



Environment
Agency

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

GE Healthcare Ltd

The Grove Centre
White Lion Road
Amersham
HP7 9LL

Permit number
EPR/PB3839DK

The Grove Centre

Permit number EPR/PB3839DK

Introductory note

This introductory note does not form a part of this permit

The permit allows the Operator to receive or dispose of radioactive waste on or from the specified premises, which are a nuclear licensed site.

The permit is issued under the provisions of regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016. Those Regulations are concerned, amongst other things, with the control of radioactive material and radioactive waste.

The operator must also comply with other legislation to which the keeping or use of radioactive material and the transfer, accumulation and disposal of radioactive waste is subject. This includes legislation enforced by the Office for Nuclear Regulation.

The Grove Centre was used for radioactive substances activities, primarily to manufacture radiopharmaceuticals, between 1940 and 2019. Manufacturing operations have ceased and the site is now being decommissioned. For this purpose, the site has been divided into two operational areas: a northern area or 'Front of Site' and a southern area. Buildings in the northern area have been demolished and work is progressing well to remediate the ground with a view to delicensing, and partially surrendering the permit for this area in 2024. Legacy facilities remaining in the southern area are contaminated with a particular radionuclide or group of radionuclides, including radium, americium, caesium-137 or strontium-90, depending on their historical use. The site operator intends to demolish these facilities within the next decade, reducing the footprint of the nuclear site to a waste storage building and associated services only.

The main features of the facilities on the premises are as follows

- Former radiochemical production laboratories, now being decommissioned.
- Associated radioactive waste handling facilities.

This document is a varied and consolidated permit reflecting the changes made to the permit since issue.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status Log of the permit

Detail	Date	Response Date
Application EPR/PB3839DK/V001	Duly made 28/05/2013	
Operator requested extension	21/08/2013	
Variation determined EPR/PB3839DK	10/09/2013	
Application EPR/PB3839DK/V002	Duly made: 09/04/2018	
Environment Agency requested extension	19/06/2018	
Operator agreed to extension		20/06/2018
Variation determined EPR/PB3839DK	10/08/2018	
Permit effective EPR/PB3839DK	01/09/2018	
Environment Agency initiated variation EPR/PB3839DK/V003	28/01/2019	
Variation determined EPR/PB3839DK (varied and consolidated permit issued)	04/06/2019	
Environment Agency initiated variation EPR/PB3839DK/V004	07/04/2022	
Variation determined EPR/PB3839DK (varied and consolidated permit issued)	18/11/2022	

End of Introductory Note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit

Permit number

EPR/PB3839DK

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016 (the "regulations"),

GE Healthcare Ltd ("the operator")

whose registered office is

**Pollards Wood
Nightingales Lane
Chalfont St Giles
Buckinghamshire
HP8 4SP**

company registration number 01002610

to carry on a radioactive substances activity/ radioactive substance activities at

**The Grove Centre
White Lion Road
Amersham
HP7 9LL**

("the premises")

to the extent authorised by and subject to the conditions of this permit.

Name	Date
 Karl Littlewood	18 November 2022

Authorised on behalf of the Environment Agency

The permit shall come into effect from 1 January 2023

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that is sufficient to achieve compliance with the conditions of this permit; and
- (b) using sufficient competent persons and resources.

1.1.2 The operator shall maintain records demonstrating compliance with condition 1.1.1.

1.1.3 The operator shall maintain a waste management plan and a site –wide environmental safety case, which together demonstrate throughout the lifecycle of the regulated facility

- (a) how the production and disposal of radioactive waste is managed to protect the environment and to optimise the protection of people;
- (b) how the disposability of radioactive waste that will require disposal on or from the premises is assured;
- (c) how members of the public and the environment are protected from the non-radiological hazards of disposals of radioactive waste; and
- (d) how the premises will be brought to a condition at which it can be released from regulation under this permit.

1.1.4 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.1.5 The operator shall:

- (a) manage and operate the activities in consultation with one or more suitable Radioactive Waste Advisers for the purpose of advising the operator as to compliance with this permit;
- (b) appoint the Radioactive Waste Adviser(s) in writing, including the scope of advice they are required to give.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry on the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 The operator shall use the best available techniques to minimise the activity of radioactive waste produced on the premises that will require to be disposed of on or from the premises.

