

**This form will report compliance with your permit as determined by an Environment Agency officer**

Site	Sizewell B Power Station	Permit Ref	XB3539DH		
Operator/ Permit holder	EDF Energy Nuclear Generation Limited	Site Ref	XB3539DH		
Date	25/03/2025	Time in	09:15	Out	17:00
What parts of the permit were assessed	1.1 General Management, 2.3 Operating Techniques, 4.1 Records				
Assessment	Site Inspection	National security direction?		No	
Recipient's name/position	ESG Head				
Officer's name	Themis Kantara, Alister Wintle	Date issued	03/07/2025		

Section 1 - Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations (EPR). A detailed explanation and any action you may need to take are given in the Detailed Assessment of Compliance (section 2) and the Actions (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our [Compliance Classification Scheme](#) (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your [local office](#).

Permit Conditions and Compliance Summary			Condition(s) breached
a) Permitted activities	1. Specified by permit	N	
b) Infrastructure	1. Engineering for prevention & control of pollution	A	
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	N	
	4. Containment of stored materials	A	
	5. Plant and equipment	A	
c) General management	1. Staff competency/ training	A	
	2. Management system & operating procedures	A	
	3. Materials acceptance	N	
	4. Storage handling, labelling, segregation	A	
d) Incident management	1. Site security	N	
	2. Accident, emergency & incident planning	N	
e) Emissions	1. Air	N	
	2. Land & Groundwater	N	
	3. Surface water	N	
	4. Sewer	N	
	5. Waste	N	
f) Amenity	1 to 5	N/A	
g) Monitoring and records, maintenance and reporting	1. Monitoring of emissions & environment	N	
	2. Records of activity, site diary, journal & events	A	
	3. Maintenance records	N	
	4. Reporting & notification	N	
h) Resource efficiency	1. Efficient use of raw materials	N	
	2. Energy	N/A	

KEY: C1, C2, C3, C4 = CCS breach category (* suspended scores are marked with an asterisk),
A = Assessed (no evidence of non-compliance), N = Not assessed, NA = Not Applicable

Number of breaches recorded

0

If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review', details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with exemption conditions
- details of any multiple non-compliances
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice
- a reference to photos taken

Introduction

In order to comply with its Radioactive Substances Regulation (RSR) environmental permit, an operator must use best available techniques (BAT) to minimise the activity of radioactive waste produced and disposed of to the environment. Disposals and discharges must also remain within permitted limits and be in a form and manner as to minimise the radiological effects on the environment and members of the public.

The inspection focused on solid waste management and sought evidence to demonstrate that EDF Energy Nuclear Generation Limited (EDF-ENGL) is compliant with the conditions of its permit at Sizewell B (ref: EPR/XB3539DH). The inspection was carried out on 25th March 2025 and consisted of interviews with people in key environmental roles and walkdown of plant areas.

Management System for Solid Radioactive Waste

The overarching management system documentation for the management and arrangements for radioactive waste is the '*Company specification for the Management of Radioactive Waste*' (BEG/SPEC/SHE/ENVI/0142). This document sets out the arrangements for managing, avoidance, generation, processing storage and disposal of solid, liquid and gaseous radioactive waste. Additionally, the minimum expectations and arrangements for managing Higher Activity radioactive Waste (HAW) and Lower Activity radioactive Waste (LAW) on sites are respectively set out in company specifications BEG/SPEC/SHE/ENVI/041 and BEG/SPEC/SHE/ENVI/009.

Site-specific local instruction SZB/LI/016/007 sets out the control of solid radioactive waste and radioactive waste oil at Sizewell B (SZB). The document provides location-specific information that cannot be captured in sufficient detail in the company specifications. The local instruction is further supported by technical standards, including the '*Sizewell B Radwaste Management Manual*' (ref 8) which provides information regarding the requirements and specifications under the RSR permit.

There are currently two radioactive waste management cases (RWMCs) at Sizewell B covering Intermediate Level Waste (ILW); these are for ion exchange and cartridge filters. We received a copy of the RWMC for the ILW resins (ref 3). The RWMC was lastly updated in 2018 to reflect the receipt of a final letter of compliance (fLoC) endorsement and decisions regarding the timing of a second ILW resin processing campaign. When asked, the Operator confirmed that RWMCs are 'live documents' however there is no set review period (instead these are completed as necessary).

Recommendation 250325/01: EDF to demonstrate how they ensure that site-specific RWMCs at Sizewell B remain up to date in accordance with '*The management of higher activity radioactive waste on nuclear licensed sites*' Guidance 2021.

