



**ENVIRONMENT
AGENCY**

RADIOACTIVE SUBSTANCES ACT 1993

**CERTIFICATE OF AUTHORISATION
AND
INTRODUCTORY NOTE**

**DISPOSAL OF RADIOACTIVE WASTE
FROM NUCLEAR SITE**

AWE plc

**ATOMIC WEAPONS ESTABLISHMENT
ALDERMASTON
READING
BERKSHIRE
RG7 4PR**

AUTHORISATION NUMBER BZ1994

INTRODUCTORY NOTE

- IN 1.** The following Certificate of Authorisation is issued by the Environment Agency under the provisions of Section 13 of the Radioactive Substances Act 1993 ("the Act"). The Authorisation permits the disposal of the specified radioactive wastes from the specified site, subject to limitations and conditions.
- IN 2.** The Act is concerned with the control of radioactive material and accumulation and disposal of radioactive waste. The requirements of the Act relating to control of radioactive material and accumulation of radioactive waste do not apply to sites Licensed under the Nuclear Installations Act 1965 because these matters are regulated under the terms of the site licence. The conditions attached to this Authorisation are, therefore, concerned only with matters that relate to the disposal of radioactive waste from the Operator at Aldermaston.
- IN 3.** The certificate authorises the disposal of solid, liquid and gaseous radioactive wastes by AWE plc from the premises of the Atomic Weapons Establishment (AWE) at Aldermaston. The wastes are produced during the production, servicing and disassembly of nuclear warheads, research and development of warhead technology and decommissioning of redundant nuclear process plant. The radioactive wastes principally contain tritium, krypton-85, plutonium-239, plutonium-240, uranium-234, uranium-235, uranium-238, caesium-137, carbon-14, iodine-129 and cobalt-60.
- IN 4.** The Certificate of Authorisation comprises a signed certificate together with 9 schedules. Schedule 1 contains general conditions that are applicable to all authorised waste types. Schedule 2 specifies the categories of radioactive waste and the disposal routes that are authorised. Schedules 3 to 7 include limitations and conditions on the radionuclides in the waste and the physical nature of the waste streams. Schedule 8 includes limitations and conditions relating to receipt of radioactive waste for disposal from other premises. Schedule 9 specifies information to be supplied and improvements to be carried out.
- IN 5.** Where limits are specified for "alpha emitters" these are principally plutonium-239 and uranium-234 with smaller contributions from uranium-238, uranium-235, plutonium-238, plutonium-240, plutonium-242, americium-241 and neptunium-237. Where limits are specified for "Beta emitting radionuclides associated with particulate matter" these are principally daughter products and activation products, mainly caesium-137 and cobalt-60. Where limits are specified for "Beta emitting radionuclides (volatile)" these are principally mixed fission products.
- IN 6.** Solid radioactive wastes arising from the dismantling of assembled nuclear weapons may be categorised as both "solid waste" for disposal to either the Low Level Waste Repository (LLWR) at Drigg or to the Operator of the Incinerators at Hythe, Hampshire; Knostrop, Leeds; and Colnbrook, Berkshire

or “Warhead Waste” for disposal to the Site Operator at Foulness, Essex. Limits and conditions relating to “Warhead Waste” in the authorisation are primarily intended to prevent the disposal of other classes of “solid waste” to the Site Operator at Foulness, Essex, the LLWR Site Operator at Drigg or the Operators of the Incinerators at Hythe, Hampshire; Knostrop, Leeds; and Colnbrook, Berkshire.

- IN 7.** The Authorisation allows the Agency to place requirements on the Operator to carry out various actions. Details of current requirements, associated specifications and approvals are placed on relevant public registers. Certain information provided by the Operator in response to Certificate requirements will also be placed on the registers.
- IN 8.** This note does not form part of the Certificate of Authorisation.



**ENVIRONMENT
AGENCY**

RADIOACTIVE SUBSTANCES ACT 1993

**Authorisation to Dispose of Radioactive Waste
from the Premises of AWE plc on the Nuclear Site at
Aldermaston**

AWE plc

Certificate Reference Number BZ1994

This certifies that the Environment Agency in exercise of its powers under Sections 16(2), 16(8) and 17(2) of the Radioactive Substances Act 1993 ("the Act") has authorised

**AWE plc
(Company Registration No 2763902)
("the Operator")**

whose Registered Office is

**The Atomic Weapons Establishment
Aldermaston, Reading
Berkshire, RG7 4PR**

under Sections 13(1) and 13(3) of the Act to dispose of radioactive waste from its premises which are on the AWE plc site at

Aldermaston in Berkshire

subject to the limitations and conditions in the Schedules to this Certificate of Authorisation.