2.3.2 The operator shall use the best available techniques in respect of the disposal of radioactive waste pursuant to this permit to:

- (a) minimise the activity of gaseous and aqueous radioactive waste disposed of by discharge to the environment;
- (b) minimise the volume of radioactive waste disposed of by transfer to other premises;
- (c) dispose of radioactive waste at times, in a form, and in a manner so as to minimise the radiological effects on the environment and members of the public.

2.3.3 The operator shall use the best available techniques to:

- (a) exclude all entrained solids, gases and non-aqueous liquids from radioactive aqueous waste prior to discharge to the environment;

- (b) characterise, sort and segregate solid and non-aqueous liquid radioactive wastes, to facilitate their disposal by optimised disposal routes;
- 2.3.4 The operator shall maintain in good repair the systems and equipment provided:
- (a) to meet the requirements of conditions 2.3.1, 2.3.2 and 2.3.3;
 - (b) to carry out any monitoring and measurements necessary to determine compliance with the conditions of this permit;
 - (c) to measure and assess the exposure of members of the public and radioactive contamination of the environment.
- 2.3.5 The operator shall check, at an appropriate frequency, the effectiveness and maintenance of systems, equipment and procedures provided to meet the requirements of conditions 2.3.1, 2.3.2 and 2.3.3.
- 2.3.6 The operator shall have and comply with appropriate criteria for the acceptance into service of adequate systems, equipment and procedures for:
- (a) carrying out any monitoring and measurements necessary to determine compliance with the conditions of this permit;
 - (b) measuring and assessing exposure of members of the public and radioactive contamination of the environment.
- 2.3.7 Subject to condition 2.3.2, the operator shall carry on the activities in a manner so as to minimise the risk of pollution from any non-radioactive substances in, or any non-radiological properties of, the radioactive waste, except to the extent the risk is addressed in a separate environmental permit.

2.4 Improvement and information programme

- 2.4.1 The operator shall complete the requirements specified in schedule 1 table S1.2 by the dates specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of a requirement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each requirement.

2.5 Pre-operational conditions

- 2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.3A have been completed.
- 2.5.2 The specific disposals and receipts of radioactive waste identified in schedule 1 table S1.3B shall not commence until the relevant measures specified in that table have been completed.

2.6 Receipt of radioactive waste

- 2.6.1 The operator shall:
- (a) for each type of radioactive waste that the operator is prepared to receive, produce a written specification of the information required to:
 - (i) enable the disposal of that type of radioactive waste in compliance with this permit; or
 - (ii) where disposal of that type of radioactive waste is not currently permitted, sufficiently characterise that waste to, as far as reasonably practicable, enable its future disposal;
 - (b) provide that written specification to any person from whom the operator is prepared to receive radioactive waste of that type;
 - (c) only accept a consignment of radioactive waste that is accompanied by a legible note providing the information specified in 2.6.1(a);
 - (d) keep a copy of any such note received;
 - (e) provide a receipt to the consignor in respect of each consignment of radioactive waste that the operator accepts.
- 2.6.2 The operator shall ensure that any radioactive waste which does not comply with the specifications produced pursuant to condition 2.6.1 is returned to the consignor as soon as reasonably practicable, unless otherwise agreed in writing with the Environment Agency.

- 2.6.3 The provisions of conditions 2.6.1 to 2.6.2 do not apply to any radioactive waste collected as a result of the operator's participation in the National Arrangements for Incidents involving Radioactivity or in the Radsafe scheme.

