


RADIOACTIVE SUBSTANCES ACT 1993
SECTION 13
**MULTI MEDIA AUTHORISATION FOR NUCLEAR
LICENSED SITES**

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INTERPRETATION OF TERMS

(1) In this Authorisation:

Except where otherwise specified, words and expressions defined in the Radioactive Substances Act 1993 shall have the same meanings when used in this Authorisation as they have in that Act;

"the Act" means The Radioactive Substances Act 1993 as amended;

"active institutional control" means control of the disposal site for solid radioactive waste by an Authorisation Holder under the Act, involving monitoring, surveillance and remedial work as necessary, as well as control of land use.

"activity", expressed in becquerels, means the number of spontaneous nuclear transformations occurring in a period of one second;

"aqueous waste" means radioactive waste in the form of a continuous aqueous phase together with any entrained solids, gases and non-aqueous liquids;

"Authorisation" means an Authorisation issued under the Radioactive Substances Act 1993;

"Authorised Person" means a person who is authorised in writing by SEPA under Section 108 of the Environment Act 1995 to exercise the powers specified in that Section;

"Authorised Premises" are the premises defined in Schedule 1;

"authorised waste acceptance criteria" means quantitative and/or qualitative criteria specified by the regulator for solid radioactive waste to be accepted for disposal;

"biodegradable waste" means waste liable to be readily decomposed by micro-organisms (i.e. putrescible waste), such as food, vegetable and animal remains, but excluding paper and similar materials that degrade more slowly

"Bq", "kBq", "MBq", "GBq", "TBq" and "PBq" are used as abbreviations meaning becquerel, kilobecquerel, megabecquerel, gigabecquerel, terabecquerel and petabecquerel respectively;

"bulk item" means a large waste item which may have been loaded and grouted into a suitable container or emplaced directly into the vaults and grouted in-situ.

"calendar year" means a period of 12 consecutive months beginning on 1 January;

"closure" means technical and administrative actions to put the Authorised Premises in its intended final state after the completion of waste disposal;

"consignment" means an individual shipment of radioactive waste not greater in volume than 40 cubic metres or such lesser volume as specified in writing by SEPA;

"construction" means any work of construction in the course of the erection on the Authorised Premises;

"decommissioning" means the process whereby a facility, at the end of its functional life, is taken permanently out of service and its site made available for other purposes and includes any remediation carried out by the Authorisation Holder in the locality of the Authorised Premises;

"demolition waste" means a Dounreay Site Restoration Ltd term used in the Environmental Safety Case 2010 for LLW streams made up of unconditioned material including, but not restricted to, concrete, bricks, metals, stone, sand and soil which have radioactivity levels not exceeding 0.01 gigabecquerels per tonne (GBq/te) alpha or 0.4 gigabecquerels per tonne (GBq/te) beta/ gamma;

"Dounreay Nuclear Establishment" means the decommissioning nuclear site at Dounreay, Caithness, adjacent to the Authorised Premises and in respect of which a licence under the Nuclear Installations Act 1965 is in force;

"environment" means all, or any, of the media of air, water (to include sewers and drains) and land;

"Environmental Operating Rule" means a mandatory restriction on operation, established and enforced by the Authorisation Holder, which is necessary to ensure compliance with this Authorisation;

"environmental safety" means the safety of people and the environment both at the time of disposal and in the future;

"Environmental Safety Case" means the collection of arguments, provided by the Authorisation Holder, that seeks to demonstrate that the required standard of environmental safety is achieved;

"Environmental Safety Case 2010" means the version of the Environmental Safety Case issued by Dounreay Site Restoration Ltd dated 27 October 2010 and having reference number 'NLLWF/3/ESC/GAL/0425/IS/01';

"gaseous waste" means radioactive waste in the form of gases and associated mists and particulate matter;

"Low Level Waste" means solid low level radioactive waste having a radioactive content not exceeding four gigabecquerels per tonne (GBq/te) of alpha or 12 GBq/te of beta/gamma activity;

"maintenance instructions" means instructions, established by the Authorisation Holder, for carrying out any maintenance that may have an effect on compliance with this Authorisation;

"maintenance schedule" means a programme, established by the Authorisation Holder, for maintenance of all systems and equipment that ensures compliance with this Authorisation;

"Management Plan" means a plan produced by the Authorisation Holder setting out the manner in which the Authorisation Holder shall operate the installation in order to comply with the conditions of the Authorisation;

"management system" includes organisational and management structure of the Authorisation Holder and procedures established by the Authorisation Holder;

"month" means calendar month (i.e. 1-31 January, 1-28/29 February, 1-31 March, etc);

"operating instructions" means instructions, established by the Authorisation Holder, for carrying out any operation that may have an effect on compliance with this Authorisation;

"phase" means the period of design, construction and operations of:

- Phase 1 LLW vault (LLW-1)
- Phase 1 demolition waste vault (DLLW-1)
- Phase 2 LLW vault (LLW-2)
- Phase 2 demolition waste vault (DLLW-2)
- Phase 3 LLW vault 1 (LLW-3-1)
- Phase 3 LLW vault 2 (LLW-3-2)

as shown in Appendix 2;

"quarter" means any period of three consecutive months;

"Radioactive Waste Adviser" means a person having a current valid certificate recognising the capacity to act as a Radioactive Waste Adviser issued by an Assessing Body approved by SEPA or a Corporate Radioactive Waste Adviser working in accordance with Corporate Arrangements approved by SEPA;

