

# Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

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Magnox Limited

BRADWELL SITE  
Bradwell-on-Sea  
Southminster  
Essex  
CM0 7HP

Permit number

EPR/ZP3493SQ/V004

# Bradwell Site

## Permit number EPR/ZP3493SQ/V004

### Introductory note

#### ***This introductory note does not form a part of this permit***

The permit allows the Operator to receive, and to dispose of radioactive waste, in carrying on specified radioactive substances activities on the specified premises.

The permit is issued under the provisions of regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010. Those Regulations are concerned with the control of radioactive material and the receipt, transfer, accumulation and disposal of 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 Health and Safety Executive and by the Department for Transport.

The main features of the facility are as follows: a former nuclear power station comprising two Magnox nuclear reactors, now undergoing decommissioning, with associated radioactive waste handling facilities.

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

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

<b>Detail</b>	<b>Date</b>
Application EPR/ZP3493SQ/V001	Duly made 07/04/11
Additional Information Received	23/06/11
Permit determined	28/07/11
Variation EPR/ZP3493SQ/V001 (varied and consolidated permit issued)	08/08/2011
Application EPR/ZP3493SQ/V002	Duly made 03/11/11
Additional Information Received	16/12/11
Permit determined	23/03/2012
Permit effective	02/04/12
Application EPR/ZP3493SQ/V003	Duly made 02/12/11
[EC Opinion received on UK submission of General Data under Article 37, Euratom Treaty]	28/06/2012
Permit determined	18/09/2012
Permit effective	01/10/2012
Application EPR/ZP3493SQ/V004	Duly made 30/11/12
Permit determined	26/02/2013
Permit effective	01/03/2013

End of Introductory Note

**Permit**

The Environmental Permitting (England and Wales) Regulations 2010

# Permit

Permit number

**EPR/ZP3493SQ/V004**

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

**Magnox Limited** ("the operator"),

whose registered office is


**Berkeley Centre  
Berkeley  
Gloucestershire  
GL13 9PB**

Company Registration Number: **2264251**

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

**Bradwell Site ("the premises")  
Bradwell-on-Sea  
Southminster  
Essex  
CM0 7HP**

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

Name	Date
Dr P Heaton 	26 <sup>th</sup> February 2013

Authorised on behalf of the Environment Agency

The permit shall take effect from 1 March 2013

# 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 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.

1.1.4 The operator shall manage and operate the activities in consultation with such suitable Radioactive Waste Advisors as are necessary 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 out 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 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 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 The operator shall post copies of this permit on the premises, in such characters and in such positions to be conveniently read by persons who have duties on the premises which are or could be affected by the matters set out in this permit.

## **2.4 Improvement and Information programme**

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

## **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 specified information;
- (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 Before the operator first receives radioactive waste from a consignor for the purpose of final disposal of that waste from or on the premises the operator shall, at the earliest opportunity, inform the local authority in whose area of responsibility the premises is situated of the origin and nature of the radioactive waste.

2.6.4 The provisions of 2.6.3 do not apply:

- (a) where the waste consignor is exempt from the requirement to hold an environmental permit for the disposal of radioactive waste;
- (b) to the extent that it would require the disclosure of information relating to sealed radioactive sources.

2.6.5 The provisions of conditions 2.6.1 to 2.6.4 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 or otherwise agreed in writing by the Environment Agency.
- 3.1.2 The limits on disposals given in schedule 3 shall not be exceeded.
- 3.1.3 Subject to condition 3.1.1, the operator shall dispose of each form of solid and non-aqueous liquid radioactive waste by an optimised disposal route for that waste form.
- 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 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 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 Environment Agency shall be notified without delay following the detection of:
- (a) any malfunction, breakdown or failure of equipment or techniques and any accident, which 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 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 Environment Agency shall be notified 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:
- (a) the operator shall notify the Environment Agency at least 28 days before making that change, or where that is not possible, without delay; and
  - (b) shall include in the notification a description of the proposed changes.
- 4.3.6 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.
- 4.3.7 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

<b>Table S1.1 Activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 23 of the Environmental Permitting Regulations</b>	<b>Description of specified activity</b>	<b>Geographical Limit of specified activity</b>
A1	Sch 23 Part 2 para 5(2)(b)	Disposal of radioactive waste on or from the premises	See Schedule 7 Site Plan
A2	Sch 23 Part 2 para 5(4)(a)	Receipt of radioactive waste for the purpose of disposal	See Schedule 7 Site Plan

