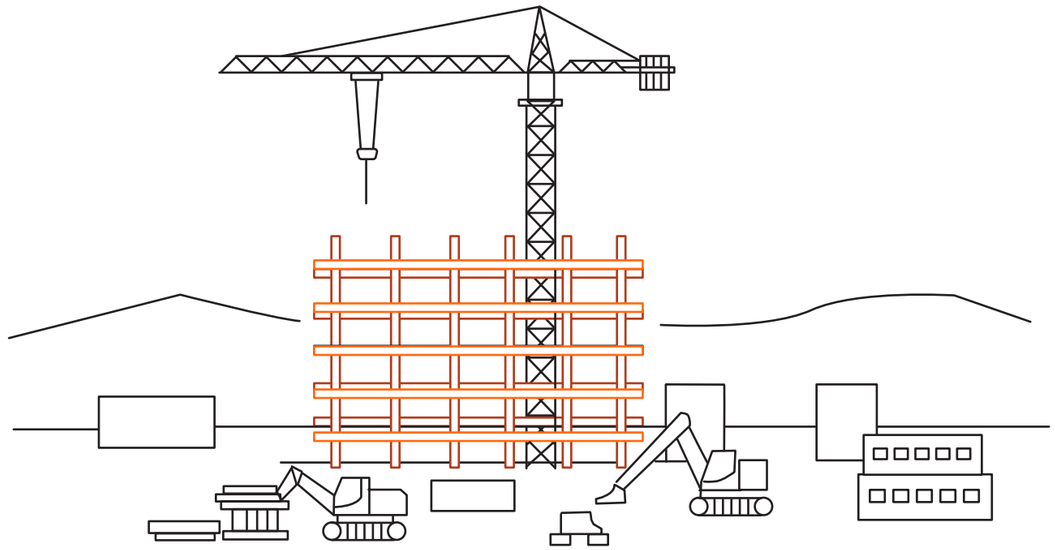
1.50 Our inspectors progressed two investigations relating to the work-related deaths at HPC in 2022 and at the AWE Aldermaston site in 2023. We also completed an investigation into health and safety breaches, which resulted in a scaffolder being seriously injured by a falling two-tonne counterweight at the Dungeness B (DNB) power station. EDF and Trillium Flow Services Ltd pleaded guilty to an offence under Section 3(1) of the Health and Safety at Work etc. Act 1974 for failing to ensure the health and safety of workers. EDF was fined £533,333 and Trillium Flow Services Ltd was fined £100,000, along with prosecution costs of £15,034 each.

1.51 Formal enforcement on nuclear site health and safety breaches included an improvement notice on AWE Aldermaston, following an incident in which an explosive component was unintentionally damaged. An improvement notice was also issued to XPO Transport Solutions UK Ltd after an employee suffered serious leg injuries in an accident involving a dropped vending machine at DNB power station. We served Sellafield Limited with two improvement notices due to breaches of The Control of Substances Hazardous to Health (COSHH) Regulations 2002 (as amended) for failing to manage the risks of working with nickel nitrate, and to prevent or adequately control exposure of workers in one of its effluent facilities.

1.52 In 2024/25, we saw a decrease in the number of RIDDOR reports; 91 reports combining data on dangerous occurrences and injuries when compared with the 115 reports submitted in 2023/24. While it represents a return to pre-COVID statistical averages, it is a cautious improvement following consecutive increases in 2022/23 and 2023/24, so vigilance on NSHS must be sustained.

1.53 Given the Government's and nuclear sector's ambitions towards major construction and deconstruction projects in GB, our early engagements and interventions have focused on organisational capability and the plans of dutyholders for discharging their responsibilities in accordance with CDM 2015, and intelligent customer capability for appointments into the principal designer and principal contractor roles.

1.54 Our focus on NSHS will continue in 2025-26 as we progress the planning and intelligence gathering needed to inform our future CNI Themed Inspection, which will focus on NSHS and fire safety across selected sites in 2026-27.



Fire Safety

1.55 In 2024/25 we conducted comprehensive fire safety inspections across licensed sites based on a risk-informed and intelligence-led basis. These inspections integrated life and nuclear fire safety assessments to enhance licensee and regulatory efficiency. The findings indicated that GB licensed sites are generally compliant with the Regulatory Reform (Fire Safety) Order 2005 and the Fire (Scotland) Act 2005.

1.56 In 2022-23, as part of the UK's contribution to the European Nuclear Safety Regulators' (ENSREG) Topical Peer Review 2 (TPR2) national self-assessment, the ongoing management of cladding risks at two sites was reviewed and found to be appropriately managed. The publication of the Grenfell Tower Inquiry Phase 2 report in 2024 provided further insights, influencing intervention priorities for 2025-26.

1.57 Throughout 2024/25, the UK continued its involvement in the ENSREG TPR2 exercise, focusing on fire protection in nuclear installations. The first phase concluded in October 2023 with the publication of National Assessment Reports (NAR); the UK report included input from GB licensees. The assessment confirmed that UK installations had appropriate fire safety measures, but identified areas for improvement, including:

1 Use of systematic hazard combination analysis; and

2 Enhancing the links between management of fire loading for life protection and nuclear safety in facilities undergoing decommissioning.

1.58 In autumn 2024, the UK's NAR was peer-reviewed by experts from other countries and was commended for its clear illustration of the self-assessment findings. Four areas of good performance were highlighted:

1. The sector-wide review of combustible cladding risks;
2. Independent verification of hot work (any work involving open flames or producing heat or sparks) at SZB;
3. Use of position monitoring on fire doors and hatches at HPC, SZB, and AGRs; and
4. At Sellafield, waste facilities implementation of automatic fire suppression to transport tug engines across the site.

Control of Major Accident Hazards (COMAH)

1.59 We continue to enforce the COMAH Regulations 2015 across three Upper Tier COMAH sites and 11 Lower Tier sites[3], working in partnership with the Environment Agency and Scottish Environment Protection Agency (SEPA). We have delivered our programme of COMAH interventions according to the sites' risk profiles and regulatory intelligence, focusing where shortfalls had been identified or anticipated changes in operations.

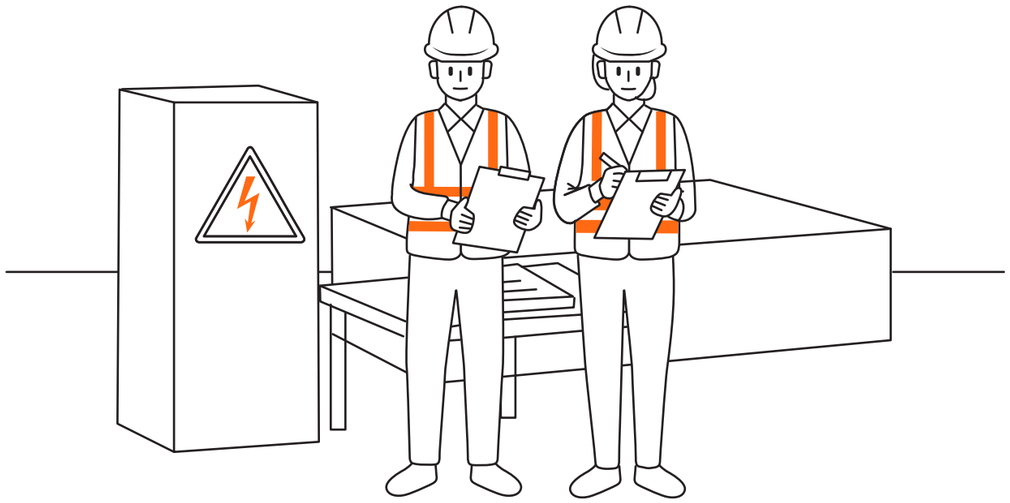
1.60 We assessed and engaged with sites on COMAH notifications associated with changes in their undertakings. This includes Regulation 6 notifications from reduced inventories linked to defueling and decommissioning operations ongoing across the EDF NGL fleet. We continue to engage with site and local authority emergency planning teams in relation to COMAH off-site emergency plans.

Vendor (supplier) inspections

1.61 We undertake an annual vendor inspection programme that considers the adequacy of licensee and vendor supply chain management arrangements. The programme targets areas of risk, and influences improvement across the GB nuclear industry. It also provides an indicator of licensee supply chain management performance. It includes suppliers who provide high risk nuclear safety related products or services, or support multiple licensees in the civil nuclear operations, decommissioning and new build sectors.

1.62 We conducted 16 vendor inspections during the period; 12 were rated Green (No Formal Action) and four were rated Amber (Seek Improvement). The shortfalls associated with the Amber rated inspections related to arrangements for supply chain management; quality planning and record management; and licensee and supplier Counterfeit, Fraudulent and Suspect Items (CFSI) risk mitigation.

1.63 The deficiencies highlighted process control, capability shortfalls and cultural weaknesses. They will be the



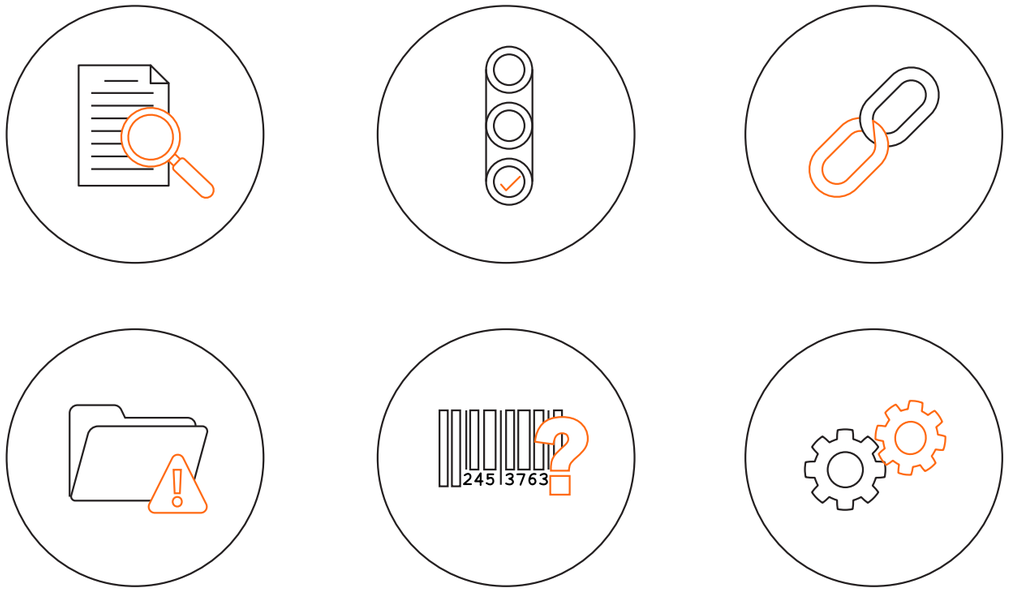
3 Upper and Lower Tier relate to the magnitude of the COMAH (non-nuclear) hazard present at the sites, which is based on the inventories of COMAH dangerous substances as laid down in Schedule 1.

subject of regulatory focus during future intervention activity to ensure our activities remain risk informed and targeted. Action was taken to ensure prompt and proportionate improvement and has resulted in reduced risk that supplied products and services could impact safe and reliable nuclear operations. (see case study 6.1.10).

1.64 CFSI risks continue to be a theme from regulatory intelligence and operating experience from national and international activity. We will continue to develop our supply chain regulatory strategy to establish approaches to prevent, detect and learn from related events. We will support collective licensees and dutyholders by sharing relevant events and learning, ensuring continued vigilance and encouraging effective risk mitigation.

1.65 The inspections rated as Green demonstrate that, in the majority of instances, licensees are effectively cascading its requirements to its supply chain organisations and are conducting oversight and assurance activities to ensure delivery to the specified intent.

1.66 GBN's formation during the reporting period has provided an opportunity for the nuclear industry to further collaborate on supply chain management and assurance activity under its leadership. We will support GBN's initiatives in this area providing our broader regulatory perspective of the opportunities to enable delivery of efficiencies and associated risk reduction.



Overview of sites in enhanced and significantly enhanced regulatory attention during the reporting period

AWE Aldermaston

1.67 AWE continued to make progress across several key areas of regulatory focus at the Aldermaston site. These included leadership, organisational capability, decision-making, and internal assurance and challenge. Demonstration of a sustained period of performance allowed us to move the site to routine attention for nuclear safety in March 2025.

Devonport Royal Dockyard Ltd (DRDL)

1.68 DRDL remains in enhanced regulatory attention. During the previous reporting period, we implemented a revised regulatory strategy, which was supported by a Level 1 RI – our highest level. With our continued support and oversight, DRDL responded positively and delivered the agreed safety outcomes associated with leadership, organisational capability, and decision-making, such that we were able to close the RI during this reporting period. We followed this with a related Level 2 RI for DRDL to deliver sustainable safety performance in line with expectations for routine regulatory attention. This focuses on DRDL's governance, internal assurance and challenge functions. DRDL continues to make progress and during 2025-26 we are purposefully stepping back to allow the licensee the autonomy to demonstrate improvements in the areas that have required enhanced attention. This will also allow us to gather regulatory intelligence to support our decision on the future regulatory attention level.

EDF NGL Corporate

1.69 EDF Nuclear Generation Ltd (EDF NGL) Corporate remains in significantly enhanced attention for cyber security. The licensee has continued delivery against their cyber transformation programme, which has seen significant improvements to security of both Sensitive Nuclear Information (SNI) and operational technology. We therefore closed an associated security direction. Furthermore, EDF NGL has defined and started recruitment against their new cyber security target operating model, which is required to implement enhanced governance arrangements. This has been a particular area of focus on which we have engaged EDF NGL due to both ourselves and EDF's Independent Nuclear Assurance having identified it as the root cause of the cyber security shortfalls leading to significantly enhanced regulatory attention and the associated Level 1 RI. Our enabling approach has supported the development of a solution that aligns with the company's business strategy, while meeting regulatory expectations

for cyber security. Their progress has allowed us to de-escalate the RI from Level 1 to Level 2 in the reporting period.

1.70 Notwithstanding the progress referred to above, EDF NGL will remain in significantly enhanced regulatory attention for cyber security until we have sufficient confidence that these new cyber governance and management arrangements are not just in place, but are operating effectively. In that regard, we will continue to monitor and hold the company to account for implementation of these new arrangements. Should the improving trajectory continue, we consider a return to enhanced regulatory attention for cyber security and a concurrent de-escalation to routine for the security purpose is achievable in financial year 2025-26.

Hartlepool

1.71 After completing its due process for the annual review of regulatory attention levels, we decided to move Hartlepool Nuclear Power Station into enhanced regulatory attention for safety. We made the decision based on evidence gained from ongoing engagements at the site, which have identified areas where improvements are required.

1.72 The enhanced regulatory attention level reflects the effort we are using to influence improvements in areas including conventional health and safety, the number of site incidents and the production of adequate nuclear safety cases. Our inspections and assessments continue to support the regulatory view that the station remains safe to operate. We have engaged frequently and purposefully with EDF since the initiation of enhanced attention at Hartlepool. EDF has presented us with the high-level detail of their proposed recovery workstreams that, if delivered, should address our concerns.

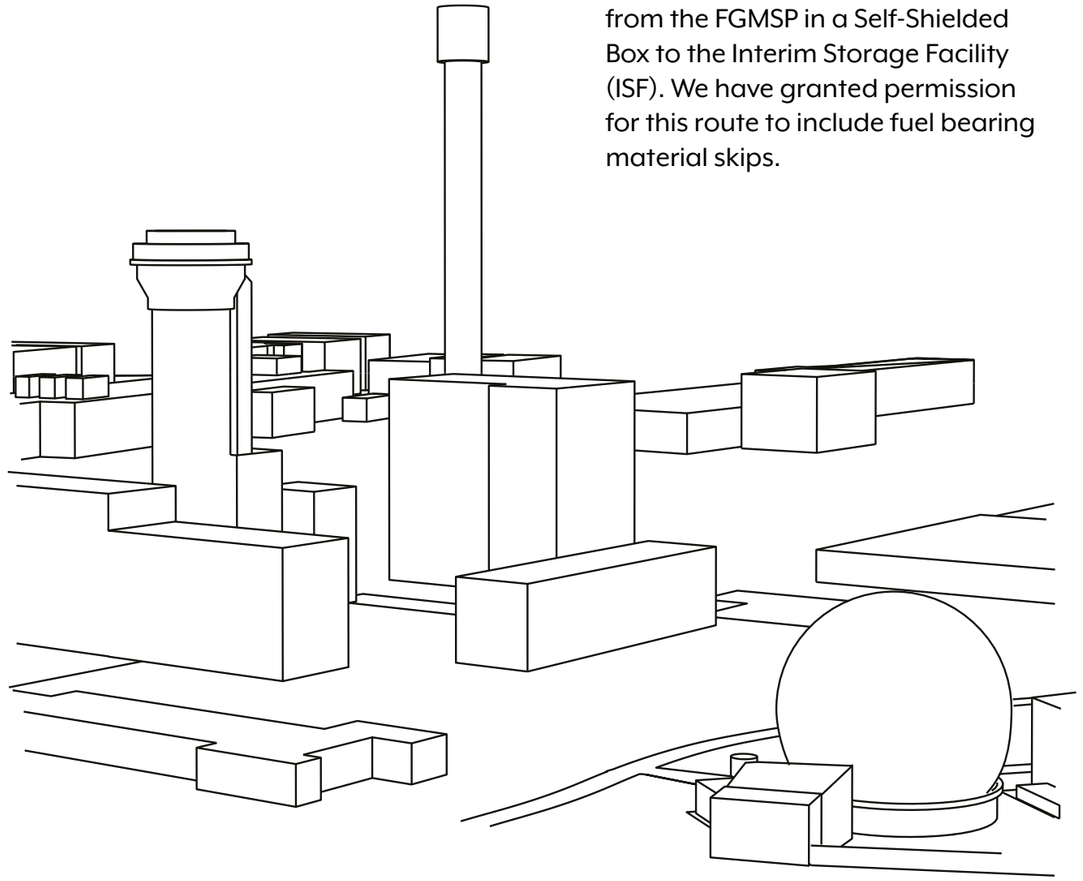
NRS Berkeley

1.73 Following successfully addressing all of the items identified in February 2022, when Berkeley was raised to an enhanced level of regulatory attention for nuclear security, the decision was taken to revert the site to a routine level in September 2024. The areas addressed included approval of the site's Security Assessment Principles (SyAPs) aligned security plan, completion of a security vulnerability assessment and sustained compliance with civilian guard force arrangements.

Sellafield Ltd

1.74 Sellafield is now retrieving waste from all of its legacy ponds and silos: First Generation Magnox Storage Pond (FGMSP), Magnox Swarf Silo Store (MSSS) and the Pile Fuel Cladding Silo (PFCS), which is in routine attention. However, limited progress has been made towards sustained retrievals at the rate required to empty these ageing facilities in a timely manner. This is an area of regulatory focus going forward.

1.75 Important milestones have been achieved this year including sustained export of zeolite skips from the FGMSP in a Self-Shielded Box to the Interim Storage Facility (ISF). We have granted permission for this route to include fuel bearing material skips.



1.76 Sellafield Ltd remains in significantly enhanced attention for safety in relation to legacy ponds and silos and Analytical Services. SNM also remain in significantly enhanced attention although continued progress against the one remaining Level 1 RI has been demonstrated. We will work with Sellafield Ltd and other key stakeholders to ensure satisfactory progress and improvement in each of these areas.

Legacy Ponds and Silos

1.77 Sellafield Ltd has made progress with waste and spent fuel retrievals from all four of the legacy ponds and silos – MSSS, PFCS, FGMSP, and the Pile Fuel Storage Pond (PFSP). However retrievals progress remains slower than expected due to a combination of technical difficulties, supply chain issues and equipment reliability. Sellafield Ltd continues to work to address these problems.

1.78 Sustained exports of legacy wastes from the FGMSP to the ISF using self-shielded boxes were notable achievements within the year. Sellafield Ltd has continued using divers in PFSP bays 11 and 12 to accelerate decommissioning, as reported in previous CNI reports, and now plans to broaden the scope of these activities within the facility.

1.79 In legacy silos, PFCS achieved the 2024/25 target for waste retrieval after an extended outage to address equipment reliability problems. The facility confirmed to us that a key decommissioning milestone, associated with early retrieval operations, was not achievable. Following engagements with us, the facility produced an action plan for re-evaluating the key decommissioning milestone within a defined time. The focus in MSSS has been on installing key modifications and preparing the facility to deliver sustained operations at retrieval rates that will achieve timely high hazard and risk reduction.