"samples" includes samples that have been prepared or treated to enable measurements to be made;

"Schedule" means a Schedule forming part of this Authorisation;

"SEPA" means the Scottish Environment Protection Agency;

"Toxic" means substances and preparations (including very toxic substances and preparations) which, if they are inhaled or ingested or if they penetrate the skin, may involve serious, acute or chronic health risks and even death, as defined in Annex 3 Directive 91/689/EEC on Hazardous waste;

"the Undertaking" means the undertaking defined in Schedule 1;

"waste permitted person" means a person who is suitably:-
authorised under the Act to dispose of or accumulate waste; or
permitted under the Environmental Permitting (England and Wales) Regulations 2010 to dispose of or accumulate radioactive waste;

"water environment" means all surface water, groundwater and wetlands; and "surface water", "groundwater" and "wetlands" shall have the same meaning as in the Water Environment and Water Services (Scotland) Act 2003;

"week" means a period of 7 consecutive days commencing at a day and time to be notified in writing to SEPA by the Authorisation Holder at least 14 days before any disposal of radioactive waste is made under the terms of this Authorisation, any subsequent change being notified in writing to SEPA at least 7 days in advance;

"year" means any period of 12 consecutive months.

- (2)(a) In this Authorisation the Interpretation Act 1978 shall apply as it does to an Act of Parliament and in particular words in the singular include the plural and words in the plural include the singular.
- (b) Any reference to a numbered Condition, Limitation, Schedule, Table, Appendix, Figure or Paragraph is a reference to a numbered Condition, Limitation, Schedule, Table, Appendix, Figure or Paragraph in this Authorisation;
- (c) Except where otherwise specified in this Authorisation, any reference to an enactment or statutory instrument includes a reference to it as amended (whether before or after the date of this Authorisation) and to any other enactment, which may, after the date of this Authorisation, directly or indirectly replace it, with or without amendment.
- (3)(a) In determining whether particular means are the "best practicable" for the purposes of this Authorisation, the Authorisation Holder shall not be required to incur expenditure whether in money, time or trouble which is, or is likely to be, grossly disproportionate to the benefits to be derived from, or likely to be derived from, or the efficacy of, or likely efficacy of, employing them, the benefits or results produced being, or likely to be, insignificant in relation to the expenditure.
- (b) Where reference is made to the use of "best practicable means" in this Authorisation, the terms "best", "practicable" and "means" have the following meaning:
- "Best" – means the most effective techniques for achieving a particular objective, having due regard to technological advances (state of the art) and changes in scientific knowledge; and understanding.
- "Practicable" – indicates that the "means" under consideration should only be selected following an optimisation process that includes consideration of the technical viability including comparable processes, facilities or methods of operation which have recently been successfully tried out and takes into account social and economic costs and benefits.
- "Means" – includes: technology, disposal options, the design, build, maintenance, operation and decommissioning of facilities, and wider management arrangements.
- (c) The social and economic costs and benefits that should be taken into account in the optimisation process used to decide what is practicable includes (where relevant);
- economic costs
 - social benefits
 - radiological exposures to the public
 - occupational radiological exposures
 - radiological impact on the environment
 - conventional safety
 - consistency with the waste hierarchy
 - impact of the non-radioactive properties of radioactive waste
 - the generation and associated impact of non-radioactive wastes, including climate change emissions

- the proximity principle
- applicable government policy

- (4) Where reference is made to radiological effects on the environment in this Authorisation it includes the effects on any living organism supported by the environment.

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1. LIMITATIONS AND CONDITIONS RELATING TO THE AUTHORISED PREMISES AND THE UNDERTAKING

1.1 Description of Undertaking

1.1.1 The Undertaking is the disposal of low level radioactive waste.

1.2 The Authorised Premises

1.2.1 The Authorised Premises are located adjacent to the Dounreay site as shown in the Location Guide forming Appendix 1 and as delineated in red on the Site Plan forming Appendix 2 of this Authorisation.

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2. GENERAL LIMITATIONS AND CONDITIONS

2.1 Environmental Safety Case

- 2.1.1 The Authorisation Holder shall maintain an Environmental Safety Case.
- 2.1.2 The Authorisation Holder shall update and provide to SEPA the Environmental Safety Case at a frequency agreed in writing with SEPA.

2.2 Optimisation

- 2.2.1 The Authorisation Holder shall use best practicable means to ensure that no unnecessary radioactive waste is generated on these Authorised Premises.
- 2.2.2 The Authorisation Holder shall use best practicable means to ensure that radioactive waste is disposed of at times, in a form, and in a manner so as to minimise the radiological effects on the environment and members of the public at the time of disposal and in the future.

