

Bradwell Site LCLC

March 2021 Report

Regulation of Bradwell site

The Environment Agency regulates radioactive waste disposals to deliver the best outcome for the environment. We do this by placing limits and conditions in the environmental permits that help us ensure radioactive waste discharges are minimised and the environment is protected.

This report covers our regulation of Bradwell site from March 2020 to February 2021.

Coronavirus: Nuclear Site Regulation operational update

The Environment Agency's priority remains to protect people and the environment. We have set out how we are doing this across the many areas we regulate, advise on or interact with the public, for example, flood defence, flood warning, environmental sampling, permitting, angling and fisheries, waterways management and billing (see [GOV.UK](https://www.gov.uk)).

In brief:

We are fully operational, with the majority of Environment Agency staff working from home.

Our frontline staff have returned to near normal regulatory work including physical inspections.

We have published a series of temporary [regulatory position statements \(RPSs\)](#). RPSs are national arrangements that allow for limited relaxations of regulatory requirements provided certain circumstances and conditions are met. They clearly set out the standards that must be adhered to. The RPSs issued at the beginning of the pandemic have and will continue to be reviewed, and extended or withdrawn as necessary.

Please see our published statement for further information:

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

Communications with Magnox

Bradwell site is managed by Magnox staff based at Sizewell A. In response to the Covid-19 pandemic we held weekly teleconferences with Sizewell A environmental staff from mid-March 2020 until June 2020, and monthly from July 2020 onwards, to review environmental risk assessments and measures to manage environmental hazards at both sites.

Use of Regulatory Position Statements

On 29 April 2020 we agreed to Bradwell site adopting the Regulatory Position Statement (RPS) C7. This allowed relaxation of the timelines for some permit conditions relating to discharge monitoring, environmental monitoring and reporting in light of the disruption caused by Covid-19 impacts or countermeasures, such as the closure of analytical laboratories.

In the case of Bradwell site, liquid in the Main Drains Pits was not sampled, and periodic monitoring of tritium discharges from the intermediate storage facility (ISF) was cancelled in the second quarter of 2020. We accepted that these omissions were reasonable under the circumstances and would not have an impact on the environment.

Bradwell has not made use of regulatory position statements since June 2020.

Enforcement Action

Waste Disposal

As noted in our report to the SSG last year, free liquid was discovered in September 2019 in a container of low level waste (LLW) consigned from Bradwell to an off-site waste treatment facility. The presence of free liquid contravened the waste acceptance criteria of the receiving site.

Magnox carried out a root cause investigation into the event and provided the investigation report to us in December 2019. This report identified that some waste containers were not weatherproof and that Magnox corporate change control processes had not been followed accurately when making changes to waste disposal arrangements, leading to the non-conforming waste shipment.

We assessed the environmental impact of the incident was low. We recorded a CCS Category 4 (no environmental impact) breach of the permit requirement to meet the conditions for acceptance of the site receiving the waste. We recorded CCS Category 3 (minor environmental impact) breaches of two permit conditions: relating to the need for management systems to be sufficient to achieve compliance with the permit, and to using best available techniques to minimise the volume of radioactive waste generated on Bradwell site.

We realise that any learning from this event would have little direct application to Bradwell site in its current configuration because all assessable LLW has already been disposed of. However, we believe that there are aspects of this event, which have wider implication for Magnox. We are concerned that similar decisions putting the environment at risk of harm could be made under similar circumstances at other decommissioning sites in future if the process drivers and constraints that eventually led to the Bradwell event are not understood and mitigated. We have therefore not finalised our enforcement response and will engage with Magnox to develop appropriate corrective actions.

Water Leak into Vaults Complex

A water leak into the vaults complex at Bradwell site was detected in September 2020. Magnox took samples of the water for analysis, which showed that low levels of radioactivity were present.

Magnox identified the source of the leak - groundwater entering the vaults via an inadequately sealed trench - early on and developed an engineering solution to stop water ingress.

Repair work has been delayed by Covid-19 restrictions and related staff health concerns. It is now scheduled to be completed by the end of March.

The water ingress has generated liquid effluent polluted with radioactivity and potentially breaches the condition of the Bradwell site permit which requires Magnox to use best available techniques (BAT) to minimise the volume and activity of radioactive waste produced on site.

We are considering our enforcement response to this event and will report our conclusions at the next Bradwell LCLC meeting.

