

# Environment Agency report

Winfrith Site Stakeholder Group

September 2021

This report covers the Environment Agency's regulation of the Winfrith Nuclear Licensed Site and related issues from the last SSG meeting (January 2021 to September 2021).

## Nuclear site regulation during the Coronavirus pandemic

Throughout the period of the C-19 pandemic, the Environment Agency has remained focussed on the protection of people and the environment. We have set out how we undertake this across the many areas we regulate, advise and interact with the public (for example, providing flood defence and flood warning, environmental sampling, permitting, angling and fisheries, waterways management and billing (see [GOV.UK](https://www.gov.uk))). Currently:

- We remain fully operational, with a balance between office attendance and staff working from home.
- Frontline staff have returned to near normal regulatory work; including site inspections, where appropriate.
- We follow site C-19 arrangements and undertake regular C-19 self-checking as part of our routine regulatory engagement with nuclear sites.

Please see our published C-19 update for further information:

<https://www.gov.uk/government/news/coronavirus-environment-agency-update>

## Radioactive substances regulation

We regulate radioactive waste disposals to the environment. We do this through environmental permits that contain conditions and limits the operator must comply with, to 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 may also regulate other activities through our environmental permits, including surface and groundwater discharges.

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 of 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).

## Permitting

Magnox holds two permits under the Environmental Permitting Regulations (EPR) at the Winfrith site: 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 Pipe line (the 'non-nuclear' EPR water discharge permit).

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No changes have been made to either permit since the last SSG meeting, however, we provided advice to Magnox on our permitting requirements in relation to future applications, 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 Radioactive Substances Compliance Assessment (RASCAR) reports.

We have produced an inspection plan for the financial year 2021/22. This includes assessing the operator's management arrangements for the following topics:

- Quarter 1 inspection(s): Decommissioning Planning;
- Quarter 2 inspection: Gaseous discharge systems;
- Quarter 3 inspection: Environmental leadership and capability;

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

We also work closely with the Winfrith End State team and relevant stakeholders (including Dorset Council, Natural England and ONR) to facilitate planning for the sites 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 these requirements, continues at pace.

### **Inspection Work since the January 2021 SSG report**

In February 2021, we assessed the arrangements for disposals of higher activity solid radioactive wastes from the site (these include the work on the dismantling of the two remaining research reactors and other waste activities across the site).

During the inspection, we assessed Magnox's approach to managing and disposing of Intermediate Level Waste (ILW) which is detailed in the Radioactive Waste Management Case (RWMC). We also assessed the Best Available Techniques (BAT) arrangements for disposal of wastes derived from the operations. We concluded that the operator's arrangements for ILW management demonstrate good practice. The staff were knowledgeable and demonstrated a good waste culture.

We hold (biweekly) joint meetings with the ONR and the site in relation to the reactor dismantling work at SGHWR and Dragon, and Plant and Structures operations. Our focus during 2021 will continue to consider waste encapsulation and temporary storage of waste packages, pending transfer to an alternative facility for longer term storage and disposal.

In June 2021, we attended the site to consider the development and implementation of decommissioning plans for subsequent phases of site work. In particular this includes decommissioning of the Active Liquid Effluent System (ALES) and other on-site plant and structures, including the Winfrith Sea Pipeline. We considered many of the processes employed by site to assess and manage decommissioning tasks to be of a good standard.

Aspects of decommissioning planning, land quality management and the inclusion of community involved decision making, will remain a prime focus throughout 2021/22; to underpin the submission of an environmental permit application to consider final stages of decommissioning under Environment Agency GRR decommissioning guidance. The permit application is expected in early 2023.

In July 2021, we completed a gaseous discharge inspection. We reviewed the arrangements for controlling the sampling and assessment of radioactive gaseous discharges, and asset maintenance for key environmental components of the radioactive discharge systems. The arrangements for management of radioactive gaseous discharges appeared to be mature and included examples of good practice. We provided general advice and guidance including recommendations and observations. These will be followed up as part of routine regulatory business.

In June 2021, we held a joint Environment Agency and Magnox webinar which highlighted the strategic and corporate opportunities to develop a strong environmental culture in the workforce and supply chain, to maximise opportunities for sustainable development and environmental benefits during decommissioning of Magnox facilities (and in particular, the Winfrith site).