This Authorisation shall come into effect on 01/03/2007

Signed*S D Chandler*.....

S D Chandler
Authorised to sign on behalf of the Environment Agency

Dated the 24th of January 2007

Schedule 1

GENERAL LIMITATIONS AND CONDITIONS

DISPOSAL

1. The Operator shall use the best practicable means to minimise the activity of radioactive waste produced on the site that will require disposal under this Authorisation.
2. The Operator shall use the best practicable means 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) subject to paragraph 5 in this Schedule, 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;

where the relevant waste types and disposal routes are specified in the Table in Schedule 2.

3. The Operator shall maintain in good repair the systems and equipment provided:
 - (a) to meet the requirements of paragraphs 1 and 2 in this Schedule;
 - (b) for the disposal of radioactive waste.
4. The Operator shall check, at an appropriate frequency, the effectiveness of systems, equipment and procedures provided:
 - (a) to meet the requirements of paragraphs 1 and 2 in this Schedule;
 - (b) for the disposal of radioactive waste.
5. If required by the Agency, the Operator shall only dispose of radioactive waste at such times, in such a form and in such a manner as the Agency specifies.

MANAGEMENT

6. The Operator shall:

- (a) have a management system, organisational structure and resources which are sufficient to achieve compliance with the limitations and conditions of this Authorisation and which include:
- (i) written arrangements specifying how the Operator will achieve compliance with each limitation and condition of this authorisation, to include arrangements for control of modifications to the design and operation of systems and equipment;
 - (ii) provision for consultation with such suitable RPAs, or other such qualified experts approved by the Agency in writing, as are necessary for the purpose of advising the Operator as to compliance with the limitations and conditions of this Authorisation and, in particular, on the matters addressed in paragraphs 1, 2, 4, 12 and 13 in this Schedule;
 - (iii) written Environmental Operating Rules and operating instructions;
 - (iv) a written maintenance schedule and instructions;
 - (v) adequate supervision of the disposal of radioactive waste by suitably qualified and experienced persons, whose names shall be clearly displayed with each copy of the Certificate of Authorisation that is posted on the premises as required by Section 19 of the Act;
 - (vi) adequate supervision by suitably qualified and experienced persons of the operation and maintenance of the systems and equipment provided to meet the requirements of paragraphs 1 and 2 in this Schedule and for the disposal of radioactive waste;
 - (vii) internal audit and review of the Operator's management system;
- (b) inform the Agency in writing, at least 28 days or such shorter period agreed by the Agency before the first disposal of radioactive waste is made under the terms of this Authorisation, of the organisational structure and resources, together with such parts of the management system as the Agency specifies, provided to achieve compliance with the limitations and conditions of the Authorisation;
- (c) inform the Agency, at least 28 days in advance or, where this is not possible, without delay, of any change in the management system, organisational structure or resources, which might have, or might reasonably be seen to have, a significant impact on how compliance with the limitations and conditions of this Authorisation is achieved.

SAMPLING, MEASUREMENTS, TESTS, SURVEYS AND CALCULATIONS

7. The Operator shall take samples and conduct measurements, tests, surveys, analyses and calculations to determine compliance with the limitations and conditions of this Authorisation.
8. The Operator shall use the best practicable means when taking samples and conducting measurements, tests, surveys, analyses and calculations to determine compliance with the limitations and conditions of this Authorisation, unless particular means are specified in this Authorisation.