Revision of Documents and Implementing Changes

We asked the Operator about the process they follow when changing management system documentation e, g. revision of technical standards. They confirmed that technical standards are written by the Environmental Support Group (ESG) team, and any document changes require raising an Action Request (AR). If the AR results to changing processes, then these are implemented before the AR is completed.

We were shown as an example the amendments completed to the '*Radwaste Management Manual*' (ref 8) in January 2025. The manual was revised to incorporate the interim storage of Low Level Waste (LLW) resins into IBCs on site and included amending the LLW resin waste stream (3S06) flow diagram. We confirmed that the revision history of the document is logged at the beginning of the report and that the corresponding ARs are referenced in the same section (these are also captured in the AMS history). The Operator confirmed that depending on the level of changes to the Radwaste Management Manual, then a toolbox talk may be undertaken with the relevant work parties or a refresher training session may be undertaken.

The environment team also provided details on the process followed when implementing new operational procedures. They confirmed that an Engineering Change (EC) was initiated for the modification to the resin transfer process (transferring resin from tank to IBC containers) and a pre-job brief was held for the relevant work parties to ensure that they understood their role in this activity. We saw the Plant Operating Instructions (POI) and the post-job debrief relating to the LLW resin transfer (ref 2 and 4). Part of the validation process included review of the POI by ESG and the System Health Engineer. The post-job debriefing also highlighted that the POI would need to be updated to include the additional equipment used for the job and that alternative equipment should be used for cleaning up minor spills.

Waste Index Metrics

We asked the Operator how trends in solid radioactive waste produced or dispatched are captured at the station. The Operator confirmed that waste arisings at the station follow a cyclic pattern with peaks occurring at the outage. The Key Performance Indicator (KPI) is owned by the Operations Manager; the metrics are periodically reviewed and challenged corporately. The Radwaste Focus Index is set at the beginning of the financial year and is based on operational experience, feedback from other teams and data from the previous year. The Index is a Fleet Tier 2 KPI metric and is reported monthly; local accountability is realised through the Environmental Strategy Review Group meetings.

Where a KPI is out of specification for three months, then this will enter Fleet Elevation – with an action plan to deliver return of the indicator back to 'Green' status. During the inspection we were shown a trend graph of the radioactive waste generated in 2024 and we confirmed that waste generation at the station was lower than the original projections.

Waste Prevention and Minimisation

The management system arrangements for embedding BAT are detailed in company standard '*Joint Radioactive Waste (HAW and LAW) arrangements (BEG/SPEC/SHE/ENV/042/01)*'. This document outlines the waste hierarchy and how it is implemented across the EDF fleet. We asked the Operator how BATs are reviewed as new waste disposal routes and technologies come to the market and if Radwaste Index Metrics are used to demonstrate ongoing implementation of BAT. Whilst the Operator was unable to offer examples of periodic BAT reviews, they highlighted that central function is currently completing a compliance evaluation programme for solid radioactive waste across the EDF fleet. The compliance evaluation reports cover a wide range of themes including waste characterisation, application of BAT, trends in waste generation and condition reports.

Recommendation 250325/02: EDF to demonstrate how BEG/SPEC/SHE/ENV/042/01 company standard is implemented at Sizewell B.

Recommendation 250325/03: EDF to demonstrate how BAT documents remain up to date as new disposal routes and technologies come to market.

Good practice 250325/01: We consider EDF undertaking compliance evaluations as an example of good practice.

We received and reviewed the compliance evaluation report for low activity waste at Sizewell B (ref 6). The report concludes that control and management of solid LLW is compliant with requirements

of the environmental permit at Sizewell B and where areas of improvement were identified the Operator has already put in place actions and/or mitigations. We welcome the conclusions of the report and have referred to the document throughout various sections of this RASCAR.

Overview of Solid Waste Streams, Processing and disposal routes

ILW cartridge filters from the cleanup of primary and secondary circuit are decay stored pending future final off-site disposal to a deep engineered facility (in line with government policy) with annual dose measurements of the package undertaken annually. Where ILW filters are deemed to be LLW and meet the disposal requirements of LLWR, these are transferred from shielded packages to canisters for disposal. This is a process that is undertaken periodically, whilst a further exercise is undertaken to move filters from single filter shielded drums to multipack shielded drums – to maintain a sufficient supply of single filter shielded drums. Management of the cartridge filters is in line with local operational instructions; the cartridges are used to fill the void space in half-height ISO (HHISO) containers before being transferred to LLWR.

