

Environment Agency Report to the Sizewell Site Stakeholder Group

February 2025

This report covers the Environment Agency's regulation of Sizewell A & Sizewell B nuclear sites and related issues for the period October 2024 to January 2025.

Our Regulation

We regulate radioactive waste disposals and discharges to the environment. We do this by placing limits and conditions in environmental permits, which helps us to ensure that radioactive waste discharges are minimised, and that the environment is protected. We carry out a variety of regulatory activities to check for compliance with our regulatory requirements, including site inspection, review of documents and arrangements and any reports of events.

Details of our assessments and any non-compliances identified are included in Radioactive Substances Compliance Assessment Reports (RASCARs), which are placed on our public register. See the 'further information' section at the end of this document to find out how to request documents from our public register.

We regulate and control other activities through our environmental permits, including surface water discharges to surrounding water bodies and emissions to air from emergency diesel generators. We are also the joint competent authority, alongside the Office for Nuclear Regulation (ONR), for the Control of Major Accident Hazard (COMAH) regulations that apply to Sizewell B.

Information on environmental permits and our regulation of the Sizewell sites can be found at: <https://www.gov.uk/guidance/sizewell-nuclear-regulation>

Site regulation

Sizewell A

We continue to hold monthly remote meetings with Nuclear Restoration Services (NRS) to discuss the work taking place on site that could have an environmental impact, and we review quarterly discharge and environmental monitoring returns.

In November 2024, we carried out an inspection of the environmental leadership and culture at site and also reviewed the progress embedding the NRS sustainability strategy. We found that NRS have a clear leadership structure to ensure that environmental risks and issues are considered alongside the management of safety. Since our last review in January 2024, real progress has been made with embedding the NRS sustainability strategy. Procedures are now in place for designing sustainability into projects, for reusing demolition material and for the reuse and recycling of redundant assets. There is an active Sustainability Group that is pushing positive initiatives such as saving water.

In January 2025, we undertook a two-day asset management inspection. The purpose of this inspection was to check that NRS are appropriately managing the facilities and equipment on site, to minimise the risk of failure of environmentally relevant plant and to minimise and mitigate any environmental risks posed by the degradation of buildings, plant, and infrastructure. On the first day, we reviewed the NRS corporate procedures and standards for asset management and on the second day, we inspected how the corporate arrangements were understood and being applied on site. The inspection report is still being completed, and we will report our full findings at the next meeting, we did however identify a number of areas of good practice, such as:

- Improved asset management lifecycle decision making since our last corporate audit in 2018.
- All site assets are recorded on an Asset Management System
- The site system engineers are suitably trained and demonstrated a high level of knowledge
- There is a clear understanding of the highest risk assets at site and plans in place to monitor and maintain them
- NRS have achieved ISO5501 accreditation for their Asset Management System

We also identified several opportunities to further improve the Asset Management System including consideration of further asset management reviews to inform improvements for individual sites, clarifying the corporate risk appetite and benchmarking NRS's approach to asset management against external organisations such as Network Rail.

Sizewell B

Alongside our inspection programme, we have maintained bi-weekly telephone and regular email contact with EDF, and routine review of returns.

In September 2024 we carried out a pre-outage inspection (ahead of refuelling outage 19, RO19). We reviewed management arrangements and practices to ensure that radioactive and other waste¹ is minimised and appropriately managed, and that Best Available Techniques (BAT) were to be implemented during RO19. No novel waste was expected as part of the outage (this was also confirmed during the subsequent start-up meeting in November), and potential environmental risks were appropriately mitigated (including the prevention of environmental releases). We did not identify any issues of non-compliance during the inspection.

On 4th November 2024 we were notified by the Operator that during RO19 routine inspections they discovered that a small section of the gaseous waste ducting (leading into the main stack) on the Auxiliary building roof had corroded through. The inspection identified that pressurised air flow was escaping through the ducting. This section of ducting is located downstream of the filtration abatement system, before joining the main vent stack. The Operator has indicated they believe that the volume and release of radioactivity to atmosphere was negligible. A work request was raised in the system and repairs were completed to high standard prior to the power station returning to service. We are investigating the root cause of the event, including the suitability of asset management

¹ Minimisation of conventional waste on site is good practice (and to comply with the minimisation of hazard to humans and environmental requirements of waste legislation).

and maintenance activities. We will update the SSG at the next meeting on the results of our investigation.