9. If required by the Agency, the Operator shall 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 Agency specifies.
10. If required by the Agency, the Operator shall, as the Agency specifies:
 - (a) keep samples;
 - (b) provide samples;
 - (c) dispatch samples for tests at a laboratory and ensure that the samples or residues thereof are collected from the laboratory within three months of receiving written notification that testing and repackaging in accordance with the appropriate transport regulations are complete.
11. The Operator shall maintain, in good repair, systems and equipment provided for:
 - (a) carrying out any monitoring and measurements necessary to determine compliance with the limitations and conditions of this Authorisation;
 - (b) measuring and assessing exposure of members of the public and radioactive contamination of the environment.
12. 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 limitations and conditions of this Authorisation;
 - (b) measuring and assessing exposure of members of the public and radioactive contamination of the environment.
13. 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 limitations and conditions of this Authorisation;
 - (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.

RECORDS

14. The Operator shall, subject to paragraph 18 in this Schedule:
- (a) make and retain records sufficient to demonstrate whether the limitations and conditions of this Authorisation are complied with;
 - (b) retain records made in accordance with any previous Authorisation issued to the Operator and related to the premises covered by this Authorisation;
 - (c) retain records transferred to the Operator by any predecessor operator which were made in accordance with any previous Authorisation related to the premises covered by this Authorisation.
15. The Operator, not later than 14 days after the end of each month or within such longer period as the Agency may approve in writing, shall in respect of all disposals of radioactive waste made during that month:
- (a) make a record of each measurement, analysis, test and survey conducted for the purpose of this Authorisation in relation to those disposals;
 - (b) make a record which shows clearly and legibly:
 - (i) the type of waste and the disposal route;
 - (ii) the name of each radionuclide or group of radionuclides, specified in the relevant Table in the relevant Schedule, which is present;
 - (iii) the activity of each such radionuclide or group of radionuclides per cubic metre of the waste, unless otherwise agreed in writing by the Agency;
 - (iv) for LLWR waste, the activity of each such radionuclide or group of radionuclides per tonne of the waste, unless otherwise agreed in writing by the Agency;
 - (v) the total activity of each such radionuclide or group of radionuclides;
 - (vi) the total volume in cubic metres, unless otherwise agreed in writing by the Agency;
 - (vii) for LLWR waste, the total mass in tonnes;
 - (viii) the date and time on which, or period during which, the disposal took place;
 - (ix) any other information the Agency may specify.

16. If the Operator amends any record made in accordance with this Authorisation it shall ensure that the original entry remains clear and legible.
17. The Operator shall keep the records referred to in paragraph 15 in this Schedule in a manner and place approved by the Agency.
18. The Operator shall retain the records referred to in paragraphs 14 and 15 in this Schedule until notified in writing by the Agency that the records no longer need to be retained.

PROVISION OF INFORMATION

19. The Operator shall supply such information in such format and within such time as the Agency may specify.
20. The Operator shall inform the Agency in writing, at least 14 days before the first disposal of radioactive waste is made under the terms of this Authorisation, of the techniques being employed to determine the activity of radioactive waste disposals and shall inform the Agency in writing in advance of any modifications to those techniques.
21. The Operator shall inform the Agency without delay if the Operator has reason to believe that disposal of radioactive waste is occurring, has occurred or might occur which does not comply with the limitations and conditions of this Authorisation, and shall report the circumstances in writing to the Agency as soon as practicable thereafter.

INTERPRETATION

22. (1) In this Certificate of Authorisation:
 - (a) except where otherwise specified, words and expressions defined in the Radioactive Substances Act 1993 shall have the same meanings when used in this Certificate of Authorisation as they have in that Act;

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

"the Agency" means the Environment Agency;

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

"Authorisation" means an authorisation issued under the Radioactive Substances Act 1993 or the Radioactive Substances Act 1960;

"best practicable environmental option" means the radioactive waste management option, for a given practice, that provides the most benefit or least damage to the environment as a whole in the long term as well as in the short term, taking into account operational doses and risks, and social and economic factors;

"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;

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

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

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

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

"Low Level Waste Repository Operator" means the current holder of the licence issued under the Nuclear Installations Act 1965 for the Low Level Waste Repository at Drigg;

"Low Level Waste Repository Waste (LLWR Waste)" means solid radioactive waste, including any immediate package, intended by the Operator for final disposal at the Low Level Waste Repository at Drigg;

"maintenance instructions" means instructions for carrying out any maintenance that may have an effect on compliance with this Authorisation;

"maintenance schedule" means a programme for maintenance of all systems and equipment that contribute to achieving compliance with this Authorisation;

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

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

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

"package" includes any sack, drum, container or wrapping;

