

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

EDF Energy Nuclear Generation Limited

Heysham 2 Power Station
Heysham
Morecambe
Lancashire
LA3 2XH

Permit number
EPR/SB3835DL

Heysham 2 Power Station

Permit number EPR/ SB3835DL

Introductory note

This introductory note does not form a part of this permit

The permit allows the Operator to receive and dispose of radioactive waste on or from the specified premises, which are part of 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 main features of the facilities on the premises are as follows:

Heysham 2 Power Station has two nuclear reactors of the Advanced Gas-cooled Reactor (AGR) type and can generate up to 1258 MW of electricity for the National Grid. It is located on the coast, approximately 5 kilometres south of Morecambe, in the vicinity of Heysham harbour. Heysham 1 power station is also situated on the same nuclear licensed site. Radioactive waste requiring disposal from the station arises in gaseous, liquid and solid form. Gaseous waste is discharged to atmosphere and aqueous liquid waste is discharged into Morecambe Bay. Solid waste and aqueous liquid waste can be transferred to the holder of an environmental permit for treatment or disposal elsewhere.

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
BZ9561/BZ9561 Effective	01/04/2007	
BZ9561/CD6918 Variation Effective	21/12/2009	
Revised and consolidated EPR permit EPR/SB3835DL/V001 Effective	01/01/2013	
Revised and consolidated EPR permit EPR/SB3835DL/V002 Effective	30/04/2013	
Revised and consolidated EPR permit EPR/SB3835DL/V003 Effective	14/07/2014	
Revised and consolidated EPR permit EPR/SB3835DL/V004 Effective	31/12/2014	
Revised and consolidated EPR permit EPR/SB3835DL/V005 Effective	14/08/2017	
Environment Agency initiated variation EPR/ SB3835DL/V006	01/02/2019	
Variation determined EPR/SB3835DL (varied and consolidated permit issued)	26/06/2019	

End of Introductory Note

Permit

Permit number

EPR/SB3835DL

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

EDF Energy Nuclear Generation Limited (“the operator”)

whose registered office is

**Barnett Way
Barnwood
Gloucester
GL4 3RS**

company registration number **3076445**

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

**Heysham 2 Power Station
Heysham
Morecambe
Lancashire
LA3 2XH**

(“the premises”)

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

Name	Date
Andrew Fairhurst	26/06/2019
Team Leader, Nuclear Regulation Group	

Authorised on behalf of the Environment Agency

The permit shall come into effect from 1 July 2019

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 After completion of requirement I4 specified in Schedule 1 table S1.2, 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 manage and operate the activities in consultation with a suitable Radioactive Waste Adviser for the purpose of advising the operator as to compliance with this permit.

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 No condition applies

- 2.6.4 No condition applies
- 2.6.5 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 S3.4.
- 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 an Advanced Gas-Cooled Reactor (AGR) power station .
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
I1	For each calendar year the Operator shall provide the Agency with a report of its efforts to: • Use the best available techniques to; • minimise the activity of radioactive waste produced, in accordance with condition 2.3.1. • minimise the activity of gaseous and aqueous radioactive waste disposed of by discharge to the environment, in accordance with condition 2.3.2. • minimise the volume of radioactive waste disposed of by transfer to other premises, in accordance with condition 2.3.2. • 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 in accordance with condition 2.3.2. • Dispose of each solid and non-aqueous waste form by an optimised disposal route, in accordance with permit condition 3.1.3. The form of this report to be agreed in writing by the Environment Agency	Not later than 31 March of the next calendar year.
I2	The Operator shall undertake a review of the existing screening measures at the intakes and outfalls which provide and discharge water to and from the Installation. The review shall be undertaken with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency "Safe Passage of Eel" Regulatory Position Statement version 1 dated July 2012. The Operator shall submit details of the arrangement suitable to meet the requirements for the safe passage of eels [of the Eels (England and Wales) Regulations 2009 (SI 2009/3344)] by either:- • Providing a written proposal for the installation of an eel screen. • Providing a written proposal to the modification of existing screening arrangements. • Providing a written response with an explanation and description of how the existing screening arrangements can be regarded to meet the requirements for the safe passage of eels [of SI 2009/3344] either without change or with mitigation measures. • Providing a written response setting out a case for an exemption In all cases, the proposal shall be submitted in writing for the approval of the Environment Agency. Where appropriate, each proposal shall contain an assessment of alternative options considered including impacts on other fish species and an explanation of why the proposed option has been chosen. Where installation of eel screen; modification of existing arrangements; or mitigation measures are proposed, the submission shall contain relevant timescales for installation in accordance with the Safe Passage of Eel Regulatory Position Statement version 1 dated July 2012. The proposals shall be implemented in accordance with the Environment Agency's written approval. The date for completion will be 30 September 2014.	Completed