1.80 To support waste retrievals from the legacy silos, Sellafield Ltd is progressing construction of several new build facilities and implementing modifications to existing facilities. We are continuing to maintain regulatory focus in these areas to ensure we have the necessary regulatory confidence that Sellafield Limited has the key enablers in place to safely store the waste retrieved from the legacy silos and that the overall risks to people on and off site remain reduced so far as is reasonably practicable.

Special Nuclear Material

1.81 Sellafield Ltd has made good progress against RIs associated with improvements to, and remediation of, some of its ageing SNM facilities. Last year, we reported that Sellafield Ltd had successfully implemented capabilities to commence overpacking and retrieval of SNM packages from Legacy Store 17 to more modern storage and the final SNM package was retrieved from the store in July 2024.

1.82 One Level 1 RI remains outstanding for SNM, which relates to safe and secure storage of the ex-Dounreay material transported to Sellafield under the Dounreay Exotics Consolidation Programme. In October 2024, we agreed to allow Sellafield Ltd to vent a sub-set of containment vessels holding former Dounreay SNM packages, and import them into medium-term storage. Sellafield has now successfully implemented this and imported a number of Dounreay SNM packages into storage, addressing a significant proportion of the inventory.

1.83 Sellafield Ltd continues to make satisfactory progress with establishing a means for retrieval, overpacking and medium-term storage of acute risk SNM packages from MOX Demonstration Facility (MDF) Lab L. It is expected that Sellafield Limited will submit a request and justification for release of the related regulatory hold point in the summer of 2025 that will allow this work to progress.

1.84 The ongoing construction of the Sellafield Product and Residue Store Retreatment Plant (SRP) is fundamental to the success of the future SNM programme. It forms part of our continued engagement and influence with Sellafield Ltd to ensure the timely implementation of capabilities required for the safe longer-term storage of the entire SNM inventory, including the material consolidated from Dounreay to Sellafield.

1.85 Analytical Services was placed into significantly enhanced attention during 2023/24. This was because analytical capability will be needed beyond 2070, but Sellafield Ltd considered that operations in the facility could not be guaranteed beyond 2040, as the facility is now beyond its original design life. During 2024/25, significant progress has been seen, but a large amount of work remains for Sellafield Ltd to achieve the operating lifetime targets for the facility. To align with this change in attention level, we have revised our regulatory approach, working closely with the Environment Agency and Sellafield Ltd's internal assurance team to focus on the outcome of viable analytical operations on the site beyond 2040. We have set key milestones related to Sellafield Ltd's work, progress of which will enable the return of the facility to routine regulatory attention.

1.86 Additionally, Sellafield Ltd remains in significantly enhanced attention for cyber security. While it is currently not meeting certain high standards that we require in this area, there is no suggestion that public safety has been compromised as a result of the identified issues. We have a detailed regulatory plan to ensure that Sellafield Ltd addresses the shortfalls, we are satisfied that it is making steady progress in resolving these.

1.87 In February 2025, Sellafield transitioned from enhanced attention for physical security

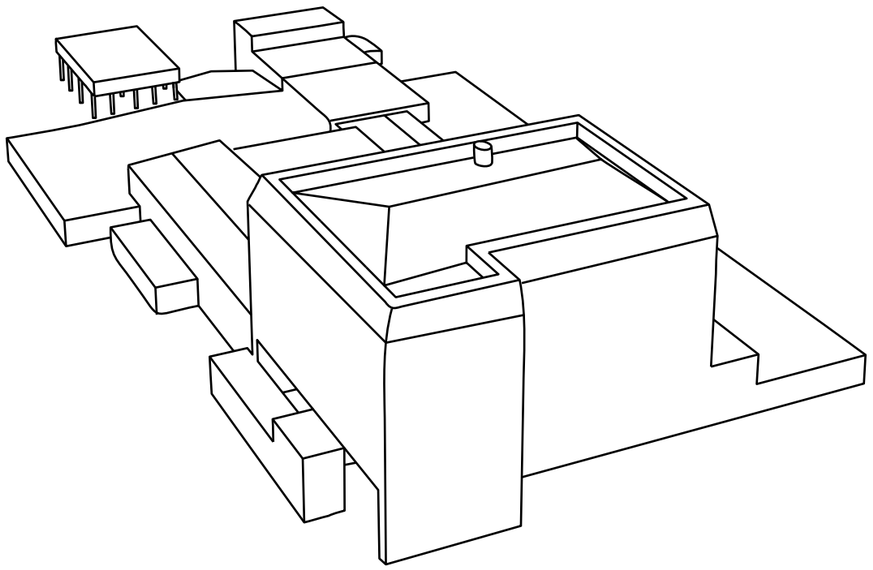
to routine regulatory attention following a period of sustained improved performance.

Springfields Fuels Ltd

1.88 Springfields Fuels Ltd was placed in enhanced regulatory attention in 2023 for cyber security following a thematic intervention on cyber security which identified significant concerns with cyber leadership and governance, the absence of an independent security assurance function and an absence of suitably qualified and experienced personnel in key security roles that limited awareness of regulatory and legislative requirements. Springfields Fuels is addressing the challenges in line with regulatory expectations but currently this level of attention is judged to be appropriate.

NRS Dounreay

1.89 In July 2024, we increased NRS Dounreay to an enhanced level of regulatory attention for safety because of unsatisfactory site performance across numerous areas: the current condition of a number of site assets (such as buildings, electrical systems, steam systems); management and compliance with various aspects of conventional health & safety legislation (such as COMAH and DSEAR); the level of management & organisational change affecting safety culture. A route to achieve a routine level of attention has been agreed with NRS Dounreay and we will continue to monitor progress against the items in the action plan.



2 Overview of performance

Overview of performance

Dutyholder performance

2.01 The following section outlines dutyholder performance by exception, covering areas where there is deviation from routine attention or significant developments during the reporting period.

Level 3

Routine attention applies to those sites, facilities, or organisations that we consider require no additional regulatory focus or effort over and above that which we would normally apply.

Level 2

Enhanced attention describes sites that, either by virtue of their safety and security performance or due to specific technical safety and security challenges, will be subject to a greater level of regulatory attention than would otherwise be the case.

Level 1

Significantly enhanced attention recognises additional factors, such as emergent or long-standing safety or security issues and/or the magnitude and nature of the risk associated with specific facilities. It may also reflect instances where we have substantially refocused our regulatory strategy to secure a specific outcome, such as accelerated hazard and risk reduction at Sellafield. We might in other circumstances assign such an attention level where the dutyholder has fundamental shortcomings in its safety or security performance or has failed to address long-standing and significant RIs.

Dutyholder performance by exception

Atomic Weapons Establishment (AWE)

Aldermaston

Regulatory attention levels

Nuclear Safety	**Enhanced** (Changed to Routine in March 2025)
Civil Nuclear Security	**N/A**
Safeguards	**N/A**

2.02 AWE Aldermaston has demonstrated sustained safety performance with a marked improvement in its demonstration of being an 'autonomous licensee'. We have undertaken a series of interventions in this reporting period to underpin our decision for AWE Aldermaston to move to routine regulatory attention. The licensee will continue to face some significant challenges in the coming years, with a large programme of capital projects and continued operations to manage. However, we consider that AWE Aldermaston has adequate processes in place to ensure it will effectively manage these challenges and ensure that safety is prioritised. Our weapons sub directorate 2025-2028 plan has defined specific themes that sets the framework for our RITE regulatory activities at AWE now they have moved to routine regulatory attention.

2.03 AWE informed us of an event that took place in the Explosives Technology Centre (XTC) facility in August 2024 when an explosive component was unintentionally damaged by workers assembling a unit for testing purposes. There was no radiological risk, but we applied our enforcement management model and accordingly issued an improvement notice. AWE has taken appropriate and timely action to improve its arrangements in response to the incident. Our priority was to simultaneously hold AWE to account for the required improvements before restarting explosive operations, while supporting them to comply with the law and safely deliver a capability of national strategic significance.

2.04 We have continued to work with AWE in closing some long-standing RIs following evidence of improvements, including two at the second highest level; one for AWE's capability and capacity and one for its decommissioning programme; both programmes have now become business as usual. This allowed us to target our resource elsewhere and the licensee to make progress in its operations.

2.05 Our investigation following the work-related fatality on the AWE Aldermaston Hub construction site in July 2023 remains ongoing.

2.06 Overall, AWE Aldermaston continues to improve, reverting to routine regulatory attention in March 2025. We will continue with our enabling approach to regulate the performance of the site to ensure that the improvements in safety performance are sustained.

Burghfield

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**N/A**
Safeguards	**N/A**

2.07 We have continued with our enabling approach at AWE Burghfield, supporting the licensee in developing the periodic review of safety (PRS) for the current assembly/disassembly facility. Our approach aids and enables AWE to comply with the law and justify the continued operation of a strategically significant capability.

2.08 Project Mensa (the new warhead assembly and disassembly facility at AWE Burghfield) is approaching the final phases of its build programme, and we are continuing to monitor its progress. We work closely with DNSR, using joint inspections and engagements where appropriate, to build confidence towards regulatory permissioning of facility operations.

BAE Systems Marine Ltd (BAESML)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**N/A**
Safeguards	**N/A**

2.09 BAESML remains in routine regulatory attention for nuclear safety. It continues to progress the small number of RIs at the Barrow site and is generally compliant against nuclear site licence conditions.

We have targeted our attention on events relating to nuclear safety, in particular procedural non-adherence. BAESML is self-aware in the areas where improvements are needed, with a mature internal regulator. We focused on gathering evidence that its improvement activities yielded the intended results and will continue this as our priority.

2.10 Our other priority during the reporting period was on BAESML addressing NSHS performance on the licensed and authorised site. A fire on the site within the Devonshire Dock Hall facility on 30 October 2024 resulted in ONR conducting preliminary enquiries. We later served an enforcement notice for improvements needed to implement suitable emergency arrangements to ensure the protection of workers in the event of a fire. Enquiries into the cause of the fire have been led by Cumbria Police, whose investigation, at the time of writing, remains ongoing.

2.11 We work closely with DNSR, with joint inspections and engagements, using a flexible permissioning approach to enable BAESML to comply with the law while delivering its future submarine build programme.

Rolls-Royce Submarines Limited (RRSL)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**N/A**
Safeguards	**N/A**

2.12 RRSL remains in routine regulatory attention for nuclear safety. We continue to monitor the progress made by RRSL on its small number of RIs as well as its continued compliance with nuclear site licence conditions (LCs), which we achieve with targeted inspections.

2.13 We recognise that RRSL has a challenging programme of delivery of significant infrastructure projects. We continue to engage with the licensee to support its compliance with the law during its ongoing installation activities, as well as its future design and construction activities. We also maintain regulatory oversight on RRSL's own improvement activities related to current and future organisational capability.

Devonport Royal Dockyard Ltd (DRDL)

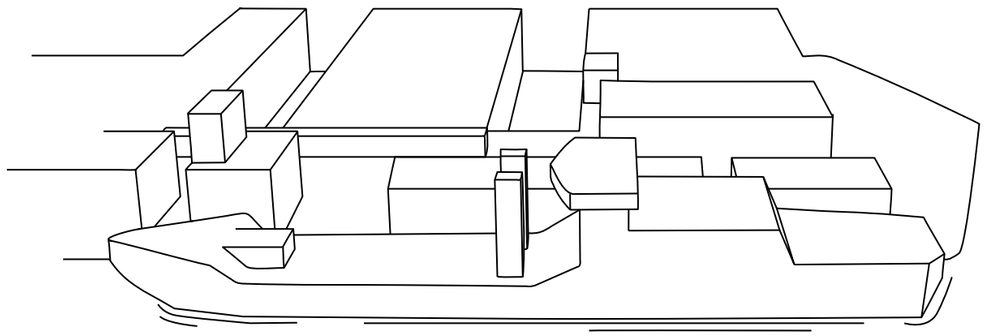
Regulatory attention levels

Nuclear Safety	**Enhanced**
Civil Nuclear Security	**N/A**
Safeguards	**N/A**

2.14 DRDL remains in enhanced regulatory attention to ensure DRDL's leadership, governance, decision making and related matters meet regulatory expectations. Nevertheless, through targeted interventions, we continue to gain assurance of DRDL's compliance with legislative safety requirements including site-wide NSHS performance.

2.15 These interventions have also included proactive and proportionate inspections and assessments supporting the regulatory decisions that allowed two submarines to safely dock and commence maintenance activities. We took an enabling approach by granting permission earlier than it was needed by DRDL. We took our decision at the point that we had secured enough confidence that DRDL had the organisational capability to determine themselves when the activity could be undertaken safely. This was also key to ensuring that ONR did not delay the project and minimised the regulatory burden on DRDL. We will now focus on the continued safety compliance of these facilities and activities.

2.16 Overall, DRDL is making improvements in line with our expectations. If the site demonstrates a further period of sustained safety improvements, we will consider a move to routine regulatory attention.



EDF Energy Nuclear Generation Ltd (EDF NGL)

EDF NGL Corporate

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Significantly Enhanced** (Cyber Security)
Safeguards	**Routine**

2.17 We assessed the performance of EDF NGL's corporate centre in 2024/25 and assigned a routine regulatory attention level for safety (nuclear and NSHS). This assessment identified some areas for improvement in 2025/26, notably LC36 (organisational capability) compliance and the demonstration of adequate capability to maintain safe operations at the licensed sites and NSHS safety performance and behaviours.

2.18 We have maintained regulatory oversight of the changes taking place at EDF NGL's corporate centre as it continues to transform its business and right-size its functions to keep pace with AGR station closures.

2.19 We continue to influence and monitor developments within EDF Nuclear Services. We permissioned a change in ownership in December 2024 from a business unit wholly owned by EDF to a standalone organisation jointly owned by the three licensees: NGL, HPC and SZC. Nuclear Services holds technical expertise seconded from NGL and HPC to deliver licensee work activities and build future nuclear skills.

2.20 In 2023-24, we issued EDF NGL with two security directions and raised a level 1 RI. These were needed to hold them to account and drive required improvements to their cyber security arrangements. With our oversight, EDF has now completed the work required under the two security directions allowing both directions to be formally closed.

2.21 In respect of governance, the new cyber security operating model has been defined and EDF NGL has been successful filling the identified posts. While the first governance cycle has been completed, these arrangements are currently at an early stage. The associated management of change (MoC) will be subject to a post implementation review to facilitate optimisation.

2.22 We will continue to conduct targeted intervention activity to enable and influence EDF NGL in cyber security, seeking evidence that improvements to governance, risk management and assurance are being delivered effectively and transitioned into sustainable business as usual. While work remains, we judged that EDF NGL had progressed sufficiently against their cyber transformation programme to support a decision to de-escalate the RI to level 2 during the reporting period.

2.23 Separately, we sent EDF NGL an enforcement letter requiring improvements to be made to their assurance of personnel security measures across the stations. EDF satisfactorily addressed these shortfalls within the year and the associated level 3 RI was closed.

Dungeness B (DNB)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.24 DNB is no longer generating electricity, meaning there are significantly reduced levels of decay heat within the reactor. As a result, hazard and risk from reactor faults is low. Defueling commenced in mid-2023 and has continued during the reporting period. We have therefore been able to target our safety case assessment and permissioning activities, enabling DNB to make progress in reducing risk at the station.

2.25 DNB has started to deliver tangible improvements in performance particularly in relation to defueling progress. The site exceeded all defueling targets for 2024 and delivered a reduction in nuclear safety related events connected to configuration/operational sharpness.

2.26 In November 2024 EDF and Trillium Flow Services were fined a combined total of £633,333 after a scaffolder was seriously injured by a falling two-tonne counterweight in June 2022. Our investigation discovered shortfalls in planning and resources with health and safety practices falling below appropriate standards.

2.27 Consequently the conventional health and safety performance and related enforcement history have led to DNB being assigned enhanced attention in this area. However, we judge that these do not warrant enhanced regulatory attention overall for DNB. The site has appointed a compliance lead and is carrying out work to enhance its conventional health and safety performance. The importance of conventional safety means that in 2025-26 we shall target our activity at ensuring DNB moves to more proactive management of this area.

Heysham 1 and Hartlepool

Regulatory attention levels

Nuclear Safety	**Heysham 1 – Routine** **Hartlepool – Enhanced**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.28 As discussed in paragraph 1.35, in December 2024 EDF announced aspirations to operate Heysham 1 and Hartlepool to 2027.

2.29 Results from graphite inspections at Heysham 1 and Hartlepool during the reporting period continue to increase EDF's and our confidence that both stations can continue to generate to the declared dates. However, we are ensuring that the licensee underpins safe ongoing generation with robust safety justifications and security arrangements.

2.30 There is an elevated station risk at both Heysham 1 and Hartlepool from boiler feed diversity, which we oversaw via two level 3 RIs. Town's water supplies can be used as an alternative water supply for the boiler feed, so other options are being explored by EDF, and an updated safety case is being prepared.

2.31 As discussed in para 1.71, we made the decision to move Hartlepool nuclear power station into enhanced regulatory attention for safety. We made the decision based on evidence gained from ongoing targeted engagements at the site which have identified areas where improvements are required. We have worked closely with EDF to ensure they develop an action plan to address areas of regulatory concern, against which we can hold them to account and influence progress.

Heysham 2 and Torness

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.32 We continue to monitor the progress of keyway root cracking at Heysham 2 and Torness, with debris from associated seal ring groove wall cracking and the movement of fuel being the major considerations. Inspection findings continue to be at the upper end of fuel channel brick cracking expectations, meaning EDF's modelling is accurate enough to justify continued safe operation of the reactors, with appropriate safety margins. However, we are engaging with EDF in respect of the plant improvements and safety case work which substantiate safe continued operation of the ageing graphite cores. We will monitor this activity closely.

2.33 We have issued two enforcement letters at Torness (in 2023 & 2024) relating to life fire safety issues in the administration, workshop and stores areas of the site. The station's initial response was not adequate, and we held them to account for more meaningful improvements. Since we issued the second enforcement letter and conducted a formal holding to account meeting in July 2024, the station is now making adequate progress to address this shortfall.

Hinkley Point B (HPB) and Hunterston B

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.34 HPB ceased generation in August 2022, and Hunterston B in January 2022. As discussed in para 1.38, Hunterston B is now fuel free. HPB continues to be defueled under our oversight and is progressing well; HPB Reactor 4 is now completely defueled and Reactor 3 is expected to be fuel free by December 2025.

2.35 We continue to oversee preparations for the effective transfer of the site licences from EDF to NRS (see paragraphs 1.08 and 1.38) and development of the Hunterston B post-defueling safety case, security plan, safeguards accountancy and control plan and decommissioning plan. We are satisfied with the good working relationship between EDF and NRS, essential for an effective transfer of the site and the continued safety of activities

2.36 As a result of the decrease in risk at these stations, we took the decision to transfer Hunterston B to our decommissioning fuel and waste sub-directorate following confirmation that the station was free of fuel, ensuring a continued proportionate approach to regulation.

Sizewell B (SZB)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.37 EDF NGL continues work to establish and confirm the feasibility of long term operations (LTO) of SZB, beyond its original design life, moving from 2035 to at least 2055 (a 60-year operational period). Following a programme of work to examine all significant safety, technical and commercial issues, we engaged with EDF NGL on the feasibility of life extension and judged there were no issues of significance that would preclude LTO at SZB. However, our detailed feedback to EDF NGL identifies some potential gaps in their assessment of the technical and safety risks which will need to be resolved.

2.38 As a result of our assessment of the SZB periodic safety review, we judged the systematic review of the hazards and deterministic safety cases undertaken by EDF to be inadequate and that improvement was required in the time taken to resolve PSR shortfalls. None of these in isolation or combination was significant enough to prevent ongoing operation of the reactor. However, the licensee has acknowledged these shortfalls, and we have agreed the scope of the work required to resolve them, which we shall oversee.

2.39 We take account of international operating experience (OPEX), particularly a US nuclear power plant which has a similar design to SZB, which has discovered cracking in its core barrel. EDF NGL considered this in relation to SZB and carried out additional inspections at the re-fuelling outage in November 2024. No anomalies were found but the OPEX from Robinson Unit 2 continues to develop. So we are overseeing the station's case for continued operation, ensuring it remains robust and risks are reduced as low as is reasonably practicable (ALARP).

2.40 During the reporting period, SZB has experienced several incidents that have challenged their compliance with conventional safety legislation, particularly in the areas of electrical safety and lifting operations. Following application of our Enforcement Management Model, we have taken appropriate and proportionate enforcement action to influence the necessary improvements.