We have received and followed up on notifications of fluorinated refrigerant gas (F-gas²) leaks from plant items on site in September 2024 and December 2024. We confirmed that the leaks were minor and that the chiller repairs were completed rapidly by qualified contractors. We established that the f-gas leak incidents were managed in line with EDF's management systems and that EDF has complied with its obligations under F-gas regulations. We will continue to work with the Operator to eliminate losses as far as possible.

Enforcement

Sizewell A

We have not taken any enforcement actions at Sizewell A in the period since the previous SSG meeting (15 October 2024). The operator has remained compliant with the requirements of their permits.

Sizewell B

We have not taken any enforcement actions at Sizewell B in the period since the previous SSG meeting (15 October 2024). The Operator has remained compliant with the requirements of their permits.

Environmental Permitting

Sizewell A

There have been no changes to NRS's Sizewell A permits in the period since the previous SSG meeting. We are expecting an administrative variation application from NRS to consolidate some changes at the site into the permit, such as removing references to gaseous disposal outlets which have not been present for some years and changing the description for the main aqueous outlet. NRS are not proposing to change any gaseous, aqueous or solid disposal limits.

Sizewell B

There have been no changes to EDF's Sizewell B permit in the period since the previous SSG meeting. We are expecting a joint partial permit transfer application from Sizewell B (EDF Energy Generation Ltd.) and Sizewell C Ltd. to transfer an area of land, currently within the Sizewell B site boundary, from EDF to Sizewell C Ltd.'s permit.

Discharge Reports

The sites' environmental permits require the operators to use Best Available Techniques (BAT) to manage their operations so that wastes are minimised along with their impacts on the public and wider environment. Disposal of wastes – as solids, liquids, or gases – can only be made via permitted routes or by transfer to permitted sites.

² F-gases are greenhouse gases with a strong global warming potential

NRS and EDF are required to report liquid and gaseous discharges to the environment to us on a regular basis. These reports are placed on the public register. We examine these reports and detail our assessment of their performance through RASCARs.

Sizewell A

At Sizewell A NRS are required to report liquid and gaseous discharges to the environment to us on a quarterly basis, within 30 days of the end of the quarter. Reports received in October 2024 and January 2025, covering the reporting period July to December 2024 (inclusive) showed that all liquid and gaseous discharges from Sizewell A were at levels well within permitted limits. One discharge was made via the main radioactive liquid effluent route in November 2024.

Low volumes of treated effluent were discharged from the sewage treatment plant, which serves both Sizewell A and Sizewell B sites. The plant is managed by NRS. Effluent is monitored at quarterly intervals for the presence of tritium or caesium-137. No radioactivity above limits of detection was reported in samples taken during the period covered in this report.

Gaseous discharges from Sizewell A are very low compared to when the site was operational (pre-2007). Gaseous discharges are fairly constant as the site's reactors are now "breathing" passively. This means there is no forced flow of air through the reactors and discharges follow a seasonal pattern across the year influenced by barometric pressure, and weather conditions.

Sizewell B

Liquid and gaseous discharges made from Sizewell B permitted routes have remained within permitted limits for the period August 2024 to December 2024 (inclusive), and returns were submitted to us within the required timescales. During the reporting period the reactor was shut down for refuelling outage 19 (RO19) on 11th October 2024 and returned to power on 1st December 2024.

12-month cumulative gaseous discharges of carbon-14 remained less than 76% of the annual limit, with other gaseous discharges less than 28% of respective annual limits. 12-month cumulative liquid discharges were in-line with expected levels and remain less than 35% of the annual limit for tritium, and less than 7% for caesium-137 and other radionuclides.