13	The Operator has undertaken a review of the existing screening arrangements with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency "Safe Passage for Eel" Regulatory Position Statement version 1 dated July 2012 (and as amended February 2013) in response to Improvement Programme reference I2. This was received within the required timescales. The Environment Agency has determined that the site does not comply with the requirements for safe passage of eel and the Operator is now required to complete a cost benefits appraisal of best available technique with reference to the Environment Agency "Safe Passage for Eel: Guidance on Exemptions" as a screening tool. a) If the Cost Benefit Assessment shows that the Benefits are greater than the costs by a factor of 1.5 or more, then the Operator shall submit to the Environment Agency for review a report setting out the costs and the technical and economic feasibility to introduce the improvements to achieve best available technique. b) If the Cost Benefit Assessment shows that the Benefits are not greater than the costs by a factor of 1.5 or more, then the Operator shall, with reference to the Environment Agency "Safe Passage for Eel: Guidance on exemptions, assess which alternative measure, or combination of alternative measures, could be implemented under a case of a conditioned Exemption. The Operator shall submit a report to the Environment Agency setting out the costs and the technical and economic feasibility of implementing their proposed alternative measure or measures. In all cases, the submission shall contain relevant timescales in accordance with the Safe Passage for Eel Regulatory Position Statement version 1 dated July 2012 (as amended 2013). The proposals shall be implemented following written approval of the Environment Agency. Whilst undertaking this Improvement Condition, the Operator shall be operating under exemption from the requirements to place eel screen diversion structures pursuant to Regulation 17(5)(a) of the Eels (England and Wales) Regulations 2009. The exemption will remain in place until the Environment Agency has provided written approval that the Improvement Condition has been deemed complete. The date for completion will be 30 September 2015.	Completed
14	Prepare a suitable waste management plan and a site-wide environmental safety case to meet the requirements of condition 1.1.3 of this permit, and have these available for inspection by the Environment Agency.	31 December 2023

