Sizewell C Project

Radioactive Substances Regulation (RSR) Permit Application

Appendix G – Glossary and Abbreviations

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1 GLOSSARY AND ABBREVIATIONS

1.1 Definitions

1.1.1 Buildings Codes

Term / Abbreviation*	Definition
HB	Operational Service Centre
HCA	Outfall Buildings
HCB	Filtering Debris Recovery Pit
HCF	Fish Recovery and Return Outfall
HD	Diesel Generator Building
HF	Conventional Island Electrical Building
HHI	Interim Storage Facility
HHK	Interim Spent Fuel Store
HK	Fuel Building
HL	Safeguard Buildings
HM	Turbine Hall
HN	Nuclear Auxiliary Building
HOJ	Fire-Fighting Water Storage Building
HPF	Forebay
HP	Pumping Station
HQA*	Radioactive Waste Storage Building
HQB*	Radioactive Waste Processing Building
HQC*	Radioactive Waste Treatment Building (Unit 2 Nuclear Auxiliary Building extension)
HR	Reactor Building
HT	Energy Platform/Transformer Platform and Switchgear
HVD	Hot Workshop, Hot Warehouse and Facilities for Decontamination
HVL	Hot Laundry
HW	Access Building
HXA	KER, TER and SEK Tanks Building
HY	Demineralisation Station
HZC	Gas Storage and Chemical Products Storage

*HQA/HQB/HQC are referred to elsewhere as the Effluent Treatment Buildings

1.1.2 System Codes*

Term / Abbreviation	Definition
APG	Steam Generator Blowdown System
CVI	Condenser Vacuum
DER	Operational Chilled Water System
DWK	Fuel Building Ventilation System
DWL	Controlled Safeguards Buildings Ventilation System
DWN	Nuclear Auxiliary Building Ventilation System
DWQ	Effluent Treatment Building Ventilation System
DWW	Access Building Ventilation System
EBA	Containment Sweep Ventilation System

Term / Abbreviation	Definition
EDE	Containment Inter-Space Ventilation System
HVAC	Heating, Ventilation and Air-Conditioning
IRWST	In-Containment Refuelling Water Storage Tank
KER	Liquid Radwaste Monitoring and Discharge System
KRT	Plant Radiation Monitoring System
NSSS	Nuclear Steam Supply System
PTR	Fuel Pool Cooling and Purification System
RCP	Reactor Coolant System
RCV	Chemical and Volume Control System
REA	Reactor Boron Water Make-Up System
REN	Nuclear Island Sampling System (Primary Side)
RES	Nuclear Island Sampling System (Secondary Side)
RIS	Safety Injection System
RPE	Nuclear Vent and Drain System
SEK	Conventional Island/Site Liquid Waste Discharge System
TEG	Gaseous Waste Processing System
TEN	Effluent Treatment Building Sampling System
TEP	Coolant Storage and Treatment System
TER	Additional Liquid Waste Discharge System
TES	Solid Waste Processing System
TEU	Liquid Waste Processing System
VDA	Atmospheric Steam Dump

*In the text some system codes are prefixed with a 1, 2 or 9 this indicates the scope of the system with regards to serving individual or both reactor units. The 9 refers to a system shared by both units. The 1 or 2 refers to separate systems for each unit. Where no number prefixes the system code this is understood as generic to both units.

1.2 Abbreviations

Term / Abbreviation	Definition
AF	Assessment Findings
ALARA	As Low As Reasonably Achievable
ALARP	As Low As Reasonably Practicable
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
BAT	Best Available Techniques
BEIS	Department for Business, Energy & Industrial Strategy
BSSD	Basic Safety Standards Directive
CA	Combustion Activity
CAE	Claims, Argument and Evidence
CEFAS	Centre for Environment, Fisheries and Aquaculture Studies
CfA	Conditions for Acceptance
CI	Conventional Island
CMT	Commitment
CS1	Consistent State 1
CS2	Consistent State 2
DAC	Design Acceptance Confirmation