"quarter" means any period of three consecutive months;

"RPA" means a Radiation Protection Adviser appointed under Regulation 13 of the Ionising Radiations Regulations 1999;

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

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

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

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

"year" means any period of 12 consecutive months;

(b) Other Site Specific Definitions:

"Aldermaston Site" means those premises occupied by AWE plc at Aldermaston in Berkshire and is known as the Atomic Weapons Establishment Aldermaston which are situated on a site in respect of which a nuclear site licence is in force, and includes in addition the Burning Grounds at the Northeast quadrant of the site that lies outwith the Nuclear Licensed Site boundary;

"Foulness Site Operator, Essex" means the holder of an authorisation under section 13 of the Radioactive Substances Act 1993 to dispose of radioactive waste of that description at Foulness, Essex;

"Incinerator Operator at Hythe" means the holder of an authorisation under section 13 of the Radioactive Substances Act 1993 to dispose of

radioactive waste of that description by burning it at an incinerator at Hythe, Hampshire;

“Incinerator Operator at Knostrop, Leeds” means the holder of an authorisation under section 13 of the Radioactive Substances Act 1993 to dispose of radioactive waste of that description by burning it at an incinerator at Knostrop, Leeds;

“Incinerator Operator at Colnbrook, Berkshire” means the holder of an authorisation under section 13 of the Radioactive Substances Act 1993 to dispose of radioactive waste of that description by burning it at an incinerator at Colnbrook, Berkshire;

“liquid mercury waste” means radioactive waste in the form of liquid mercury;

“warhead waste” means radioactive waste in the form of a solid containing explosives, foams, plastics, rubbers, salts or metal arising from the dismantling of assembled nuclear warheads;

“Winfrith Nuclear Site” means the site at Winfrith, Dorset for which a licence has been issued under the Nuclear Installations Act 1965;

- (2) In this Certificate of Authorisation the Interpretation Act 1978 shall apply as it does to an Act of Parliament and in particular words in the singular include the plural and words in the plural include the singular.
- (3) (a) In determining whether particular means are the "best practicable" for the purposes of this Authorisation, the Operator shall not be required to incur expenditure whether in money, time or trouble which is, or is likely to be, grossly disproportionate to the benefits to be derived from, or likely to be derived from, or the efficacy of, or likely efficacy of, employing them, the benefits or results produced being, or likely to be, insignificant in relation to the expenditure.
- (b) Where reference is made to the use of "best practicable means" in this Certificate of Authorisation, the means to be employed shall include:
 - (i) the provision, maintenance and manner of operation of any relevant plant, machinery or equipment;
 - (ii) the supervision of any relevant operation.

Schedule 2

AUTHORISED RADIOACTIVE WASTE TYPES AND DISPOSAL ROUTES

1. Subject to paragraph 2 in this Schedule, the Operator is authorised to dispose only of the radioactive waste types identified in the Table in this Schedule and only by the relevant disposal routes specified in the Table.
2. The Operator may dispose of radioactive waste, not being waste otherwise authorised to be disposed of, which is collected as a result of the user's participation in the National Arrangements for Incidents involving Radioactivity provided that the Operator:
 - (a) transfers the waste to a person whom the Environment Agency has agreed in writing may receive that waste;
 - (b) as soon as practicable provides available details in writing of the nature of the radioactive waste, the radionuclides present, their activities and the manner and date of disposal.