3 Disposals of radioactive waste and monitoring

3.1 Disposals of radioactive waste

- 3.1.1 Subject to condition 3.1.4, there shall be no disposals of radioactive waste except of the types of radioactive waste and by the disposal routes specified in schedule 3.
- 3.1.2 The limits on disposals given in schedule 3 shall not be exceeded.
- 3.1.3 The operator shall ensure the use of an optimised disposal route when disposing of any radioactive waste in accordance with Table S3.3.
- 3.1.4 The operator may dispose of radioactive waste, not being radioactive waste otherwise authorised to be disposed of, which is collected as a result of the operator's participation in the National Arrangements for Incidents involving Radioactivity or in the Radsafe scheme provided that the operator:
- (a) transfers the radioactive waste to a person whom the Environment Agency has agreed in writing may receive that radioactive waste;
 - (b) as soon as reasonably practicable provides available details in writing to the Environment Agency of the nature of the radioactive waste, the radionuclides present, their activities and the manner and date of disposal.
- 3.1.5 The operator shall ensure that the transfer of radioactive waste is in accordance with the directions of the person to whom the radioactive waste is transferred that are necessary to enable that person to comply with all relevant regulatory requirements.
- 3.1.6 The operator shall:
- (a) ensure that the person to whom radioactive waste is transferred receives at the time of transfer of each consignment a clear and legible note signed on the operator's behalf stating:
 - (i) the total activity in the consignment of each relevant radionuclide or group of radionuclides listed in the relevant table in schedule 3; or
 - (ii) when no relevant radionuclide or group of radionuclides is specified in schedule 3, the total activity in the consignment of each radionuclide or group of radionuclides as listed in the written specification of the person to whom the radioactive waste is transferred.
 - (b) obtain a note signed on behalf of the person to whom radioactive waste is transferred, at the time of transfer, stating that the transfer has taken place;
 - (c) keep a copy of any note issued under condition 3.1.6(a) and any note received under condition 3.1.6(b).
- 3.1.7 If required by the Environment Agency, the operator shall ensure that any consignment or part of any consignment of radioactive waste found, following transfer, not to be in accordance with the conditions of this permit:
- (a) is packaged in accordance with the relevant legislation;
 - (b) is returned as soon as is reasonably practicable to the operator's premises.
- 3.1.8 The operator shall, not later than 14 days after the end of each month or within such longer period as the Environment Agency may approve in writing, record all disposals of radioactive waste made during that month.

3.2 Monitoring

- 3.2.1 The operator shall:
- (a) take samples and conduct measurements, tests, surveys, analyses and calculations to determine compliance with the conditions of this permit;
 - (b) unless otherwise agreed in writing by the Environment Agency:

- (i) define, document and carry out an environmental monitoring programme;
 - (ii) use the results of that programme to carry out an annual retrospective assessment of the dose to the representative person;
 - (iii) inform the Environment Agency in writing in advance of any modifications affecting the extent of that programme or that have a potential to change the results obtained.
 - (c) use the best available techniques when taking such samples, conducting such measurements, tests, surveys, analyses and calculations, and carrying out such an environmental monitoring programme and retrospective dose assessment, unless particular techniques are specified in schedule 3 of this permit or in writing by the Environment Agency;
 - (d) define and document the techniques being employed to determine the activity of radioactive waste disposals and inform the Environment Agency in writing in advance of any modifications to those techniques that have a potential to change the results obtained.
- 3.2.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.2.3 Monitoring equipment, techniques, personnel and organisations employed for the monitoring of disposals and the environment required by condition 3.2.1 or 3.2.5 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.2.4 Permanent means of access shall be provided to enable sampling and monitoring to be carried out in relation to the disposal outlets specified in schedule 3 unless otherwise agreed in writing by the Environment Agency.
- 3.2.5 If required by the Environment Agency, the operator shall:
- (a) take such samples and conduct such measurements, tests, surveys, analyses and calculations, including environmental measurements and assessments, at such times and using such methods and equipment as the Environment Agency specifies;
 - (b) keep samples, provide samples, or dispatch samples for tests at a laboratory, as the Environment Agency specifies, 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 relevant legislation are complete.
- 3.2.6 The operator shall carry out:
- (a) regular calibration, at an appropriate frequency, of measuring instruments and other systems and equipment provided for:
 - (i) carrying out any monitoring and measurements necessary to determine compliance with the conditions of this permit;
 - (ii) measuring and assessing exposure of members of the public and radioactive contamination of the environment.
 - (b) regular checking, at an appropriate frequency, that such measuring instruments and other systems and equipment are serviceable and correctly used.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained until notified in writing by the Environment Agency that records no longer need to be retained.

4.1.2 The operator shall keep on the premises all records, plans and the management system required by this permit, unless otherwise agreed in writing by the Environment Agency.

4.1.3 The operator shall:

- (a) retain records made in accordance with any previous relevant permit issued to the operator and related to the premises covered by this permit;
- (b) retain records transferred to the operator, which were made in accordance with any previous relevant permit related to the premises covered by this permit.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by this permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 The operator shall supply such information in relation to:

- (a) the disposals of radioactive waste; and
- (b) the samples, tests, surveys, analysis and calculations, environmental monitoring and assessments undertaken under conditions 3.2.1 and 3.2.5 in relation to disposals of radioactive waste;

in such format and within such timescales as the Environment Agency may specify in writing.

