



**Modular Application for PERMIT of
RADIOACTIVE SUBSTANCES ACTIVITIES
Not involving Sealed Sources
Under the
Environmental Authorisations (Scotland) Regulations 2018**

This form is **only** for permits relating to **unsealed radioactive material and radioactive waste**.

You must use this form to:

- **APPLY FOR A NEW PERMIT**
- **VARY THE CONDITIONS OR LIMITS OF AN EXISTING PERMIT**

Further information on what type of authorisation you require for your radioactive substances activity can be found in the *Radioactive Substances Authorisation Guide* available on the SEPA [website](#).

Applications for transfers, surrenders and sealed sources are available on the SEPA [website](#).

SEPA will attach a number of standard conditions to your permit, depending on what you have applied for. We would recommend that you read the suite of standard conditions before you apply. They can be obtained on SEPA's [website](#)

If you feel that a section of standard conditions will not be suitable for your activity, please indicate what changes you think are necessary. SEPA may issue bespoke conditions.

All reference notes in this form relate to the Modular Application Form Guidance available on the SEPA [website](#). We encourage you to read the guidance when completing this form.

Any personal data that you have been asked to provide on this form and as part of this application process will be held and processed in accordance with SEPA's Privacy notice, available on SEPA's website.

SECTION 1 - GENERAL INFORMATION

TYPE OF APPLICATION

1a. Please state which of the following applications you are making (see guidance note on p3)

Type of application	Tick applicable box below	List existing authorisation	Offshore?
New	<input type="checkbox"/>		<input type="checkbox"/>
Variation*	<input checked="" type="checkbox"/>	EAS/P/1173599	<input type="checkbox"/>

*Type of variation	Substantial <input checked="" type="checkbox"/>	Standard <input type="checkbox"/>
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1b. Is the application relating to a nuclear site? (see guidance note on p3)

Yes No

1c. To meet with the requirements of this application you must have a recognised Justified Practice. Details of Justified Practices can be found in the government's *Justification of Practices Involving Ionising Radiation Regulations 2004* document ([link](#)) (see guidance note on p3)

I confirm that my Practice is Justified

APPLICANT DETAILS

1d. Please provide details of the legal person who will hold the permit (see guidance note on p3)

Legal Business Name:	Dounreay Site Restoration Limited
Legal Status	Company or corporate body
Trading/Business Name (if different):	Click here to enter text.
Company Registration number (if applicable):	SC307493
Official/Registered Office Address	Building D2003, Dounreay, Thurso, Caithness
Postcode:	KW14 7TZ
Telephone No:	01847 802121
Email Address:	regulatory.correspondence@dounreay.com

SITE DETAILS

1e. Please provide details of the premises to which the application refers (see guidance note on p4)

Name:	Low Level Waste Disposal Facilities
Address:	Dounreay, Thurso, Caithness
Postcode:	KW14 7TZ
Telephone No:	01847 802121

1f. Please give the grid reference of the main entrance to the premises (see guidance note on p4)

Ordnance Survey national grid reference 8 characters,
For example SJ 1234 5678

N	C		9	9	3	7		6	7	5	1
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1g. Please state the local government area in which the premises are situated (see guidance note on p4 – where applicable please select 'outwith Scotland').

Highland

CONTACT DETAILS

1h. Please provide details about the individual that we may contact about the application (see guidance note on p4)

Name:	Barrie Cran
Address:	Building D2003, Dounreay, Thurso, Caithness
Postcode:	KW14 7TZ
Email Address:	barrie.cran@dounreay.com
Telephone No:	01847 802356
Position/Designation:	Assurance Director


1i. Please provide details of the contact and billing address for invoices to be sent (see guidance note on p5)

Name:	Dounreay Site Restoration Limited
Address:	Building D2003, Dounreay, Thurso, Caithness
Postcode:	KW14 7TZ
Telephone No:	01847 806021
Email Address:	accounts@dounreay.com
Position/Designation:	Accounts Payable
SEPA account number (if known)	60083