Table – Authorised Waste Types and Disposal Routes

Radioactive waste type	Disposal Route
Gaseous Waste	Discharge to the environment
Aqueous Waste	Discharge to the Public Sewer at AWE Aldermaston
	Discharge to the Aldermaston Stream at AWE Aldermaston
Organic Liquid Waste	Transfer to the Incinerator Site Operator at Hythe in Southampton for the purpose of disposal by incineration at that site
	Transfer to the Incinerator Site Operator at Knostrop, Leeds for the purpose of disposal by incineration at that site
	Transfer to the Incinerator Site Operator at Colnbrook, Berkshire for the purpose of disposal by incineration at that site
Solid Waste	Transfer to the Incinerator Site Operator at Hythe, Hampshire for the purpose of disposal by incineration at that site
	Transfer to the Incinerator Site Operator at Knostrop, Leeds for the purpose of disposal by incineration at that site
	Transfer to the Incinerator Site Operator at Colnbrook, Berkshire for the purpose of disposal by incineration at that site
	Transfer, for the purpose of treatment prior to final disposal at the LLWR at Drigg, to the person operating Complex B4 and Facilities A50 and A51 on the Winfrith Nuclear Site.
	Transfer to the Sellafield Site Operator at Sellafield for the purpose of final disposal at the LLWR at Drigg
	Transfer to the LLWR Site Operator at Drigg for the purpose of final disposal at the site.
Liquid Mercury Waste	Transfer, for the purpose of treatment, to the person operating Complex B4 and Facilities A50 and A51 on the Winfrith Nuclear Site.
Warhead Waste	Transfer to the Site Operator at Foulness, Essex for the purpose of security controlled disposal at that site
	Transfer to AWE Burghfield

Schedule 3

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

1. The Operator shall:
 - (a) only discharge radioactive gaseous waste to the environment by means of the outlets identified in Table 1 in this Schedule and such other outlets as the Agency may approve in writing.
 - (b) not discharge radioactive gaseous waste through any outlet identified in Table 1 in this Schedule that the Agency has notified in writing is not to be used.
2. The Operator shall not in any year discharge gaseous waste in which the activity of any radionuclide or group of radionuclides specified in the Tables in this Schedule exceeds the relevant Annual Limit:
 - (a) Table 2a for discharges associated with the operation of the site;
 - (b) Table 2b for supplementary discharges associated with Nuclear Non-Proliferation Treaty work.
3. If, in any quarter, the activity in gaseous waste discharged of any radionuclide or group of radionuclides specified in Table 2a in this Schedule exceeds, or is likely to exceed, the relevant Quarterly Notification Level (where specified), the Operator shall provide the Agency with a written submission which includes:
 - (a) details of the occurrence;
 - (b) a description of the means used to minimise the activity of gaseous waste discharged;
 - (c) a review of those means having regard to paragraphs 1 and 2 in Schedule 1;

not later than 14 days from making the record which demonstrates such excess.
4. For the purposes of demonstrating compliance with the limitations and conditions of this Authorisation relating to “beta-gamma emitting radionuclides associated with particulate matter” and “alpha-emitting radionuclides associated with particulate matter” in gaseous waste the Operator shall measure the gross beta and alpha activity of all particulate samples collected for these purposes, after an appropriate period for decay of radon daughters, by using suitable sample preparation methods and suitable counting systems which have been agreed in writing by the Agency.

Table 1 – AWE Aldermaston - Authorised Gaseous Discharge Outlets

Authorised gaseous discharge outlets
Group A: Such stacks or outlets associated with discharges from Facilities Engaged Completely or Principally in Decommissioning Operations in buildings: A, B, C, D, G2 and G3 and other minor facilities as approved in writing beforehand by the Agency.
Group B: Such stacks or outlets associated with discharges from Facilities Engaged Completely or Principally in Support of Production and Capability in buildings AB9, G1, L, N1 and P and other minor facilities as approved in writing beforehand by the Agency.
Group C: Such stacks or outlets associated with discharges from Facilities Engaged Completely or Principally in Research and Development in buildings: AB19, AB21, I, J and K and other minor facilities as approved in writing beforehand by the Agency.
Group D: Such stacks or outlets associated with discharges from Facilities Engaged Completely or Principally in Waste Management Operations in buildings: AB25, F1, and M and other minor facilities as approved in writing beforehand by the Agency.
Group E: Such stacks or outlets associated with discharges from Facilities expected to Commence Operation during the Lifetime of this Authorisation in the following buildings: Enriched Uranium Facility, Hydrodynamics Facility, Orion Laser Facility, Additional Tritium Facility and other new minor facilities as approved in writing beforehand by the Agency.