Permit Information Conditions

Magnox have not yet demonstrated that they meet all of the Environment Agency's expectations for a site placed in an interim state to allow for deferred dismantling. We have therefore set improvement and information requirements in the Bradwell permit.

Information requirement IC1

Information requirement IC1 required that Magnox carry out an "audit of management arrangements implemented at Bradwell for compliance with this Permit to check that these are sufficient to comply with the conditions of this permit. The audit should assess whether the management system is adequate and whether there are sufficient resources and competent personnel to meet each permit condition"

Magnox supplied a report to us in December 2019 confirming that they had completed an audit of management arrangement in place when Bradwell site entered Care & Maintenance. We have reviewed the audit report and attached audit checklist and concluded that the requirements of IC1 have been met.

Information requirement IC2

In January 2021, to satisfy the terms of information requirement IC2, Magnox submitted a written report to the Environment Agency:

- reviewing of the effectiveness of management arrangements at Bradwell and proposing criteria against which to measure the environmental performance of the site
- using data collected since Bradwell site entered its interim state to carry out an initial evaluation of environmental performance against the environmental performance criteria

We are assessing Magnox's submission, and will report our conclusions at the next Bradwell LCLC meeting.

CEAR Variation

We varied the Compilation of Environment Agency Requirements (CEAR) to change the completion date for the site-wide environmental safety case (SWESC) for Bradwell site to 31 December 2025.

Previously all Magnox sites were required to complete a SWESC by 31 December 2023. We have agreed with Magnox that SWESC completion dates for the Magnox fleet are to be staggered over three years from 2022 to 2025.

Discharge Reports

Nuclear sites are required to routinely report to us their liquid and gaseous discharges to the environment. We review these reports for compliance which is detailed in a RASCAR, and subsequently placed on the public register.

Discharges of active liquid effluent from the site have ceased. Rainwater drains to a single point on site (the Main Drains Pit) and is periodically discharged to the Blackwater Estuary. Magnox takes a spot sample from the Main Drains Pit for analysis at quarterly intervals for information purposes.

The discharge reporting requirements for Bradwell site changed in May 2019 with the issue of permit variation V006. The requirement under the previous permit variation, V005, was to report at quarterly intervals. This changed under V006 to annual reporting within three months of the end of the year, against much reduced discharge limits.

In 2019 discharges of all radionuclides or groups of radionuclides specified in the permit were less than 2.5% of their permitted limit. From an environmental impact perspective the discharges are not significant and remain far below the levels when Bradwell was an operating power station.

We have not yet received Bradwell site's 2020 discharge return. We expect to receive it later this month.

Environmental Impacts

The RIFE report presents a yearly assessment of radiological dose to individuals in the vicinity of nuclear sites. This is based on studies of food consumption patterns in the local area and environmental monitoring commissioned or carried out by government agencies.

The latest report, "Radioactivity in Food and the Environment 2019" (RIFE 25) is published on the gov.uk website at:

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

RIFE 25 includes an annual assessment of radiological dose to the group of people in the local population identified as being most exposed to radiation from the Bradwell site. In 2019, the dose attributed to this group of people from all pathways and sources of radiation from Bradwell was 0.005 millisieverts, lower than the dose of 0.011 millisieverts calculated in 2018.

Magnox also carries out an environmental monitoring programme and assessed the radiological dose to the most exposed group to 0.017 millisieverts in 2019.

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Both assessments indicate that the dose is well below the UK Government dose limit for members of the public from man-made sources of 1 millisieverts per year.

On-going regulation of Bradwell under Care & Maintenance

Although the most significant hazards have been removed from Bradwell site or made passively safe, there remain some areas of site that are radioactively contaminated and which are not due to be decommissioned until final site clearance. Magnox continue to monitor and report on radioactive discharges from the site and on the results of the environmental monitoring programme around the site to measure levels of radioactivity in the local environment and detect any trends in these levels.

The Bradwell site continues to be regulated under the Environmental Permitting Regulations (EPR) 2016 and will have environmental permits for both radioactive substances activities and water discharges. We will tailor our regulatory activities, proportionately to the risks from site, whilst ensuring the standards of protection of the public and environment are maintained. We will continue to independently scrutinise Magnox's arrangements for compliance, taking on board the views of local stakeholders and interested parties.

Further Information

Contact the Environment Agency's lead regulator for Bradwell site, Peter Reynolds, who based in the Nuclear Regulation Group (South) at:

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