2.3 Design and Construct

- 2.3.1 The Authorisation Holder shall ensure the vaults are designed and constructed in accordance with the Environmental Safety Case 2010.
- 2.3.2 The Authorisation Holder shall, following each phase of excavation, provide SEPA with a detailed design for the Authorised Premises as soon as practicable and in any event at least two calendar months prior to the commencement of the construction of the Authorised Premises.
- 2.3.3 The Authorisation Holder shall, prior to waste disposal, provide to SEPA documentary evidence, including a certificate of completion, that each phase of the Authorised Premises is designed and constructed in accordance with the detailed design provided to SEPA in accordance with paragraph 2.3.2.
- 2.3.4 The Authorisation Holder shall provide a copy of any completion certificate(s) issued by the local authority to SEPA as soon as practicable.
- 2.3.5 The base, sides and final cap of the disposal vaults at the Authorised Premises shall consist of an artificially established, engineered barrier constructed to ensure as a minimum the following standards:
 - 2.3.5.1 permeability of less than or equal to 1.0×10^{-9} metres/second; and
 - 2.3.5.2 an artificial barrier with a thickness of not less than 0.5 metres, giving equivalent or greater protection than a 5 metres thick mineral layer; and
 - 2.3.5.3 the artificial barrier shall provide sufficient attenuation capacity to prevent an unacceptable risk to groundwater.
- 2.3.6 The Authorisation Holder shall, prior to construction of each phase, provide to SEPA a detailed programme of Construction Quality Assurance monitoring and reporting, including the demonstration of compliance with the standards required in paragraph 2.3.5.

2.4 Disposal of Radioactive Waste

- 2.4.1 The accumulation and disposal of radioactive waste at the Authorised Premises shall not commence without written agreement from SEPA.
- 2.4.2 The Authorisation Holder shall inform SEPA in writing, at least 28 days before the first disposal of radioactive waste is made under the terms of this Authorisation, of the programme being undertaken to satisfy paragraph 2.9.2 and 2.9.3.

2.5 Accumulation of Radioactive Waste

- 2.5.1 The Authorisation Holder shall only accumulate radioactive waste in order that it may be disposed of in accordance with the conditions and limitations in this Authorisation.
- 2.5.2 The Authorisation Holder shall dispose of accumulated radioactive waste as soon as it is practicable to do so and in any event within 24 hours of receipt.
- 2.5.3 The Authorisation Holder shall ensure that radioactive waste which is being accumulated shall be segregated from waste which is not radioactive waste and shall be accumulated separately.
- 2.5.4 The Authorisation Holder shall ensure that only suitably qualified and experienced persons shall have access to the accumulated radioactive waste.
- 2.5.5 The ionising radiation symbol and the word "Radioactive" shall be displayed at all times at the immediate location where any radioactive waste is being accumulated.
- 2.5.6 All radioactive waste being accumulated shall be clearly and legibly marked to permit its identification.
- 2.5.7 All radioactive waste being accumulated shall be stored in such a manner as to prevent, as far as is reasonably practicable, the contamination of other articles or substances.
- 2.5.8 The accumulated radioactive waste shall be stored in such a manner so as to prevent, as far as reasonably practicable, the dispersal of any radionuclide contained in any of the radioactive waste as a consequence of fire, corrosion, explosion, flood or any other hazard.

2.6 Operation

- 2.6.1 The Authorisation Holder shall operate the Authorised Premises in accordance with the Environmental Safety Case. However, in the event of any conflict between the Environmental Safety Case and the conditions of this Authorisation, the conditions of this Authorisation shall take priority.
- 2.6.2 The Authorisation Holder shall prepare, maintain and implement a Management Plan which includes, but is not limited to:
- i Load management
 - ii Leachate management

- iii Water management
- iv Packaging
- v Criticality Safety Case
- vi Authorised Waste Acceptance Criteria implementation
- vii Waste receipt and disposal
- viii Capping
- ix Environmental monitoring
- x Records management
- xi Training of staff

- 2.6.3 The Authorisation Holder shall produce and maintain an intervention strategy for the retrieval of disposed waste before commencement of waste emplacement.
- 2.6.4 The Authorisation Holder shall produce, maintain and implement contingency arrangements and emergency plans for reasonably foreseeable events including, but not restricted to, corrosion, explosion, flooding, fire and loss of containment of the waste.
- 2.6.5 All operations on the Authorised Premises shall be carried out in accordance with the Management Plan. Where any limit or condition of this Authorisation conflicts with the Management Plan, the Authorisation condition shall take precedence over the Management Plan.
- 2.6.6 Unless otherwise specified in this Authorisation any proposed change(s) by the Authorisation Holder to the Management Plan shall be submitted in writing to SEPA at least 28 days before the implementation of the proposed change(s). The Management Plan shall only be amended in accordance with the proposed change(s) if, and to the extent that, either (a) SEPA gives written approval of the proposed change(s) or (b) SEPA has not indicated to the Authorisation Holder in writing within 28 days of receiving the proposed change that the proposed change(s) are rejected.
- 2.6.7 The Authorisation Holder shall take all practicable measures to prevent access to the radioactive waste by any person not authorised by the Authorisation Holder.
- 2.6.8 Whenever the Authorisation Holder knows or has reasonable grounds for believing or suspecting that any radionuclide contained in the radioactive waste has been or may be dispersed in a manner not permitted by this Authorisation the Authorisation Holder shall take all practicable measures forthwith to restrict any further dispersal of any such radionuclide and notify SEPA without delay.
- 2.6.9 The Authorisation Holder shall take all practicable measures to prevent the loss or theft of any radioactive waste.
- 2.6.10 Whenever the Authorisation Holder knows or has reasonable grounds for believing or suspecting that any of the radioactive waste has been lost or stolen the Authorisation Holder shall take all practicable measures forthwith to recover the radioactive waste and notify SEPA without delay.