<b>Table S1.2 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
	None specified	

<b>Table S1.3A Pre-operational measures</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
	No measures specified	

<b>Table S1.3B Pre-operational measures for future development</b>		
<b>Reference</b>	<b>Operation</b>	<b>Pre-operational measures</b>
	No measures 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 Specified disposals to air

Specified waste type	Disposal outlet ref	Source	Radionuclide or group of nuclides	Annual limits	Weekly Advisory Level	Quarterly Notification level
Gaseous waste	All outlets (including approved outlets)	As specified below and including any specified in the CEARS	Tritium	6 TBq	600 GBq	1.2 TBq
Gaseous waste	Approved outlets A5 – A29	Approved outlets A5 to A29 as specified below and including any approved outlets specified in the CEARS	Carbon -14	900 GBq	40 GBq	200 GBq
Gaseous waste			Beta-emitting radionuclides associated with particulate matter <sup>1</sup>	600 MBq	Not specified	80 MBq
Gaseous waste	A1	Reactor 1 and 2 Shield Cooling Air (SCA)	Tritium, Carbon-14, Beta emitting radionuclides associated with particulate matter <sup>1</sup>	10% of the relevant annual limit for All outlets, or as agreed in writing with the Environment Agency	Not specified	Not specified
Gaseous waste	A2	Reactor 1 and 2 Blowdown Stack				
Gaseous waste	A3	Fuel Element Debris (FED) Dissolution Ventilation Plant				
Gaseous waste	A4	Mobile Extraction Units (MEUs)				
Gaseous waste	A5	Intermediate Level Waste (ILW) Drying Plant				
Gaseous waste	A6	Fuel Element Debris (FED) Retrieval Ventilation Plant				
Gaseous waste	A7	Fuel Element Debris (FED) Sorting Ventilation Plant				
Gaseous waste	A8	Aqueous Discharge Abatement Plant (ADAP) Ventilation System				
Gaseous waste	A9	Active Waste Vault Ventilation Plant				
Gaseous waste	A10	Magnox Vaults 7A, 7B, 8A & 8B Ventilation Plant				

No individual limits specified for these disposal outlets

No individual limits for these disposal outlets

Gaseous waste	A11	Active Waste Handling Building Ventilation Plant
Gaseous waste	A12	Reactor 1 and 2 Upper/Lower Maintenance Room
Gaseous waste	A13	Reactor 1 and 2 Bottling Hood Vent
Gaseous waste	A14	Ponds Water Treatment Plant Decarbonating Tower
Gaseous waste	A15	Health Physics and Chemistry Laboratory 1
Gaseous waste	A16	Health Physics and Chemistry Laboratory 2
Gaseous waste	A17	Low Level Waste Management Facility
Gaseous waste	A18	Health Physics Laboratory Fume Cupboard
Gaseous waste	A19	Reactor 1 and 2 Inner & Outer Gas Cubicle Rooms
Gaseous waste	A20	Reactor 1 and 2 Blowdown & Evacuation Main Room
Gaseous waste	A21	Reactor 1 and 2 East & West Circulator Hall Ventilation Systems
Gaseous waste	A22	Reactor 1 and 2 Pile Cap Ventilation System
Gaseous waste	A23	Reactor 1 and 2 Boiler House Ventilation System
Gaseous waste	A24	Final Delay Tank Building & Access Walkway
Gaseous waste	A25	Ponds Building Ventilation Plant
Gaseous waste	A26	C3 Working Conditions Facility Ventilation Plant
Gaseous waste	A27	Central Workshops Maintenance Facility
Gaseous waste	A28	Ponds Water Treatment Plant Carbonating Tower
Gaseous waste	A29	Active Waste Interim Storage Facility

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

**Table S3.2 Specified disposals to water**

Specified waste type	Disposal outlet ref	Source	Radionuclide or group of nuclides	Annual limits	Quarterly Notification level
Aqueous waste	W1-W2 (in total)	As specified below	Tritium	7 TBq	1 TBq
			Caesium-137	0.7 TBq	0.15TBq
			"Other radionuclides" <sup>2</sup>	0.7 TBq	0.15TBq
Aqueous waste	W2	System for discharging treated sewage effluent and storm water to the Blackwater Estuary via the east cooling water outfall	Tritium, Caesium-137 and "Other radionuclides" <sup>2</sup>	1% of the relevant annual limit for W1-W2	Not specified
Aqueous waste	W1	System provided for discharging radioactive waste from the Final Monitoring and Delay Tanks to the Blackwater Estuary via the east cooling water outfall	No individual limits specified for these disposal outlets		