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	None specified

Schedule 2 – Holdings of Open Sources

There are no requirements under this schedule

Schedule 3 – Disposals of radioactive waste and monitoring

Table S 3.1 Disposals to air

Radioactive waste type	Disposal outlet reference	Disposal outlet	Radionuclide or group of nuclides	Annual limits	Weekly Advisory Level	Quarterly Notification level
Gaseous waste	All outlets (including approved outlets) except A22	As specified below	Tritium	10 TBq	0.65 TBq	1.2 TBq
			Carbon -14	3.7 TBq	0.35 TBq	0.8 TBq
			Sulphur-35	230 GBq	25 GBq	20 GBq
			Argon-41	75 TBq	Not specified	15 TBq
			Iodine-131	1.5 GBq	Not specified	0.06 GBq
			Cobalt-60 associated with particulate matter	100 MBq	Not specified	15 MBq
Gaseous waste	Outlets A15 – A21 and Approved outlets	As specified below	Tritium, Carbon-14, Sulphur-35, Argon-41, Iodine-131, Cobalt-60 associated with particulate matter	2% of the relevant annual limit for all outlets except A22	Not specified	Not specified
Gaseous waste	A1	Reactor 7 Vessel Blowdown Stack	No individual limits specified for these disposal outlets			
Gaseous waste	A2	Reactor 8 Vessel Blowdown Stack				
Gaseous waste	A3	Reactor Auxiliaries Blowdown Stack				
Gaseous waste	A4	Reactor 7 Safety Relief Valve Stacks				
Gaseous waste	A5	Reactor 8 Safety Relief Valve Stacks				
Gaseous waste	A6	Fuel Pond Contaminated Air Ventilation Stack				
Gaseous waste	A7	Fuel Handling Block Ventilation Stack				
Gaseous waste	A8	Fuelling Machine Maintenance Area Ventilation Stack				
Gaseous waste	A9	Gas Circulator Maintenance Workshop Ventilation Stack				
Gaseous waste	A10	Combined Active Waste Building Ventilation Stack				
Gaseous waste	A11	Reactor 7 Vessel Purge Ventilation Stack				
Gaseous waste	A12	Reactor 8 Vessel Purge Ventilation Stack				
Gaseous waste	A13	Reactor 7 Common Ventilation Stack				
Gaseous waste	A14	Reactor 8 Common Ventilation Stack				
Gaseous waste	A15	Charge Hall Vents				
Gaseous waste	A16	Charge Hall Hatches				
Gaseous waste	A17	Hot Gas Release Vents				

Gaseous waste	A18	Steam Generating and Condensing Systems (including associated flanges, valves etc)	
Gaseous waste	A19	Carbon Dioxide Ring Main Vents and Relief Valves	
Gaseous waste	A20	Pressure Vessel Cooling Water, Circulator Auxiliary Cooling Water, Bypass Gas Plant Cooling Water and Diagrid Support Skirt Cooling Water Head Tank Bursting Discs and Vacuum Pump Exhausts	
Gaseous waste	A21	Louvres, vents, fan-assisted vents, windows and doors associated with Radiation/Contamination Controlled Areas, Laboratories, Turbine Hall and radioactive material storage areas/tanks not specifically listed above	
Gaseous waste	Approved outlets (air)	All outlets to air, not otherwise described in this table, that are approved by the Environment Agency .	

Table S 3.2 Disposals to water					
Radioactive waste type	Disposal outlet reference	Disposal outlet	Radionuclide or group of nuclides	Annual limits	Quarterly Notification level
Aqueous waste	All outlets (including approved outlets)	As specified below	Tritium	650 TBq	150 TBq
			Sulphur-35	2 TBq	0.25 TBq
			Cobalt-60	10 GBq	0.25 GBq
			Caesium-137	100 GBq	5 GBq
			"Other radionuclides" ¹	80 GBq	7.5 GBq
Aqueous waste	Outlets W2 – W6 and Approved outlets	As specified below	Cobalt-60, Caesium-137 and "other radionuclides"	1% of the relevant annual limit for all outlets	Not specified
			Tritium and Sulphur-35	1.5 % of the relevant annual limit for all outlets	Not specified
Aqueous waste	W1	Systems provided for discharging radioactive waste from the Final Delay Tanks and Tritiated Effluent Storage Tanks to Morecambe Bay via the main cooling water outfall	No individual limits specified for these disposal outlets		
Aqueous waste	W2	Systems provided for discharging water from reactor cooling systems to Morecambe Bay via the main cooling water outfall.			
Aqueous waste	W3	System provided for discharging boiler water and condensate from the Turbine Hall to Morecambe Bay via the main cooling water outfall			
Aqueous waste	W4	System provided for discharging treated sewage to Morecambe Bay via the main site drain at SD402592			
Aqueous waste	W5	System provided for discharging site surface water to Morecambe Bay via the main site drain at SD402592			
Aqueous waste	W6	System provided for discharging site surface water to Morecambe Bay via outfalls adjacent to the main cooling water intake			
Aqueous waste	Approved outlets (water)	All outlets to water, not otherwise described in this table, that are approved by the Environment Agency.			