2.7 Closure

2.7.1 The Authorisation Holder shall produce, maintain and implement a plan for the closure of the vaults, consistent with the Environmental Safety Case, which must be agreed in writing by SEPA prior to commencement of closure of the vaults.

2.7.2 The Authorisation Holder shall, prior to the cessation of waste disposal, produce a plan for the maintenance of active institutional control following the closure of the facility which must be agreed in writing by SEPA prior to its implementation, and thereafter maintained and implemented.

2.8 Management

2.8.1 The Authorisation Holder shall have a management system and resources which are sufficient to achieve compliance with the limitations and conditions of this Authorisation and which include, without restricting the generality of the requirement under this paragraph:

2.8.1.1 written arrangements specifying how the Authorisation Holder shall achieve compliance with each limitation and condition of this Authorisation, to include arrangements for control of the design and operation of systems and equipment provided for such compliance with this Authorisation, and any modifications made to these systems and equipment;

2.8.1.2 written Environmental Operating Rules and operating instructions;

2.8.1.3 a written maintenance schedule and instructions;

2.8.1.4 adequate supervision of the disposal of radioactive waste by suitably qualified and experienced persons, whose names shall be clearly displayed with each copy of this Authorisation that is posted on the Authorised Premises as required by Section 19 of the Act;

2.8.1.5 adequate supervision by suitably qualified and experienced persons of the operation and maintenance of the systems and equipment provided to meet the requirements of paragraph 2.2.1 and for the disposal of radioactive waste;

2.8.1.6 internal audit and review of the Authorisation Holder's management system and its efficacy.

2.8.2 The Authorisation Holder shall inform SEPA, at least 28 days in advance or, where this is not possible, without delay, of any change in the management system, or resources which might have, or might reasonably be seen to have, a significant impact on how compliance with the limitations and conditions of this Authorisation is achieved.

2.8.3 The Authorisation Holder shall appoint each Radioactive Waste Adviser in writing and include in the appointment the scope of advice which the Radioactive Waste Adviser is required to give.

2.9 Sampling, measurements, tests, surveys and calculations

- 2.9.1 The Authorisation Holder shall take samples and conduct measurements, tests, surveys, analyses and calculations to determine its compliance with the limitations and conditions of this Authorisation.
- 2.9.2 The Authorisation Holder shall use best practicable means to prepare, maintain and implement a programme of monitoring the site and the facility, which must be agreed in writing with SEPA prior to its implementation, so as to confirm the assumptions of the Environmental Safety Case. Any proposed change(s) by the Authorisation Holder to the programme of monitoring shall be submitted in writing to SEPA at least 28 days before the implementation of the proposed change(s) and not implemented without written agreement from SEPA.
- 2.9.3 The Authorisation Holder shall undertake a programme to monitor the levels of radioactivity and ionising radiation in the environment and food caused by the disposal of radioactive waste on or from the Authorised Premises by taking such samples, conducting such measurements, tests, surveys, analyses and calculations, including environmental measurements and assessments, as are necessary to continuously assess the effectiveness of the measures taken by the Authorisation Holder to comply with paragraphs 2.4.1, 3.1.3 and 3.1.4.
- 2.9.4 The Authorisation Holder shall carry out reviews at an appropriate frequency of the adequacy of the programme undertaken to satisfy paragraph 2.9.2 and 2.9.3.
- 2.9.5 The Authorisation Holder shall use the best practicable means when taking samples and conducting measurements, tests, surveys, analyses and calculations to determine its compliance with the limitations and conditions of this Authorisation, unless particular means are specified in this Authorisation.
- 2.9.6 The Authorisation Holder shall keep any sample or a sub sample taken as a requirement of paragraphs 2.9.2 and 2.9.3 for a minimum period of six months from the date of sampling and in sufficient quantity that the analysis carried out by the Authorisation Holder can be repeated, and shall provide any of the samples or sub samples, on request, to an Authorised Person or to such other person as an Authorised Person specifies; and if required by SEPA dispatch samples for tests at a laboratory and ensure that the samples or residues thereof are collected from the laboratory within three months of receiving written notification that testing and repackaging in accordance with the appropriate transport regulations are complete.
- 2.9.7 The Authorisation Holder may dispatch samples of radioactive waste for testing to a Waste Permitted Person.
- 2.9.8 The Authorisation Holder shall evaluate all groundwater monitoring data against the baseline agreed in writing with SEPA.
- 2.9.9 Where the evaluation of the monitoring data shows any parameter exceeding baseline levels, the Authorisation Holder shall report this to SEPA, in writing, within 28 days.
- 2.9.10 The Authorisation Holder shall report to SEPA, on the basis of aggregated data once a year, the results of monitoring carried out in compliance with this Authorisation. The report shall give an explanation and interpretation of any

trends or exceedances of baseline levels in the monitoring data submitted. This report shall be submitted to SEPA, in writing, by 31 March each year.