4.3 Notifications

4.3.1 The operator shall notify the Environment Agency without delay following the detection of:

- (a) any malfunction, breakdown or failure of equipment or techniques or any accident that has caused, is causing or may cause significant pollution or may generate significant amounts of radioactive waste;
- (b) the breach of a limit specified in this permit, or disposal of radioactive waste other than by a relevant permitted route;
- (c) any significant adverse environmental effects that could reasonably be seen to result from the operation of the facility.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The operator shall notify the Environment Agency within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

- (a) any change in the operator's trading name, registered name or registered office address;
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

- 4.3.5 Where the operator proposes to make a 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 conditions of this permit is achieved, the operator shall:
- (a) notify the Environment Agency at least 28 days before making that change, or where that is not possible, without delay; and
 - (b) include in the notification a description of the proposed changes.
- 4.3.6 Where the operator proposes to make a change to the waste management plan, to the site-wide environmental safety case or, where applicable, to the facility-specific environmental safety case, including a change to the waste acceptance criteria, which might have, or might reasonably be seen to have, a significant impact on the quantity or nature of radioactive wastes disposed or planned to be disposed of on the site, or result in a significant change to the nature, place or environmental impact of such disposals, the operator shall:
- (a) notify the Environment Agency at least 28 days before making that change, including in the notification a description of the proposed changes; and
 - (b) where the Environment Agency so notifies the operator, not implement the proposed changes until the Environment Agency has given its agreement in writing.
- 4.3.7 If, in any week, the activity in any radioactive waste disposed of from any outlet or group of outlets specified in schedule 3 of any radionuclide or group of radionuclides exceeds, or is likely to exceed, the relevant Weekly Advisory Level (where specified), the operator shall:
- (a) without delay, inform the Environment Agency and the Food Standards Agency;
 - (b) as soon as reasonably practicable, advise the Environment Agency and the Food Standards Agency of the circumstances at the premises leading to the release and the possible impact of any deposition of radioactivity on pasture or crops in the vicinity of the premises, including any measurements made.
- 4.3.8 If, in any quarter, the activity in any waste discharged from any outlet or group of outlets specified in schedule 3 of any radionuclide or group of radionuclides exceeds the relevant Quarterly Notification Level (where specified), the operator shall provide the Environment Agency with a written submission which includes:
- (a) details of the occurrence;
 - (b) a description of the means used to minimise the activity of radioactive waste discharged;
 - (c) a review of those means having regard to conditions 2.3.1, 2.3.2 and 2.3.3;
- not later than 14 days from making the record which demonstrates such excess.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "without delay", in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities

Activity reference	Activity listed in Schedule 23 of the regulations	Description of specified activity	Limit of specified activity
A1	Sch 23 Part 2 para 11(2)(b)	Disposal of radioactive waste on or from the premises	Operation of a radiopharmaceuticals manufacturing facility
A2	Sch 23 Part 2 para 11(4)(a)	Receipt of radioactive waste for the purpose of disposal	

