



Safeguards Annual Report 2024

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# Introduction

The Office for Nuclear Regulation (ONR) is the State Regulatory Authority (SRA) for safeguards in the UK. This means that we are responsible for domestic regulation of UK operators and ensuring that the UK meets its international safeguards obligations. Our regulation of safeguards, and facilitation of the safeguards activities of the International Atomic Energy Agency (IAEA), are delivered by our Safeguards Sub-directorate.

This report provides an overview of our implementation of the safeguards regime in 2024, as required under Regulation 41(2) of the Nuclear Safeguards (EU Exit) Regulations 2019 (NSR19).

# Regulatory activities

NSR19 places duties on all holders of civil nuclear material in the UK to establish, implement and maintain a system of accounting for, and control of, qualifying nuclear material in each qualifying nuclear facility. Holders of qualifying nuclear material encompass a diverse range of organisations. This includes operators of major nuclear facilities (such as reactors, reprocessing plants, fuel enrichment and fuel fabrication plants) to qualifying nuclear facilities with limited operation (QNFLOs), such as universities, research centres and small businesses.

Our enforcement policy statement and The Regulators’ Code require us to enforce these duties in a manner that is:

* proportionate to risks arising from any breach;
* targeted on activities that give rise to the most serious risks;
* consistent across similar circumstances to achieve similar outcomes;
* transparent to the dutyholders in question; and
* accountable to the public.

To achieve this, we have established an effective and robust regulatory framework to ensure compliance with NSR19 and to enable the UK to meet its international safeguards obligations. This framework provides safeguards inspectors with a regulatory toolkit from which they can make targeted and proportionate interventions to ensure operators are adequately complying with NSR19. This toolkit includes a combination of regulatory activities that can be broadly categorised into ongoing engagement, on-site inspection, and the regulatory assessment of operator submissions. Our guidance further demonstrates this regulatory approach and is available to operators through our [website](https://www.onr.org.uk/publications/regulatory-guidance/).

## Inspection

During the reporting period we conducted 26 on-site inspections. These inspections included:

**Nuclear Material Accountancy** (NMA) to confirm whether operators’ nuclear material accounting and operating records, required by Regulations 10 and 11 of NSR19, are technically underpinned and align with the accounting reports submitted to us under Regulations 12-15 of NSR19.

**Physical Inventory Take (PIT) Evaluation** to confirm that operators are undertaking regular PITs as required, and that this component of their accountancy and control system is proportionate to and appropriate for the facility in question, as required by Regulation 6 and Schedule 2 of NSR19.

**Basic Technical Characteristics** (BTC) to confirm whether design information declared by operators under Regulation 3 of NSR19 is accurate and matches physical reality.

**Accountancy and Control Plans** (ACP) to confirm whether operators are adequately implementing their nuclear material Accountancy and Control Plans (ACPs), as required by regulations 6, 7, and 9 of NSR19.

**Safeguards System-Based Inspections** (SSBI) which take a cross-cutting approach by focusing on key nuclear material accountancy and control systems (such as measurement systems, nuclear material tracking and data processing systems). They also confirm whether these systems are being implemented in a manner which is proportionate to and appropriate for the facilities in question, as required by Regulation 6 and Schedule 2 of NSR19.

Of these on-site inspections, 25 received a ‘green’ rating, indicating no formal action taken by ONR. One inspection received an ‘amber’ rating, where we have sought improvement from the operator to address gaps in compliance. We have worked constructively with the operator and we are content that the operator has addressed these gaps in a timely manner.

We have undertaken several joint compliance inspections with our nuclear safety and security inspectors. This allows us to be more efficient and effective by sharing regulatory intelligence where possible, avoiding the undue burden of separate interventions driven by each regulatory function.

## Assessment

NSR19 requires operators to make submissions to us that include:

* safeguards-relevant design information of facilities BTC, as required by Regulation 3 of NSR19;
* descriptions of arrangements and procedures for nuclear material accountancy and control ACPs, as required by regulation 7 of NSR19; and
* accounting reports on nuclear material inventories and movements, as required by regulations 12-15 of NSR19.