¹ as measured using the techniques specified in Schedule 3 Table 3.6

Table S 3.3 Disposals to sewer

Radioactive waste type	Disposal outlet reference	Disposal outlet	Radionuclide or group of nuclides	Annual limits	Quarterly Notification level
None specified		None specified			

Table S3.4 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
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
Radioactive Waste as defined in the Transfrontier Shipment of Radioactive Waste and Spent Fuel Regulations 2008	Transfer in accordance with the conditions of an authorisation granted under the Transfrontier Shipment of Radioactive Waste and Spent Fuel Regulations 2008		Any	No Limit	No Limit

¹ For the purposes of this table, "environmental permit" includes any authorisation or permit issued by the environmental regulator for Wales, Scotland or Northern Ireland.

Table S 3.5 Disposal by on-site incineration			
Radioactive waste type	Incinerator unit	Radionuclide or group of nuclides	Monthly incineration limit (as input)
None specified			

Table S 3.6 monitoring techniques

Table and radionuclide	Monitoring technique
Table S3.2- Measurement of 'other radionuclides' in aqueous waste	For the purposes of demonstrating compliance with the limitations and conditions of this Permit relating to "other radionuclides" in aqueous waste, the Operator shall measure the gross activity, excluding tritium, sulphur-35, cobalt-60 and caesium-137, of all samples collected for these purposes by: (a) For liquid effluent discharged from Final Delay Tanks: (i) evaporating the sample to remove tritium and dissolving the residues in nitric acid; (ii) measuring the activities of the radionuclides in the dissolved residues using triple channel liquid scintillation spectroscopy which has been set and calibrated as below: -the "low energy" channel of the liquid scintillation spectrometer shall have been set to detect all beta energies below 8.0 keV, calibrated for detection efficiency using a tritium standard; -the "intermediate energy" channel shall have been set to detect all beta energies above 18.6 keV and up to the maximum energy of 167 keV, calibrated for detection efficiency using a carbon 14 standard; -the "high energy" channel shall have been set to detect all beta energies above 167 keV and up to the maximum detectable by the counter, calibrated for detection efficiency using a standard consisting of strontium 90 and yttrium 90; - the automatic energy/quench correction function shall be applied to the counting protocol; (iii) summing the activities from each of the above three channels for each sample to give the "total activity excluding tritium"; the total discharge for each calendar month shall be determined from the sum of the "total activity excluding tritium" in each discharge over that month; (iv) preparing a bulked sample representative of the total effluent discharged over the calendar month; this shall be analysed for sulphur 35 by liquid scintillation and cobalt 60 and caesium 137 by gamma spectrometry, then these quantities will be subtracted from the sum of "total activity excluding tritium" discharged over the month to determine the discharge of "Other activity" for the calendar month; (b) For liquid effluent discharged from Tritiated Effluent Storage Tanks: (i) analysing an undiluted sample for cobalt-60 and caesium-137 by gamma spectroscopy; (ii) diluting a sub-sample by a factor of 1000; (iii) measuring the activity in the diluted sample by using triple channel liquid scintillation spectroscopy which has been set and calibrated as below: -the "low energy" channel is used for the determination of tritium; -the "intermediate energy" channel is used for the determination of sulphur 35; -the "high energy" channel shall have been set to detect all beta energies above 167 keV and up to the maximum detectable by the counter, calibrated for detection efficiency using a standard consisting of strontium 90 and yttrium 90; -the automatic energy/quench correction function shall be applied to the counting protocol; (iv) if neither cobalt 60 nor caesium 137 is present in concentrations above the relevant minimum detectable activity, taking "Other radionuclides" to be equal to the activity measured in the high energy channel, multiplied by 1000 to account for the dilution; if the concentration of either cobalt 60 or caesium 137 is above the minimum

	detectable activity, then that will be subtracted from the activity measured in the high energy channel, multiplied by 1000, to give "Other radionuclides"; (c) Any other method, which has been agreed in writing by the Environment Agency.
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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 *EDF Energy Nuclear Generation Limited*

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:

- a. comparable processes, facilities or methods of operation which have recently been successfully tried out;
- b. technological advances and changes in scientific knowledge and understanding;
- c. the economic feasibility of such techniques;
- d. time limits for installation in both new and existing plants;
- e. 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.

"*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