- 2.9.11 All monitoring boreholes and access to them shall be maintained to enable samples to be taken. Any borehole that is damaged or destroyed to the extent that sampling or monitoring in accordance with the requirements of this Authorisation is not possible shall be replaced where necessary as soon as possible. Damage to boreholes shall be recorded.
- 2.9.12 All sample points shall be constructed, maintained and appropriately identified as sample points so that representative samples may be safely obtained.
- 2.9.13 Borehole logs and construction details surveyed to ordnance datum shall be retained by the Authorisation Holder.
- 2.9.14 The Authorisation Holder shall provide and at all times maintain in good repair systems and equipment for:
 - 2.9.14.1 carrying out any sampling, monitoring and measurements necessary to determine compliance with the limitations and conditions of this Authorisation; and
 - 2.9.14.2 measuring and assessing exposure of members of the public and radioactive contamination of the environment.
- 2.9.15 The Authorisation Holder shall have and comply with appropriate criteria for the acceptance into service of systems, equipment and procedures for:
 - 2.9.15.1 carrying out any sampling, monitoring and measurements necessary to demonstrate compliance with the limitations and conditions of this Authorisation; and
 - 2.9.15.2 measuring and assessing exposure of members of the public and radioactive contamination of the environment.
- 2.9.16 The Authorisation Holder shall carry out regular calibration, at an appropriate frequency, of systems and equipment provided for:
 - 2.9.16.1 carrying out any sampling, monitoring and measurements necessary to determine compliance with the limitations and conditions of this Authorisation; and
 - 2.9.16.2 measuring and assessing exposure of members of the public and radioactive contamination of the environment;
 - 2.9.16.3 regular checking, at an appropriate frequency, that such systems and equipment are serviceable, accurate and effective and correctly used at all times.

2.10 Waste Compliance Testing

- 2.10.1 The Authorisation Holder shall prepare, implement and maintain a programme of waste compliance testing agreed in writing with SEPA prior to the commencement of disposal of waste.

2.10.2 Waste compliance testing shall consist of tests which demonstrate that the waste complies with the Authorised Waste Acceptance Criteria.

2.10.3 The Authorisation Holder shall select, at a frequency agreed in writing with SEPA, waste consignments, held by the waste consignor, which shall be destructively tested to confirm both content and characterisation against the consignor's waste records.

2.11 Records

2.11.1 The Authorisation Holder shall:

2.11.1.1 make, as soon as is reasonably practicable, and retain true, accurate and legible records sufficient to demonstrate whether the limitations and conditions of this Authorisation are and have been complied with; and

2.11.1.2 retain all records made in accordance with all previous Authorisations issued to the Authorisation Holder and related to the Authorised Premises covered by this Authorisation.

2.11.2 The Authorisation Holder shall implement and maintain a comprehensive system of recording information on all aspects of the Authorised Premises including but not limited to:

- i All decisions and reasoning underpinning the Environmental Safety Case;
- ii Site investigation and characterisation details;
- iii Design and build documents and drawings;
- iv Waste form and characterisation data;
- v Detailed information demonstrating that disposed wastes are Authorised Waste Acceptance Criteria compliant;
- vi Waste emplacement locations;
- vii Other operational information as required;
- viii Details of facility closure;
- ix Details of, and data from, monitoring programmes.

2.11.3 Duplicates of the records referred to in 2.11.1.1 and 2.11.1.2 shall be kept at diverse locations, agreed in writing with SEPA, in durable form and, prior to the revocation of the Authorisation, shall be included in the public archive.

2.11.4 If the Authorisation Holder amends any record made in accordance with this Authorisation the Authorisation Holder shall ensure that the original entry remains clear and legible.

2.12 Provision of information

2.12.1 The Authorisation Holder shall supply on request and without delay, to any Authorised Person any record made as a requirement of this Authorisation.

2.12.2 The Authorisation Holder shall supply to SEPA any such information in such format and within such time as SEPA may periodically specify in writing.

2.12.3 The Authorisation Holder shall inform SEPA without delay if the Authorisation Holder has reason to believe that disposal of radioactive waste is occurring, has occurred or might occur which does not comply with the limitations and

conditions of this Authorisation, and shall report the circumstances in writing to SEPA as soon as practicable thereafter.

- 2.12.4 The Authorisation Holder shall inform SEPA in writing, within 90 days of the effective date of this Authorisation, of the organisational structure and resources, together with the whole management system or such parts of the management system as SEPA specifies in writing, provided to achieve compliance with the limitations and conditions of this Authorisation.

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3. LIMITATIONS AND CONDITIONS RELATING TO TYPES OF WASTE THAT CAN BE DISPOSED OF UNDER THIS AUTHORISATION AND THE DISPOSAL ROUTES AUTHORISED

3.1 Disposal of radioactive waste

3.1.1 The Authorisation Holder is authorised to dispose only of the radioactive waste arising from the Dounreay Nuclear Establishment and from the Undertaking at the Authorised Premises, only of the types of radioactive waste identified in Table 3.1, only by the relevant disposal routes specified in Table 3.1.

3.1.2 The maximum radionuclide specific activities that are to be disposed of at the Authorised Premises are specified in Appendix 3 and are subject to any further limitations and conditions contained within Schedules 4 to 7.

Table 3.1

Radioactive Waste Type	Disposal Route	Permission to Accumulate
Low Level Waste	Emplacement in Vaults LLW-1, LLW-2, LLW-3-1, LLW-3-2	YES
Demolition Waste	Emplacement in Vaults DLLW – 1 and DLLW-2	YES
Radioactive Waste	Return to Dounreay Nuclear Establishment	YES
Samples of Waste	Transfer to a Waste Permitted Person	YES

3.1.3 The Authorisation Holder is authorised to accumulate and dispose of radioactive waste arising from the Undertaking at the Authorised Premises to the Dounreay Nuclear Establishment for conditioning and subsequent disposal.