We perform assessments of these submissions to judge their compliance with regulatory requirements and relevant good practice, and to inform and target our on-site inspection activities.

We assessed all nuclear material accounting reports submitted during the reporting period and carried out ten assessments. These included:

**BTC assessments** to confirm whether these submissions were correct, complete, and adequate in line with the requirements of Regulation 3 of NSR19 and, where necessary, met international obligations. The two BTC assessments completed were judged to be adequate.

**ACP assessments** to confirm whether the arrangements and procedures for nuclear material described in ACP submissions were proportionate to and appropriate for the facility in question, and are being implemented adequately, as required by Regulations 6, 7, and 9 of NSR19. The two assessments were judged to be adequate.

**QNFLO assessments** to confirm documents comply with the requirements of NSR19, and the information provided within the BTC are correct and arrangements and procedures for controlling and accounting for material outlined in the ACP are proportionate and appropriate for the qualifying nuclear facility**.** Each of the six QNFLO assessments were judged to be adequate.

## Facilitation

As set out in Section 72 of The Energy Act (2013), one of our safeguards purposes is to enable and facilitate compliance by the UK with its international safeguards obligations. Under the UK’s Voluntary Offer Agreement (VOA), INFCIRC/951, with the IAEA, the UK is obliged to facilitate IAEA safeguards inspections and site visits at UK facilities that have been designated for that purpose.

The IAEA designated four facilities across two sites for their inspection of the implementation of UK safeguards and carried out 37 safeguards inspections at the designated facilities during the reporting period. We successfully facilitated all the IAEA inspections enabling the IAEA to fulfil their objectives. We facilitate IAEA safeguards inspection activities by liaising with them and the relevant operators, overseeing facility preparations for inspection, and where necessary accompanying IAEA inspectors on-site.

No significant issues have been raised by the IAEA regarding the facilitation of their safeguards inspections in the UK. During the Annual Review of Safeguards Implementation in the UK, the IAEA indicated they were satisfied that we were effectively meeting our international obligations.

We continue to support the IAEA to better understand the differences between the records held at Capenhurst site and the nuclear material accounting reports we submitted to the IAEA. These differences are due to the different reporting requirements in NSR19 and the VOA causing a deviation when domestic reports are translated into the required format for the IAEA.

DESNZ, on behalf of the UK, and the IAEA have agreed that the Sellafield Product and Residue Store (SPRS) will be designated for implementation of IAEA safeguards in line with the Sellafield Retreatment Plant (SRP) starting operations in 2028. The intent is to retain the current quantity of separated, unirradiated plutonium under IAEA safeguards, once plutonium cans start to be removed from their existing storage locations, repackaged and/or retreated, then sent for long term storage in SPRS. We are facilitating interactions between the IAEA, Sellafield and the Nuclear Decommissioning Authority to support the arrangements and activities to make this happen.

## Reporting

NSR19 requires operators of qualifying nuclear facilities to provide us with accounting reports for each material balance area. A material balance area is an area in or outside of a facility where the physical inventory of qualifying nuclear material can be determined, and the quantity of qualifying nuclear material in each transfer into or out of the area can be determined.

There are currently 67 material balance areas across the UK (excluding qualifying nuclear facilities with limited operation – see below).

Regulations 13 to 18 of NSR19 prescribe the various types of reports and frequency of reporting required. These reports include monthly Inventory Change Reports (Regulation 14), and Material Balance Reports and Physical Inventory Listings each calendar year (Regulation 15).

We have successfully assessed these reports to ensure that they are correct and complete. We have submitted them to the IAEA, in the required format under the UK/IAEA VOA, enabling the UK to meet its international safeguards obligations. Within the reporting period, this amounts to more than a thousand reports, with approximately three hundred thousand lines of accounting data.

Where our assessment has highlighted errors or discrepancies, we have worked with the relevant operators for these all to be resolved in a timely manner.

Regulation 19 of NSR19 requires operators to submit additional reports arising from international agreements and to fulfil obligations resulting from international trade. These include bilateral Nuclear Cooperation Agreements (NCAs) with the United States of America, Australia, Canada, Japan, and with Euratom. During the reporting period we have received, analysed and facilitated the submission of these reports to the relevant states through DESNZ in accordance with the administrative arrangements underpinning each of these agreements.