Nuclear Restoration Services (NRS)

Regulatory Attention Levels for NRS Corporate

Nuclear Safety	**N/A**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.41 Nuclear Restoration Services Ltd currently consists of 13 licensed sites: Bradwell A, Berkeley, Chapelcross, Dounreay, Dungeness A (DNA), Harwell, Hinkley Point A, Hunterston A, Oldbury, Sizewell A (SZA), Trawsfynydd, Winfrith and Wylfa. This section specifically refers to the corporate entity not the respective sites.

2.42 EDF's AGR sites will start transferring to NRS in 2025-26 with Hunterston B expected in April 2026 followed by HPB. We have been working with NRS to ensure that the transfer is both safe and secure. This includes overseeing NRS restructuring to allocate a Managing Director for sites that have a sister station (such as Hunterston A & B) and those that are solo (such as Berkeley), to ensure there is no impact on safety, security or safeguard performance.

2.43 We are working in an enabling manner with NRS to achieve appropriate security outcomes across its various sites. This involves appropriate Home Office police force engagement across several NRS locations. NRS performs adequately in terms of cyber security and information assurance (CSI&A).

2.44 Major dismantling projects continue across the NRS sites despite uncertainties regarding future funding. The principal hazard reduction activity on most sites remains the retrieval and packaging of intermediate level waste into modern storage facilities, pending long-term disposal routes becoming available. These projects are inspected and permissioned by us in a proportionate and targeted manner considering both the lessened nuclear risks on site but potentially higher conventional safety risk due to challenges of decommissioning compared with operation.

2.45 ONR and the NRS corporate centre have also been collaborating in reducing regulatory burden this year with several initiatives such as removing legacy licence condition specifications (See case study) and approvals.

Berkeley

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.46 Berkeley was removed from enhanced regulatory attention for protective security following the completion of an investigation in June 2024. Berkeley is continuing with waste retrievals from the vaults and shielded area and packaging them for interim storage in the on-site storage facility. NRS Ltd reassessed the funding available for the blower hall remediation project following the government's spending review and regulatory attention will focus on ensuring that the area is in a safe state to re-enter a period of care and maintenance.

Trawsfynydd

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.47 Trawsfynydd is the lead site for early dismantling of NRS's reactor fleet. A critical enabler to this strategy is the height reduction of the reactor buildings, and our inspectors are regulating the application of the Construction (Design and Management) Regulations 2015 to ensure activities will be undertaken safely. NRS is in the process of appointing the principal contractor for the project, with work expected to commence in 2025/26.

Dungeness A (DNA)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.48 At DNA, our inspectors are regulating the preparatory work required for safe demolition of the boiler annexes and removal of the boilers, as well as regulating the application of the Construction (Design and Management) Regulations 2015 to ensure that health and safety is fully considered in the design phase of the main demolition project. We have recognised the conventional health and safety/construction risk profile of this project and appointed a Nuclear Site Health and Safety Specialist as project inspector to oversee this work.

Dounreay

Regulatory attention levels

Nuclear Safety	**Enhanced**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

2.49 The interim end state of the Dounreay site (the point at which all operational buildings would be demolished, and the waste would be within interim stores) was previously predicted to be in the 2030s; however, it has been known for some time that the plans for the Dounreay site would be subject to review and associated dates would need revision. Recently, NRS Dounreay has produced a revised lifetime plan which now identifies that the interim end state should be achieved later than the original 2030s date. This would bring about a substantive increase in both time and cost from previous predictions. We have been working with Dounreay to understand the implications of the revised site lifetime and to ensure key enabling assets (such as: buildings, electrical supplies, utilities) remain appropriate for the new life of the site. Dounreay has been focused on a number of key asset improvement projects to ensure their assets will support future mission delivery.

2.50 There have been several industrial relations issues at the Dounreay site in 2024 which had an impact on site activities. However, commitment to safety and security during this period has been maintained. We continue to monitor the impact of industrial action on site with regard to our regulatory purposes and progressing decommissioning activities.

2.51 Dounreay is currently in enhanced regulatory attention for safety due to the current condition of a number of site assets (such as buildings, electrical systems, steam systems), management of conventional health & safety legislation (such as compliance with COMAH, DSEAR) and the level of management & organisational change affecting organisational safety culture. These matters have been discussed with NRS and site management, who demonstrate an understanding that the route out of enhanced attention was not just about addressing the associated RIs, but in dealing with the root causes of why the regulator is identifying these issues. We continue to hold Dounreay to account in these areas, as well as establishing regulatory arrangements to support Dounreay to return to routine regulatory attention.

2.52 In January 2024, the NDA and MoD announced plans to transfer Vulcan Naval Reactor Test Establishment (NRTE) to NRS for decommissioning with the intention to create a single site. Combining the Vulcan site with the adjacent Dounreay site will be the focus of future regulatory activity, working with the MoD, NDA and NRS to ensure this is achieved successfully, which will require suitable arrangements and evidence of appropriate leadership, management and organisational change control.

2.53 In February 2024, we issued an improvement notice over how Dounreay stores bulk alkali metal in the Prototype Fast Reactor (PFR) complex. Dounreay has now implemented improvements to the storage arrangements, including improved water protection and an enhanced monitoring regime which has enabled us to close out the improvement notice. Notwithstanding the closure of the improvement notice, we still remain concerned about the interim storage of sodium at the site and the long term plans to manage the final disposal, which is a factor in the site's enhanced regulatory attention level.

2.54 Dounreay's security performance is satisfactory and supported appropriately at the executive level. It also performs adequately in terms of Cyber Security and Information Assurance (CSI&A). Due to its remote geographical location, the Civil Nuclear Constabulary continues to employ a variety of methods to attract new recruits and retain the required officers to meet security requirements.

Winfrith

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Nuclear Safeguards	**Routine**

2.55 NRS's projects to remotely cut-up and remove the Dragon reactor using innovative laser cutting technology, and to decommission the Steam Generating Heavy Water Reactor (SGHWR), have both experienced delays. The NRS in-house decommissioning team's activities are currently progressing against a revised programme. A new cementation plant at Winfrith is undergoing commissioning that will support the decommissioning operations of both the SGHWR and Dragon reactors.

NNB Generation Company (HPC) Ltd

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Nuclear Safeguards	**Routine**

2.56 HPC construction continues at pace, with installation of key equipment taking place in the reporting period. We permissioned installation of the unit 1 RPV in November 2024, the first such activity in the UK for more than 30 years. Welding of the primary circuit[4] and planning for early commissioning and pre-operations is ongoing.

2.57 Our regulatory focus is targeted on site health and safety to protect the workforce; construction/ installation quality, to ensure that safety significant equipment is built in accordance with the design intent; and NNB's preparedness for future safe operations.

2.58 Notwithstanding our ongoing investigations and enforcement activity, actions to improve safety performance have been made by NNB in areas such as life fire safety and we consider routine regulatory attention continues to be appropriate. For this highly dynamic

4 "Primary circuit" in an EPR is a closed loop that transfers heat from the reactor core to the steam generators whilst keeping radioactive materials contained. It includes the RPV, steam generators, coolant pumps, and the pressuriser.

construction project, routine regulatory attention necessarily entails a significantly higher level of our engagement and oversight compared with the operational nuclear power stations.

Nuclear site health and safety at HPC

2.59 With ongoing civil construction, work on mechanical, electrical, and heating, ventilation and air conditioning (HVAC) – known collectively as the 'MEH' phase – and early commissioning activities, the worker population on site has grown to more than 14,000. The industrial safety record at HPC has remained largely consistent with other large-scale construction projects, and we judge that in some areas, such as health monitoring of the large workforce, NNB is industry-leading.

2.60 NNB is adequately discharging its duties to coordinate and control all its contractors and thereby managing the significant NSHS risks present on such a large and complex site. We judge that there is a healthy reporting culture, ensuring that when events occur they are investigated, and measures are implemented to prevent recurrence. Those undertaking work on the site have been open and transparent in their dealings with our inspectors and have cooperated fully with all regulatory queries.

2.61 We have influenced NNB to maximise learning and improvement in specific areas, such as lifting activities. There has also been a demonstrable improvement in the arrangements for managing the life fire risk on site in the period.

2.62 We served one improvement notice under CDM 2015 in relation to compliance shortfalls in planning, management, and monitoring by NNB as the principal contractor. This related to a dangerous occurrence involving a tower crane, which was reported to us under RIDDOR.

2.63 We also issued enforcement letters to Bylor joint venture members (Bouygues Travaux Publics SAS and Laing O'Rourke Delivery Limited) in relation to the same incident.

2.64 We issued enforcement letters to the MEH joint venture members (Altrad Babcock Ltd, Altrad Services Ltd, Cavendish Nuclear Ltd, NG Bailey Ltd and Balfour Beatty Kilpatrick Ltd) for compliance shortfalls in fire safety arrangements against the Regulatory Reform (Fire Safety) Order (FSO) 2005.

2.65 NNB, Reel UK Ltd and Bylor Joint Venture satisfactorily complied with the enforcement notices issued under the FSO, noted in the previous report.

2.66 There are two formal investigations in progress relating to NSHS events, including into the work-related death that occurred in November 2022. We are unable to include further details here as this matter is now subject to legal proceedings.

Nuclear safety at HPC

2.67 Our nuclear safety focus areas are ensuring design intent and hence future through-life nuclear safety:

- oversight of manufacturing, delivery, on-site fabrication, installation, and commissioning of equipment;
- permissioning and oversight of component installation for the nuclear steam supply system (NSSS) making up the primary circuit;
- assessment of significant management of organisational change proposals that impact on safety and security leadership and governance;
- appropriate follow-up of any whistleblower reports and responding to a large volume of Freedom of Information (FOI) requests and public queries;
- assessment of the safety case that will support delivery of fuel to site and subsequent commissioning activities; and
- learning from other European Pressurised (Water) Reactor (EPR) projects.

2.68 We have carried out inspections focused on NNB and its supply chain to gain assurance in the quality of equipment important for nuclear safety. This has focused on equipment that is significant and/or complex, and/or where there has been notable operational experience that we can take learning from. For example, this included an inspection of the unit 1 polar crane, which concluded that activities met relevant good practice in relation to Work at Height Regulations (WAHR) 2005, Provision and Use of Work Equipment Regulations (PUWER) 1998, and Nuclear Site Licence Condition (LC) 21 (Commissioning) and LC 28 (Examination, inspection, maintenance, and testing).

2.69 We gave permission for the installation of the Unit 1 RPV following an extensive assessment of the underpinning safety case and arrangements governing its safe installation, and concluded that the vessel could be installed safely.

2.70 We also permissioned the commissioning of low voltage (LVL) boards as a key enabling activity. The primary purpose was to gain early confidence in arrangements to support bulk commissioning activities that will begin in 2026. The LVL boards have a relatively low nuclear safety significance, however it represented the first key commissioning activity on site. This activity influenced notable improvements to the commissioning arrangements, such as scalability, quality and availability of records, control of temporary equipment and devices etc. that will be implemented prior to major commissioning activities.

2.71 We assessed and agreed to a management of change request involving senior level changes to the NNB board and organisation having concluded that the governance arrangements underpinning these changes were robust. These included

establishment of a new safety and schedule assurance function, led by the Safety and Schedule Assurance Director and, supported by two new director posts; the Independent Nuclear Regulation (INR) Director and a Safety, Health and Environment Director. We are working constructively with NNB to ensure the effective implementation of these changes, which will be subject to an independent post implementation review and inspection.

2.72 As part of our focus on the maintenance of an adequate organisation capability, we continue to monitor developments within Nuclear Services. Nuclear Services holds technical competence seconded from NGL and HPC, to deliver licensee work activities. We assessed and permissioned the change in ownership of Nuclear Services from a business unit wholly owned by EDF to a separate legal entity, Nuclear Services (Technical) Company Ltd., owned by the three licensees HPC, SZC and NGL. This was to ensure that adequate technical resources are available when required, and that licensees maintain control of the work that could impact on nuclear safety.

Nuclear security at HPC

2.73 NNB continues to manage site security adequately as the security risk profile gradually increases, with proportionate arrangements in place for this phase of the project. We remain engaged in the development of the operational security regime, and the project is proactive and adept at anticipating and mitigating issues and challenges that arise.

2.74 NNB has made steady progress in addressing shortfalls in cyber security and information assurance arrangements identified in previous years. This includes investment in cyber security organisational capability, development of its governance and management model, and making improvements in assurance and oversight. Development of cyber security controls for the operational phase of the project are progressing adequately.

Nuclear safeguards at HPC

2.75 We remain engaged with NNB on the production of its basic technical characteristics, accountancy and control plan and overall nuclear material accountancy system, with a focus on any qualifying nuclear material being brought onto the HPC site to enable compliance with the Nuclear Safeguards Regulations 2019. We are content that NNB is making adequate progress in developing the necessary arrangements and procedures to comply with Safeguards Regulations.

Nuclear Waste Services (NWS) – Low Level Waste Repository (LLWR)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Nuclear Safeguards	**Routine**

2.76 Engagement continues on the implementation of organisational changes to become NWS; no concerns have been identified during the first year of operating as a single legal entity.

2.77 We welcome the work undertaken by LLWR to understand the challenges relating to the waste treatment framework and review its waste acceptance procedure to improve waste flow from producer to treatment and disposal routes.

2.78 We will work with LLWR as the site implements the government's revised policy framework for managing radioactive substances and nuclear decommissioning, which outlines a risk-informed approach to radioactive waste management

Sellafield Ltd

Regulatory attention levels

Nuclear Safety	**Significantly enhanced for First Generation Magnox Storage Pond, Magnox Swarf Storage Silo, Pile Fuel Cladding Silo, Special Nuclear Materials Facilities and Analytical Services.**
	Enhanced for remainder of estate
Civil Nuclear Security	**Significantly enhanced for cyber security**
	Routine for protective security
Safeguards	**Routine**

2.79 The Sellafield site remains a high regulatory priority. The most hazardous legacy ponds and silos and special nuclear materials areas will continue to receive significantly enhanced regulatory attention for nuclear safety reasons for many years to come. Progress with remediation of the highest hazard facilities has continued, but has been slowed by technical difficulties, supply chain issues and equipment reliability challenges.

2.80 Last year, we reported that these facilities have now been joined in this highest of attention levels by Analytical Services due to delays in the Replacement Analytical Project (RAP) and significant uncertainty of the capability of the current aging facility to service the site requirements prior to the availability of RAP. Sellafield Ltd has made significant progress during the period, undertaking remedial work and risk reduction through the removal of legacy gloveboxes. A recovery plan has been developed and we will continue to gain assurance on progress against programme milestones.

2.81 We continue to seek improvements in relation to the site's high hazards and risk reduction activities. In addition, we have now embarked upon interventions to cover asset management and accelerated decommissioning where there are key enablers to progressing hazard and risk reduction activities across the site. We hold monthly senior level engagement meetings with the Sellafield management team during which consistent performance and safe delivery remain key focus areas. We have been encouraged by the consistent open and transparent approach the management team maintains and the self-reflective position Sellafield Ltd has taken on occasions when we have taken enforcement action.

2.82 There has been noteworthy progress during the year including:

- Waste is being retrieved from all of the legacy ponds and silos on site.
- Completion of active commissioning for the BEPPS-DIF facility becoming fully operational to enable storage of PFCS packages.
- We have agreed to allow Sellafield Ltd to commence exporting fuel bearing material skips from the First Generation Magnox Storage Pond (FGMSP) to the Interim Storage Facility (ISF).
- We have agreed to allow Sellafield Ltd to vent a sub-set of containment vessels containing former Dounreay SNM packages, and import them into medium-term storage.
- Significant progress in Analytical Services towards meeting facility lifetime targets that will support future high hazard risk reduction across the site.
- Relocation of previously consolidated Dounreay special nuclear material to a fit-for-purpose storage solution at the Sellafield site indicating good progress against an existing Level 1 RI.
- The operation of two vitrification lines within High Level Waste Plants (HLWP) for the first time in approximately 8 years. This resulted in significant progress against programmed targets for reduction of Highly Active Liquor (HAL) stocks within High Level Waste Plants (HLWP).

2.83 We have ensured that safety cases in support of facilities and activities adequately address the potential hazards. In addition to the activities described above, this has allowed the lifting of hold points for transfer of plutonium bearing liquors into HLWP, commencement of remediation activities in laboratories and the use of 63 can racks within the THORP storage pond.

Other facilities and site-wide matters at Sellafield

2.84 High level waste plants: The Waste Vitrification Plant continues to progress converting the site's HAL stocks into glass. Although performance has been impacted by ongoing plant ageing and reliability issues, Sellafield Ltd has operated two vitrification lines within HLWP for the first time in approximately 8 years. HAL stocks at Sellafield are reducing in terms of both volume and heat load. We continue to retain oversight of the HAL stock levels and vitrification performance.

2.85 Industrial safety: Performance in this area has continued to be variable during the reporting period. We have served three improvement notices relating to nuclear site health and safety within the year; two relate to the handling and general arrangements for the non-radiological chemical nickel nitrate, and a third relates to the collision of two flatbed railway carriages during shunting operations.

2.86 Sellafield Ltd has complied with one of the two nickel nitrate notices, with the second currently due, at the time of writing, in September 2025. Sellafield Ltd has also complied with the railway collision notice, with suitable and sufficient arrangements to allow risks to be appropriately managed and prevent similar occurrences in the future. We are encouraged by the understanding Sellafield Ltd has on the need to improve its risk profiling for conventional safety across the site, but this now needs to be developed and implemented and we will keep close oversight of this work.

2.87 Incidents, investigations, and enforcement: Notwithstanding legal obligations, we continue to observe an open and positive reporting culture of security, nuclear, radiological and conventional safety events at Sellafield, which we welcome and strongly encourage. There have been three INES Level 1 (anomaly) events this year. Several events have resulted in preliminary enquiries or investigations, and which resulted in three enforcement letters and three improvement notices being issued to Sellafield Ltd.

2.88 Emergency preparedness and response: Sellafield Ltd undertook a Level 1 safety demonstration with an exercise based on a fire at the PFCS during this reporting period. The scenario provided a challenge to the responders with an emergency intervention, casualty and radiological release. We assessed the exercise as Green

against LC 11 on the basis that Sellafield Ltd had adequately demonstrated the application of their emergency arrangements.

2.89 Decommissioning and Post-Operational Clean Out (POCO): A number of inspections have taken place this year across the Sellafield site that have looked at decommissioning and POCO. We are satisfied with the planning, transition and progress of decommissioning and post operational clean out by Sellafield Ltd at the corporate level and, for facilities, we are also satisfied with its planning, transition and progress of decommissioning and post operational clean out.

2.90 New Major Construction Projects: There are numerous significant new build projects on the Sellafield site at various stages of design (such as BEPPS2) and construction (such as the Site Ion Exchange Effluent Treatment Plant Continuity Plant (SCP) and the Sellafield Product and Residue Store Retreatment Plant (SRP)). We continue to engage with these projects to exercise regulatory influence before options are foreclosed, and where appropriate, implement flexible permissioning regimes to help mitigate project risk.

Security and Safeguards Performance

2.91 Sellafield Ltd continues to be subject to significantly enhanced regulatory attention for security overall. This is due to security risks relating to the unique nature of the hazards at the Sellafield site and the significantly enhanced regulatory attention of cyber security caused by shortfalls in dutyholder arrangements. In September 2024, we prosecuted Sellafield Ltd for shortfalls in cyber security arrangements contrary to NISR 2003. The prosecution relates to offences of cyber security shortfalls during a four-year period between 2019-2023, which resulted in Sellafield Ltd being fined £332,500.

2.92 New senior leadership at Sellafield Ltd has placed greater emphasis in addressing cyber security shortfalls which has subsequently enabled notable progress. Additionally, increased regulatory oversight has helped overall progress in Sellafield Ltd's compliance with their security plan and improved cyber security posture. While resourcing levels and Suitably Qualified and Experienced Personnel (SQEP) in cyber security remains challenging, it is hoped that Sellafield Ltd will achieve the necessary outcomes required to reduce regulatory attention to enhanced during the 2025/26 financial year. Positively, Sellafield was returned to routine regulatory attention in December 2024 for physical security. We will ensure that Sellafield Ltd continues to comply with their arrangements for physical security.

2.93 Overall, safeguards performance at Sellafield Ltd is satisfactory. Sellafield has continued to support IAEA international safeguards interventions facilitated by us. These interventions are essential to provide assurance to the international community that the UK is meeting its international nuclear safeguards obligations, agreed with the IAEA under the Voluntary Offer Agreement, and demonstrating the UK's open and transparent approach.

2.94 Sellafield is working closely with the IAEA and ONR to facilitate IAEA international safeguards implementation activities in the Sellafield Product and Residue Store (SPRS), including planning for the installation of safeguards equipment to allow the IAEA to achieve their international safeguards objectives.