3.1.4 The Authorisation Holder shall maintain in good repair the systems and equipment provided:

3.1.4.1 to meet the requirements of paragraphs 2.4.1 and 3.1.2; and

3.1.4.2 for the disposal of radioactive waste under this Authorisation.

3.1.5 The Authorisation Holder shall check, at an appropriate frequency, the effectiveness of systems, equipment and procedures provided:

3.1.5.1 to meet the requirements of paragraphs 2.4.1 and 3.1.2; and

3.1.5.2 for the disposal of radioactive waste under this Authorisation.

3.2 Authorised Waste Acceptance Criteria

3.2.1 The following Authorised Waste Acceptance Criteria shall apply to radioactive waste accepted at the Authorised Premises;

- i No waste will be accepted for disposal at the Authorised Premises unless it has been demonstrated by the consignor that Best Practicable Means and the waste hierarchy have been applied;
- ii The physical characteristic of the waste package shall be such that safety is not compromised during any stage of management;
- iii Best Practicable Means shall be applied to the disposal of each bulk item at the Authorised Premises;
- iv Waste in its untreated form shall contain < 0.1%wt very toxic substances and < 3 %wt for toxic substances;
- v Only waste meeting the definition of Demolition Waste shall be disposed of to the Demolition waste vault;
- vi Biodegradable waste must be excluded as far as is practicable and must not exceed 1%wt of the untreated waste package;
- vii Only the radionuclides up to the activity specified in Appendix 3 shall be disposed of at the Authorised Premises;
- viii Compacted waste packaged in Half Height ISO containers shall contain no greater than 600g Uranium-235;
- ix Mixed compacted and non-compacted waste packaged in Half Height ISO containers shall contain no greater than 600g Uranium-235;
- x Non-compacted waste packaged in Half Height ISO containers shall contain no greater than 60g Uranium-235;
- xi Non-containerised Low Level Waste shall contain no greater than 60g Uranium-235 per item;
- xii Packages of Demolition Low Level Waste shall contain no greater than 6g Uranium-235.

3.2.2 In the event that radioactive waste or its packaging does not meet any of the Authorised Waste Acceptance Criteria set out in paragraph 3.2.1 it shall be rejected by the Authorisation Holder. Rejected radioactive waste shall be returned to the Dounreay Nuclear Establishment forthwith and the Authorisation Holder shall inform SEPA in writing without delay.

3.3 Waste Characterisation

3.3.1 In respect of all radioactive waste accepted for disposal at the Authorised Premises, the Authorisation Holder shall ensure, by appropriate auditing, that the radioactive waste has been characterised by the consigner such that all information necessary for the safe disposal of the radioactive waste in the long term is correct, available and recorded.

4. FURTHER LIMITATIONS AND CONDITIONS RELATING TO THE HAZARDOUS PROPERTIES OF THE RADIOACTIVE WASTE TO BE DISPOSED.

4.1 Excluded hazardous materials.

4.1.1 Radioactive waste containing any of the following hazardous properties are excluded from disposal at the Authorised Premises:

- i Combustible metals, such as uranium, lithium, magnesium, zinc, zirconium, sodium, potassium, calcium and other metals, in finely divided form;
- ii Other pyrophoric materials;
- iii Phosphorus;
- iv Fixed liquids (e.g. immobilised in cement) with flash points less than 21°C;
- v Chemical compounds representing a high fire hazard;
- vi Materials that react with water to evolve heat and flammable gases (e.g. hydrides, nitrides and carbides);
- vii Strongly acidic or alkaline compounds.

4.1.2 Notwithstanding paragraph 3.2.1, the Authorisation Holder shall ensure that radioactive waste to be disposed of at the Authorised Premises shall comply with the following conditions:

- i Waste containing loose powders or asbestos must be in sealed containers;
- ii Waste must not contain strong complexing agents, unless treated and stabilised;
- iii All waste containing ion exchange material must be intimately stabilised to ensure retention of its radioactivity content;
- iv No readily leachable/soluble solid wastes are to be disposed of without conditioning. Readily leachable/soluble solid waste must be fixed in a solid matrix (e.g., cement) that will not readily release that component when contacted with water;
- v Waste must not contain, or be capable of spontaneously generating, quantities of toxic gases, vapours or fumes harmful to persons transporting, handling or disposing of the waste;
- vi Waste must not contain material capable of detonation or explosive decomposition or reaction at normal pressures, nor of explosive reaction with water;
- vii Waste must not contain corrosive material that might prejudice the integrity of the container, including bags, used for disposal;
- viii Waste must not contain metals or other materials, unless treated and stabilised, that might react readily with grout;
- ix Pressurised gases, including redundant cylinders and aerosols, must be excluded until made safe;
- x Strong oxidising agents (e.g., peroxides, chlorates, nitrates) are to be eliminated wherever practicable. In any event, these materials are not to be in close contact with easily oxidised materials;
- xi Waste containing pathogens or biologically hazardous material shall be excluded from waste packages accepted for disposal unless demonstrated to have been made safe.

