

Environment Agency report

Winfrith Site Stakeholder Group

October 2022

This report covers the Environment Agency's regulation of the Winfrith Nuclear permitted site (and related issues), for the period from the last SSG report and meeting (May 2022).

Radioactive substances regulation

We regulate processes and systems associated with radioactive waste disposals. We do this through environmental permits that contain conditions and limits the operator must comply with, to minimise wastes and protect people and the wider environment. We check compliance with the permits through routine interaction with the operator and by undertaking regulatory inspections.

Working with colleagues across the Environment Agency, we also regulate and control other activities through our environmental permits, including surface and groundwater discharges. Through our corporate objectives, aims and general duties, we also provide advice and guidance to protect or enhance the wider environment and support sustainable development.

Regulatory compliance interactions are recorded in Radioactive Substances Compliance Assessment Reports (RASCARs). These summarise the type of work we have undertaken, describe any non-compliance or observations and good practice, and include actions or recommendations from our findings. They are public register records and can be provided on request (please see the 'further information' section at the end of this document to find out how to request public register records-in the link below).

Permitting

Magnox Winfrith hold two permits under the Environmental Permitting Regulations (EPR): one covers Environment Agency regulated radiological discharges and waste transfers from the site (the 'nuclear' EPR permit); the second covers the discharge of non-radiological aqueous effluent via the Winfrith Sea Pipeline (the 'non-nuclear' EPR water discharge permit).

No changes have been made to either permit since the last SSG meeting, however, we continue to provide advice to Magnox on our permitting requirements in relation to future variations to the permits, including those for the management of the Winfrith Sea Pipeline and development of a Winfrith End State restoration plan. These topics will be increasingly important as the site moves through the final stages of decommissioning.

Regulatory and Compliance Activities

We check compliance with the permits through regular contact with the operator and through site meetings and inspections. We also receive and assess a range of monthly reports from the site. For all inspections, we issue RASCAR reports.

We continue to hold weekly (virtual) meetings with the Magnox environment team and relevant Magnox managers, to ensure permit compliance and reporting requirements remain fit for purpose during ongoing decommissioning work and assess emerging issues and progress with actions.

We also work closely with the Winfrith site End State team and other relevant stakeholders (including Dorset Council, Natural England and ONR) to facilitate planning for the site's final stage decommissioning work. This work is required to meet the Environment Agency GRR guidance on requirements for release of the site from radioactive substances regulation (once all the relevant decommissioning work and verification monitoring has been completed). Whilst the precise end state date for the site is still to be confirmed, preparatory work to achieve final stage decommissioning, continues at pace.

Inspection Work since the May 2022 SSG report

In Quarter 1, we did not undertake a formal inspection. However, we continued to work with Magnox Winfrith across technical areas where environmental management and end state planning is required to achieve final stage decommissioning. This included review and further development of the sites environmental monitoring programme, to monitor the impact of decommissioning activities (discussed in the last SSG report).

In May, we visited the site and held meetings with the newly appointed Winfrith Environment Manager and their team; to review progress with observations and recommendations from previous inspections and discuss future end state work plans and planning for the management of the Winfrith Sea Pipeline.

In May, we attended a separate End State technical meeting to discuss progress with the development of the final stage decommissioning and restoration plans and consider technical planning for the decommissioning and management of the Steam Generating Heavy Water (SGHWR) and Dragon reactor voids. Restoration planning will become an increasing feature of the end state work across the site.

We also attended (as virtual observers) a Winfrith site Local Environmental Forum with Magnox staff. We found this to be a dynamic and developing forum- to advance opportunities for the site contribution to enhance sustainable development measures and help contribute to reducing Magnox Winfrith impact on the environment.

The Environment Agency are developing a project that will review the benefits derived from the application of sustainable development measures at Winfrith and consider the role of participatory community involvement in decommissioning at Magnox Nuclear sites. Learning from the Winfrith approach is central to this work and will be a subject for future discussion with the Winfrith SSG.

During Quarter 2 (July), we conducted an inspection of the Winfrith site's waste management arrangements, working with colleagues from the Environment Agency conventional waste team. Our objective was to review the organisational resourcing, planning aspects and physical management of wastes.

We looked at the management of a range of low radio-active wastes (LAW) and non-radiological (conventional) wastes and considered the suitability of waste storage arrangements across the site.

During the inspection, we talked to members to the leadership team, individual project teams, and waste and environment team. There were no identified permit non-compliance issues.

The inspection was very positive, and several areas of good conventional (non-radiological wastes) management practice were identified. These included induction and training, and the organisation and management of wastes tracking for off-site disposals.

In Quarter 3 (early October) we will undertake an inspection at Winfrith to consider the management and maintenance of environmentally related assets. We will report the outcome of the inspection at a subsequent SSG.

Discharge Reports

The site's environmental permit requires Magnox to use Best Available Techniques (BAT) to minimise generation of radioactive waste, and minimise any permitted releases into the environment. The site is required to report permitted liquid and gaseous discharges to the environment on a regular (quarterly) basis. We assess these reports and produce a RASCAR on our findings.

Limits are set in the Winfrith EPR permit to control the maximum level of radioactivity that can be discharged to atmosphere as a gaseous discharge or to sea through the Winfrith Sea Pipeline, over a rolling twelve month period.

Liquid effluent discharged to the sea at Arish Mell via the Active Liquid Effluent System (ALES) and Winfrith Sea Pipeline remain well below permit limits, equivalent to previous reports and approximating to less than 1% of the permitted limit set for the site. We note that ongoing decommissioning work may further reduce the aqueous discharges over time, as this work progresses.