2.95 There was a repeat incident of an unauthorised IAEA seal break in an IAEA selected facility at Sellafield, leading to formal enforcement action with the issuing of an enforcement letter. Sellafield has committed to an action plan to mitigate this issue, and we will maintain oversight of their efforts to ensure improvement.

Sellafield Ltd Site Tenants

2.96 UK National Nuclear Laboratory (UKNNL) Ltd is a tenant on the Sellafield site. The dutyholder's regulatory attention level for security has been maintained as routine.

2.97 Cavendish Nuclear Ltd (CNL) Ltd is a tenant on the Sellafield site. The dutyholder's regulatory attention level for security is routine.

Springfields Fuels Ltd (SFL)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Enhanced**
Safeguards	**Routine**

2.98 While the production of AGR fuel has reduced substantially during the years, with the eventual phasing out of the fleet, operator EDF Energy is seeking lifetime extensions for several of its AGRs, prolonging the expected lifetime of operations at the Springfields site. In parallel with maintaining the production of AGR fuel, SFL continues to actively pursue future opportunities for fuel manufacture and business diversification. We are actively engaged with the site to ensure the new developments and changes can be accommodated without challenging the security and safety of existing operations.

2.99 Springfield Fuels Ltd (SFL) is in enhanced regulatory attention for security. This is primarily for cyber security while it continues to resolve issues identified with cyber leadership and governance. SFL is addressing these concerns but some of the matters raised will require additional specialist staff and resources which are not a short-term matter to resolve. Additionally, SFL has updated the site's security plan to reflect the revised Physical Protection System Outcome (PPSO). We continue to influence the shortfalls being addressed by the dutyholder.

2.100 SFL is in routine attention for safeguards. The SFL Board has committed to improving their leadership and culture for safeguards, including senior level oversight of safeguards and adapting arrangements to include safeguards early in their design processes to ensure key regulatory requirements are captured. SFL is challenged with a reduction in capacity due to staffing and changes to security and safeguards management. We continue to focus efforts to ensure this challenge is managed appropriately by SFL.

URENCO UK Ltd (UUK)

Regulatory attention levels

Nuclear Safety	**Routine**
Civil Nuclear Security	**Routine**
Safeguards	**Routine**

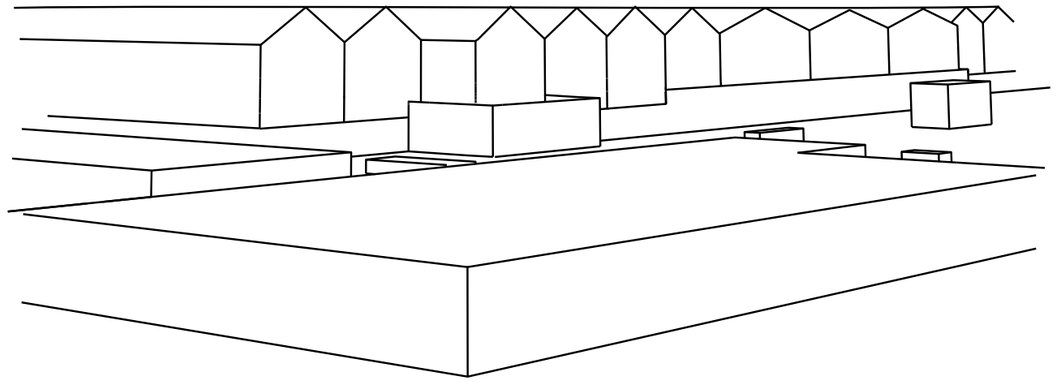
2.101 Our regulatory oversight of UUK's site-wide transformation programme at Capenhurst has continued, and we remain supportive of UUK's ambition to harmonise ways of working across the site. UUK continues to increase its organisational capacity as it embarks upon a significant expansion and modernisation programme, including the design and construction of a new High Assay Low Enriched Uranium Facility (HALEU-F) and significant upgrades to ageing uranium enrichment facilities. We are closely monitoring UUK's safety upgrades at these facilities. In light of the significant amount of work across the site, we have been actively engaged with all relevant stakeholders to ensure that existing commitments to deal with legacy uranium hexafluoride tails owned by the Nuclear Decommissioning Authority and stored on the site, are dealt within a timely manner, in a way which ensures legal duties continue to be met.

2.102 We have taken various formal enforcement actions across the site during this reporting period, to address non-compliances. The site has responded positively and we have seen a return to compliance in the areas where regulatory action was taken. We continue to investigate an incident that occurred at the Tails Management Facility (TMF) in February 2024 when a metal container weighing more than 11 tonnes was dropped from a forklift truck. Our regulatory focus in the latter part of the reporting period has been on ensuring the site's approach to managing risks arising from conventional health and safety hazards meets regulatory expectations.

2.103 UUK continues to perform adequately for security. A cyber-themed Leadership and Governance intervention was finalised in October 2024 and the licensee is addressing the issues highlighted by the report.

2.104 The IAEA continue to apply safeguards measures at those parts of the Urenco Capenhurst Site selected under the UK/IAEA safeguards agreement. We have successfully facilitated IAEA inspection activities at the site during the period and the IAEA has confirmed that all safeguards' objectives at the site were satisfactorily met during the period. UUK also saw the formal opening of a new one-of-a kind IAEA training facility for safeguards by the Director General. We were instrumental in guiding this project to fruition, along with governmental partners from the UK, USA, Germany and Netherlands, and the IAEA.

2.105 UUK has demonstrated that, during the period, implementation of arrangements for nuclear material accountancy and control across all three business areas at the Capenhurst site adequately met our expectations and are broadly in-line with the requirements of the Nuclear Safeguards Regulation 2019. We continue to monitor a noticeable trend in inventory differences concerning the decommissioning of the early centrifuges. UUK has developed plans for quantifying the amount of nuclear material hold-up to confirm processing inventory differences. We remain engaged with UUK and will continue to monitor the implementation of the new plans.



New nuclear reactors

Rolls-Royce SMR GDA

2.106 Step 2 of the Rolls-Royce SMR GDA was successfully completed in July 2024, meeting the agreed 16-month schedule. This assessment of the Rolls-Royce SMR design was undertaken with regulatory colleagues from the Environment Agency and Natural Resources Wales and concluded that there are no fundamental reasons why a Rolls-Royce SMR could not be built in Great Britain.

2.107 The Rolls-Royce SMR design is a 470MW PWR which uses mature and well-established technology deployed internationally. Innovation comes in the form of its modular approach to construction, which would see many components built in factory conditions and assembled on site.

2.108 In parallel to closing out the Step 2 assessment objectives, we engaged with Rolls-Royce SMR Ltd to agree the timescales, scope and submissions for a meaningful Step 3. This step involves an in-depth assessment of the design and supporting safety, security, safeguards, and environmental protection cases. It follows a targeted and risk informed approach to examine the available evidence that supports the claims and arguments put forward by Rolls-Royce SMR Ltd. We sought evidence of its organisational readiness and maturity to support this significant undertaking. Rolls-Royce SMR Ltd was able to satisfy us that it was ready to move into Step 3. Since August 2024, we have been engaged with Rolls-Royce SMR Ltd on this next level of detailed assessment, undertaken to a 29-month schedule defined by the reactor technology vendor's design development plans and stakeholder requirements.

2.109 ONR and its UK regulatory colleagues are the first regulators to look at this 'home grown' technology. This has required us to take a pragmatic and enabling approach to our assessment as the design is still being developed. However, we have also seen the benefits of a UK reactor technology being designed and substantiated specifically to meet UK requirements and expectations.

2.110 Despite this UK focus, Rolls-Royce SMR Ltd does have international ambitions for its technology. Rolls-Royce SMR Ltd has identified Poland, the Czech Republic, Finland, Sweden and the Netherlands as potential markets for its technology and invited regulators from these countries to attend our regulatory engagements with it during this period. We have maintained our independence and focus on GDA objectives, while helping overseas regulators increase their appreciation of the design and gain confidence in the rigour and relevance of GDA to the benefit of potential future deployment in their countries.

2.111 Rolls-Royce SMR Ltd remains a growing organisation with the challenging mission of developing a new nuclear power plant design. However, it recognises the benefits of its engagement with us through GDA, it is positive and responsive in its regulatory interactions, and it is committed to maximising the value of GDA to derisk the future deployment of its technology in both Great Britain and abroad.

BWRX-300 and SMR-300 GDAs

2.112 In this reporting period, two additional GDAs completed Step 1 and transitioned to step 2:

- Holtec International SMR-300 completed Step 1 and moved to Step 2 in August 2024; and
- GE-Hitachi BWRX-300 completed Step 1 and moved to Step 2 in December 2024.

2.113 Step 1 for both reactor technologies was focused on project initiation. It involved agreeing the scope and schedule for the Step 2 regulatory assessment of fundamental adequacy, and ensuring the Requesting Party has adequate submissions and capacity/capability to support the GDA. In both cases, we were satisfied (along with our regulatory colleagues at the Environment Agency and Natural Resources Wales) that both organisations were ready to start Step 2.

2.114 Step 1 did not reach any regulatory conclusions on the suitability of Holtec's 300MW PWR technology or GE-Hitachi's 300MW BWR technology for deployment in Great Britain, only on the readiness of the projects and the Requesting Parties to commence the assessment phase. We have observed the continuing growth of the UK capacity and capability of both organisations, sufficient to support the immediate challenge of Step 2, and to provide a springboard for the further expansion that will be needed if these technologies are ultimately taken forward for development in Great Britain.

2.115 Both GDAs are scheduled to complete Step 2 in the next reporting period (2025/2026). Neither reactor technology vendor has plans at this stage to move directly into Step 3, and therefore these GDAs will conclude without the examination of the detailed evidence to underpin the safety and security of the technology. This evidence will be required if either of these technologies are to be constructed; it is a decision for the reactor technology vendors and their stakeholders on whether to undertake GDA Step 3 or submit their designs for regulatory assessment as part of a site-specific project.

2.116 Both of these USA-based reactor technology vendors (with their relevant licensee partners) have plans to submit applications to the US Nuclear Regulatory Commission (US NRC) and are keen that we collaborate with American regulatory colleagues on the assessment of their technologies. We are equally committed to this goal to the benefit of nuclear safety, assessment efficiency and to support

the vendors' goal of a standard design deployable across multiple countries. However, it should be noted that during the reporting period, US NRC had not received a complete application for these two technologies, and so collaboration has been limited to narrow technical areas for which it has received 'white papers' or 'topical reports.'

2.117 We are collaborating with US and Canadian regulatory colleagues on specific areas of assessments associated with these technologies. These collaborations are facilitated by a Memorandum of Cooperation on advanced reactor and small modular reactor technologies between the Canadian Nuclear Safety Commission (CNSC), ONR and US NRC, of which we became a full member in March 2024.

2.118 In the case of the BWRX-300, CNSC has been assessing an application from GE-Hitachi's licensee partner Ontario Power Generation for a construction licence at the Darlington site in Ontario. This has enabled greater collaboration between CNSC, ONR, and US NRC on the BWRX-300 than has been possible on other reactor technologies.

2.119 GE-Hitachi and its North American licensee partners are provided with an opportunity to suggest and support areas for regulatory collaboration, and to scrutinise the progress being made through a BWRX-300 'six-party forum'. At various levels, this group has met four times during this reporting period.

2.120 The collaboration during the reporting period had limited relevance to our judgements on whether the two technology vendors were ready for the next phase of regulatory engagement in the UK, but it was an important input into our development of targeted and proportionate assessment strategies which allow the Step 2s to be completed on accelerated timescales. Details of our ongoing collaboration are published here

Sizewell C (SZC) Ltd

2.121 We granted a nuclear site licence to SZC Ltd in May 2024, following a proportionate reassessment focused primarily on outstanding issues that were highlighted during our initial assessment in 2022. Granting of the licence allows the licensee to develop and implement their arrangements for compliance against the LCs.

2.122 As enabling construction activities continue on site, our focus will be on arrangements for safe construction, building organisational capability, arrangements for supply chain and quality management, and the development of the site-specific safety case.

2.123 We support the licensee's strategy of intelligent replication of HPC design at SZC to the extent that it is safely achievable. This allows us to gain regulatory confidence from areas that we have already assessed and have been satisfied with at HPC, and to apply a more targeted and proportionate approach to the regulation of this new build project.

2.124 Throughout the reporting period we have worked closely with the Department for Energy Security and Net Zero (DESNZ) and SZC Ltd in the development of the enduring Shareholder Agreement (eSHA) and the underpinning arrangements that will facilitate investment in the project. Our primary interest is to ensure that the licensee board is appropriately constituted to ensure that nuclear safety is at the heart of decision making and a primary focus of the board.

2.125 The development of site security arrangements at SZC has accelerated in the past 12 months as the project progresses. SZC understands the security risks presented and manages the risks adequately. Relevant security lessons are being learned from the HPC project, and the development of the broader security regime aligns with our expectations for this stage of the project.

2.126 SZC has submitted an updated security plan and security improvement plan to address cyber security shortfalls, and we remain satisfied with SZC's response and commitment to develop these arrangements further.

Engagement with Potential GDA Requesting Parties

2.127 During the year, both Westinghouse Electric Company UK and Newcleo SA submitted applications to DESNZ requesting their reactor technologies enter the GDA process, and we assisted DESNZ in its reviews of these applications. Newcleo has subsequently indicated that it is not intending to pursue a UK project, and Westinghouse has yet to confirm its timeframes for commencing GDA.

Advanced Nuclear Technologies (ANTs)

2.128 Following the launch of the early engagement process, we have seen high levels of interest in engaging with us and the environmental regulators by a number of advanced nuclear technology vendors. Multiple organisations have since entered the process and completed tier 1 and tier 2 engagements.

2.129 Jointly with the Environment Agency and Natural Resources Wales, we have provided applicants with guidance on available pathways, key risks, and opportunities, as well as undertaking structured workshops on key technical topics.

2.130 By end of March 2025, we completed tier 1 and tier 2 engagements with Last Energy, and held tier 1 engagements with Moltex Flex, Newcleo, Terrapower and X-Energy. Last Energy UK has since progressed to preliminary design review (tier 3 engagement) on three topic areas, and plans are in place for tier 2 workshops with Terrapower and X-Energy in 2025.

2.131 The tier 1 workshops have enabled requesting parties and us to discuss the regulatory pathways available and proposed deployment plans. When followed by technical and process workshops (tier 2), we provided regulatory advice on key topics and risks to streamline future

progress. Through preliminary design review (tier 3) of Last Energy UK's PWR-20 design, we assessed its plans for safety analysis, waste and decommissioning and organisational development. In parallel to preliminary design review, Last Energy UK entered nuclear site licensing in January 2025, and we have been providing licence pre-application advice, informed by the preliminary design review exercise. Our licence pre-application advice to Last Energy UK will continue in 2025-26 until it makes a formal application for their Llynfi site, which ONR would in turn assess.

2.132 Entry to early engagement is available to any party proposing to deploy reactor technology in GB, including reactor technology vendors, developers, or aspirant licence/permit holders.

2.133 We have continued to improve our guidance on early engagement (ONR-GDA-GD-009), with greater clarity through publication of its second issue in 2025, and further joint guidance on preliminary design reviews.

2.134 In September 2024, our GDA guidance to Requesting Parties was reissued to include an appendix on the leveraging of international submissions and another on proceeding from GDA Step 2 to licensing. The planning and delivery of tier 1 and tier 2 early engagement with Advanced Modular Reactor (AMR) vendors has benefited from increased awareness of our processes and GB requirements under the MoC.

2.135 We have continued to provide support to DESNZ on advanced nuclear policy delivery. Also facilitated by DESNZ funding, international engagement and regulatory capability have been key activities in 2024-25. We have contributed to the SMR Regulators Forum, now in phase four, and continue to hold the position of vice-chair, providing UK influence to the scope and focus of the forum. We have contributed to the regulatory track in the Nuclear Harmonisation Standards Initiative (NHSI) and its technical guidance on leveraging design reviews. We have also been members of the organising committee for the 2024 IAEA SMR conference, giving visibility and recognition to our early engagement and design assessment processes across member states including embarking countries.

2.136 We continued to provide regulatory support to Phase B of the DESNZ AMR Research, Development and Demonstration (RD&D) programme, which provided DESNZ funding for two reactors to progress Front End Engineering Design and supporting activities until March 2025, to enable an AMR demonstrator by the early 2030s.

2.137 ONR and the Environment Agency have engaged on topic areas of regulatory interest with the UKJ-HTR (the demonstration high temperature gas reactor) led by UK NNL with the Japanese Atomic Energy Agency (JAEA)), following withdrawal of Ultra Safe Nuclear Corporation (USNC)'s project. We have also engaged with the Coated Particle Fuel (CPF) programme, which aims to continue developing CPF technology required for AMRs and SMRs. Both the reactor and fuel programmes are now due to conclude in December 2025, following extensions at the vendors' request.

2.138 Our regulatory advice and guidance to UK NNL and its reactor technology and fuel vendor partners is aligned with our approaches to early regulatory engagement, acting as enablers of regulatory assessment of potential future project phases.

Other cross-cutting nuclear regulation activities

AGR Transition

2.139 Hunterston B is the first EDF AGR to complete defueling with the last flask of fuel leaving site on 20 February 2025. Fuel free assessment is now complete and Nuclear Restoration Services has submitted its site licence application, a sign of AGRs moving to the decommissioning phase. Following confirmation that no fuel remains on site, the regulation of Hunterston B has now been transferred to our Decommissioning, Fuel and Waste sub-directorate, which has the expertise to ensure continued proportionate regulation of a decommissioning power station.

Geological Disposal Facility (GDF)

2.140 We continue to engage with NWS to support the government's plans for the licensing of any future GDF. While we do not have a role in the siting process, we have supported NWS in its engagement with volunteer communities to ensure the public understands how we would regulate the facility in future.

2.141 We continue to work together with the Environment Agency to provide pre-application scrutiny and advice to NWS to support a prospective site licence application, details of which are published annually in the autumn in a joint report. We continue to scrutinise timescales for the delivery of the GDF and where there are delays, we seek to ensure any potential impact on relevant dutyholders, including their facilities and waste forms, is understood so they can be safely managed.

Radioactive materials transport

2.142 ONR's Transport Competent Authority (TCA), as part of the organisation's transport delivery function, oversees the safe transport of civil radioactive materials across Great Britain by road and rail. This oversight extends to the nuclear industry as well as sectors such as medical, construction, manufacturing, and research.

2.143 Additionally, ONR's transport delivery function is responsible for regulating the security of civil nuclear material during transport.

Transport Safety

Permissioning and Assessment

2.144 Throughout the reporting period, we supported a range of domestic and international transport activities by:

- Approving a broad array of package designs;
- Validating international Competent Authority approvals; and
- Authorising modifications to existing package designs.

2.145 These approvals have facilitated the secure transport of:

- Irradiated fuel from GB nuclear power plants to Sellafield;
- Seven flasks containing vitrified residues, transported by rail from Sellafield to the Isar federal storage facility in Germany, with arrival on 3 April 2025;
- Nuclear fuel cycle materials, including enriched uranium oxide powders, nuclear fuel, and uranium hexafluoride;
- Radioactive material used in the medical sector for patient treatment; and
- Radioactive substances utilised in industrial applications such as radiography and sterilisation.

2.146 We withdrew a combined package design and shipment approval following evidence that consignors were not demonstrably compliant with certain key aspects of the associated shipment approval. Engagement is ongoing with the designer and consignors to implement improvements and enable renewal of the approval. Furthermore, we challenged the safety significance categorisation of three modifications to existing package designs, leading to either resubmission by applicants or additional assessment by us.

Inspection, Investigation and Enforcement

2.147 In 2024/2025, we conducted 35 planned and ten unplanned inspections (including three Ionising Radiation Regulations 2017 consents), each covering up to 14 thematic areas per inspection. Two thematic areas (emergency contingency planning and radiation risk assessment) resulted in the greatest number of red and amber ratings, primarily through unfamiliarity with legislation and limited Radiation Protection Advisor (RPA) experience with transport assessments. We issued four improvement notices and sent seven enforcement letters; 48 issues were resolved during the same period. We also issued updated guidance and have participated in multiple industry conferences – specifically those attended by RPAs – to highlight changes and related regulatory expectations.

2.148 The outcome of the inspections highlighted in this year's report are partly due to more risk-informed targeting of dutyholders, including those who have not been inspected previously. The TCA is discussing, with government, numerous proposals to enhance our inspection targeting and efficacy, in addition to reviewing the framework for the training and qualification of Dangerous Goods Safety Advisers (DGSAs), to support improved dutyholder compliance. Transport dutyholders reported 131 incidents, mostly TS07 (regulatory non-compliance) and TS08 (significant safety occurrences). Only one incident required formal investigation and led to an improvement notice and none caused a radiation emergency.