Table 2a – AWE Aldermaston Site Gaseous Annual Activity and Quarterly Notification Levels

Radionuclide	Annual Site Activity Limit	Site Quarterly Notification Level
Alpha emitters	165 kBq	NA
Beta emitting radionuclides associated with particulate matter*	600 kBq	NA
Krypton-85	75 GBq	15 GBq
Total Tritium	39 TBq	8 TBq
Argon-41	1 GBq	NA

* excluding Pu-241 and tritides

Table 2b – AWE Aldermaston Site Gaseous Annual Activity Limits – Supplementary Work associated with the Nuclear Non-Proliferation Treaty

Radionuclide	Annual Site Activity Limit
Beta emitting radionuclides (volatile)	4.4 MBq
Carbon-14	6 MBq

Schedule 4

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

1. The Operator shall:
 - (a) only discharge radioactive aqueous waste to the environment through the systems specified in Table 1 in this Schedule and such other systems as the Agency may approve in writing.
 - (b) not discharge radioactive aqueous waste through any system identified in Table 1 to this Schedule that the Agency has notified in writing is not to be used.
2. The Operator shall use the best practicable means to exclude all entrained solids, gases and non-aqueous liquids from radioactive aqueous waste prior to discharge to the environment.
3. The Operator shall not in any year discharge aqueous waste through any system or group of systems specified in Table 1 in this Schedule in which the activity of any radionuclide or group of radionuclides specified in Table 2 exceeds the relevant Annual Limit.
4. If, in any quarter, the activity in aqueous waste discharged through any system or group of systems specified in Table 2 in this Schedule of any radionuclide or group of radionuclides specified exceeds the relevant Quarterly Notification Level, the operator shall provide the Agency with a written submission which includes:
 - (a) details of the occurrence;
 - (b) a description of the means used to minimise the activity of aqueous waste discharged;
 - (c) a review of those means having regard to paragraphs 1 and 2 in Schedule 1;not later than 14 days from making the record which demonstrates such excess.
5. If the activity of any radionuclide or group of radionuclides specified in Table 3 in this Schedule exceeds the relevant Activity Notification Level for aqueous waste discharged through any system or group of systems specified, the operator shall provide the Agency with a written submission which includes details of the occurrence not later than 14 days from making the record which demonstrates such excess.

6. For the purposes of demonstrating compliance with the limitations and conditions of this Authorisation relating to “beta-gamma emitting radionuclides” and “alpha-emitting radionuclides” in aqueous waste the Operator shall measure the gross beta and alpha activity of all samples collected for these purposes by using suitable sample preparation methods and suitable counting systems which have been agreed in writing by the Agency.

Table 1 – Authorised Aqueous Discharge Systems

Authorised aqueous discharge systems
From the Aldermaston site into the public sewer. (“System 1”)
System provided by the Operator for the discharge of aqueous radioactive waste from the North Ponds Water Management System situated on the Aldermaston site into the Aldermaston Stream at AWE Aldermaston. (“System 2”)

Table 2 – System 1 - AWE Aldermaston Discharge to the Public Sewer

Radionuclide or Group of radionuclides	Annual limit	Quarterly notification level
Alpha emitters	10 MBq	2 MBq
Tritium	25 GBq	5 GBq
Other beta emitters	20 MBq	4 MBq

Table 3 – System 2 - AWE Aldermaston Discharge to the Aldermaston Stream

Radionuclide or Group of radionuclides	Activity notification level Bq l⁻¹
Tritium	30

Schedule 5

LIMITATIONS AND CONDITIONS RELATING TO DISPOSAL OF RADIOACTIVE WASTE BY INCINERATION ON THE PREMISES

1. Disposal of radioactive waste by incineration on the premises is not authorised.

Schedule 6

LIMITATIONS AND CONDITIONS RELATING TO THE DISPOSAL OF RADIOACTIVE WASTE BY TRANSFER FOR THE PURPOSE OF FINAL DISPOSAL AT THE LLWR AT DRIGG