There are four demineraliser waste streams that are deemed to be ILW; three of these are associated with the CVCS system and the final is associated with the Fuel Storage Pond cleanup system. Resins are sluiced to the storage tank at a frequency ranging from 18 to 36 months (generating approximately 2m³ of waste); the sluice frequency is based on chemistry advice. When an ILW resin packaging campaign comes around, the tanks are transferred into Mosaik casks for dewatering and subsequent storage. The frequency of the dewatering campaigns is based on ullage of the storage tanks.

Operational/maintenance waste streams are a mixture of LLW and HAW. HAW are decay stored whilst available disposal routes for the LLW include the LLWR, incineration and a metal recycling facility. LLW are sorted and segregated on tables in the radwaste building; the Operator aims to maximise volume of waste going to incineration as this results to greater waste volume reduction (approximately 75% of waste follows this disposal route). Any waste that doesn't meet the Waste Acceptance Criteria for incineration or the LLWR goes to Tradebe Inutec for supercompaction; shredding is no longer undertaken at the station.

Waste prevention/Minimisation

The Operator confirmed that there is an overarching spreadsheet capturing waste streams across the EDF fleet and the spreadsheet cross references the '*Solid Radwaste Management Manual*' (ref 8). The manual provides details on individual waste streams and demonstrates the adoption of waste hierarchy at the station. Where there are site-specific considerations e.g. new waste stream is identified, an AR is raised, and the manual is updated along with the associated POI and Work Order Cards (WOC).

We asked the Operator what practices they have in place to promote and drive waste minimisation and prevention across the site. They confirmed that employees have waste minimisation training e.g. not bringing non-essentials into the RCAs and that feedback and ideas are shared amongst the green team and the teams generating waste. Exempt waste bins are placed around the RCAs and are monitored for clearance before they can be removed from the RCA and disposed of as non-radioactive. Further efforts to reduce and control waste generation include the reduction of the RCA bins (down to 50 from an original 400) and improved signage. The Operator also confirmed they have installed a forward tool store in the RCA where people can withdraw and reuse equipment instead of disposing.

Characterisation of Solid Radioactive Waste

ESG confirmed that the '*Radwaste Sampling Techniques Document (THTS022)*', details the techniques for sampling and analysing radioactive waste at Sizewell B. LLW resins are stored with water in two tanks in the Radwaste Management Building. An Isolock sampler takes a sample of each filled tank (following recirculation), referred to as a 'batch'. Each batch sample is fully analysed to calculate radioactivity levels and establish appropriate disposal options. We confirmed that the same sampling methodology and technique is used for characterisation of ILW and LLW resins.

Record Keeping, Monitoring Equipment and Analysis

Records of radioactivity content for ILW Mosaik casks are stored in the station Asset Management System as a record, whilst records for LLW drum radioactivity content are stored on the station LLW activity assessment spreadsheet and are linked to the corresponding drum and batch sample. Monitoring equipment is calibrated annually by Cavendish Nuclear, and the calibration dates are listed in the station's database. If the calibration date is within one month, then the system does not allow the equipment to be issued for use. Additional pre-job tasks also include bench tests of the equipment, to confirm pass/fail criteria, prior to their use.

We discussed with the Operator how they engage with external suppliers who provide services relating to permit compliance (e.g. laboratories). They confirmed that there is work at corporate level to raise awareness on the timescales associated with the delivery of projects and to ensure that demand is met. Whilst no issues have been raised relating to laboratory capacity, work planning and ongoing engagement with laboratories helps meeting the expected regulatory standards and station demands.

Solid Radioactive Waste Off-site Transfer and Disposal

We asked the Operator on their arrangements for ensuring compliance with Waste Acceptance Criteria (WAC) and Conditions for Acceptance (CFA) for the receiving disposal sites. They confirmed that radioactive waste processing areas have flow charts showing WAC requirements for each waste stream and employees undergo training. Additionally, the LLW compliance evaluation report (ref 6) highlights that radioactive waste disposal sites are selected based on WAC which are detailed in a letter before sending the waste, this gives the consignor and disposal site the opportunity to review the waste being sent and whether the site is permitted to accept.