5. FURTHER LIMITATIONS AND CONDITIONS RELATING TO DISPOSAL OF RADIOACTIVE GASEOUS WASTE BY DISCHARGE TO THE ENVIRONMENT

5.1 Discharge of radioactive gaseous waste

5.1.1 Disposal of radioactive gaseous wastes is not authorised by this Authorisation.

DRAFT for Consultation

6. FURTHER LIMITATIONS AND CONDITIONS RELATING TO DISPOSAL OF RADIOACTIVE AQUEOUS WASTE BY DISCHARGE TO THE ENVIRONMENT

6.1 Discharge of radioactive aqueous waste

6.1.1 Disposal of radioactive aqueous wastes is not authorised by this Authorisation.

DRAFT for Consultation

7. INFORMATION REQUIREMENTS

7.1 Information Requirements

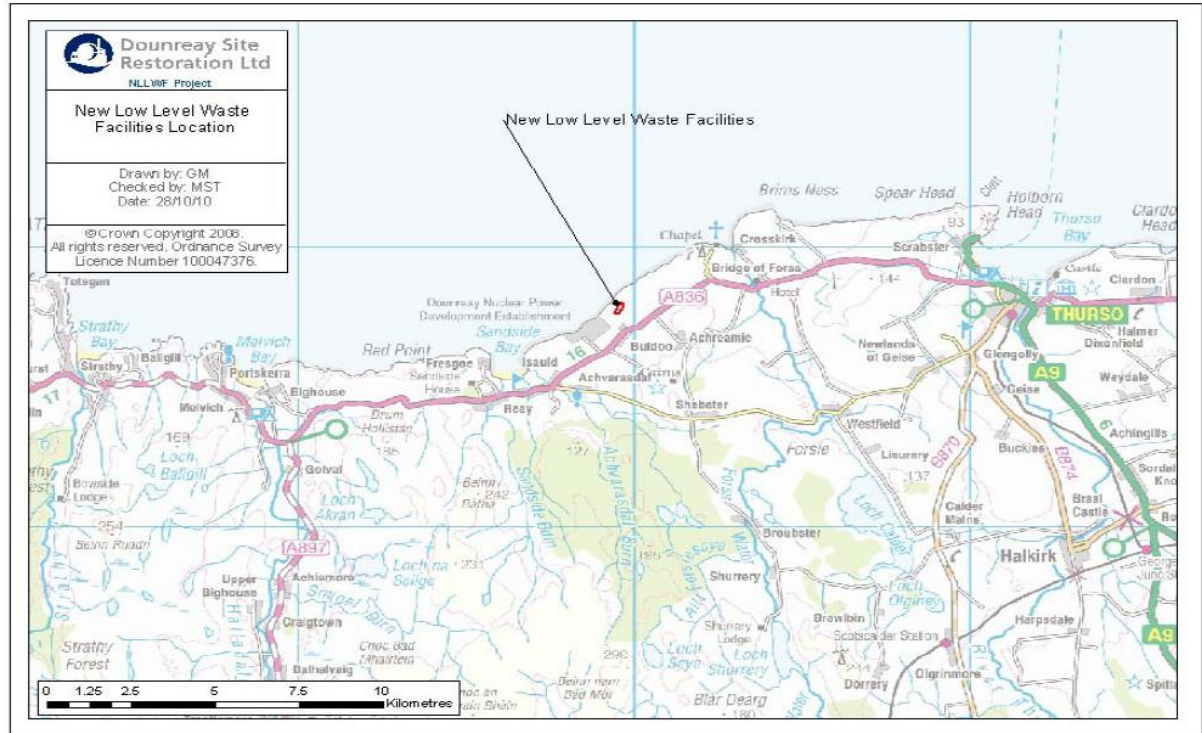
- 7.1.1 The Authorisation Holder shall provide the information specified in Table 7.1 by the relevant completion date and, shall notify SEPA, in writing, within 14 days of the completion of each of those specifications.