Table S1.2 Improvement and information requirements

Reference	Requirement	Date
	None specified	

Table S1.3A Pre-operational measures

Reference	Measure
	None specified

Table S1.3B Pre-operational measures for future development

Reference	Disposal or receipt	Measure
	None specified	

Schedule 2 – Holdings of Open Sources

There are no requirements under this schedule

Schedule 3 – Disposals of radioactive waste and monitoring

Table S3.1 Disposals to air

Radioactive waste type	Disposal outlet reference	Disposal outlet	Radionuclide or group of nuclides ¹	Annual limits ²	Quarterly notification level
Gaseous waste	All outlets specified below including approved minor outlets (air)	As specified below	Tritium	2 TBq	0.4 TBq
			Radon-222	10 TBq	2 TBq
			Other alpha-emitting radionuclides ³	2.25 MBq	0.45 MBq
			Radionuclides with a half-life of less than 2 hours ⁴	750 GBq	Not specified
			All other radionuclides ⁵	16 GBq	3.2 GBq
Gaseous waste	Approved minor outlets (air)	All outlets to air, not otherwise described in this table, that are approved by the Environment Agency	Tritium	3% of the relevant annual limit for all outlets specified, including approved minor outlets (air)	Not specified
			Radon-222		
			Other alpha-emitting radionuclides		
			Radionuclides with a half-life of less than 2 hours		
			All other radionuclides		
Gaseous waste	A1	Stack K, Building 22 and Building 23	No individual limits specified for these disposal outlets		
Gaseous waste	A2	Stack L, Building 23			
Gaseous waste	A3	Stack M, Building 27			
Gaseous waste	A4	Stack N, Building 20			
Gaseous waste	A5	Stack P, Building 29			
Gaseous waste	A6	Stack W, Building 24			

¹ Where defined, as measured using the techniques defined in Schedule 3, table S3.4

² Limits apply to the sum of contributions from all permitted disposal outlets

³ 'Other alpha-emitting radionuclides' means gross measurement of all alpha-emitting radionuclides except radon-222

⁴ 'Radionuclides with a half-life of less than 2 hours', means short lived positron emitting radionuclides for PET applications or research

⁵ 'All other radionuclides' means

- The gross measurement of all beta/gamma emitting radionuclides except tritium and
- any other radionuclides specified in writing by the Environment Agency

Table S3.2 Disposals to sewer					
Radioactive waste type	Disposal outlet reference	Disposal outlet	Radionuclide or group of nuclides ⁶	Annual limits ⁷	Quarterly notification level
Aqueous waste	All outlets (including approved outlets)	As specified below	Tritium ⁸	141 GBq	Not specified
			Alpha-emitting radionuclides ⁹	300 MBq	Not specified
			All other radionuclides ¹⁰	65 GBq	Not specified
Aqueous waste	W2	System provided by the operator for the discharge of effluent from the site to the public sewer under Finch Lane, discharging to the Maple Lodge Sewage Treatment Works	No individual limits specified for these disposal outlets		

⁶ Where defined, as measured using the techniques defined in Schedule 3, table S3.4

⁷ Limits apply to the sum of contribution from all disposal outlets

⁸ Tritium discharges estimated by calculation

⁹ 'Alpha-emitting radionuclides' means the gross measurement of all alpha-emitting radionuclides

¹⁰ 'All other radionuclides' means the sum of all radionuclides except those otherwise specified in this Table

Table S3.3 Disposals by transfer to other premises

Radioactive waste type	Disposal route: person to whom radioactive waste may be transferred ¹	Purpose of transfer	Radionuclide or group of radionuclides	Calendar year limit	Annual volume limit – m ³
VLLW	The holder of an environmental permit for the receipt and disposal of VLLW	For any one or more of: - treatment - onward transfer for treatment or disposal - incineration - metals recovery - final disposal	Any	No limit	No limit
LLW	The holder of an environmental permit for the receipt and disposal of LLW.	For any one or more of: - treatment - onward transfer for treatment or disposal - incineration - metals recovery - final disposal	Any	No limit	No limit
Liquid waste with an activity concentration not exceeding 4 GBq/t of alpha emitting radionuclides nor 12 GBq/t of all other radionuclides	The holder of an environmental permit for the receipt and disposal of liquid waste.	For any one or more of: - treatment - onward transfer for treatment or disposal - incineration - final disposal	Any	No limit	No limit
Liquid waste with an activity concentration exceeding 4 GBq/t of alpha emitting radionuclides or 12 GBq/t of all other radionuclides	- Any nuclear operator holding an environmental permit for the receipt of radioactive waste - A specified holder of an environmental permit for the receipt and disposal of liquid waste, as agreed in writing by the Environment Agency	For any one or more of: - treatment - onward transfer for treatment or disposal - incineration - final disposal	Any	No limit	No limit
ILW	- Any nuclear operator holding an environmental permit for the receipt of radioactive waste - A specified holder of an environmental permit for the receipt and disposal of ILW, as agreed in writing by the Environment Agency	For any one or more of: - treatment - onward transfer for treatment or storage - incineration - storage before future disposal	Any	No limit	No limit
Plutonium Contaminated Material	The Sellafield Site Operator	For treatment and / or storage before future disposal	Any	No limit	No limit

Radioactive Waste as defined in the Transfrontier Shipment of Radioactive Waste and Spent Fuel (EU Exit) Regulations 2019	Transfer in accordance with the conditions of an authorisation granted under the Transfrontier Shipment of Radioactive Waste and Spent Fuel (EU Exit) Regulations 2019	Any	No Limit	No Limit
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1 For the purposes of this table, "environmental permit" includes any authorisation or permit issued by the environmental regulator for England, Wales, Scotland or Northern Ireland.