A waste transfer Quality Plan (QP) is required for consignments of radioactive waste for treatment and/or disposal offsite to ensure compliance with environmental permit requirements both for Sizewell B and the receiving site. Following the inspection, we received a copy of the QP for waste transferred off-site for Supercompaction (ref 5). Completion and maintenance of the QP is by a suitably qualified and experienced (SQEPed) radioactive waste engineer. The QP is also reviewed and signed off by the ESG team to confirm that waste is ready for shipment (as part of the Quality Assurance Process).

Solid Radioactive Waste Storage

The Operator confirmed that CRADLE is the system for logging and storing information regarding waste generated on site including packaging information and records for disposal. When we reviewed the POI for the LLW resin transfer (ref 4) we confirmed that there is a requirement to update the CRADLE waste inventory system with details of the resin transfer from the tanks to the IBCs.

We discussed with the Operator storage capacity of the Dry Fuel Store (DFS), where used nuclear fuel is stored, and potential implications for the Long- Term Operation (LTO) Business Case. They confirmed that there is sufficient capacity to support the proposal for the proposed extended lifetime operation (up to 2055). Weekly surveys are completed around the DFS during the dry fuel store campaign. Storage conditions in the DFS are stable and whilst there is no formal monitoring programme outside of campaigns the Operator highlighted that they undertake periodic walkdowns to confirm cask conditions.

The Pin Store is located within the Radioactive Waste Building and used for storage of drummed ILW and LLW; the store is currently less than 50% full. Operations undertake walkdowns around the Pin store in line with site procedures and remedial works were recently completed on the flooring to address signs of degradation (a WOC was raised as part of the works). Additionally, the compliance evaluation report confirms that weekly surveys are completed around the waste storage areas by an Accredited Radioactive Waste Engineer (AccRWE).

Plant Tour

During the inspection we completed a walkdown of the Fuel Building and the DFS building. We received an update on the progress of the DFS campaign and observed the cleaning process of multi-purpose canisters (MPCs).

MPCs are cleaned using demineralised water prior to loading used nuclear fuel. We saw the IBCs used for storing demineralised water and the ESG Head confirmed that the IBCs are clearly labelled and only used for that purpose. Any used demineralised water, following MPC cleaning, is stored in different IBCs in the DFS. We asked the Operator about the disposal of the used water, and they confirmed that it is chemically tested, and the results are reviewed by the ESG team, prior to discharge under the station's non-radiological water discharge activity (WDA) permit (ref: PRECS03962).

During our walkdown at the DFS we noted some spills around an open MPC. ESG confirmed that this was a result of water spraying during the MPC cleaning process and that a handheld vacuum cleaner is regularly used to collect the water and transfer to IBCs for disposal. The plant areas we inspected appeared to be in state of good repair and we collected information on the pollution prevention procedures adopted to protect the environment. We can confirm that we didn't identify any regulatory issues.

LLW Resin Long-term Strategy Update

LLW resins are taken out of service before coming ILW however, they do not meet the acceptance criteria for incineration due to radioactivity levels. An optioneering study previously undertaken in 2021 concluded that the preferred BAT for this waste stream is encapsulation. However, reliability issues with the plant meant that the last campaign was completed over two years ago. Despite their efforts, EDF was unable to bring the encapsulation plant back into service, so proposed an interim strategy of interim storage of LLW resins in IBC containers in the Radwaste Building. We reviewed the proposal and provided comments in a RASCAR on 5th February 2025 (XB3539DH-0541762). Our review noted and accepted the need for interim storage to support ongoing station operation, but we asked EDF to establish a clear plan and timescales for implementing a long-term solution.

During the visit we received an update from the Project Manager on the progress of the long-term resin management strategy (previously identified as recommendation REC_250217_01). They confirmed that the station is committed to the implementation of the strategy by 2029 and a team is currently being established. The project is currently going through the gated process, moving from Gate A to Gate B, and funding has been secured in the Medium-Term Plan (MTP). We received a computer screenshot of the gated paper for the LLW strategy after our visit (ref 9) and the ESG team confirmed that there is opportunity for additional funding if needed. A detailed optioneering study is required (this is an 18-month process) to deliver the LLW strategy and four possible options are subject to change including mobile encapsulation and transport for off-site treatment.

The Project Manager confirmed that it would take approximately five years to reach Gate D (from the start of the process) and for the long-term strategy to be implemented. We asked the Operator, and they confirmed that the resin tanks have sufficient capacity to accommodate the strategy's implementation timescales; the tanks will be filled up and require emptying around 2030. We can confirm that recommendation REC_250217_01 has been addressed. We wish to receive further periodic updates on the delivery of the project as part of our ongoing regulatory engagement.