<sup>(2)</sup> as measured using the techniques specified in Schedule 3 Table S3.4



**Table S3.3 Specified transfers to other premises**

Specified radioactive waste type	Person to whom radioactive waste may be transferred <sup>1</sup>	Purpose of transfer	Radionuclide or group of radionuclides	Calendar year limit	Annual volume limit/m <sup>3</sup>
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
Metallic LLW	The holder of an environmental permit for the receipt and disposal of metallic LLW	For any one or more of: - treatment - onward transfer for treatment or disposal - incineration - metals recovery - final disposal	Any	No limit	No limit
Combustible radioactive solid and liquid waste	The holder of an environmental permit for the receipt and disposal of combustible radioactive solid and liquid	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	For treatment and / or storage before future disposal	Any	No limit	No limit
Radioactive Waste as defined in the Transfrontier Shipment of Radioactive Waste Regulations 1993 or 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 Regulations 1993 or the Transfrontier Shipment of Radioactive Waste and Spent Fuel Regulations 2008		Any	No Limit	No Limit

<sup>1</sup> For the purposes of this table, "environmental permit" includes an authorisation issued under the Radioactive Substances Act 1993 by the environmental regulator for Scotland or Northern Ireland.

**Table S3.4 monitoring techniques**

Table and radionuclide	Monitoring technique
Table 3.1 "Beta-emitting radionuclides associated with particulate matter"	<p>For the purposes of demonstrating compliance with the conditions of this permit relating to "beta-emitting radionuclides associated with particulate matter", the operator shall measure the gross beta activity of all particulate samples collected for these purposes, after an appropriate period for decay of radon daughters, by using:</p> <ul style="list-style-type: none"><li>(a) best available techniques</li></ul> <p>including</p> <ul style="list-style-type: none"><li>(b) any other suitable counting system, which has been agreed in writing by the Agency.</li></ul>
Table 3.2 "other radionuclides"	<p>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 and caesium-137, of all samples collected for these purposes by:</p> <ul style="list-style-type: none"><li>(a) best available techniques</li></ul> <p>including</p> <ul style="list-style-type: none"><li>(b) any other suitable method, which has been agreed in writing by the Agency.</li></ul>

# 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

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

<b>(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</b>	
<b>To be notified within 24 hours of detection</b>	
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>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
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	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Radionuclides detected	
Activity of radionuclides detected	
Date of monitoring/sampling	

**Part B - to be submitted 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 the operator of the Bradwell site.

# Schedule 6 - Interpretation

In this permit, except where otherwise specified, words and expressions defined in the Environmental Permitting (England and Wales) Regulations 2010 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.

"*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.

"*ILW*" means Intermediate Level Waste is radioactive waste, including any immediate packaging, with radioactivity levels exceeding a concentration of 4 gigabecquerels per tonne of alpha emitting radionuclides and 12 gigabecquerels per tonne of all other radionuclides but which does not require heating to be taken into account in the design of storage or disposal facilities.

"*LLW*" means Low Level Waste which is solid radioactive waste, including any immediate packaging, with a maximum concentration of 4 gigabecquerels per tonne of alpha emitting radionuclides and 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*" (NAIR) means the arrangements co-ordinated by the Health Protection Agency 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 the holder of a licence issued under the Nuclear Installations Act 1965

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

"*open radioactive source*" means radioactive material not in the form of a sealed radioactive source.

"*organic liquid waste*" means radioactive waste in the form of liquid, not being aqueous waste, containing one or more organic chemical compounds.

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

"Radioactive Waste Adviser" means, subject to the transitional arrangements in the Environment Agencies' Scheme for Radioactive Waste Advisers ("the Scheme"), either an individual certified under the Scheme and appointed in writing by the operator, or those individuals advising the operator under the operator's arrangements, approved under the Scheme, for "corporate radioactive waste adviser". The Scheme is set out in the Environment Agencies' Statement on Radioactive Waste Advisers of 24 May 2011, together with the associated guidance and other documents published by the Environment Agencies from time to time. (Current documents are available at: [http://www.sepa.org.uk/radioactive\\_substances/radioactive\\_waste\\_advisers.aspx](http://www.sepa.org.uk/radioactive_substances/radioactive_waste_advisers.aspx).)