REMITTANCE INFORMATION

Please provide payment details for the application (see guidance note on p5)			
Please ensure you submit the correct fee for your application. This fee is reviewed every year. For latest fees please consult the latest Environmental Regulation (Scotland) Charging Scheme on the SEPA website (www.sepa.org.uk and search for 'charging schemes and summary charging booklets') or contact your local SEPA office.			
BACS	Sort Code	83-34-00	IMPORTANT! When paying by BACS or direct transfer you MUST submit remittance advice or proof of payment with your application form. If this is not received the application will be deemed invalid and returned to you, as SEPA is unable to process your application without this.
	A/C Number	00137187	
Credit/Debit Card	Payment is accepted by all major credit/debit cards. Please include payment contact details below so that we can take payment securely		
	Name	N/A	Tel: N/A
Cheque	Made payable to "SEPA" and must be included with a printed application form		
Amount payable	£ - Reason for non-payment: Cost to be recorded and charged as band A		

DECLARATION

Please read the declaration and complete the boxes below (see guidance note on p5)			
<p>I/we hereby apply for authorisation under the Environmental Authorisations (Scotland) Regulations 2018 in respect of the premises referred to in Section 1 and in respect of the management of radioactive substances of the description and quantities referred to in this application. I/we declare that to the best of my/our knowledge the particulars in each section of this application are true and accept that the information contained in the application may form part of the publically available information held by the Scottish Environment Protection Agency and relevant public registers. I/we have read the data protection notice and understand the implications of the General Data Protection Regulation (GDPR)</p>			
Signature:		Date:	10/07/21
Name:	Barrie Cran	Position:	Assurance Director
Authorised on behalf of (company, corporate body, firm etc.)	Dunblane Site Restoration Limited		

APPLICATION CHECKLIST

Once you have completed all parts of the application, please use this checklist to indicate the items you have completed and are sending us as part of the application. (see guidance note on p5)		
Payment made using a suitable payment method		<input type="checkbox"/>
Remittance Advice/Proof of Payment (if applicable)		<input type="checkbox"/>
Declaration signed		<input checked="" type="checkbox"/>
Application sections completed and submitted	1. Mandatory	<input checked="" type="checkbox"/>
	2. Mandatory	<input checked="" type="checkbox"/>
	3. If applicable	<input type="checkbox"/>

	4. If applicable	<input type="checkbox"/>
	5. If applicable	<input type="checkbox"/>
	6. If applicable	<input type="checkbox"/>
	7. If applicable	<input checked="" type="checkbox"/>
	8. If applicable	<input type="checkbox"/>
<p>Supporting documents/information - please list documents included:</p>	<p>Application to SEPA for a variation to EAS/P/1173599 - Supporting Document (D3100/4/REP/INT/40185/IS/02) Environmental Safety Case 2020 (D3100/4/REP/GAL/40137/IS/01) Optimisation 2020 (D3100/4/REP/GAL/40136/01) ESC Management Plan (D3100/4/REP/GAL/40135/IS/01) Performance Assessment Run 5 (D3100/4/REP/GAL/40134/IS/01) Waste Acceptance Rules 2020 (D3100/4/REP/GAL/40133/IS/01) Application of Sum of Fraction for D3100 (D3100/4/REP/GAL/40092/IS/03) Radionuclides Accounted for in Total Low Level Waste Activity Limits (D3100/4/REP/INT/40088/IS/02) Site Characteristics Summary 2020 (D3100/4/REP/GAL/40051/IS/01) Criticality Safety Assessment 2020 (D3100/4/REP/GAL/40019/IS/01.3) Management of Non-Radiological Hazards 2020 (D3100/4/REP/GAL/40018/IS/02) Alternative Approaches to Setting and Managing Revised D3100 Activity Limits (D3100/4/REP/GAL/40017/IS/01) LLW Inventory Report 2020 (D3100/4/REP/GAL/400016/IS/02) D3100 Facility Design Summary Report (D3100/4/REP/GAL/40004/IS/01) A full list of documents submitted to support this application are listed in the spreadsheet Supporting documentation register for EAS-P-1173599 Variation Application 2021</p>	

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SECTION 2 - FURTHER INFORMATION

2a. Provide a brief overview of the radioactive substances activity that you are applying to carry out, including any arrangements for management of any waste generated (see guidance on p7)

Dounreay Site Restoration Limited (DSRL) operates facilities for the disposal of low-level radioactive waste (LLW) adjacent to the Dounreay nuclear licensed site in Caithness, in the north of Scotland.
The Low Level Waste Disposal Facilities (LLWDF) are operated to dispose of solid LLW arising from the ongoing activities at the Dounreay Nuclear Licenced Site and the Vulcan Naval Reactor Test Establishment. No change to this purpose is proposed within this variation application.