Conclusions

We are satisfied that solid radioactive waste at SZB continues to be managed in a way that is optimised and minimises the activity and impact of waste disposals. The inspection indicated that both corporate and SZB-specific management arrangements are appropriately implemented. The DFS visited was in good condition and indicated a high standard of housekeeping and procedures for environmental protection. The inspection provided evidence that EDF-NGL is compliant with the conditions of its permit and uses BAT to manage its solid waste. No non-compliances were identified.

Good practice

Good practice 250325/01: We consider EDF undertaking compliance evaluations as an example of good practice.

Recommendations

Recommendation 250325/01: EDF to demonstrate how they ensure that site-specific RWMCs at Sizewell B remain up to date in accordance with '*The management of higher activity radioactive waste on nuclear licensed sites*' Guidance 2021.

Recommendation 250325/02: EDF to demonstrate how BEG/SPEC/SHE/ENV/042/01 company standard is implemented at Sizewell B.

Recommendation 250325/03: EDF to demonstrate how BAT documents remain up to date as new disposal routes and technologies come to market.

References

1. Dry Fuel Store (DFS) Campaign 4 – Cask 16 Quality Plan dated September 2024 (ref: SZB/QP/KE/016)
2. Sizewell B Power Station Post Job ALARP Brief LLW resin transfer from storage tanks to IBCs (ref: SZB/TH/F078 Rev 001)
3. Sizewell B Radioactive Waste Management Case for Sizewell B ILW Resin dated October 2018 (ref: NFL/REP/0129/SZB/14)
4. Plant Operating Instructions Part 8 Radwaste Systems Chapter 4 Solid Radwaste Management System Resin Transfer (HC) POI – HC153 Manually Remove LLW Spent Resin from LLW Storage Tanks dated August 2024
5. Quality Plan for the Transfer of Radioactive Waste for Treatment and Disposal via Supercompaction dated July 2020
6. Management and Disposal of Low Active Waste Compliance Evaluation Report (ref: SZB/ENV/21/002)
7. Sizewell B Power Station Multi-Purpose Canister Cleanliness Record Sheet (ref: SZB/TCF/046 Issue 000)
8. Sizewell B Power Station Technical Standard SZB/THTS/014 Solid Radwaste Management Manual (ref: SZB/THTS/014) dated January 2025
9. LLW Resins Gated Paper Details
10. The management of higher activity radioactive waste on nuclear licensed sites. Joint guidance from the Office for Nuclear Regulation, the Environment Agency, the Scottish Environment Protection Agency and Natural Resources Wales to nuclear licensees dated July 2021 (Revision 2.1)

Section 3- Enforcement Response

Only one of the boxes below should be ticked

You must take immediate action to rectify any non-compliance and prevent repetition.

Non-compliance with your permit conditions constitutes an offence* and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.

We will now consider what enforcement action is appropriate and notify you, referencing this form.

Section 4- Action(s)

Where non-compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.

Criteria Ref.	CCS Category	Action Required / Advised	Due Date
See Section 1 above			

Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence* and we may take legal action against you.

● We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.

● Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.

● A civil sanction Enforcement Undertaking (EU) offer may also be available to you as an alternative enforcement response for this/these offence(s).

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

Non-compliance scores and categories

CCS category	Description
C1	A non-compliance which could have a major environmental effect
C2	A non-compliance which could have a significant environmental effect
C3	A non-compliance which could have a minor environmental effect
C4	A non-compliance which has no potential environmental effect

Operational Risk Appraisal (Opra) – Non-compliances do not currently affect RSR Opra scores.

Section 6 – General Information

Data protection notice

The information on this form will be processed by the Environment Agency to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). The Environment Agency may also use and/or disclose it in connection with:

- offering/providing you with its literature/services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

The Environment Agency may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The Environment Agency will provide a copy of this report to the [public register\(s\)](#). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within 20 working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If a permit holder disagrees with the RASCAR form, they should raise their concerns to the officer or team which issued the form. This must be done within 14 calendar days of receipt. If the response does not resolve the issue, a permit holder can request an appeal of the regulatory decision. This request must be made within 28 calendar days of receipt of the response. More details on our regulatory appeals process can be found at <https://www.gov.uk/guidance/appeal-a-regulatory-decision-from-the-environment-agency>. If the permit holder is still not satisfied, they can make a complaint to the Parliamentary and Health Service Ombudsman. Advice about complaining can be obtained by phoning the Ombudsman's helpline on 0345 015 4033.