"Radsafe" 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.

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

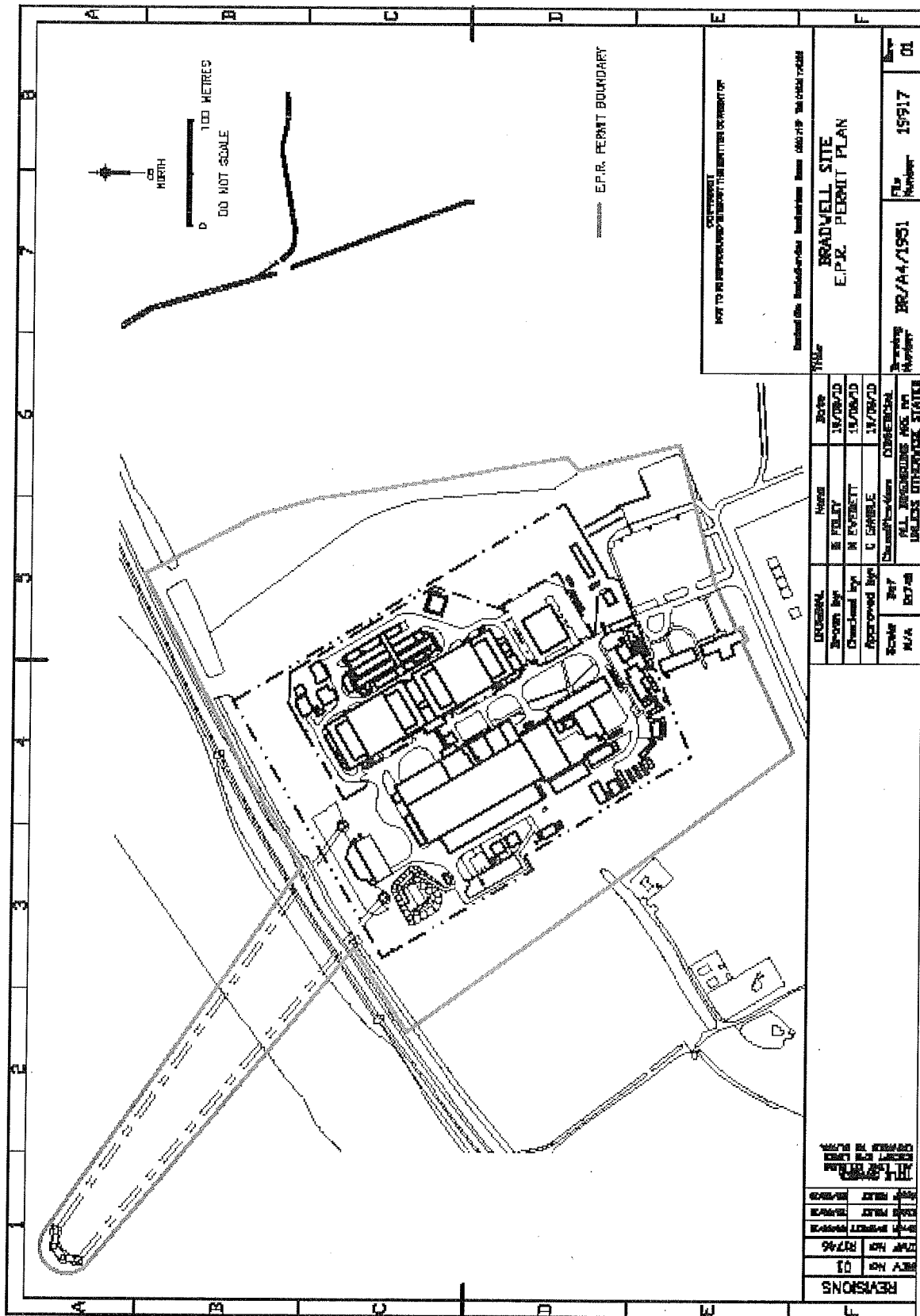
"The Agency", means the Environment Agency.

"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.

"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