We will continue to work with the Winfrith site to embed these opportunities, to support the Environment Agency 5 year tactical planning for green growth and a sustainable future (EA2025); and to support 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, 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.

## Discharge Reports

The site's environmental permit requires Magnox to use the 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, approximating to 1% of the permitted limit set for the site.

Gaseous discharges also remain compliant and well below permitted limits approximating to 4% of the permitted limit set for the site.

## **Environmental impacts**

The site nuclear environment permit requires the operator to monitor and assess the radiological impact of discharges on the environment through the operator's environmental monitoring programme. Monitoring undertaken by the operator, indicates that the environmental impact from the permitted discharges remains low. During 2021 we continue to work with site to review the operator's environmental monitoring programme to ensure it remains appropriate and reflects subsequent stages of site decommissioning work.

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 2019" (RIFE 25), is published on the GOV.UK website.

<https://www.gov.uk/government/publications/radioactivity-in-food-and-the-environment-rife-reports>

The RIFE 25th edition, is the current latest edition and contains information on radiation exposures (doses) to the public and radioactivity levels in the environment during 2019. Doses to 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 habits around the sites. It covers radioactivity near to nuclear fuel production and reprocessing sites, research establishments, nuclear power stations, defence establishments, radiochemical production, industrial and landfill sites, and non-nuclear sectors. It also reports on regional monitoring away from these sites - providing a check on background and the residue of historical fallout. The webpage also includes a summary report for historical trends.

The report for 2019 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 (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.

In 2019 period, data from RIFE 25 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 0.027 mSv, (this is unchanged from the 2018 report). This total dose from all pathways is considered to be very low and approximates to less than 3 per cent of the government derived national dose limit applied to protect members of the public of 1mSv. Exposures associated with the permitted aqueous or gaseous discharges from the site are also very low and approximate to less than 1% of the of the national dose limit.

The RIFE 26 (for the 2020 period) is expected in the late autumn 2021. Early indications are that total dose to the public from the Winfrith site will be in a similar order to, or less than the 2019 data.

Notification of the release of the 26th edition of RIFE will be provided to the SSG with an appropriate summary, on release.

### **Incidents and enforcement**

On the 23 February 2021, we were informed that the site would not be able to submit an annual Pollution Inventory data return by the required date (25th February). The provision of this data is a requirement of the site's EPR 16 Permit.

Magnox reported to us that during the verification of the data returns, potential errors in the data had been detected. These required further checking and this could not be completed before the due submission date. We asked Magnox to confirm when the corrected data would be submitted; and agreed to an appropriate date for submission. Magnox carried out an investigation into the event. They confirmed some minor accountancy errors had been discovered and identified improvements to their procedures and training to mitigate against a re-occurrence.

Whilst this resulted in a breach of permit in relation to the particular submission requirement, the errors were not associated with other discharge compliance reporting data and they did not require any change in data associated with the recording and reporting on discharges from the site. There were no environmental consequence associated with the changes.

The Environment Agency monitors breaches of permit conditions using the Compliance Classification Scheme (CCS). This ranks non-compliances on a 1-4 scale, with category 1 being the most serious. Category 3 and 4 non-compliances are both considered 'minor', with Category 4 non-compliances having no associated potential environmental impact and considered to be events requiring little or no additional regulatory resources beyond that given in routine engagement with the site to bring them back into compliance.

In considering our enforcement response, we took account of the proactive approach by Magnox to identify and implement corrective actions. We concluded that the event was a Category 4 (minor) breach of general management requirements specified in permit condition 1.1., and associated with a failure in arrangements to ensure that these types of accountancy operations are managed appropriately at all times.

### **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 consider the level of resourcing for an appropriate waste and environmental culture, and leadership, that focusses attention on environmental aspects of the decision making required through the decommissioning process.

This is a new style report and we will consolidate its structure through the coming months. If you have any comments please contact the Environment Agency Nuclear Regulator (Adam Davis) 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.

**customer service line**      **03708 506 506**

**floodline**      **03459 88 11 88**

**incident hotline**      **0800 80 70 60**

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Please email [WTenquiries@environment-agency.gov.uk](mailto: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 publically 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.

**Contact details**

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