Table 7.1

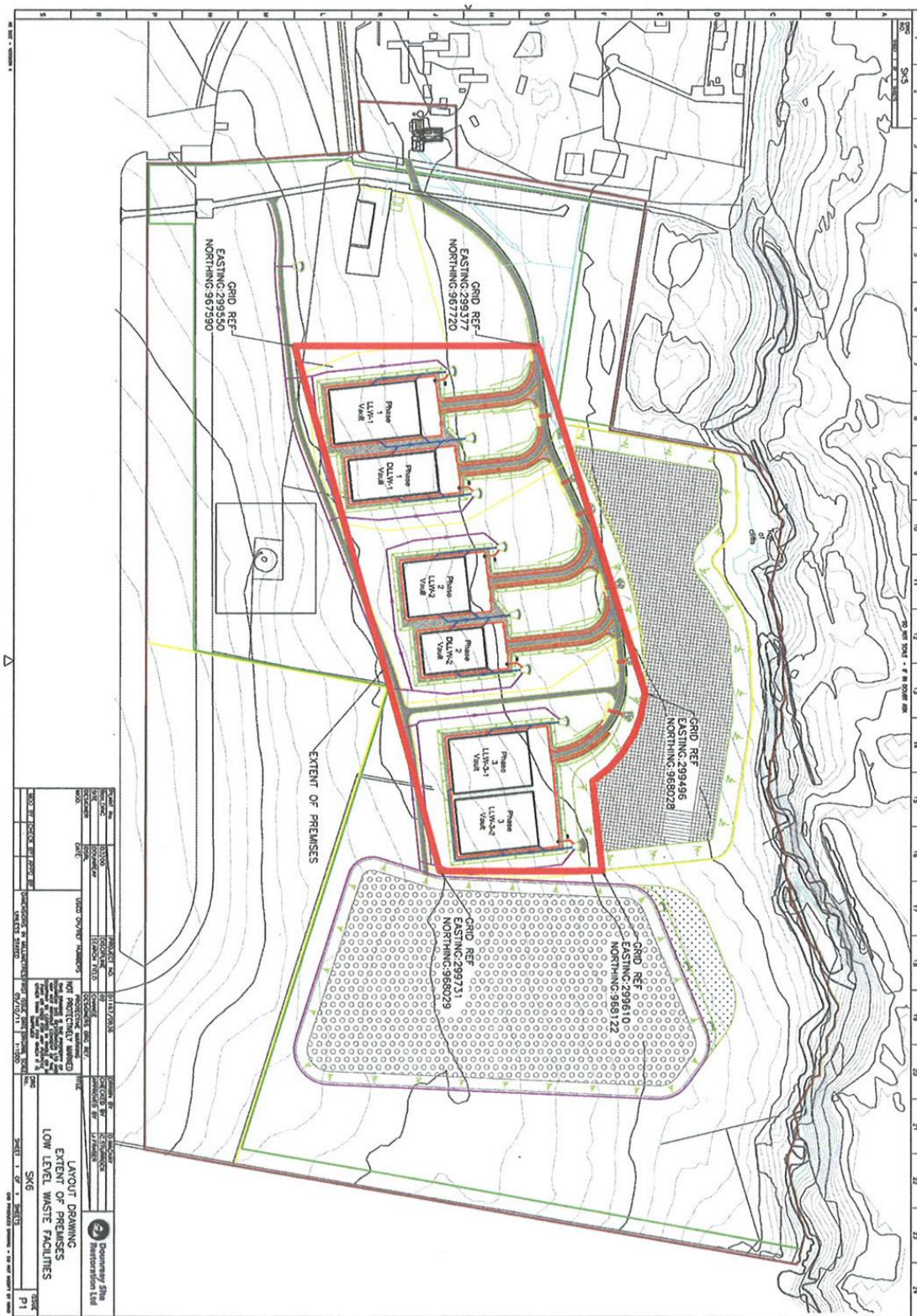
Specified information	Completion Date
1. For each calendar year a summary of the records made in compliance with paragraph 2.11.1.1.	Within 8 weeks from the end of that calendar year.
2. A report on the review of the Environmental Safety Case including any actions needed and timescales for completion.	3 years from the date of this Authorisation and at the same intervals thereafter unless otherwise agreed in writing with SEPA
3. For each calendar year a summary of the results required by paragraph 2.9.2 and 2.9.3 in relation to the environmental monitoring programme	By 31 March the following year.

8. Appendices

8.1 Appendix 1 – Location Guide



8.2 Appendix 2 - Site Plan



8.3 Appendix 3 - Authorised Disposal Inventory

Only the radionuclides up to the 2009 activity level as specified in the Table below shall be disposed of at the Authorised Premises

Nuclide	Demolition LLW (Bq)	LLW (Bq)
H-3	3.56E+08	2.67E+12
C-14	2.16E+05	5.48E+09
Co-60	7.63E+09	2.83E+11
Ni-63	8.77E+08	6.12E+10
Se-79	2.05E+07	5.40E+07
Sr-90	2.97E+11	2.71E+12
Nb-94	4.69E+07	2.94E+08
Mo-93	+	+
Tc-99	2.05E+08	9.90E+08
Cs-137	5.92E+11	4.01E+12
Sm-151	6.01E+09	1.06E+11
Eu-152	3.76E+04	2.71E+11
Pb-210	*	1.33E+09
Po-210	**	1.19E+09
Ra-226	**	9.00E+09
Ra-228	4.92E+07	6.28E+08
Ac-227	4.59E+03	5.86E+04
Th-228	7.47E+07	7.10E+08
Th-229	**	6.59E+04
Th-230	8.28E+04	4.54E+06
Th-232	9.79E+07	9.29E+07
Pa-231	6.43E+04	4.64E+05
U-232	1.40E+08	5.75E+07
U-233	**	3.56E+07
U-234	2.15E+09	1.33E+11
U-235	7.83E+08	4.42E+09
U-236	2.24E+08	1.14E+10
U-238	6.24E+07	1.20E+09
Np-237	3.63E+05	1.26E+06
Pu-238	1.31E+10	5.57E+10
Pu-239	1.40E+10	3.18E+11
Pu-240	1.73E+10	1.28E+11
Pu-241	3.84E+11	2.11E+12
Pu-242	5.97E+06	5.59E+07
Am-241	1.99E+10	3.36E+11
Am-242m	2.23E+08	1.75E+09
Am-243	1.79E+07	3.19E+07
Cm-243	7.72E+07	7.78E+07
Cm-244	9.46E+08	3.53E+09
Other Alpha	1.84E+08	1.44E+09
Other Beta/Gamma	1.76E+10	9.89E+10
Total Alpha	6.92E+10	1.01E+12
Total Beta/Gamma	1.31E+12	1.24E+13

+ Placed in Other Beta/Gamma

* Placed in Other Beta/Gamma, as less than 1000 Bq.

** Placed in Other Alpha, as less than 1000 Bq