Table S3.4 monitoring techniques

Table and radionuclide	Monitoring technique
Table S3.1 – 'Radon-222'	For the purposes of demonstrating compliance with the conditions of this permit relating to "Radon-222" in gaseous waste, the operator shall measure this by using a poly-allyl diglycol carbonate (PADC) detector where i. The PADC is counted following chemical etching ii. The PADC is calibrated using Rn-222 iii. The reported discharges take account of the air flow and any dilution used in the sampling system or by using any other technique agreed in writing with the Environment Agency as constituting Best Available Techniques.
Table S3.1 – 'Other alpha-emitting radionuclides'	For the purposes of demonstrating compliance with the conditions of this permit relating to "Other alpha-emitting radionuclides" in gaseous waste, the operator shall measure these by using a gas proportional counter where i. The glass fibre papers are measured separately after an appropriate period for decay of radon daughters. ii. The counter is calibrated for detection efficiency using an americium-241 standard. iii. The results are background corrected. or by using any other technique agreed in writing with the Environment Agency as constituting Best Available Techniques.
Table S3.1 – 'All other radionuclides'	For the purposes of demonstrating compliance with the conditions of this permit relating to "All other radionuclides" in gaseous waste, the operator shall measure these by using a gas proportional counter where i. The glass fibre papers and carbon filter papers are measured separately after an appropriate period for decay of radon daughters. ii. The counter is calibrated for detection efficiency using an caesium-137 standard iii. The results are background corrected. or by using any other technique agreed in writing with the Environment Agency as constituting Best Available Techniques.
Table S3.2 – 'Alpha-emitting radionuclides' and 'All other radionuclides'	For the purposes of demonstrating compliance with the conditions of this permit relating to 'All other radionuclides' or 'Alpha-emitting radionuclides' in aqueous waste, the operator shall measure the gross activity of all samples collected for these purposes by: i. counting the sample using a Liquid Scintillation Counter, which has been set and calibrated such that the 0-20 keV, and 0-2000 keV ranges of the liquid scintillation counter are set to detect tritium and all other radionuclides ii. counting the alpha separately by means of a scintillation or proportional counter using an americium-241 standard. or by using any other technique agreed in writing with the Environment Agency as constituting Best Available Techniques.

Schedule 4 - Reporting

There are no requirements under this schedule.

Schedule 5 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the disposal. Where appropriate, a comparison should be made of actual disposals and permitted disposal limits.

Part A – to be provided within 24 hours

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or disposal which has caused, is causing or may cause significant pollution or may generate significant amounts of radioactive waste

Date and time of the event	
Reference or description of the location of the event	
Description of where any disposal into the environment took place	
Radionuclides potentially released	
Best estimate of the quantity or rate of release of radionuclides or amount of radioactive waste generated	
Measures taken, or intended to be taken, to stop any disposal	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit or disposal of radioactive waste other than by a relevant permitted route

Disposal outlet reference/ source	
Radionuclides	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the disposal	

(c) Notification requirements for the detection of any significant adverse environmental effect

Description of where the effect on the environment was detected	
Radionuclides detected	
Activity of radionuclides detected	
Date of monitoring/sampling	

Part B - to be provided as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any contamination of the environment which has been or may be caused by the disposal	
The dates of any unauthorised disposals from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of GE Healthcare Ltd

Schedule 6 - Interpretation

In this permit, except where otherwise specified, words and expressions defined in the regulations in relation to radioactive substances regulation shall have the same meanings when used in this permit as they have in those regulations.

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

"*annual limit*" means the limit over a period of any consecutive 12 months.

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

"*best available techniques*" means the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste. In determining whether a set of processes, facilities and methods of operation constitute the best available techniques in general or individual cases, special consideration shall be given to:

- comparable processes, facilities or methods of operation which have recently been successfully tried out;
- technological advances and changes in scientific knowledge and understanding;
- the economic feasibility of such techniques;
- time limits for installation in both new and existing plants;
- the nature and volume of the discharges and emissions concerned.