1. The Operator shall not:
 - (a) transfer any consignment of LLWR Waste in which the activity of alpha emitting radionuclides exceeds 4 gigabecquerels per tonne or the activity of all other radionuclides exceeds 12 gigabecquerels per tonne;
 - (b) in any calendar year transfer LLWR Waste in which, in total, the activity of any radionuclide or group of radionuclides listed in Table 1 in this Schedule exceeds the relevant Annual Limit;
 - (c) in any calendar year transfer LLWR Waste in which, in total, the volume of the waste exceeds the Annual Limit specified in Table 2 in this Schedule.
2. The Operator shall not transfer LLWR Waste:
 - (a) unless it has been treated or packaged in such a way as to render it, so far as is reasonably practicable, insoluble in water and not readily flammable;
 - (b) which contains any of the following materials, unless otherwise agreed in writing by the Agency:
 - (i) metals and other materials which readily react either with water or air with the evolution of heat or flammable gases;
 - (ii) explosive materials;
 - (iii) liquids with flashpoint less than 21 °C absorbed on solid materials;
 - (iv) strong oxidising agents;
 - (v) pressurised gas cylinders or pressurised aerosol containers;
 - (vi) materials which generate or are capable of generating toxic gases, vapours or fumes harmful to persons handling the waste;
 - (vii) chemical complexing or chelating agents.
3. The Operator shall ensure that the transfer of LLWR Waste is in accordance with the directions of the person to whom the waste is transferred.

4. The Operator shall:

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- (a) ensure that the person to whom LLWR 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) that the activity of alpha-emitting radionuclides in the consignment does not exceed 4 gigabecquerels per tonne and that the activity of all other radionuclides does not exceed 12 gigabecquerels per tonne;
 - (ii) the total activity in the consignment of each radionuclide or group of radionuclides listed in Table 1 in this Schedule;
 - (b) obtain a record signed on behalf of the person to whom LLWR Waste is transferred, at the time of transfer, stating that the transfer has taken place.
5. If required by the Agency, the Operator shall ensure that any consignment or part of any consignment of LLWR Waste found, following transfer, not to be in accordance with the limitations and conditions of this Authorisation:
- (a) is packaged in accordance with the appropriate transport regulations;
 - (b) is returned as soon as is reasonably practicable to the Aldermaston site.

Table 1 – AWE Aldermaston - Annual Activity Limits for the Disposal of Radioactive Waste by Transfer For the Purpose of Final Disposal at the Low Level Waste Repository at Drigg

Radionuclide or group of radionuclides	Annual limit
Uranium	55 GBq
Radium-226 plus Thorium-232	0.03 GBq
Other alpha emitters ¹	120 GBq
Carbon-14	0.03 GBq
Iodine-129	1 MBq
Tritium	400 GBq
Cobalt-60	30 GBq
Other radionuclides ²	230 GBq

1 "other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2 "other radionuclides" means:

- (a) iron-55 and beta-emitting radionuclides with half-lives greater than three months unless individually specified in this Table and
- (b) any other radionuclides specified in writing by the Agency

Table 2 – AWE Aldermaston - Annual Volume Limit for the Disposal of Radioactive Waste by Transfer For the Purpose of Final Disposal at the Low Level Waste Repository at Drigg

Annual limit, cubic metres
4000

Schedule 7

LIMITATIONS AND CONDITIONS RELATING TO DISPOSAL OF RADIOACTIVE WASTE BY TRANSFER TO OTHER PREMISES

1. The Operator shall not in any calendar year transfer radioactive waste to a person specified in Tables 1 and Tables 3 to 4 in this Schedule in which, in total:
 - (a) the activity of any relevant radionuclide or group of radionuclides exceeds the relevant Annual Activity Limit; or
 - (b) the volume of the waste and its immediate packaging exceeds the relevant Annual Volume Limit.
2. The Operator shall not in any calendar year transfer radioactive waste for disposal by incineration where the activity of any relevant radionuclide or group of radionuclides exceeds the relevant Annual Activity Limit or the volume of the waste and its immediate packaging exceeds the relevant Annual Volume Limit in Table 2 in this Schedule.
3. The Operator shall ensure that the transfer of radioactive waste is in accordance with the directions of the person to whom the waste is transferred.
4. The Operator shall:
 - (a) ensure that the person to whom waste is transferred receives at the time of transfer of each consignment a clear and legible note signed on the Operator's behalf stating the total activity in the consignment of each relevant radionuclide or group of radionuclides listed in the Tables in this Schedule;
 - (b) obtain a record signed on behalf of the person to whom waste is transferred, at the time of transfer, stating that the transfer has taken place.
5. If required by the Agency, the Operator shall ensure that any consignment or part of any consignment of waste found, following transfer, not to be in accordance with the limitations and conditions of this Authorisation:
 - (a) is packaged in accordance with the appropriate transport regulations;
 - (b) is returned as soon as is reasonably practicable to the AWE Aldermaston Site.