There are several reports in addition to those mentioned above arising from state level agreements with the IAEA (see following table). We have met all these reporting requirements. This includes substantial reporting commitments under the protocol additional to the voluntary offer safeguards agreement (INFCIRC/951 Add. 1) with the IAEA known as the ‘Additional Protocol’ (AP).

|  |  |
| --- | --- |
| **Report** | **Frequency** |
| Qualifying Nuclear Facilities. ‘Facilities List’ | Annual |
| Application of Safeguards on material transferred to the UK pursuant of INFCIRC/175 | Quarterly |
| Minimisation and elimination of Highly Enriched Uranium (HEU) pursuant to INFCIRC/912 | Annual |
| Neptunium (Np) and Americium (Am) Report | Annual |
| Annual Additional Protocol (AP) submission pursuant to the UK/IAEA - AP agreement | Annual |
| UK Export report pursuant to the UK/IAEA Additional Protocol (AP) agreement | Quarterly |
| IAEA Inspector designation | Periodic |
| Withdrawals of nuclear material from safeguards | Annual |
| Programme of Activities pursuant to the UK Voluntary Offer Agreement | Annual |
| INFCIRC/549 – Annual inventories of Plutonium and Highly Enriched Uranium Holdings | Annual |

## Qualifying Nuclear Facilities with Limited Operation

We regulate more than 130 qualifying nuclear facilities with limited operation (QNFLOs), this number fluctuating over time due to the changing nature of these organisations’ activities. They primarily comprise universities, research centres, and small businesses. NSR19 provides the opportunity for these operators to apply for a reduced safeguards reporting regime, which we have implemented following applications from eligible QNFLOs. The reduced reporting regime is working effectively, and we continue to support these organisations in meeting their obligations under NSR19. For QNFLOs, the same regulatory framework applies as with the larger facilities, but we adopt a proportionate approach given the scale of the facility.

## AUKUS

For the trilateral partnership between Australia, the UK and the US (AUKUS) regarding collaboration on future nuclear-powered submarines for the Royal Australian Navy, non-proliferation and international safeguards need to be considered.

As part of the implementation work for this collaboration, DESNZ continue to draw on our safeguards technical expertise in developing the safeguards and verification approach for AUKUS and for providing capacity-building support to the Australian Safeguards and Non-Proliferation Office (ASNO).

We are represented at the UKs AUKUS cross-Governmental safeguards technical experts group meetings and in the UK delegation meeting with trilateral partners and with the IAEA where applicable.

## Update of NSR19

The Post Implementation Review (PIR) of NSR19 and the Nuclear Safeguards (Fissionable Material and Relevant International Agreements) (EU Exit) Regulations was undertaken by DESNZ in 2023. Since the PIR Report was published, we have been engaging with DESNZ to address the required modifications to simplify and strengthen the regulations to allow us to better influence improvements in the relevant areas, and better align our requirements to global standards. Work is ongoing with the intention being that the amended regulations be issued for consultation in 2025.

## Treaty of Tlatelolco

DESNZ are currently engaging with us to discuss how the UK’s safeguards obligations could be implemented in the British Overseas Territories that are signatories to the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco). Initial discussions with DESNZ have included our feedback on what role we could perform in providing the necessary safeguards assurances and we have demonstrated our commitment to supporting DESNZ in this endeavour. Providing such safeguards assurances currently sits outside our vires and planning to implement this regime would require an assessment to identify the appropriate level of resource, funding, and legislative change.

# Conclusion

Through our implementation of NSR19 in 2024, we have enabled the UK to meet all its international safeguards’ obligations, delivered the required IAEA safeguards reporting on time, and effectively facilitated IAEA safeguards activities in the UK. During 2025, we hope to see the updated NSR19 regulations be issued for consultation, and for further clarity regarding ONR’s role in the UK meeting its safeguards obligations in its overseas territories in Latin America. We will continue to work closely with our domestic operators to provide regulatory advice and guidance to assist them in meeting their obligations under NSR19.

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Any enquiries related to this document should be sent to contact@onr.gov.uk