2.149 Police forces, under Agency Agreements, served two prohibition notices for unsafe transport of radioactive materials and notified ONR accordingly.

Nuclear Transport Security

2.150 During 2024/25, ONR conducted eight transport security inspections of Class A and B carriers. No significant issues were identified with all inspections rated adequate and all carriers committed to delivering high levels of security.

Emergency Planning and Response (EP&R)

2.151 In addition to maintaining and sustaining our emergency response arrangements, the EP&R team oversees off-site regulation of the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR 19) in collaboration with selected local authorities and the Ministry of Defence (MoD). The team also provides land use planning guidance consistent with our policy, along with specialist advice and information to support the development of both national and international policies pertaining to EP&R matters.

2.152 During this period, we have continued our engagement with government and local authorities to review and update the National Nuclear Emergency Planning and Response Guidance (NNEPRG). Although progress has been slower than anticipated, an updated version of the guidance should be available by the end of 2025. We remain committed to close collaboration with all stakeholders to advance this project, which is integral to a future test of national arrangements.

2.153 While awaiting further information regarding any forthcoming national nuclear emergency exercise, we have sustained engagement with DESNZ to encourage continued governmental participation in existing Level 2 (local authority-led) exercises. This effort resulted in the participation of DESNZ, as the lead Government Department (LGD), alongside the Cabinet Office and Scottish Government Resilience Team in two exercises this year. Both events provided valuable insights into information sharing and the provision of strategic-level specialist advice. Plans are underway to build on this work in selected Level 2 exercises during the coming year.

2.154 As the regulator for REPPIR 19, our ongoing engagement extends to MoD and the 16 local authorities responsible for maintaining off-site emergency plans for designated nuclear facilities. This included eight Level 2 (local authority-led) test

exercises of off-site emergency plans (OSEP) at both civil and defence sites. We acknowledge the efforts of operators and local authorities in developing a National Nuclear Emergency Exercise Plan (NEEP) aimed at scheduling mandatory exercises within the required triennial timeframe while avoiding excessive clustering.

2.155 Recurring themes from Level 2 exercises reveal varying approaches to OSEP construction and detail. Notably, plans incorporating concise 'executive summaries' and clearly defined 'immediate actions' tend to facilitate more effective responses. The implementation of planning expectations, and the delivery of radiation protection advice to emergency services. These areas are likely to be influenced by ongoing reviews of the NNEPRG and REPPIR 19, and will remain a focus of further ONR engagement.

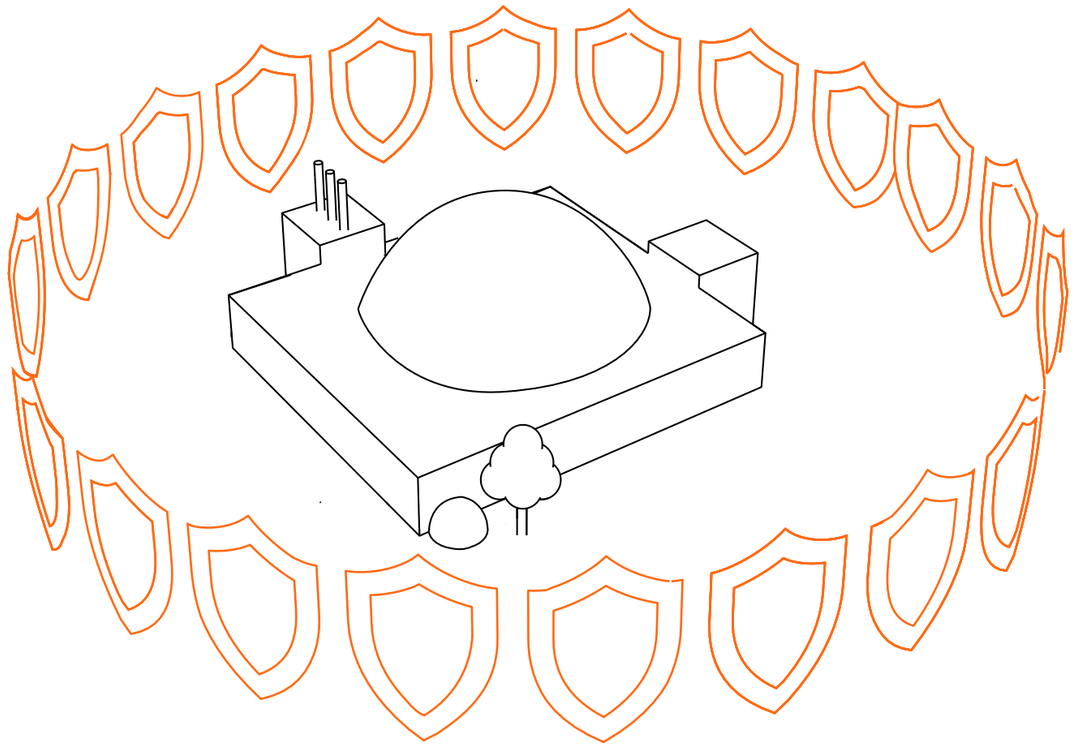
2.156 Our involvement in land use planning continues to expand. In this period, we provided comments on approximately 400 planning applications and responded to more than 100 enquiries related to land use planning. There has also been an increase in appeals against planning decisions requiring our specialist input at formal inquiries. With anticipated further development, we are collaborating with local authorities to ensure that emergency plans can accommodate growth within associated planning zones.

2.157 During the reporting period, our emergency telephone line received 18 calls, of which 15 were routine notifications regarding minor incidents not classified as emergencies. The remaining three calls concerned safety events at licensed nuclear sites, including an electrical fire, an off-site gas leak necessitating partial site evacuation, and activation of a non-radiological monitoring alarm, which also resulted in partial evacuation.

3 CNI themes for 2025/26

3.01 Cyber security will remain a CNI theme. This recognises our continued role in driving further improvements in this area and delivering an overall uplift in the civil nuclear sector's cyber security defence and recovery capability

3.02 The CNI nuclear site health and safety themed inspections will continue to focus on this topic and fire safety across selected sites through 2025/26.



Annex 1

Regulatory attention levels

4.01 The regulatory attention levels that we are applying to licensed nuclear sites during 2025/26 is summarised below in Table 1. The attention level assigned for each site is based on our assessment of its overall performance during the past 12 months, considering a broad range of safety and security considerations, and/or the operational issues each site is addressing.

4.02 It also reflects an overall judgement across our nuclear safety, NSHS, civil nuclear security, and transport purposes. Attention levels may differ between safety and security for the same licensed site and may be allocated to specific parts of larger sites.

4.03 We have now implemented safeguards attention levels to safeguards dutyholders. Our baseline safeguards attention levels have been evaluated based on our operational experience of nuclear material accountancy, control and safeguards in the UK.

Table 1: Regulatory attention levels for licensed sites at 31 March 2025

Regulatory attention at March 2024	Licensed site	Change in attention at March 2025
Significantly enhanced	Sellafield (Sellafield Ltd): MSSS, PFCS, FGMSP	No change
	Sellafield (Sellafield Ltd): SNMs	No change
	Sellafield (Sellafield Ltd): Analytical Services	Raised to Significantly Enhanced
Enhanced	Atomic Weapons Establishment (AWE Plc), Aldermaston	Reduced to Routine in March 2025
	Berkeley (NRS)	Reduced to Routine for protective security in September 2024
	Devonport (Devonport Royal Dockyard Ltd)	No change
	Dounreay (NRS)	Raised to Enhanced
	Hartlepool (EDF Energy Nuclear Generation Ltd)	Raised to Enhanced
	Sellafield (Sellafield Ltd), remainder of site	No change
	Springfields Fuels Ltd	Raised to Enhanced for cyber security

Regulatory attention at March 2024	Licensed site	Change in attention at March 2025
Routine	Atomic Weapons Establishment (AWE Plc), Burghfield	No change
	Barrow (BAE Systems Marine Ltd)	No change
	Bradwell (NRS)	No change
	Capenhurst (Urenco UK Ltd)	No change
	Chapelcross (NRS)	No change
	Derby (Rolls-Royce Submarines Ltd), 2 sites	No change
	Dungeness A (NRS)	No change
	Dungeness B (EDF Energy Nuclear Generation Ltd)	No change
	GE Healthcare Amersham (GE Healthcare Ltd)	No change
	Harwell (NRS)	No change
	Heysham 1 (EDF Energy Nuclear Generation Ltd)	No change
	Heysham 2 (EDF Energy Nuclear Generation Ltd)	No change
	Hinkley Point A (NRS)	No change
	Hinkley Point B (EDF Energy Nuclear Generation Ltd)	No change
	Hinkley Point C (NNB Generation Company (HPC) Ltd)	No change
	Hunterston A (NRS)	No change
	Hunterston B (EDF Energy Nuclear Generation Ltd)	No change
	Low Level Waste Repository (LLWR)	No change
	Metals Recycling Facility (Cyclife UK Ltd), Lillyhall	No change
	Oldbury (NRS)	No change
	Rosyth (Rosyth Royal Dockyard Ltd)	No change
	Sizewell A (NRS)	No change
	Sizewell B (EDF Energy Nuclear Generation Ltd)	No change
	Torness (EDF Energy Nuclear Generation Ltd)	No change
	Tradebe Inutec (Inutec Ltd)	No change
	Trawsfynydd (NRS)	No change
	Winfrith (NRS)	No change
	Wylfa (NRS)	No change

Annex 2

Event report and regulatory intelligence report 2024/25

Introduction

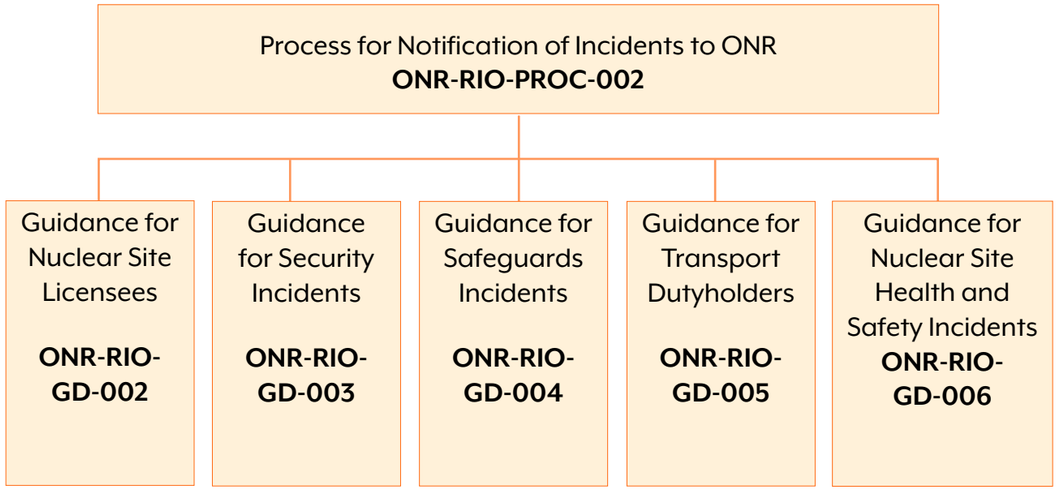
5.01 This events and regulatory intelligence report provides an overview of the incidents dutyholders have reported to us during the period of 1 April 2024 to 31 March 2025.

5.02 It provides analysis of incidents across our purposes and an overview of our regulatory response. It covers our use of the intelligence from these incidents as operating experience (OPEX) for us to better tailor our regulation. It concludes with a summary of the most significant incidents.

5.03 Our incident notification guidance is available on our website[5]

Incident reporting framework

Figure 1



Events report and regulatory intelligence

Introduction

5.04 Our incident notification guidance is available on our website Notify ONR | Office for Nuclear Regulation.

Incident reporting framework

5.05 In line with international expectations, UK legislation requires dutyholders to formally report safety, security, and safeguards incidents to us.

5.06 Figure 1 shows the structure of our incident reporting process and guidance.

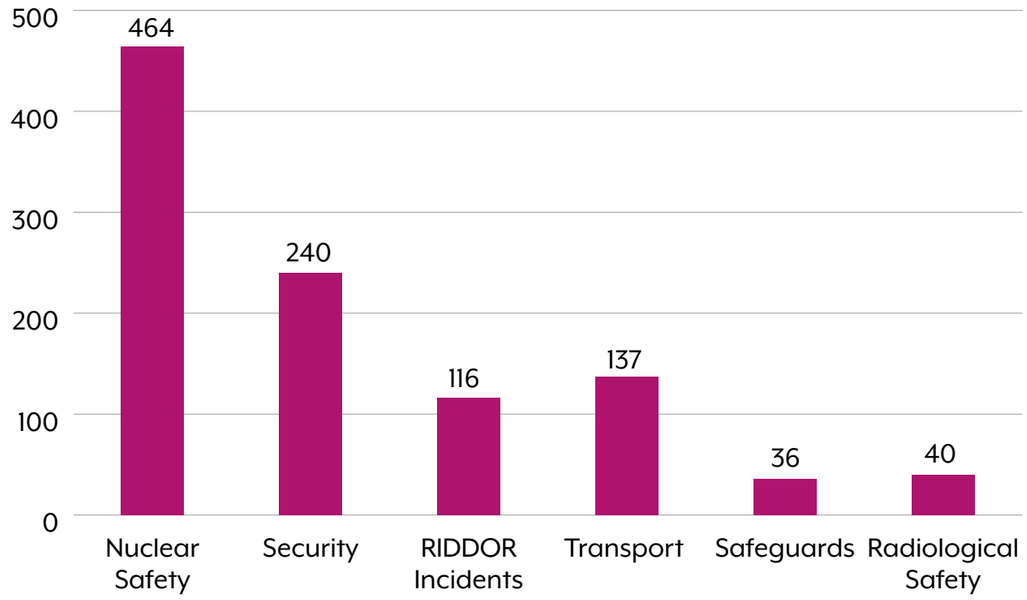
5 https://www.onr.org.uk/about-us/contact-us/notify-onr

Incident reporting trends in 2024/25 across ONR's purposes

5.07 Figure 2 is an overview of incidents that dutyholders reported to us against each regulatory purpose during the period of 1 April 2024 to 31 March 2025. For consistency, we have separated radiological and Nuclear Site Health and Safety Incidents (RIDDOR[6]) incidents to present our five purposes across six topic areas:

- Nuclear safety;
- Radiological safety;
- Security;
- Safeguards;
- Transport safety; and
- RIDDOR incidents.

Figure 2: incident reports during 2024/25



5.08 Legislation sets the general severity threshold for dutyholders to report incidents to us. The actual threshold varies between topic area and involves a degree of judgement. Our approach has been to promote consistent reporting thresholds. We have observed a net increase in incident reports of 16% since last year. The changes in this period are:

- 36% increase in nuclear safety incident reports;
- 8% increase in security incident reports;
- 17% reduction in RIDDOR reports.
- 5% increase in transport incident reports;
- 16% increase in safeguards incident reports; and
- 33% increase in radiological safety incident reports;

5.09 The net increase in incident reports and the increase in nuclear safety incident reports arises largely from a single incident reporting category. Incidents that could significantly compromise the effectiveness of the arrangements for emergency preparedness and response on a site are reported to us. This incident category has a subjective reporting threshold and as a result a large number of minor contraventions can dominate reporting data. In this case, the Sellafield site has reported a large number of minor shortfalls against the minimum safe manning levels for emergency response.

5.10 RIDDOR reporting is the exception to the increasing general trend. Legislation prescribes the RIDDOR reporting threshold. Our analysis shows that while the total number of RIDDOR events is lower on some sites, the number of significant RIDDOR events has remained consistent with the previous year.

5.11 The other changes are mostly the lowest significance incident categories. Historically, our analysis shows reporting thresholds dominate reports in these categories. Therefore the changes are not necessarily indicative of actual performance. We give further analysis of these trends in the relevant sections of this intelligence report.

5.12 Legislation sets the general severity threshold for dutyholders to report incidents to us. The actual threshold varies between topic area and involves a degree of judgement. Our approach has been to promote consistent reporting thresholds. We have observed a net reduction in incident reports of 10% since last year. The changes in this period are:

- 39% reduction in security incident reports;
- 9% reduction in nuclear safety incident reports;
- 20% increase in radiological safety incident reports;

- **Trends of Significance of Incidents**
  - We used four variables to consistently trend higher significance incidents:

- The incidents' International Nuclear and Radiological Event Scale (INES) rating;
- Our expected timescales for incident notification;
- Our inspectors' judgements on incident significance; and
- The dutyholders' judgement of incident significance[7].

5.13 During this reporting period, there were 122 higher significance incidents across all our purposes.

6 RIDDOR – Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013.

7 ONR-OL-PROC-003: Processing and Governance of Incident Notifications by ONR

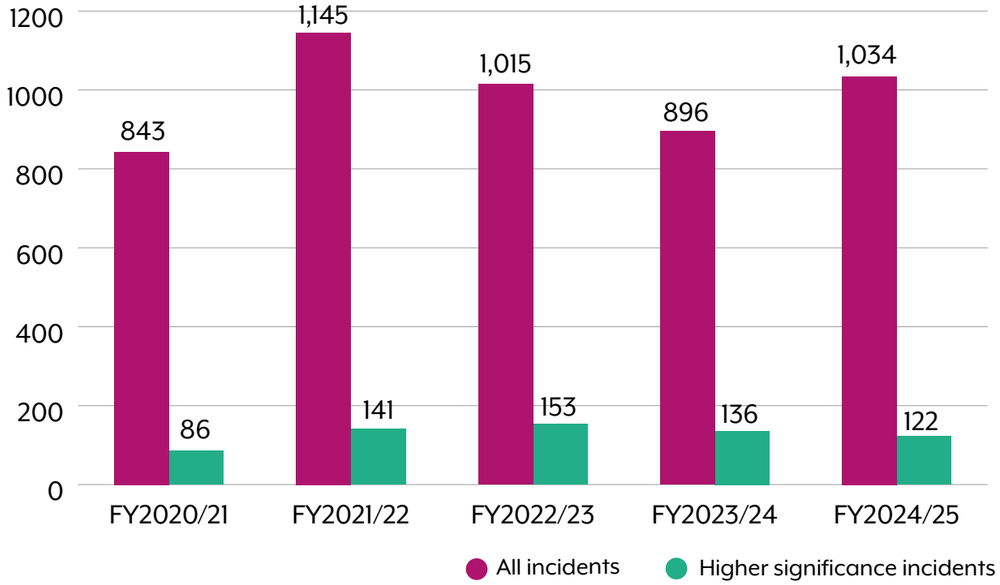
5.14 Table 2 presents the five-yearly trend of total incidents and higher significance incidents reported to us.

5.15 Our analysis shows dutyholders continue to report incidents with higher significance more consistently. Changing reporting practices does not have such a large influence on these trends. This means this dataset is a more reliable indicator of underlying performance.

5.16 Overall, this data shows the number of significant incidents was consistent with the previous year. The number of INES events categorised as anomalies or above has remained constant at ten events. The number of events that either met or had the potential to meet our investigation criteria has also remained constant at about 25 events with no significant variation between dutyholers. However, there is a small but noticeable increase in the number of transport events that potentially met our investigation criteria.

Total number of Incident Reports to ONR

Table 2: five-year trend of all incidents and significant incidents



Regulatory response to incidents

5.17 Our inspectors decide a proportionate regulatory response for all incidents reports. Table 3 shows our final follow up of all incidents reported between 1 April 2024 and 31 March 2025.

Table 3: Regulatory response to incidents

ONR Regulatory Response	Number of Incidents	Proportion
Investigation or Preliminary Enquiries	25	2.4%
Routine follow up	373	36%
No further action	641	61%

5.18 The proportion of incidents that met our investigation or preliminary enquiries criteria has fallen slightly which is due to the number of investigations remaining constant while the total number of reported events has increased. The proportion of events that were routinely followed up by site inspectors and those where no further action was warranted have remained consistent with the previous reporting period.

5.19 Five incidents met our formal investigation criteria:

- Two nuclear site health and safety incidents occurred on the Sellafield site;
- a nuclear site health and safety incident and a radiological safety incident occurred at the AWE Aldermaston site; and
- a transport incident was investigated at the Nordion UK site.

5.20 Formal enforcement action was taken on ten occasions during the reporting period; nine improvement notices and a security direction were issued. For the majority of incidents where preliminary enquiries were made or were subject to routine follow up, we either carried out informal enforcement action or decided to take no further action. Routine enforcement action was taken on 33 occasions through issue of enforcement letters.