Table 1 – AWE Aldermaston - Waste Disposal by Transfer for Incineration

Person to whom the waste may be transferred	Radionuclide or group of radionuclides	Annual Activity Limit	Annual Volume Limit (cubic metres)
The Incinerator Site Operator at Hythe, Hants	Alpha	60 MBq	1050
	Tritium	0.82 TBq	
	Carbon-14	40 MBq	
The Incinerator Site Operator at Knostrop, Leeds	Tritium	0.82 TBq	510
	Carbon-14	40 MBq	
The Incinerator Site Operator at Colnbrook, Berks	Tritium	0.24 TBq	510
	Carbon-14	40 MBq	

Table 2 - AWE Aldermaston - Annual Total Volume and Total Activity Limits for Transfer for Incineration to Operators specified in Table 1

Radionuclide or Group of Radionuclides	Annual Activity Limit	Annual Volume Limit (cubic metres)
Alpha emitters	60 MBq	1050
Tritium	0.82 TBq	
Carbon-14	40 MBq	

Table 3 – AWE Aldermaston - Transfers of Waste Mercury

Person to whom the waste may be transferred	Radionuclide or group of radionuclides	Annual Activity Limit	Annual Volume Limit (cubic metres)
Transfer, for the purpose of treatment to the person operating Complex B4 and Facilities A50 and A51 on the Winfrith Nuclear Site	Alpha emitters	12 GBq	3
	Plutonium-241	48 GBq	
	Tritium	1 GBq	
	Other Radionuclides	24 GBq	

Table 4 – AWE Aldermaston - Transfers of Warhead Waste

Person to whom the waste may be transferred	Radionuclide or group of radionuclides	Annual Activity Limit	Annual Volume Limit (cubic metres)
The Site Operator at Foulness, Essex AWE Burghfield	Tritium	300 MBq	50

Schedule 8

**LIMITATIONS AND CONDITIONS RELATING TO RECEIPT OF
RADIOACTIVE WASTE FOR DISPOSAL FROM OTHER PREMISES**

1. The operator shall not receive radioactive waste from premises other than those specified in this Schedule.

Table

Premises from which radioactive waste may be received
AWE plc Atomic Weapons Establishment Burghfield
AWE plc Atomic Weapons Establishment Blacknest
The Site Operator, Foulness, Essex
Waste received as a result of participation in the NAIR Scheme
Other premises approved in writing by the Agency

Schedule 9

IMPROVEMENT AND ADDITIONAL INFORMATION REQUIREMENTS

1. The Operator shall complete the requirements specified in the Table in this Schedule by the relevant completion date and, where relevant, shall notify the Agency, in writing, within 14 days of the completion of each of these requirements.

Requirement	Completion Date
1. The Operator shall provide the Agency with a full report of a comprehensive review of whether the current disposal routes continue to represent the best practicable environmental option for waste disposal from the site, together with a programme for carrying out any necessary changes identified by the review.	3 years from the effective date of this Authorisation and at such intervals thereafter as the Agency specifies in writing.
2. The Operator shall provide the Agency with a full report of a comprehensive review of national and international developments in best practice for minimising all waste disposals, together with a strategy for achieving reductions in discharges.	3 years from the effective date of this Authorisation and at such intervals thereafter as the Agency specifies in writing.
3. The Operator shall provide the Agency with a full report of a comprehensive review of the means used to assess the activity of radionuclides in disposals and to determine compliance with this Authorisation including consideration of national and international developments in best practice.	3 years from the effective date of this Authorisation and at such intervals thereafter as the Agency specifies in writing.
4. The Operator will investigate the practicality of continued reductions in the generation of aqueous Radioactive wastes on site and the on-site re-use of The condensate arising from the operation of the Radioactive Waste Treatment Plant as part of a continued drive towards reduction of aqueous discharges into the environment and provide a full report to the Agency.	2 years from the effective date of this Authorisation.
5. The Operator shall undertake a programme of work to identify the means to minimise the radioactive aqueous effluent discharged into the environment by use of the route to the Silchester Sewage Works with the end point of determining whether it will be possible to ensure that the activity of the discharge should be equal to, or less than the World Health Organisation screening levels for Drinking Water.	Within 2 years from the effective date of this Authorisation