No quarterly notification levels (QNLs) were exceeded for gaseous or aqueous discharges. Liquid tritium discharges increased from September to November as a result of preparation works during RO19, where the reactor coolant system is diluted and drained. This aligns with the cyclic trend of discharges in following the station fuel cycle, as reported during the previous SSG. We will review subsequent returns to ensure that tritium discharges progressively reduce following the reactors return to service.

Environmental Monitoring

Radioactivity in food and the environment report

Our annual report was published in November 2024 on GOV.UK [Radioactivity in food and the environment \(RIFE\) report](#) - GOV.UK (www.gov.uk)

This report gives a detailed assessment of radioactivity in food and the environment and the public's exposure to radiation during a specific year. It shows that the public's exposure to permitted discharges and direct radiation near nuclear and non-nuclear sites is low and within dose limits.

The report brings together the nationwide monitoring programmes of the UK's food standard agencies and environment agencies. This monitoring is independent of, and is also used as a check on, the monitoring carried out by site operators.

This is now the second year we've published the whole report as a HTML document with associated ODS files. We no longer issue a PDF or print copy. Previous reports are on the National Archives website.

The annual report highlights:

- Overall, between 2022 and 2023 there were no significant changes to the radioactivity measured in food and the environment.
- The dose received by the public near to nuclear licensed sites and industrial and landfill sites in the UK is low and again well within legal limits.
- Food remains safe and the public's exposure to artificial radiation is within legal limits.
- Radioactivity from natural background, rather than nuclear sites, continues to be the more significant source of exposure to communities in all areas of the UK.
- Around 10,000 analyses and dose rate measurements were completed in 2023.
- The data from our monitoring programme in this report demonstrates that radioactivity in food and the environment is safe.

For Sizewell, the total dose for the representative person was less than 0.010mSv in 2023, down from 0.011mSv in 2022, and less than 1% of the government derived limit to protect members of the public. Levels of radioactivity found in the environment remain low.

In parallel to this programme, the operators are required to carry out their own programme of environmental monitoring and to submit the results of this programme to us on a periodic basis. This is carried out jointly by NRS and EDF.

In September 2024 and December 2024, we received the environmental monitoring reports covering the period from April 2024 to September 2024 (inclusive).

Sizewell A

For a herbage (plant) sample taken in April 2024, the initial result showed an elevated level of radiation. The area was re-surveyed in May 2024 and the results of the resample were found to be at the minimal detectable activity of the instrument. The original elevated result was likely a consequence of the area being waterlogged when the sample was taken. We were informed of this issue in advance and did not deem further action necessary.

The other results are consistent with our independent programme and do not indicate any other concerning results or trends. We make the information from both operator and our own environmental monitoring programmes available on our public register.

Sizewell B

We received the results of the Environmental Monitoring Programme (EMP) for the period between January 2024 to June 2024 (inclusive).

The values of radioactivity measured in samples of the EMP vary in response not only with discharges from the Power Station but also in response to local environmental conditions, weather, sampling techniques, and analysis methods. We require the operator to inform us when values obtained exceed the mean plus three standard deviations of the previous 12 results, that is for some reason are statistically higher than those taken in the previous year. Between January and June Sizewell B reported three occasions when the reported results were statistically elevated.

- One of the samples was high for potassium-40 which is reported solely as an indicator of sediment or sand grain size. Higher potassium-40 indicates the sample has a smaller average grain size, which may correlate with greater absorption of other nuclides. No elevation was noted for other nuclides in the samples measured.
- A quarterly grass/herbage sample was elevated for caesium-137 was thought to be a result of excess rainfall (preceding the collection day) which can cause radionuclides to be drawn out of the soil and deposited onto vegetation. An additional sample was subsequently collected from the same location and the activity reported was below the Minimum Detectable Activity (MDA).
- The Radiation dose rate on a quarterly beach/ estuarine spot measurement was elevated. An extra measurement taken 3 days later reported the dose within the normal range. Analysis of historic results suggest that the elevated result can be attributed to natural fluctuating background.

We routinely review the EMP results and examine trends over time to ensure that any unusual results are not of operational or radiological significance.