5.21 In addition to regulatory follow up, we report the most significant incidents to DESNZ on a quarterly basis. We publish the details of these incidents on our website. During this period, we reported three incidents to DESNZ. Page 90 is an updated summary of the incidents and our responses.

Topic area analysis – nuclear safety incidents

5.22 Dutyholders report incidents to us under the reporting categories defined in our Incidents Notification guidance. Figure 5 shows all incidents with a nuclear safety category reported to us during 2024/25.

5.23 Figure 3 shows that the lower-level incident categories with the greatest increases are:

- LC non-compliance (NS11);
- safety analysis showed reduced defence in depth (NS12); and
- degraded emergency response capability (NS16).

5.24 The previously reported reduction in the number of higher significance operational incidents (NS05, NS06 and NS07), due to the effect of fewer operating nuclear reactors and end of reprocessing at Sellafield, has continued to be observed. The number of these incidents has stabilised and is consistent with the previous year. This year, there were also a significant reduction in the number of operations revealing reduced defence in depth (NS08). The reduction in the number of operational plants may therefore account for the reduction in the number of NS08 events.

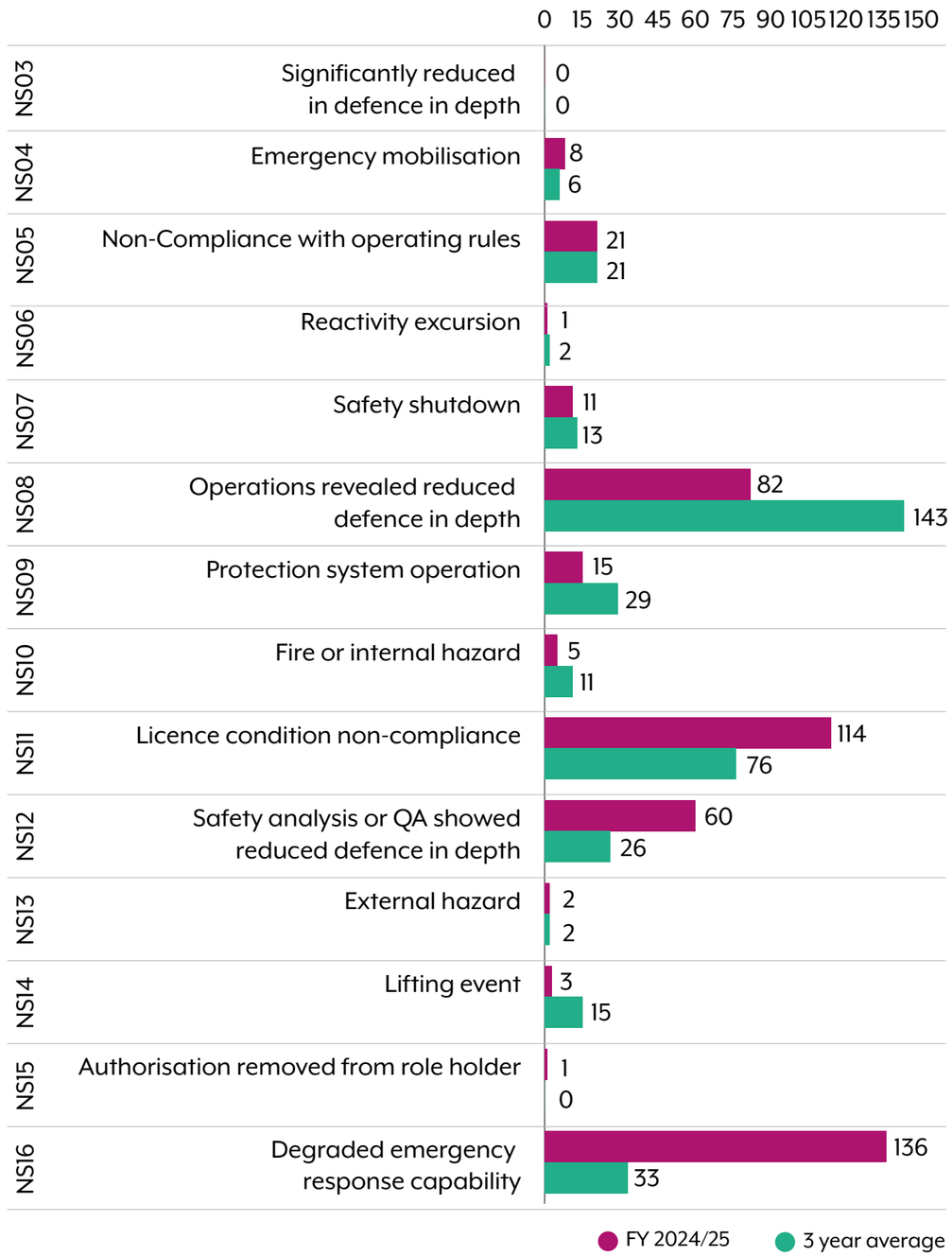
5.25 The notable change from the previous year is the increase in incidents reported under the NS16 category. This increase has arisen from incidents reported by the Sellafield site where breaches of the site minimum safe staffing level[8] may have degraded the site emergency response capability. These incidents have been categorised as minor shortfalls and work is ongoing to ensure that these events are appropriately categorised and to ensure that we can focus on the more significant nuclear safety incidents requiring regulatory attention and resolution.

5.26 The increase in LC non-compliance (NS11) incidents is accounted for by an increased willingness of the Sellafield site to report contraventions of approved procedures. In the majority of cases these incidents have been categorised as minor incidents requiring no further action by ourselves.

5.27 The increase in incidents involving safety analysis or QA showing reduced defence in depth (NS12) can be attributed to the continued review of safety cases for the operating reactor fleet. Advances in safety case analysis techniques can identify circumstances where existing fault sequences have not been demonstrated to meet modern standards. A safety case anomalies process is used to address these circumstances. The increase in reported NS12 incidents have been categorised as minor shortfalls and indicate a healthy periodic review process.

8 Minimum safe staffing level is defined based on specific roles rather than functional capability, meaning that the absence of an individual post-holder is sometimes treated as a fundamental gap in emergency response, even where sufficient defence-in-depth exists to fulfil the function

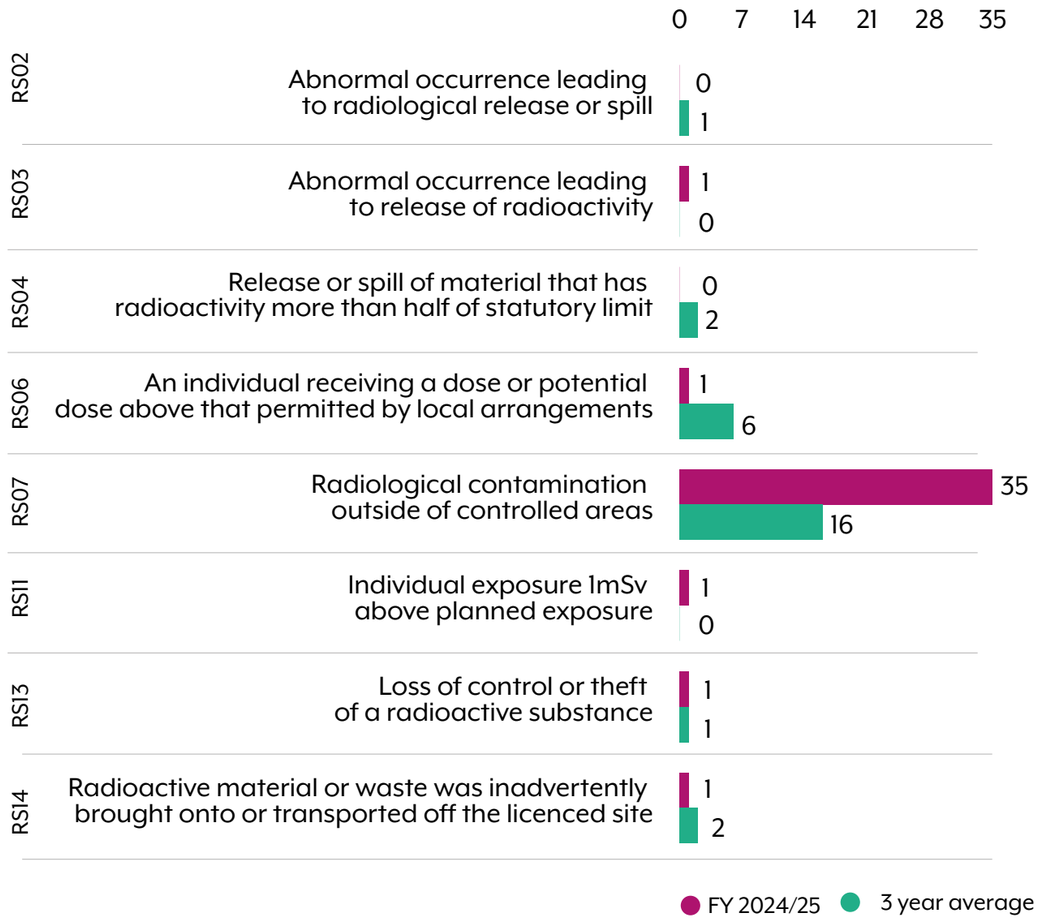
Figure 3: Breakdown of incidents related to nuclear safety – 2024/25



Topic Area Analysis – radiological safety incidents

5.28 Figure 4 shows all incidents with a radiological safety category reported to us during 2024/25.

Figure 4: Breakdown of incidents related to radiological safety – 2024/25



5.29 Our inspectors have continued to influence dutyholders to report lower-level contamination incidents.

5.30 The incidents reported under the RS07 category are dominated by reports from the Sellafield site. These incidents have been categorised as minor incidents and the number of incidents does not indicate a decreasing trend of radiological safety performance. It is however interesting to note that other nuclear sites with similar chemical plants continue to report very few contamination events outside of controlled areas. This difference may indicate a different interpretation of the RS07 category or that there is a difference in radiation and contamination tolerance between the Sellafield site and other chemical plant sites. We intend to analyse these incidents more fully to identify any intelligence to inform our inspections.

Topic Area Analysis – security

5.31 Figure 5 provides a breakdown of security incidents by category as reported to us during 2024/25.

5.32 The security categories in Figure 5 reflect those specified under the Nuclear Industries Security Regulation (NISR) 2003 within Regulations 10, 18 and 22. The threshold for reporting 'events and matters' is defined in NISR 2003. This threshold is different to safety incidents reported under RIDDOR and/or Licence Condition 7. It means most security reports are administrative and/or procedural non-compliances. Consequently, these are not security breaches nor are they a reduction in security defence in depth for nuclear material. We use multiple factors to assess incident significance and our inspectors follow-up based on this assessment.

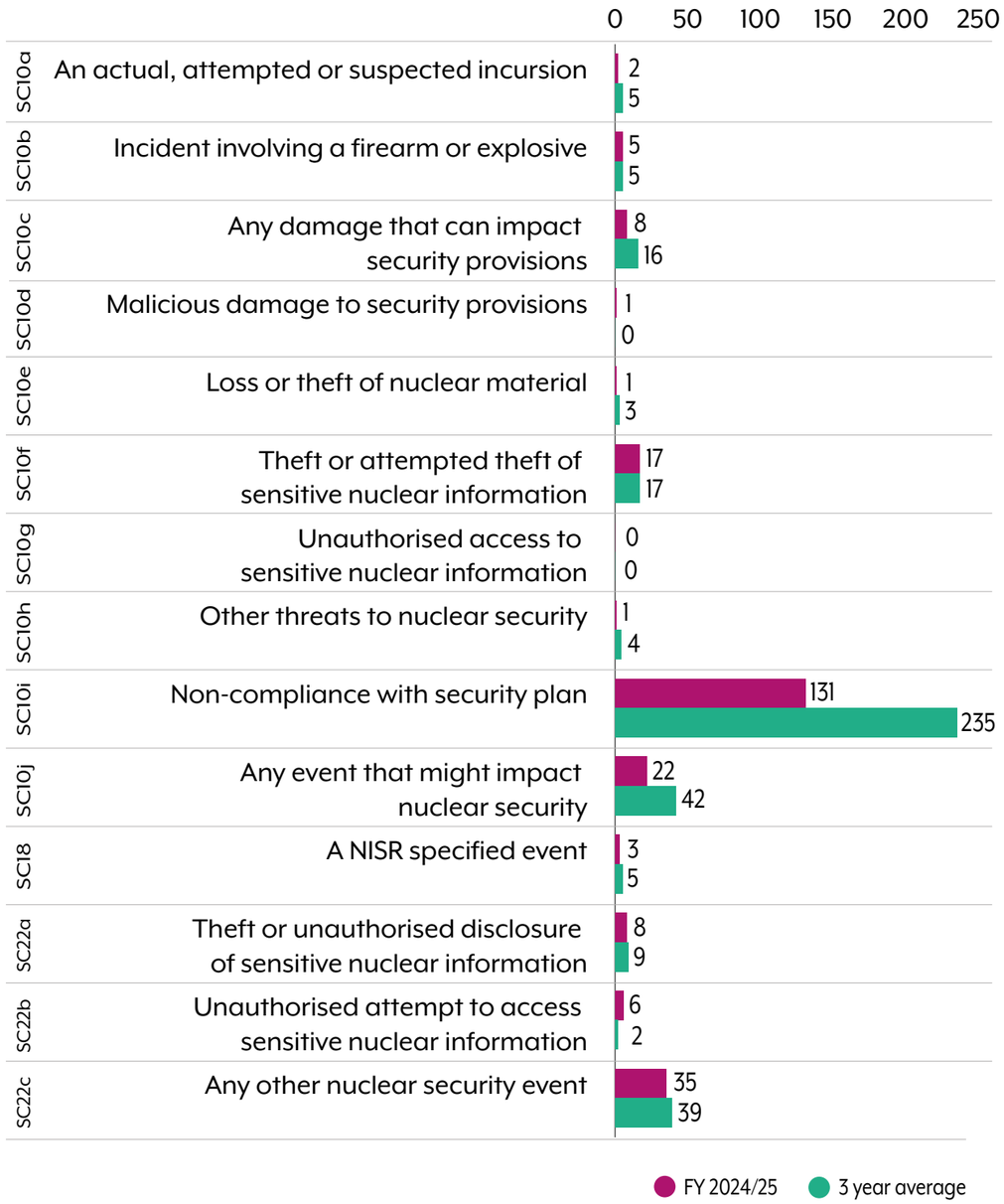
5.33 Consistent with the overall trend, the number of security incident reports in most categories has reduced. We will monitor the year on year reducing trend to ensure we are satisfied that it represents an accurate picture across the industry.

5.34 The only category with an increase is related to the unauthorised access to sensitive nuclear information, principally as a result of information being sent between contracting parties over the internet.

5.35 Other incident report categories have reduced or remained consistent with the previous year. The categories with the largest reduction compared to the three-year average are minor non-compliances with the security plan (SC10i) and any incident that might impact nuclear security (SC10j). These incidents have been categorised as having minor impacts on nuclear security.

5.36 Our inspectors reviewed these security incidents and judged that none met the criteria for a formal investigation and were categorised as minor shortfalls against the approved security plan.

Figure 5: Breakdown of incidents related to security – 2024/25



Topic area analysis – safeguards

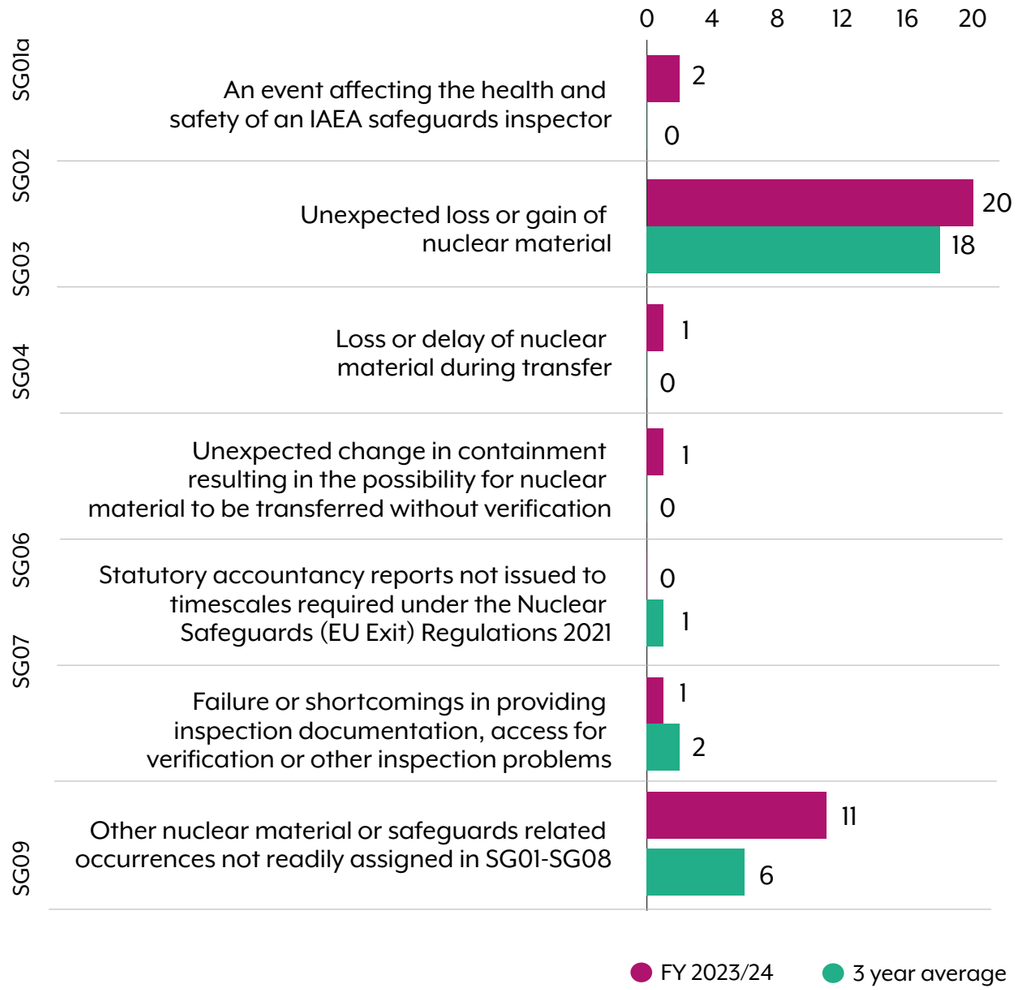
5.37 Figure 6 provides a breakdown of safeguards incidents by category as reported to us during 2024/25.

5.38 We assess the significance of reported safeguards incidents based on the implications for compliance with UK domestic safeguards regulations and UK international safeguards obligations.

5.39 A single incident had potential to meet our investigation criteria. This concerned the break of a IAEA seal on a plutonium store. Following analysis of the IAEA CCTV coverage (defence in depth) and an internal Sellafield basic cause investigation an enforcement letter was issued. The enforcement came as a result of failure to adhere to operator's agreed processes and the potential of reverification if there had been a failure in the camera surveillance.

5.40 All other safeguards incident reports were categorised as minor shortfalls and did not impact compliance with the UK international safeguards obligations.