Gaseous discharges also remain compliant and well below permitted limits, approximating to 3% of the permitted limit set for the site. Although these discharges remain low, it is noted that the relative level of these gaseous discharges may fluctuate as the decommissioning programmes evolve.

Environmental impact

The site environmental permit requires the operator to monitor and assess the impact of discharges on the environment.

Monitoring undertaken by the operator, indicates that the environmental impact from the permitted discharges remains low.

The Environment Agencies and Food Standards Agency also carry out independent environmental monitoring around nuclear sites. These monitoring programmes support our regulatory function and provide reassurance that public radiation exposures are within legal limits. The results of this work are published annually and the latest report, "Radioactivity in Food and the Environment 2020" (RIFE 26), is published on the GOV.UK website.

[Radioactivity in food and the environment \(RIFE\) reports - GOV.UK \(www.gov.uk\)](https://www.gov.uk/rife-reports)

This current (26th edition) contains information on radiation exposures (dose) to the public and radioactivity levels in the environment in 2020, from nuclear sites and other industrial and landfill activities. We expect a new (27th) edition (covering 2021) to be released in early November. However, as part of a commitment to minimise the carbon footprint and move to electronic communications, a decision has been taken to stop production of the printed version of the report. It will continue to be available as an electronic version, which individuals can sign up to, to receive an electronic copy on release. The report may also continue to be available in CD format, on request.

Radiation Doses to the most exposed people are calculated and measured using radioactivity concentrations in samples of food and the environment collected around UK nuclear licensed sites, external dose rates from radiation in sediments, and information on people's living habits around the sites.

The report for the 2020 period continues to show that total doses to the public, from permitted discharges and direct radiation around UK nuclear sites, remained below the annual legal limit to protect members of the public (set at 1 millisievert per annum (mSv)). 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.

For the 2020 period, data from RIFE 26 for Winfrith, indicates that the total dose to individuals and members of the public from all pathways and sources of radiation from the site was 0.014 mSv. For the Winfrith site, the representative person in 2020 was an adult living near the site, which is the same potential exposure pathway as identified in previous years. The primary source for the attributed dose is from direct radiation shine. The total dose from all pathways is considered to be very low and approximates to less than one and a half per cent of the government derived national dose limit applied to protect members of the public (set at 1mSv). Within the overall estimates for total dose, exposures associated with the permitted aqueous or gaseous discharges from the site, remain a very small component of the total dose, and at a similar level to those reported in the 2019 period. We expect the 2021 data in the 27th edition to follow a downward trend with total dose in 2021, to reduce to around 1% of the public dose limit.

Notification of the release of the 27th edition of RIFE will be provided to the SSG with an appropriate summary, on release (but expected in early November).

Incidents and enforcement

There have been no new incidents or enforcement actions reported since the last SSG report.

Forward Look

We will continue our work in preparation for the final stages of decommissioning and will be focussing on the management of radioactive wastes from the planned dismantling of the sites remaining reactors (Dragon and SGHWR) and the dismantling of the ALES and Winfrith Sea Pipeline.

We will also continue to work with the site to set and develop their sustainability strategy and seek opportunities to achieve UN Sustainable Development Goals, where these support the Environment Agency 5 year tactical planning for green growth and a sustainable future (EA2025). These in turn help embed the UK Governments 25 year plan for the environment.

Further details of the EA 2025 work can be viewed here:

<https://www.gov.uk/government/publications/environment-agency-ea2025-creating-a-better-place>

Further details on governments drive towards this ambition are available here:

<https://www.gov.uk/government/publications/implementing-the-sustainable-development-goals>

We are also working with Magnox to highlight the significant opportunities at Winfrith, and we would like Magnox to work collegiately with other stakeholders and the wider

community to achieve an enduring legacy for sustainable development through the decommissioning process.

We will report on progress with these work programmes in subsequent SSG reports.

If you have any comments please contact the Environment Agency Nuclear Regulator through the contact details below.

Further Details

Details of public register records for nuclear sites can be provided on specific request through contact with the EA Customers and Engagement Team in the Wallingford office. Please email WTenquiries@environment-agency.gov.uk. However, a public register service covering the wider (non-nuclear) aspects of the Environment Agency work is also available on the GOV.UK website at:

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

Public register documents may also be requested by contacting the Customers and Engagement Team in the Wallingford office.

Further information on our role in regulating the use of radioactive substances and related activities on nuclear licensed sites can be found on the Environment Agency pages of the Gov.UK website at:

<https://www.gov.uk/government/publications/nuclear-regulation-in-the-environment-agency>

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>

Public Health England has placed guidance on ionising radiation dose comparisons on the GOV.UK at: <https://www.gov.uk/government/publications/ionising-radiation-dose-comparisons>

The Environment Agency's lead Nuclear Regulator for the Magnox Winfrith site is Adam Davis. Adam is a Radiation Biologist by background and works within the national Nuclear Regulation Group ((NRG South)), based at the Environment Agency's Wallingford office in Oxfordshire.

NRG (South) undertakes environmental regulation of radioactive substances on nuclear licensed sites in southern England. It works closely with external bodies such as the Office for Nuclear Regulation and local Environment Agency teams that cover other general (non-radioactive substances) environment protection matters such as regulation of groundwater, contaminated land, waste management and water abstraction. Contacts for these activities can be arranged through Adam.

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