The analytical results for strontium-90 (Sr-90) for the period January to March 2024 for the sand and sediment samples were reported late in the subsequent environmental monitoring report. EDF EGL utilises contract laboratories to support Sr -90 measurements for the EMP's at Sizewell B and other stations and there have been some difficulties in the contractors meeting the expected standards. We will keep the performance of any contracted support for the EMP at Sizewell under review.

The results of the EMP indicate radioactivity in the environment remains below regulatory concern and demonstrates the effectiveness of the Operator's programme and analysis in identifying and informing results of interest. The results continue to be consistent with our independent programme and do not indicate any other concerning results or trends.

As a result of Sizewell C construction activities some of the sampling locations of the Sizewell B EMP may need to be relocated. We are reviewing proposals from EDF to ensure that the EMP continues to represent BAT and meets the aims and objectives as outlined in our monitoring guidance. We will carry out a regulatory assessment of the changes and provide further updates to the SSG.

Further Information

The Environment Agency's Nuclear Regulation Group (South) (NRG(S)) is responsible for the environmental regulation of radioactive waste disposals on or from nuclear licensed sites in southern England. We also support NRW in this role in Wales. We work closely with local Environment Agency teams as well as external bodies such as the Office for Nuclear Regulation.

The Environment Agency's Lead Regulators for Sizewell A and Sizewell B are James Heavingham and Alex Lord, respectively. From 1st April 2025 Alex will be replaced as Sizewell B lead regulator by Themis Kantara.

NRG(S) Address Environment Agency, Nuclear Regulation Group, Red Kite House, Howbery Park, Wallingford, Oxfordshire, OX10 8BD

Email nrg.south@environment-agency.gov.uk

Local Office Address Environment Agency, Icen House, Cobham Road, Ipswich, Suffolk, IP13 9JD

For regular updates on our work in regulating radioactive substances and nuclear sites visit our LinkedIn page:

<https://www.linkedin.com/showcase/regulating-radioactive-substances>

A public register service is available on the GOV.UK website at:

<https://environment.data.gov.uk/public-register/view/index>

Alternatively, you can request access to public documents directly by contacting the Customers and Engagement Team in the Wallingford office. Please email:

WTenquiries@environment-agency.gov.uk

Further information on how we regulate different types of nuclear sites, and protect people and the environment is available on the GOV.UK website at:

<https://www.gov.uk/guidance/nuclear-sites-environmental-regulation>

Our enforcement and sanctions policy is publicly available on the GOV.UK website at:

<https://www.gov.uk/government/publications/environment-agency-enforcement-and-sanctions-policy/environment-agency-enforcement-and-sanctions-policy>

Our public participation statement on when and how we consult on permit applications is available here:

<https://www.gov.uk/government/publications/environmental-permits-when-and-how-we-consult>

UK Health Security Agency has placed guidance on ionising radiation dose comparisons on the GOV.UK website at:

<https://www.gov.uk/government/publications/ionising-radiation-dose-comparisons>

All our open consultations will appear on this webpage

Nuclear consultations - Environment Agency - Citizen Space (environment-agency.gov.uk)

National news items

Public consultation: Regulation of solid radioactive waste disposal facilities - proposed guidance

The Environment Agency, NRW and NIEA are consulting on proposals to update the guidance on how we regulate near surface and geological disposal facilities. The draft guidance documents explain what an operator must show us to obtain an environmental permit or permits for such a radioactive waste disposal facility. The draft guidance we are consulting on consists of:

- Disposal facilities for solid radioactive waste: guidance on the requirements for authorisation (GRA)
- Guidance on staged regulation

The consultation on the draft GRA applies to England, Wales, and Northern Ireland. There will be a separate consultation on a version of the GRA for Scotland.

The consultation on our staged regulation guidance is for England only.

We held an online consultation event for anyone with an interest or question about the documents in January.

There's a public summary available on both links below (HTML on gov and ODT on Cit space).

The consultation closes on 28 February 2025.