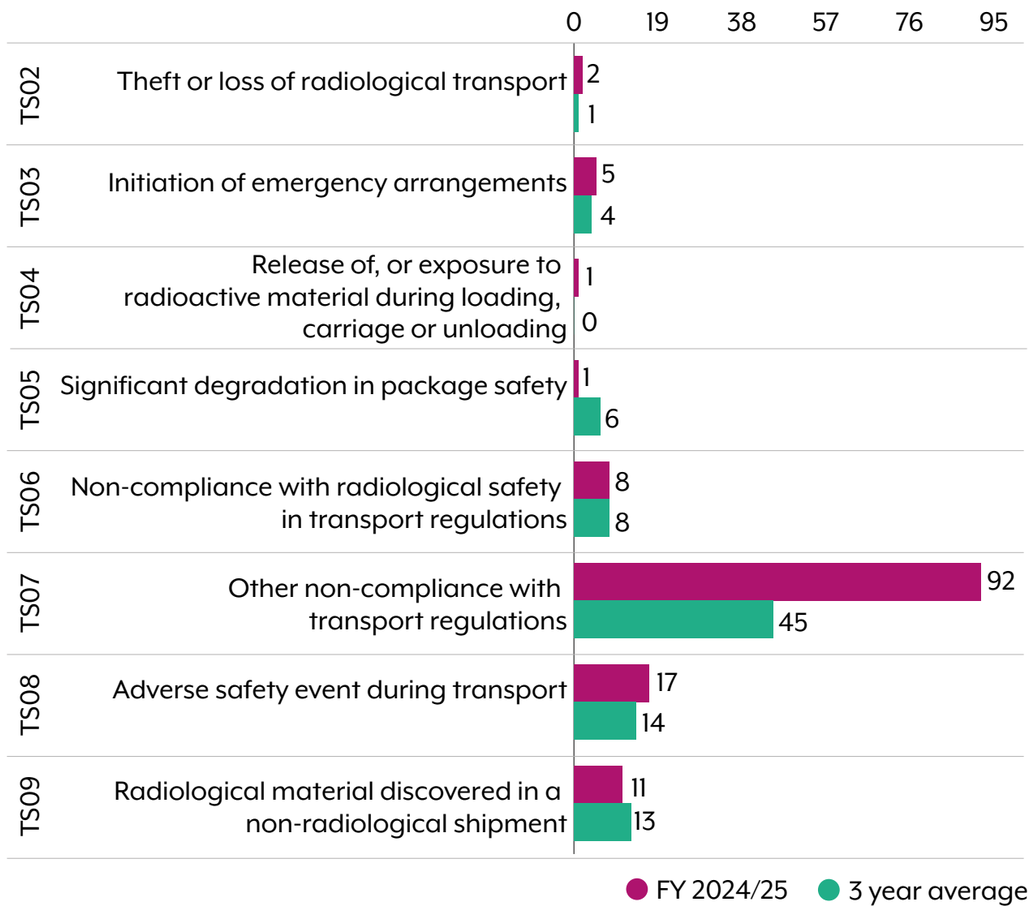
Figure 6: Breakdown of incidents related to safeguards – 2024/25



Topic area analysis – transport safety incidents

5.41 Figure 7 provides a breakdown of transport safety incidents by category as reported to us during 2024/25.

Figure 7: Breakdown of incidents related to transport safety – 2024/25



5.42 The number of reported significant transport incidents is small and no incident involved a radiological release or exposure to members of the public. These categories include theft (TS02), initiation of emergency arrangements (TS03), significant degradation of package safety function (TS05) and transport in excess of radiation or contamination levels (TS06) and reporting remains consistent with the three-year average.

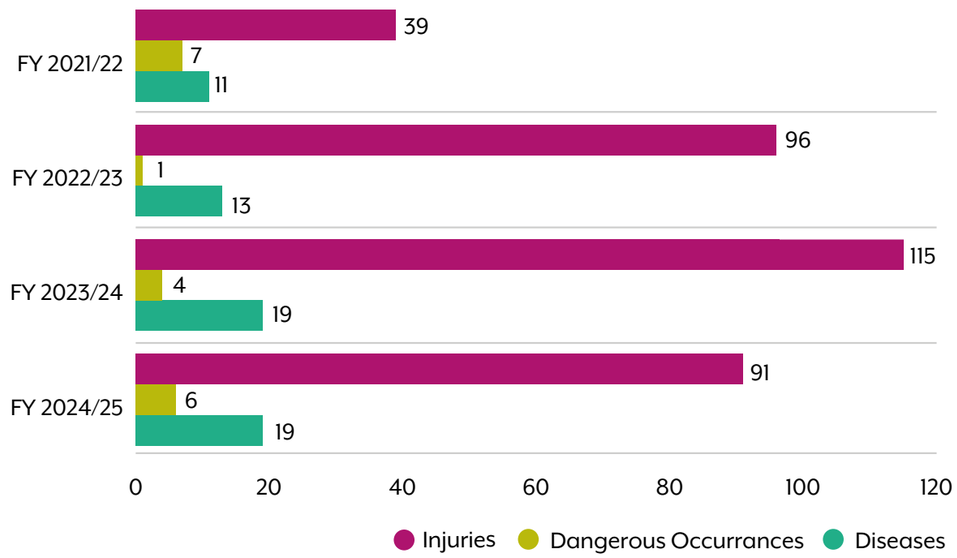
5.43 Our inspectors have continued to encourage dutyholders to report lower-level incidents which accounts for the increase in reported TS07 incidents as compared to the three-year average. The radioactive transport legislation is highly prescriptive and in the majority of cases, this category represents the volume of minor administrative non compliances against the legislation by a large number of nuclear and non-nuclear dutyholders. There were five TS07 incidents that potentially met our investigation criteria.

Topic area analysis – nuclear site health and safety incidents

5.44 Dutyholders report specified injuries to workers, diseases, and dangerous occurrences on GB nuclear sites to us under RIDDOR 2013.

5.45 Figure 8 provides the trend of site safety incidents as reported to us during 2024/25. There was a 17% decrease in 2024/25 RIDDOR injury reports compared to 2023/24. Our analysis shows the decrease in the GB nuclear sites' total number of reports of injuries has returned to the three-year average.

Figure 8: Trend of Site Safety Incidents – 2024/25



5.46 Table 4 provides information on the number of RIDDOR-reportable injuries that occurred between 1 April 2024 and 31 March 2025. The data includes all RIDDOR injuries reported by contractors, tenants, and licensees across nuclear sites.

5.47 During the past five years, there was a gradual upward trend in all categories of RIDDOR events, with the

exception of occupational disease reporting, which has decreased. In 2024/25, we have seen a return to incident numbers similar to 2022/23.

5.48 While a welcomed and positive development from the trend in the past three reporting years, it is too early to judge whether the observed decrease represents an developing improvement that will be sustained and could be attributed to a sector-wide improvement in H&S performance. Fluctuations in this small RIDDOR dataset (vs other sectors) can be influenced by multiple organisational and external factors. Importantly, it is the nature and relative risk of the injuries reported, rather than the number of reports alone, that provides meaningful insight for monitoring and response.

5.49 We have analysed the data from reported injuries and compared it with previous analysis (2022/23) and found that:

- More than 40% of the reported injuries arose from slips, trips or falls from the same level;
- there has been a slight reduction in injuries from manual work activities;
- there has been a slight increase in injuries from falls from height and moving objects striking individuals; and
- lifting equipment injuries remain similar to previous years.

5.50 In terms of type of injuries, the majority of them were acute injuries which included minor injuries (such as sprains) and fractures. The percentage of serious injuries has significantly reduced from the previous year, with amputation being the most serious injury reported during this period. Approximately 10% of the RIDDOR injury reports had potential for more serious consequences to individuals on site, this is a reduction from previous years' levels (which were at around 20%). This high potential reportable events involved impact with moving vehicles and falls from height, which align with dominant hazards in UK-wider industry incident data.

5.51 Occupational diseases reported during this period were cases of hand-arm vibration syndrome and occupational dermatitis.

Table 4: Reportable Injuries 1 April 2024 – 31 March 2025

Site	Total Injuries Reported FY24/25	Total Injuries Reported FY23/24
Sellafield	21	20
Hinkley Point C	22	22
Sellafield Site	21	15
Devonshire Dock Complex (Barrow)	19	14
Devonport Royal Dockyard	11	10
Atomic Weapons Establishment Aldermaston	9	3
Springfields Works	8	1
Dounreay	3	2
HMNB Clyde – Faslane	4	1
Capenhurst Works (UUK)	1	2
Dungeness B	2	1
Hinkley Point A	2	1
Magnox Limited	1	2
Sizewell B	1	2
Atomic Weapons Establishment Burghfield	0	2
Hartlepool	1	1
Hunterston A	1	1
Hunterston B	2	0
Torness	0	2
Hinkley Point B	0	1
Barrow In Furness	1	0
Berkeley Site	1	0
Capenhurst Works (UNS)	0	1
Chapelcross Nuclear Power Station	0	1
Harwell	1	0
Heysham 1	0	1
Heysham 2	0	1
Inutec Ltd. (Winfrith)	0	1
LLW Repository	0	1
Metals Recycling Facility, Lillyhall	1	0
Nuclear Fuel Production Plant Raynesway	1	0
Rosyth Dockyard	1	0
Sizewell C	0	1
Vulcan Naval Reactor Test Establishment (NRTE)	1	0
Winfrith	0	1
Total	**115**	**91**

Use of RIDDOR Data

5.52 It is important to note that the RIDDOR dataset is small in comparison with other industry sectors, and trending on specific topics or individual dutyholders is generally not statistically meaningful. However, we use this data, alongside other sources of operational intelligence, to build a comprehensive picture of each site and inform our regulatory oversight and response. Our regulatory response is outlined in Section 1.09, with individual commentary provided for each dutyholder.

Reporting Timeliness and System Changes

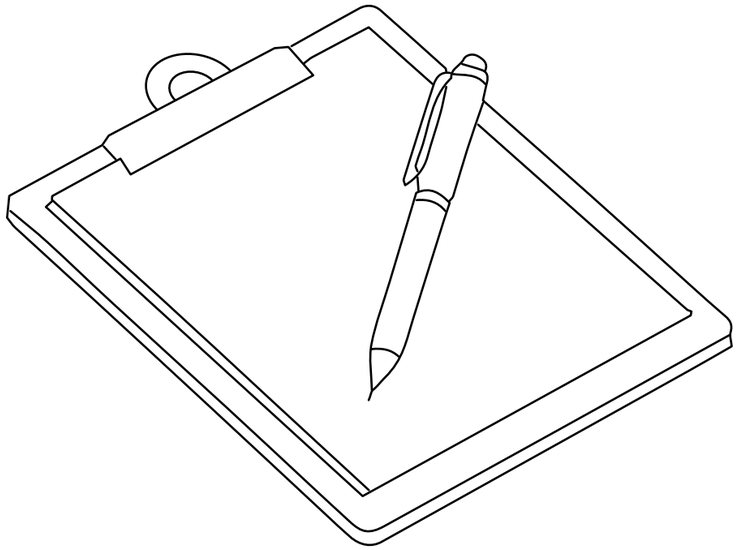
5.53 RIDDOR 2013 establishes specific timescales for formal reporting to the enforcing authority, in this case, ONR. During the past year, we have observed a number of late reports. We work closely with the Health and Safety Executive (HSE) and the dutyholder community to ensure that reports are submitted to the correct enforcing authority within the required timescales.

Table 5: Numbers of dangerous occurrences from each site during 2023/24

Site	Total Injuries Reported FY24/25	Total Injuries Reported FY23/24
Sellafield Site	5	5
Devonshire Dock Complex (Barrow)	3	2
Heysham 1	1	1
Heysham 2	2	0
Hinkley Point C	1	1
HMNB Clyde – Faslane	0	2
Springfields Works	1	1
Torness	1	1
Atomic Weapons Establishment Aldermaston	0	1
Devonport Royal Dockyard	0	1
Dounreay	1	0
Harwell	0	1
Hinkley Point A	0	1
Hunterston A	1	0
Neptune Reactor Raynesway	1	0
Nuclear Fuel Production Plant Raynesway	1	0
Sizewell A Site	0	1
Sizewell B	0	1
Trawsfynydd	1	0
Total	**19**	**19**

5.54 The analysis of the dangerous occurrences reported indicates that:

- there has been a decrease in dangerous occurrences related to lifting activities;
- dangerous occurrences related to health hazards and high energy missiles have increased slightly; and
- dangerous occurrences related to high voltage electric equipment remain similar to previous years.



Incidents ONR reported to DESNZ

Dounreay, INF- 4259, 30/07/24

NRS Dounreay monitors the water level within a redundant carbon bed filter located in an external area near fuel cycle facilities. This carbon bed filter is no longer in use and is awaiting decommissioning. When in operation the system was a dry system and water entered the system after operation ceased.

Monitoring has indicated a small quantity of water is lost from the bed each day.

The decrease in the water level has been estimated at 200mm during 12 months (a rate of water loss of around 1 litre per day). Previous sampling of the water reported activity levels of up to 61,000 Bq per litre, with Caesium (Cs-137) the dominant isotope.

A small leak is assumed to be the reason for the decrease in water level. A release to the environment has not been detected by the current monitoring regime.

Dutyholder response

NRS Dounreay staff conducted a site level investigation, both ONR and the Scottish Environment Protection Agency (SEPA) were notified of the situation. NRS has been unable to determine where the leak is occurring within the structure or confirm a pathway for the leak.

NRS promptly reduced the water level in the carbon bed filters to a small heel, reducing the potential for any further leakage. Ground water sampling and monitoring in the area has been enhanced. The results of this enhanced monitoring has not identified a change in activity level, in either the ground or drain networks, in the vicinity of the carbon bed filter.

ONR actions

Our inspectors have discussed this matter with NRS Dounreay representatives for the affected area. We have confirmed that there were no immediate consequences from the water losses and consider that NRS Dounreay's follow up actions are reasonable. The removal of the water from the affected beds has eliminated the potential of any further substantial leakages. Dounreay has appropriately considered the health and safety aspects of this event and further follow up on this event by us is not planned.

SEPA is of the opinion that NRS have contravened, are contravening, or are likely to contravene conditions of its permit in relation to the leakage of radioactively contaminated water from the carbon bed filter. As a result, SEPA has issued a regulatory notice seeking further improvements on the control of discharges, which they will progress. No site workers have been harmed or exposed to radiation as a result of this issue.

Sellafield, INF- 3890, 02/04/24

On 25 January 2024, Sellafield Ltd staff entered a nuclear material storage area to undertake routine maintenance activities. This area is subject to the application of safeguards measures by the International Atomic Energy Agency (IAEA).

On this occasion, an IAEA seal was removed from the access door without prior notification to the IAEA, which is a requirement under the IAEA safeguards measures. Later, it was confirmed that the seal had not been properly connected by staff upon exiting the store.

As there are backup systems such as IAEA surveillance cameras in place, there were no actual consequences in terms of IAEA's ability to maintain continuous monitoring of the area.

No radioactive materials were affected by this incident and there were no safety consequences.

Dutyholder response

Sellafield Ltd confirmed to us that the IAEA safeguards measures applied to the store were in place and performed a check of future maintenance plans, which may necessitate access to the storage area to ensure the IAEA are notified in advance of any store entry.

Sellafield identified a number of actions following on from their investigation to strengthen arrangements for accessing the stores and ensure relevant personnel were aware of and trained in the operation of the IAEA seals.

Refresher training was provided to all relevant workers at the facility.

ONR actions

We consider Sellafield Ltd's immediate response to the incident to be appropriate.

We conducted follow-up activities as part of routine IAEA onsite inspection activities to observe the satisfactory implementation of the revised arrangements. It was determined at that time that Sellafield Ltd had implemented arrangements which, if adhered to, would adequately address the root cause of this incident.

Transport, INF- 4807, 24/01/25

A vehicle belonging to Isospeed Ltd was carrying five Class 7 dangerous goods (radioactive material) Type A packages, which are used to transport smaller quantities of radioactive material. In this instance, three packages with Iodine-131 and two krypton generators with a total Transport Index of 6.2, were being transported from Glasgow to Edinburgh in the early hours of 24/01/25. This was during Storm Eowyn and a vehicle had been blown over on the A74, which the Isospeed Ltd vehicle collided with. There was minimal damage to one of the Type A packages (tears and crush damage to corners of the outer cardboard packaging and no radiation or contamination detected.) The vehicle was significantly damaged and the driver required hospital treatment.

Dutyholder response

Police contacted Isospeed Ltd headquarters and the company enacted its emergency plan for such an occurrence. Isospeed Ltd contacted relevant regulators and liaised with the police and their Radiation Protection Adviser regarding the condition of the packages, which were deemed to be in a safe state at the scene of the incident. An Isospeed Ltd driver was sent to collect the packages from the damaged vehicle which had been safely transported by emergency services to a nearby service station. The packages were subsequently taken to an in-transit store before onward transport to the original consignee.

ONR actions

Our inspector contacted Isospeed Ltd to confirm our understanding of the incident from the information provided. The inspector queried why Isospeed Ltd was transporting Class 7 dangerous goods in a location where an Amber/ Red weather warning had been issued. Isospeed Ltd stated these were medical packages required for patients and company policy is to attempt all such deliveries. Our inspector requested to see the risk assessment/policy in place for travelling in extreme weather conditions. Isospeed Ltd provided further justification, stating:

- Isospeed Ltd's policy is to transport life-saving treatment;
- drivers are used to driving in extreme weather conditions;
- it is up to the driver to decide if it is safe to drive; and
- police said the driver could not have avoided the collision.

In response to the incident, and following our intervention, Isospeed Ltd has introduced a daily go/no-go dashboard with the consignor to identify the importance of package delivery for the next day or where deliveries can be delayed until later. This is used to inform their risk assessment prior to travelling in extreme weather.

Annex 2

Annex 3

Case studies

CASE STUDY 1:
Regulating Project CAROUSEL; "Centre of excellence for non-proliferation and safeguards at Capenhurst"

Introduction

The IAEA has sought a facility to enhance its training of international safeguards inspectors to maintain their knowledge and to ensure that all safeguarded enrichment plants, and associated material, remain in peaceful use in order to support the global nuclear energy renaissance. The centre of excellence will also enable development of new approaches for more efficient safeguards implementation for future nuclear fuel cycle technologies.

Siting of such a facility was subject to stringent conditions, which severely limited the number of countries able to host. Due to the UK's openness and transparency with regard to its nuclear fuel cycle, and the good standing of the GB nuclear industry, the UK was chosen as the host country.

Approach

Enabling a training centre to demonstrate diversion techniques and covert development of weaponisable material, raised specific challenges for the UK as the host nation with regards to maintaining compliance with UK safeguards legislation.

Plans for the centre of excellence have been under development for a number of years, with significant involvement from both our safeguards and security specialists. They have been reviewing the IAEA proposals for the facility to ensure their suitability and that sensitive information is properly protected.

Following initial negotiations, the UK agreed to host the training centre. Urenco UK has provided an old cascade from one of its enrichment plants, isolating it from the rest of plant, to enable its development into a dedicated training facility.

We engaged with the IAEA and the host facility, Urenco UK, to ensure that a balanced and effective regulatory strategy was implemented that maintained nuclear material accountancy, control and safeguards, while delivering a fit-for-purpose centre of excellence.

In addition to engaging with Urenco and the IAEA, we engaged with the UK government through DESNZ and a consortium of international partners including the USA, Germany and the Netherlands. We acted as the conduit and mediators between these partners, smoothing issues with the project and as acting as a support for Urenco UK in enforcing UK standards and expectations from the IAEA. This "pentapartite community" acts as the intellectual property guardians for the learning and knowledge developed at the facility.

Outcomes

The centre of excellence was officially opened by the IAEA Director General in August 2024, representing the culmination of years of effort from all collaborating parties involved.

This dedicated facility, operated by Urenco UK on behalf of the IAEA, is already being used by the IAEA to develop an advanced training course for inspection of gas centrifuge enrichment plants globally. The facility is planned to be fully operational by the end of 2025 enabling training of IAEA personnel, testing of new equipment technologies as well as R&D to support global non-proliferation and nuclear safeguards.

This project demonstrates our diverse functions, as a regulator of UK's nuclear industry ensuring security and safeguards compliance is maintained, engaging with international stakeholders to reach consensus, and promoting and aiding development of peaceful nuclear fuel cycle capabilities.

The completion of the project and ongoing operation of the centre of excellence leads to better, more efficient nuclear safeguards globally, and a safer world.

CASE STUDY 2
Reduction of regulatory burden for NRS Ltd decommissioning nuclear sites

The Central Electricity Generating Board and South of Scotland Electricity Board operated Magnox fuelled nuclear power across the UK, supplying electricity to the national grid between 1956 and 2015, see figure 1. All the former Magnox fuelled sites stopped operating their reactors between 1989 and 2015 and are being decommissioned by Nuclear Restoration Services Ltd (NRS), see figure 2.

During the period the Magnox fleet of reactors were operating, we utilised "Licence Instruments" in conjunction with the conditions attached to the site licence (also known as licence conditions), as measures to maintain comprehensive regulatory oversight of each licensed site.

Licence Condition 1, paragraph 3a, allows for the withdrawal of approvals, directions and consents. However, the provision does not address the withdrawal of specifications. Consequently the specifications issued during the operational phase of each reactor were still in force across the Magnox fleet, despite the reactors no longer being operational, with no established regulatory mechanism available for their withdrawal.

To remove the unnecessary regulatory burden this was placing on NRS, we sought legal advice and following due process, a withdrawal template for an individual specification was issued for use in 2021. NRS identified in 2024 that almost 100 legacy specifications and associated approvals were still in force. They approached us to consider if these could be withdrawn to enhance operational efficiency, ensure proportionate regulation and deliver cost and time benefits.

Historically Licence Instruments (LI) have been issued individually, with each supported by a project assessment report. This process was not designed to accommodate "bulk" withdrawals. However, ONR inspectors established that the legal advice in 2019 could be applied to facilitate "bulk" withdrawals using the primary legislative powers of the Nuclear Installations Act (NIA) 1965 (As Amended) Section 4(5).