2b. Please indicate what activities you intend to carry out, or if you are varying an existing permit, which activities are affected by your proposed changes. (see guidance note on p7)

Holding of unsealed radioactive material	<input type="checkbox"/> - complete section 3
Introduction of radioactive material into the environment	<input type="checkbox"/> - complete section 3
Introduction of radioactive material into organisms	<input type="checkbox"/> - complete section 3
Discharge of radioactive liquid waste to the environment	<input type="checkbox"/> - complete section 4
Discharge of radioactive gaseous waste to the environment	<input type="checkbox"/> - complete section 5
Transfer to a person not in accordance with the standard conditions	<input type="checkbox"/> - complete section 6
Dispose of radioactive waste on your site	<input checked="" type="checkbox"/> - complete section 7
Receive radioactive waste or samples from another person	<input type="checkbox"/> - complete section 8
Other, please give details	Click here to enter text.

2c. For any radioactive waste generated, please describe the means considered for:
(i) minimising the volume and activity of waste requiring transfer disposal; and

(ii) minimising the impact to the environment of waste disposals.

(see guidance note on p7)

Operational waste management approaches are laid out in the Operational Management Plan (OMP/D3100/001), with requirements for waste minimisation, and segregation of radioactive and non radioactive wastes highlighted. A supporting Project Specific Waste Plan (PSWP) [PSWP-17-D3100-001] has been developed to assist in the consignment of waste generated through routine and maintenance operations carried out within the D3100 project area. The PSWP identifies all waste streams expected from current and future operations, ensuring routes are available for any waste produced (all operational waste generated is expected to be radiologically clean).”

Wastes produced during disposal operations at D3100 are generally clean, or out-of-scope of radioactive substances regulation. There is an increased potential for radioactive waste to be produced from operations in the D3130 Demolition LLW vault. Where possible this will be disposed of at the point of generation. For any radioactive waste that requires further packaging and conditioning, the waste will be transferred to Dounreay site in compliance with DSRL’s existing waste management arrangements.

Transfer of any radioactive waste generated within the LLWDF to the Dounreay site for packaging and conditioning has been notified to SEPA in line with EASR Standard Condition C.3 “Transfer of radioactive waste”. Monthly data returns summarising any waste transfers are submitted to SEPA in line with D3100/CI/012 in order to satisfy EASR Standard Condition A.8.

The Environmental Impact of the facilities is detailed within the Environmental Safety Case (D3100/4/REP/GAL/40137/IS/01) which includes an assessment of the Environmental Risk from Ionising Contaminants (ERICA). The Run 5 Performance Assessment (D3100/4/REP/GAL/40134/IS/01) assesses several scenarios against the risk guidance level from the Guidance on Requirements for Authorisation (GRA) and the ongoing optimisation of the facilities ensures the impact of disposals is as low as reasonably practicable.

NEW PERMIT APPLICATIONS ONLY

The following questions only need to be completed for applications for a new permit.

2d. Please provide information on who is responsible and the organisational arrangements for protection and safety with regard to public exposure from the management of the radioactive substances. *(see guidance note on p9)*

N/A

2e. Please provide information on the competencies and training of staff involved in managing the radioactive substances. *(see guidance note on p9)*

N/A

2f. Please provide details of the design features of your premises and equipment that will ensure adequate protection against public exposure. *(see guidance note on p9)*

N/A

2g. Please provide the anticipated public exposures in normal operation of your radioactive substances activity. *(see guidance note on p9)*

N/A

<p>2h. Have you carried out an assessment of the activity and the premises in order to-</p> <ul style="list-style-type: none"> (i) estimate, to the extent practicable, the probability and magnitude of a potential public exposure; (ii) assess the quality and extent of protection and safety provisions, including engineering features as well as administrative procedures; and (iii) define the operational limits and conditions of operation? <i>(see guidance note on p10)</i> 	<p>Choose an item.</p>
<p>2i. Do you have emergency procedures relating to the radioactive substances activities? <i>(see guidance note on p10)</i></p>	<p>Choose an item.</p>
<p>2j. Do you have arrangements to maintain, test, inspect and service the relevant equipment and facilities to continue to meet the design requirements, operational limits and conditions of operation throughout their lifetime? <i>(see guidance note on p10)</i></p>	<p>Choose an item.</p>
<p>N/A</p>	
<p>2k. Please provide details of how you intend to provide quality assurance for the radioactive substances activity? <i>(see guidance note on p11)</i></p>	
<p>N/A</p>	

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SECTION 7 - DISPOSAL OF RADIOACTIVE WASTE ON YOUR SITE

7a. Please provide details of:

- (i) what types of wastes will be disposed of on site;
- (ii) where on your site the disposals will occur;
- (iii) the quantity of waste to be disposed of on site *(see guidance note p27)*

The Low Level Waste Disposal Facilities (LLWDF) dispose of solid Low Level Radioactive Waste (LLW) as detailed within the accompanying Environmental Safety Case (ESC) (D3100/4/REP/GAL/40137) and the agreed Operational Management Plan (D3100/OMP/001 Issue 8).