GOV.UK [Regulation of solid radioactive waste disposal facilities: proposed guidance - GOV.UK](#)

Consultation response page [Guidance on the requirements for authorisation and staged regulation for the disposal of solid radioactive waste - Environment Agency - Citizen Space](#)

Geological disposal: scrutiny of Nuclear Waste Services' work - annual reports

Our annual report was published on GOV.UK in October 2024.

[Geological disposal: scrutiny of Nuclear Waste Services' work - annual reports - GOV.UK \(www.gov.uk\)](#)

Through our joint scrutiny work, the Environment Agency and the Office for Nuclear Regulation (ONR) provide regulatory advice to Nuclear Waste Services about implementing geological disposal.

These annual reports explain what we examined through our scrutiny work and the main comments provided to Nuclear Waste Services. They also highlight areas where Nuclear Waste Services needs to improve.

The Environment Agency and ONR will make sure that any future geological disposal facility meets our high standards for environmental protection, safety, security, radioactive waste transportation and safeguards.

Assessing new nuclear power station designs – Have your say

Generic Design Assessment (GDA) is an open and transparent process. A nuclear power station design company going through GDA must set up a website to:

- publish information about the design
- invite the public to ask questions and make comments

The design company must respond to any comments or questions they receive. The regulators will see the comments and questions and the responses provided. We can also use this information to help inform our assessment work.

The Environment Agency has:

- completed step 2 and started step 3 of the [Generic Design Assessment](#) on Rolls-Royce SMR Limited's 470MWe small modular reactor on 30 July 2024. The [public comments process](#) for this GDA opened at the start of Step 2 and you can make a comment through the company website.
- completed step 1 and started step 2 of the [Generic Design Assessment](#) on Holtec International's small modular reactor SMR-300 on 1 August 2024. The [public comments process](#) for this GDA opened at the start of Step 2 and you can make a comment through the company website.
- completed step 1 and started step 2 of the [Generic Design Assessment](#) on GE-Hitachi Nuclear Energy's BWRX-300 small modular reactor on 12 December 2024. [GDA Step 1 of the GE-Hitachi SMR: statement of findings - GOV.UK](#) The [public comments process](#) for this GDA opened at the start of Step 2 and you can make a comment through the company website.

Learn more about assessing new reactor designs [New nuclear power stations: assessing reactor designs - GOV.UK \(www.gov.uk\)](#)

Read our blog [Ensuring nuclear reactor designs meet high standards of environmental protection – Creating a better place \(blog.gov.uk\)](#)

Updated guidance: Regulatory expectations for successful land quality management at nuclear licensed sites

The environment agencies and the Office for Nuclear Regulation (ONR) have [published updated guidance](#) that sets out our high-level regulatory expectations for the prevention and management of radioactive and non-radioactive contamination of the ground and water on nuclear licensed sites.

It updates joint guidance issued in 2014, reflecting how some land quality issues can also now be covered through the Site Wide Environmental Safety Cases and Waste Management Plans created under our guidance on "Management of radioactive waste from decommissioning of nuclear sites: Guidance on Requirements for Release from Radioactive Substances Regulation" (the GRR).

The guidance highlights the five key principles that we expect operators / licensees to consider when preventing and managing land and water contamination, namely:

1. establish strategies and plans for land quality management
2. prevent new contamination of land or the water environment
3. understand the land quality and contamination characteristics of the site
4. manage land quality to mitigate safety and environmental risks
5. work with stakeholders and other interested parties

The guidance describes our shared and complementary interests in land quality matters, explains how we expect climate change and sustainability to be taken into account and provides a reference list of further reading.

[Land quality management | Office for Nuclear Regulation](#)

Chief Regulator's Report

We've published the first Chief Regulator's report. It summarises the performance of the businesses and activities regulated by the Environment Agency in England in 2023-24. It outlines key outcomes of our regulation, providing assurance and transparency across our wide regulatory remit, and it sets out the aims and ambitions of our Chief Regulator, Dr Jo Nettleton.

The report covers our work regulating the nuclear industry and radioactive substances during 2023-24.

[Environment Agency Chief Regulator's report 2023-24 - GOV.UK](#)