We worked with NRS to enable it to produce a single written request for all the LIs to be considered for withdrawal across 10 NRS sites. Our assessment on the impact of each withdrawal was considered in a single project assessment report. The assessment concluded that the LIs being assessed no longer contributed to safety due to the decreasing nuclear risk profiles of the 10 sites, which are all in

advanced stages of decommissioning. It also concluded that the withdrawal of associated approvals, such as those for nuclear maintenance schedule prefaces aligns with and supports our ongoing commitment to delivering proportionate and enabling regulation.

The process was finalised through the issuing of a single legal instrument in the form of a letter being issued to NRS to confirm the requested LIs had been withdrawn.

We estimate that hundreds of hours of NRS and ONR inspector time was saved by utilising the Nuclear Installations Act 1965 (As Amended) Section 4(5) powers directly rather than the historical approaches of individual LIs not designed for this type of request. Through this innovative regulatory approach, we expect that NRS Ltd will see significant savings going forward, as compliance with these LIs is no longer necessary.

Figure 1: Berkeley Nuclear Power Station being commissioned for nuclear power generation in 1962

Figure 2: NRS Berkeley in 2020s

CASE STUDY 3

Sellafield Limited (Sellafield) – Release of Hold Point 406, allowing Sellafield to export fuel bearing material from the FGMSP in SSBs to the ISF.

The First Generation Magnox Storage Pond (FGMSP) on the Sellafield site is an open-air pond that was constructed in the 1950s and 1960s. Its role was to receive and store irradiated fuel from Magnox reactors, and to remove the fuel cladding prior to the fuel being processed.

Due to the ageing pond structure and infrastructure obsolescence, it presents an on-going high hazard radiological risk for which a solution must be found. FGMPS contains significant volumes of historic inventory, comprising various fuels, non-fuel bearing solid items/miscellaneous beta-gamma waste, mobile sludge, and the pond liquor contained within ~1150 skips, of which 346 contain fuel bearing material.

Moving the material from the pond presented a significant operational challenge to Sellafield Ltd. They addressed this by developing their capability to retrieve the skips and move them to their Interim Storage Facility (ISF) constructed in 2019 and operational in 2024.

Despite the positive work to remove waste from FGMSP and to address the high risk posed by the material, the ISF did not meet established national or international standards (such as IAEA guidance) for the storage of spent nuclear fuel. This compliance gap represented a regulatory challenge, which could have jeopardised the considerable advances that the site had achieved in hazard and risk reduction.

However, we recognised this challenge and adapted our flexible regulatory permissioning strategy accordingly. We provided advice and guidance to Sellafield, identifying areas where they needed to bolster safety and security elements of their proposal.

Sellafield developed an alternative proposal and while it did not meet all relevant good practice, our assessment acknowledged the improvements made and the mission critical imperative to address the ongoing high radiological risk.

On the balance of risk, safety case evidence sampled, our specialist inspectors' assessments and independent oversight by the Sellafield Ltd Nuclear Independent Oversight, we were satisfied that the risks associated with the proposed activity had been reduced so far as is reasonably practicable, thereby meeting statutory requirements. We were then able to release Hold Point 406, allowing Sellafield to export fuel bearing material from the FGMSP in SSBs to the ISF.

CASE STUDY 4
Sizewell A Turbine Hall – use of explosives to aid demolition

The twin reactors at Sizewell A were shut down at the end of 2006 after 40 years of operation.

Planning consent was granted in 2024 to demolish the turbine hall, representing one of the most significant work programmes at Sizewell A in many years. Due to the novel and innovative method proposed by NRS to demolish the hall, which involved the use of explosives, we placed a regulatory check point on the project which allowed us and NRS to ensure that all key risks had been identified and minimised, before the work was commenced.

Ahead of the demolition, controlled test detonations were successfully conducted with precision timing sequences specifically designed to comply with the rigorous nuclear site requirements for air overpressure and ground vibration limits.

The explosive demolition to debilitate the four reinforced concrete turbine bases on which the two 65-tonne turbogenerators stood took place in November 2024 and involved the largest single use of electronic detonators and cartridge explosive ever used on a licensed GB nuclear site.

Throughout this project, which pushed the boundaries of innovation in de-planting and conventional demolition, we adopted an enabling regulatory approach with NRS to agree the most effective and efficient way of progressing this work, recognising the benefits of adopting innovative solutions to achieve the desired outcomes. This helped to facilitate regulatory approval and allowed us to permission the novel approach. As a result, the extensive large turbine bases were successfully removed in just two weeks, significantly improving upon the more conventional drilling techniques that would have extended the project by several months.

The successful implementation of this innovative approach at Sizewell establishes a new benchmark. NRS are considering rolling out this demolition technique and the principles across some of its other sites, creating substantial operational efficiencies and significantly accelerating the pace of other decommissioning projects.

https://www.onr.org.uk/news/all-news/2024/12/enabling-regulatory-approach-helps-sizewell-a-turbine-hall-demolition/

CASE STUDY 5
Regulatory Oversight and Permissioning of a Novel Area – Graphite Safety Cases

The core of an AGR consists of large assembly of graphite bricks that are keyed together to form channels for fuel and control rods. As the core ages, there are two damage mechanisms that affect the core: graphite weight loss and brick cracking. Both increase with time and have the potential to affect the ability to control and shut down the reactor safely. The graphite core cannot be replaced.

The AGRs and their graphite cores are unique to the UK and there is limited experience available both in the UK and internationally of operating an AGR with increasing levels of graphite weight loss and brick cracking. This means there is a lack of relevant good practice and safety cases are based on first principles.

The licensee's graphite safety cases require continuous development to cover the progression of the damage mechanisms, relying on complex and novel methodologies to predict damage progression and to demonstrate tolerance to such damage. Such cases, require significant time and effort for the licensee to develop and for us to assess.

To enable us to make timely decisions on the adequacy of such cases and to minimise the risk to continued operation, and thereby avoiding lengthy shutdowns, our approach is to engage with the licensee at an early stage to discuss any new and novel developments. This enables us to independently develop our understanding by utilising knowledge, expertise available to us within ONR and externally through advisory expert panels. Any significant issues we identify are communicated to the licensee, so that they are appropriately addressed at an early stage in the safety case development. This approach reduces the risk of any significant shortfalls when such cases are submitted to us for assessment and permissioning.

To facilitate this, we have created a 'Graphite Project Lead' that coordinates and manages the assessment and permissioning of graphite safety cases and communications with the licensee. Lines of communications are established with the licensee at different levels, from technical and specialist levels to senior levels. We ensure consistency of our communications at the different levels through regular internal meetings that discuss ongoing issues and potential showstoppers. Consistency of messaging has proven to achieve balanced outcomes effectively and efficiently.

We also utilise the intelligence gathered from the early engagements to define our permissioning strategies for the different graphite safety cases. Proportionate to the nuclear risk, different approaches are utilised through 'derived powers', afforded to us through flexible permissioning arrangements. This ranges from no assessment and resolution of any issues through Level 4 engagements to the requirement of a permissioning licence instrument, allowing the effective targeting of the licensees and our efforts, utilising our limited resources efficiently.

This approach has been successful in avoiding potential lengthy reactor shutdown periods similar to those that happened at Hunterston B when the brick cracking in the core progressed quicker than predicted in 2018. At the time, following safety case submission to us for assessment, we identified a number of significant shortfalls and raised a number of technical queries that the licensee had to address when the reactors were off-line.

Well-managed proactive and early engagements have enabled us to regulate graphite effectively and efficiently, avoiding lengthy shutdowns and time pressure, which in turn has enabled the licensee to achieve its operational ambitions safely.

CASE STUDY 6
Devonport Submarine Dockings

Devonport is one of the largest naval bases in Western Europe and employs thousands of people. Here, through-life support is provided for submarines, surface ships and associated systems and equipment. Devonport Royal Dockyard Limited's (DRDL) licence conditions stipulate that our permission/approval is required before commencing the most safety significant activities. This is primarily due to the high-hazard nature of maintaining nuclear powered submarines. Agreeing these via "working level arrangements" gives us a more flexible approach to granting permission than utilising the licence conditions and can be tailored to the safety needs of the site.

DRDL is currently subject to enhanced regulatory attention because of historic shortfalls in areas such as organisational capability, decision making and leadership. As a result, our regulation of recent submarine docking and maintenance activities had to achieve a fine balance between holding DRDL to account for committed improvements while supporting the licensee to safely achieve this strategically important work.

The regulatory attention levels we apply to our licensed sites enable us to differentiate between dutyholders who are fully compliant and those where improvements are required. Our objective is to support sites out of enhanced and significantly enhanced attention as that reduces regulatory oversight, reduces costs for both the regulator and the dutyholder and ultimately leads to safety improvements.

Our targeted approach meant that we only evaluated the highest hazard areas, or those where the hazard is least well controlled; for instance our assessments and inspections were focused on issues that could produce significant radiological risk, novel activities and principal nuclear safety measures. We were able to take a risk-informed and proportionate approach to determining those activities that presented the highest hazard due to our experience of the site, our understanding of the activities and our technical expertise.

Where appropriate, we re-used information already provided by DRDL and regulatory intelligence previously gathered and worked closely with the Defence Nuclear Safety Regulator and the Environment Agency to prevent duplication.

In permissioning the second activity we took an innovative approach by giving permission before it was requested or needed by DRDL. Permission was considered at the point that we had secured enough confidence that DRDL had the organisational capability to determine themselves when the activity could be undertaken safely. This was key to ensuring that we did not delay the site's project working.

CASE STUDY 7
Regulation of explosives manufacture and storage at AWE

AWE is an arms-length body of the Ministry of Defence, which undertakes high-hazard activities across its licensed sites, associated with manufacturing, maintaining and assuring nuclear warheads in support of the UK's nuclear deterrent. AWE is unique in having both explosive and radiological hazards present on its sites.

Activities associated with the manufacture and storage of explosives are inherently dangerous to workers. Having suitable controls in place is fundamental in reducing the risk of fire and explosion, as well as limiting the number of individuals exposed to that risk. In 2024, AWE's Explosives Technology Centre (XTC), located on the Aldermaston nuclear licensed site, began to increase productivity and experienced a series of events, which repeatedly challenged essential safety controls.

We immediately met with AWE to clarify accountabilities and influence the necessary safety improvements. Unfortunately, before these improvements could be fully realised, a further incident occurred, which resulted in damage to an explosive charge and exposed workers to an unacceptable risk. We applied formal enforcement in line with our Enforcement Policy Statement and Enforcement Management Model and served an improvement notice (IN) to promptly secure the required safety outcomes.

As a result of the IN, we had the scope to stop or limit activities at the XTC. However, aware of the time required to demonstrate compliance with the IN and that XTC programmes are critical to AWE's mission and UK national security, it was considered disproportionate to unduly limit XTC's operation. Instead, we supported AWE in identifying a series of risk informed and targeted improvements, in addition to enhanced oversight and control of explosive activities.

In parallel, and in response to broader significant and sustained safety improvements over several years, we moved the wider Aldermaston site out of enhanced regulatory attention. The regulatory attention levels we apply to our licensed sites enable us to differentiate between dutyholders who are fully compliant and those that require evidenced improvements. We always support sites on a path of improvement out of enhanced and significantly enhanced attention.

This action enabled us to reduce our regulatory oversight and footprint on site, while promoting AWE's autonomous self-regulation and demonstrates an explicit consideration of the economic impact of our activities.

CASE STUDY 8
Nuclear New Build Early Engagement

As an enabling regulator, we see a real benefit in being able to engage with vendors and prospective licensees early in their plans and believe that this enables us to provided targeted advice that could lead to efficiencies during formal regulatory processes.

As such, on 26 March 2024, ONR, alongside the Environment Agency and Natural Resources Wales, launched the early engagement process for those interested in deploying nuclear reactor technology in Great Britain. This was one of the key commitments we made in support of the governments civil nuclear roadmap. It is a transparent framework that enables vendors and interested parties to engage with us, the Environment Agency and Natural Resources Wales. There are three tiers of engagement that interested parties can request and vendors are able to apply for the type of engagement that best suits them and their plans. The framework is available to reactor vendors, developers or aspirant licence/permit holders.

This framework has not only enabled requesting parties to get early advice that can help them better manage and de-risk the different stages of their project, it provides the regulators with the chance to understand the maturity and readiness of a project to enable applicants to progress to more formal processes and enable effective prioritisation and management of regulatory resource.

Since its launch, ONR and the Environment Agency have engaged with five companies. One of these organisations is now in the nuclear site licensing process and another has applied for GDA, while another two have signalled their intent to apply for GDA at a later point. This demonstrates that the process is achieving its aim of enabling organisations to gain a better understanding of and make meaningful progress through regulatory processes.

The early engagement work has been absorbed into our portfolio without increasing head count. We are continually gathering feedback from these interactions to improve the framework and integrate it with other regulatory processes.

Generic Design Assessment (GDA)

ONR, the Environment Agency and Natural Resources Wales developed the GDA process in response to a request from government following its 2006 Energy Review. GDA is essentially a process where the regulators assess the potential suitability of a nuclear reactor in terms of safety, security and environmental at an unspecified location in the UK.

GDA is a voluntary process designed to offer reduction in uncertainty and project risk regarding reactor designs and their associated safety and security justifications, so as to be an enabler to future licensing, permitting, construction and regulatory activities. By engaging in this assessment at the design stage, any potential safety, security or environmental concerns can be identified and highlighted so they can be addressed, thus de-risking more formal regulatory processes in the future.

GDA is not site specific, allowing the results of the regulators' assessment to potentially be applied to multiple sites where that design is subsequently constructed. However, undertaking GDA does not prevent a requesting party working on site selection, technology selection, financing, licensing, etc. at the same time – these activities can commence before GDA has been completed.

As committed to in the Civil Nuclear Roadmap, we have engaged in reviews of both the GDA and Nuclear Site Licensing process to identify opportunities for streamlining. A key area identified was greater collaboration with international regulators on reactor design assessment and leveraging assessments undertaken by other regulatory bodies. As such, the GDA guidance was updated in July 2024 to provide information on how we can leverage regulatory assessments undertaken in other countries to realise efficiencies in GDA, and on moving from a two-step GDA to nuclear site licensing and construction. We have published our collaboration activities to date on our website.

The GDA process not only benefits the requesting parties but will also benefit potential licensees wishing to commence projects involving the technologies that have engaged with the GDA process.

GDA is an enabling and efficient way of helping to ensure that new nuclear power stations will meet high standards of safety, security, environmental protection and waste management while providing vendors and potential licence applicants with

the means to reduce overall project risks and gain increasing levels of regulatory confidence in their design.

During the course of several GDAs, we have gained experience of how UK expectations compare with reactor vendors' country specific nuclear safety requirements, and their application by regulators. For example, we now have a much greater appreciation of the French and USA regulatory approaches following the EPR and AP1000 GDAs respectively. We continue to work closely with these regulators today. The result is that we already have well-informed knowledge of the areas of a new international design are likely to align with our expectations, and likewise where to expect gaps. This speeds up the process of evaluating a new design.

The RIs identified towards the end of the EPR GDA process informed our approach going forward. In subsequent GDAs, we asked questions about how the selected technology addressed known areas of challenge earlier in the process. This allowed us to proportionately focus on the important issues at an early stage. For example, there are ABWR and HPR1000 regulatory observations (ROs) raised early in those GDAs that look similar to the GDA Issues raised at the end of the EPR GDA, because the EPR issues informed those GDAs.

An indicator of the success of this informed and targeted, approach is that there have been no GDA Issues remaining at the close-out of the process on GDAs since EPR and AP1000, and the number of Assessment Findings raised on each GDA has also reduced significantly compared to the EPR/AP1000.

There has been a significant increase in the portfolio of our new reactors directorate, in particular there are currently three GDAs in progress, with a further two GDAs expected to start in quarter two of 2025. This is compared to just one GDA being undertaken in 2018/19.

Robust scrutiny and subsequent learning has resulted in significant streamlining and efficiency in the GDA process. If we had resourced the current GDA work at the equivalent level to 2018/19 we would have required an additional 107 FTE. For 2025/26 the GDA resource demand is 68 FTE – a reduction of 36%.

The early engagement work with five technology vendors has also been absorbed into our portfolio without increasing head count.

CASE STUDY 9
Vendor Inspection of Bilfinger

Challenge

Suppliers play a vital role in supporting the design, construction, operation and decommissioning of nuclear facilities. With the growth of these activities, coupled with an increasing reliance on new and existing suppliers, it will continue to be important that licensees have robust Supply Chain Management (SCM) arrangements for nuclear safety related items or services.

These arrangements, which include procurement activities, are fundamental to ensuring that any potential licensee, licensee or other dutyholder applies appropriate levels of control, oversight and assurance over all organisations within their supply chains, including those based outside of Great Britain.

Approach

The Energy Act 2013 establishes us as the Enforcing Authority for Section 6 of the Health and Safety at Work Act (HSWA) 1974, which relates to the 'General Duties of Manufacturers'. One of the methods we use to exercise this responsibility is via an annual Vendor Inspection (VI) programme that samples the adequacy of licensee and vendor supply chain management arrangements.

The programme targets areas of risk and seeks to influence improvements across the GB nuclear industry. It includes suppliers who provide safety-related products or services, and in doing so, also enables us to consider the adequacy of the licensee's SCM arrangements.

The programme identified Bilfinger for inspection given their role as a critical supplier to the GB nuclear industry. In February 2024, an inspection took place at Bilfinger's Hull premises and we identified a number of shortfalls that required improvement. Consequently, an RI was raised to seek improvements in the integration, clarity and completeness of Bilfinger management systems and quality

management arrangements.

We have engaged with Bilfinger as they have implemented the Improvement Plan to address the shortfalls identified. These enabling engagements provided a platform for a follow-up inspection, which sampled the adequacy of Bilfinger's arrangements, established in its management system, for the supply of nuclear safety related items or services to the GB nuclear industry.

Outcome

ONR and the German nuclear regulator, the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUKN), undertook a follow-up inspection of Bilfinger in Dortmund.

The inspection demonstrated Bilfinger have adequately addressed the actions contained within their Improvement Plan. As a result, there has been an improvement in the integration, clarity and completeness of Bilfinger's management systems and quality management arrangements. These improvements will reduce the risk that goods or services purchased by GB licensees do not meet the specified technical and/or quality requirements, supporting safe and reliable nuclear operations.

The improvements observed have been shared with other national nuclear regulators via the Nuclear Energy Agency (NEA) Working Group on Supply Chain (WGSUP), which is responsible for supporting and advising the Committee on Nuclear Regulatory Activities (CNRA) in carrying out its programme of work in areas related to nuclear supply chains.

CASE STUDY 10
Proportionate package approval activity for Small to Medium Sized Enterprises

SXSUBSEA Ltd are the owner/designer of a package used to transport high activity Iridium-192 sources within a radiography projector. In 2023, the company applied for the renewal of their package design approval, which was due to expire in January 2024. The package is not regularly used by the company, but they wished to retain its approval to allow transport of the projector if required.

Recognising that the package approval process can involve significant costs and the applicant was a small/medium sized enterprise, we developed a proportionate, risk-targeted strategy for the renewal, critically reviewing the previous package design approval and only assessing those areas affected by changes in the package design and/or legislation. Our assessment work was limited to mechanical engineering, the applicant's periodic design review and assessment of ageing effects. Our enabling approach ensured legal compliance and ongoing package safety without incurring excessive cost for the applicant.

CASE STUDY 11
Project Aries – Effective cyber protection systems

Our dutyholders acknowledge the need for investment to protect against the ever-evolving threat landscape, particularly across sites with the greatest potential for unacceptable radiological consequences following a cyber-attack. As part of our commitments under the 2022 Civil Nuclear Cyber Security Strategy, and in support of the CNI's cross-cutting theme on cyber security, we commenced Project Aries.

Project Aries was a joint programme of engagement between Cyber Security and Information Assurance (CS&IA) and Electrical, Control and Instrumentation (EC&I) inspectors with support from Fault Studies specialists. It focused on ensuring dutyholders have sufficient control measures in place so a malicious actor cannot carry out a cyber-attack resulting in an unacceptable radiological release.

This work brought together experienced inspectors from across ONR and our purposes, to reduce duplication and improve efficiency through collaboration. It was based on the idea that, if safety-related operational technology is not secure, we cannot be confident that it is truly safe.

We worked hand in hand with dutyholders using an enabling and sampling approach to take confidence in the evidence put forward by dutyholders, ensuring it was appropriately tailored to each, without the fear that it would be considered suitable for either security or safety, but not the other. This enabled us to provide confidence following high level media and ministerial interest in reported cyber events that such circumstances could not result in an unacceptable radiological release affecting the public.