"*techniques*" include both the technology used and the way in which the installation is designed, built, maintained, operated and dismantled.

"*Bq, kBq, MBq, GBq, TBq and PBq*" are used as abbreviations meaning becquerels, kilobecquerels, megabecquerels, gigabecquerels, terabecquerels and petabecquerels respectively.

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

"*disposability*" means capable of being conditioned, packaged and disposed of in a way that meets the standards and specifications for final disposal using the identified disposal route, and where the conditioned waste will maintain its integrity such that safe and efficient storage, handling, transport and disposal is achieved.

"*disposal facility*" means an on-site engineered facility where solid radioactive waste is permanently emplaced solely for the purpose of disposing of that waste.

"*disposal for a purpose*" means on-site disposal of solid radioactive waste by permanent deposit where, if suitable radioactive waste were not available, other materials would have to be found to fulfil the purpose.

"*disposal in-situ*" means on-site disposal of solid radioactive waste by leaving it permanently in its original position, together with any necessary preparatory works.

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

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

"*LLW*" means solid radioactive waste with an activity concentration greater than the maximum for LLW, but which does not require heating to be taken into account in the design of storage or disposal facilities.

"*LLW*" means solid radioactive waste, including any immediate packaging, with an activity concentration greater than the maximum for VLLW but not exceeding 4 gigabecquerels per tonne of alpha emitting radionuclides nor 12 gigabecquerels per tonne of all other radionuclides.

"*MCERTS*" means the Environment Agency's Monitoring Certification Scheme.

"*month*" means calendar month.

"*National Arrangements for Incidents Involving Radioactivity*" means the arrangements co-ordinated by Public Health England to protect the public from hazards arising from the use and transport of radioactive materials and in situations where no formal contingency plans exist.

"*nuclear operator*" means a person who carries on a radioactive substances activity on a nuclear site.

"*optimise*" and "*optimised*" means the outcome of the process of optimisation, in which all exposures to ionising radiation of any member of the public and of the population as a whole resulting from the disposal of radioactive waste are kept as low as reasonably achievable, taking into account economic and social factors.

"*other than in a disposal facility*" means one or both of "*disposal for a purpose*" and "*disposal in-situ*"

"*packaging*" includes any sack, drum, container or wrapping.

"*quarter*" means any period of three consecutive months.

"*Radioactive Waste Adviser*" means an individual, or group of individuals, with the knowledge, training and experience needed to give radioactive waste management and environmental radiation protection advice in relation to radioactive waste to ensure the effective protection of members of the public whose competence is recognised by the Environment Agency.

"*Radsafe*" means the consortium of organisations which offer mutual assistance in the event of a transport accident involving radioactive materials belonging to a RADSAFE member.

"*samples*" includes samples that have been prepared or treated to enable measurements of activity to be made.

"*Sellafield Site Operator*" means the holder of the licence issued under the Nuclear Installations Act 1965 for the Sellafield Site.

"*site-wide environmental safety case*" means a documented set of claims made by the operator, and substantiated by a structured collection of arguments and evidence, to demonstrate achievement by the site as a whole of the required standard of environmental safety. Where relevant it includes the facility-specific environmental safety case for any on-site disposal facility.

"*spot sampling*" means the taking of samples on a non-continuous basis of radioactive substances for subsequent analysis.

"*VLLW*" means solid radioactive waste with a maximum concentration of 40 megabecquerels per tonne of tritium and carbon-14 (in total) and 4 megabecquerels per tonne of all other radionuclides.

"*waste acceptance criteria*" means qualitative and/or quantitative criteria, specified by the operator, for solid radioactive waste to be accepted for disposal.

"*waste management plan*" means a documented plan, prepared by the operator, which provides a comprehensive description of the current intent for dealing with all radioactive waste on or adjacent to the site and demonstrates how waste management has been optimised.

"*week*" means a period of 7 consecutive days commencing at a day and time to be notified in writing to the Environment Agency by the Operator at least 14 days before any disposal of radioactive waste is made under the terms of this permit, any subsequent change being notified in writing to the Environment Agency at least 7 days in advance.

"*year*" means any period of 12 consecutive months.

Schedule 7 - Site plan



END of PERMIT