The extent of the site can be found in the attached Variation Application (Appendix E, D3100/4/REP/INT/40185). The disposals occur within engineered vaults, currently two vaults are in operation (marked in the aforementioned Appendix E by red cross hatching): D3120 for the disposal of LLW and D3130 for the disposal of Demolition LLW – a sub category of LLW. Further details of the facilities are given in the accompanying ESC (D3100/4/REP/GAL/40137) and Facility Design Summary Report (D3100/4/REP/GAL/40004/IS/01).

7b. Please provide the information requested in the table below

(see guidance note on p27 & use the key indicators specified below the table)

Physical form of the waste	Radionuclide or group of radionuclides	Max. activity of each radionuclide (Bq)	Type of change requested
The application requests the use of a Sum of Fractions approach, therefore the proposed limits are in a different format. Please refer to 7d and the Application of Sum of Fractions (D3100/4/REP/GAL/40092/IS/03) supporting report for further details.	N/A	N/A	Choose an item.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Choose an item.

Click here to enter text.	Click here to enter text.	Click here to enter text.	Choose an item.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Choose an item.

Key: (N) = new request, (I) = increase requested, (R) = reduction requested, (U) = unchanged

7c. Please give details of any significant non-radioactive properties of the radioactive waste and confirmation that the chosen disposal route is suitable for its non-radioactive properties.
(see guidance note on p28)

There has been an increase in estimates of the non-radiological inventory for disposal to the LLWDF since the 2009 application although the proportion of hazardous materials to the total waste inventory remains small and will be monitored to assess this position. Due to the engineering and the management of the facilities, the LLWDF have been demonstrated to be equivalent to the requirements of a hazardous waste management facility. For further details please refer to the Management of Non-Radiological Hazards (D3100/4/REP/GAL/40018) which provides information on the expected inventory and the management of LLW with non-radiological hazards.

7d. Please describe what (if any) limits you are applying for and how they were determined.
(see guidance note on p28)

DSRL request that the current approach of using an estimated inventory to set radionuclide limits is replaced with a risk-based 'sum of fractions' (SoF) approach. In such an approach, activity levels are derived directly by relating the performance of the facility, the individual radionuclide properties and specified performance measure(s). Two sets of Calculated Total Activity Levels (CACLs) are proposed, one for LLW and another for Demolition LLW based on the engineering of the facilities. For further details on this approach, please refer to the Application to SEPA for variation to EAS/P/1173599 - Supporting Document (D3100/4/REP/INT/40185/IS/02) and the Application of Sum of Fractions (D3100/4/REP/GAL/400092) which provides details on the proposed approach to radiological limits.

Further limit changes are also requested in the Application to SEPA for variation to EAS/P/1173599 – Supporting Document (D3100/4/REP/INT/40185/IS/02) regarding the criticality limits on fissile material that have been updated to reflect the Criticality Safety Assessment 2020 (CSA, D3100/4/REP/GAL/40019/IS/01.3) which considers graphite and beryllium content in addition to fissile material.

7e. Please describe how this disposal represents Best Practicable Means (BPM). (see guidance note on p28)

A Best Practicable Environmental Options (BPEO) study was conducted in 2004 identifying the construction of the LLWDF as the best strategy for the management of LLW from Dounreay. The optimisation of the siting, design and ongoing management of the facilities are detailed within the Optimisation report (D3100/4/REP/GAL/40136) and the ESC (D3100/4/REP/GAL/40137). The performance assessment Run 5 (D3100/4/REP/GAL/40134) demonstrates the safety of the facilities against the risk guidance levels within the GRA and has been externally peer reviewed, along with the ESC, in advance of this application.

7f. Have you submitted a dose assessment demonstrating that your proposed disposals will not adversely affect the public? *(see guidance note on p29)*

Yes

No

If not, please explain

[Click here to enter text.](#)