Term / Abbreviation	Definition
DAW	Dry Active Waste
DCO	Development Consent Order
DWMP	Decommissioning Waste Management Plan
EBP	Expected Best Performance
EC	European Commission
EDRMS	Electronic Document and Record Management System
EoG	End of Generation
EPE	Environmental Protection Equipment
EPF	Environmental Protection Function
ETB	Effluent Treatment Building (HQA/B/C)
ERICA	Environment Risks from Ionising Contaminants: Assessment and Management
EU	European Union
FDP	Funded Decommissioning Plan
FID	Financial Investment Decision
FOAK	First of a Kind
FPS	Flow Proportional Samplers
FWP	Forward Work Plan
GDA	Generic Design Assessment
GDF	Geological Disposal Facility
GRR	Guidance on the Requirements for Release from Radioactive Substances
HAW	Higher Activity Waste
HEPA	High Efficiency Particulate Air
HPA	Health Protection Agency
HRGS	High Resolution Gamma-Ray Spectrometry
HPC	Hinkley Point C
HPC IC	Hinkley Point C Information Condition
I&C	Instrumentation & Control
IAEA	International Atomic Energy Agency
IC	Intelligent Customer
ICRP	International Commission on Radiological Protection
ILW	Intermediate Level Waste
IMS	Integrated Management System
IWS	Integrated Waste Strategy
KEPE	Key Environmental Protection Equipment
LC	Licence Condition
LLW	Low Level Waste
LLWR	Low Level Waste Repository
LoC	Letter of Compliance
LRGS	Low Resolution Gamma-Ray Spectrometry
NDA	Nuclear Decommissioning Authority
NDAWG	National Dose Assessment Working Group
NFCC	Non-Fuel Core Component
NHB	Non-Human Biota
NI	Nuclear Island
NNB GenCo (HPC)	NNB Generation Company (Hinkley Point C) Limited
NOAK	Next of a Kind
NSL	Nuclear Site Licence

Term / Abbreviation	Definition
MPC	Multi-Purpose Canister
ODN	Ordnance Datum Newlyn
OEF	Operational Experience Feedback
ONR	Office for Nuclear Regulation
PCER	Pre-Construction Environmental Report
PCSR	Pre-Construction Safety Report
PCmSR	Pre-Commissioning Safety Report
PHE	Public Health England
PWR	Pressurised Water Reactor
QNL	Quarterly Notification Level
R&A	Review and Acceptance
RAP	Reference Animals and Plants
RC0	Reference Configuration 0
RC1	Reference Configuration 1
RC2	Reference Configuration 2
REPs	RSR Environmental Principles
RIA	Radiological Impact Assessment
RSPB	Royal Society for the Protection of Birds
RSR	Radioactive Substances Regulation
RWA	Radioactive Waste Advisor
RWM	Radioactive Waste Management Ltd
RWMC	Radioactive Waste Management Case
SAC	Special Area of Conservation
SAPs	Safety Assessment Principles
SFA	Spent Fuel Assemblies
SFAIRP	So Far as is Reasonably Practicable
SFIRF	Spent Fuel Inspection and Repackaging Facility
SoDA	Statement of Design Acceptability
SPA	Special Protection Area
SSC	Structures, Systems and Components
SSSI	Site of Specific Scientific Interest
SWESC	Site-Wide Environmental Safety Case
SZA	Sizewell A
SZB	Sizewell B
SZC	Sizewell C
SZC Co.	NNB Generation Company (Sizewell C) Limited
VLLW	Very Low Level Waste
WAC	Waste Acceptance Criteria
WDA	Water Discharge Activity
WMP	Waste Management Plan

1.3 Glossary

Activation products

Activation products are materials made radioactive by neutron activation. Fission products and actinides produced by neutron absorption of nuclear fuel itself are normally referred to by those specific names, and

activation product reserved for products of neutron capture by other materials, such as structural components of the nuclear reactor, the reactor coolant, control rods or materials in the environment.

Activity (Radioactive)

The activity is the number of nuclear disintegrations in a radionuclide per unit of time.

In the SI system, the unit of activity of a radiation source is the Becquerel (Bq), which is equal to the activity of a quantity of radionuclide for which the mean number of nuclear disintegrations per second is 1.

Activity, specific

The activity of a material per unit mass (Bq/kg).

Activity concentration

The activity concentration is the activity per unit of volume (Bq/m^3).

Alpha particle

A positively charged particle consisting of two neutrons and two protons which is emitted from Atoms undergoing alpha decay. The range of the alpha particle is short (a few cm's in air) and they are easily shielded (stopped by a single sheet of paper). They only present a significant hazard where they enter the body - even the most energetic alpha particles are not able to penetrate the dead outer layers of skin.

As Low As Reasonably Achievable

See As Low As Reasonably Practicable.

As Low As Reasonably Practicable

As Low As Reasonably Practicable has been defined by the Health and Safety Executive as the equivalent to the phrase "as low as reasonably achievable" used by other bodies nationally and internationally. As Low As Reasonably Practicable is key to UK radiation protection and aims to minimise the risk of radiation exposure to people. As Low As Reasonably Practicable aims to achieve a balance between various factors including safety, environmental protection as well as other social, political and economic considerations.

Barrier

Any device placed between radioactive substances and the environment in order to prevent or restrict dispersal.

Base Load

Base load power plants produce electricity and typically operate continuously to at maximum output throughout the year except during scheduled maintenance and repairs.

Best Available Techniques

The means by which environmental optimisation is delivered. Best Available Techniques is defined within the Radioactive Substances Regulation permit as:

> “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 Best Available Techniques in general or individual cases, special consideration shall be given to:

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

It therefore follows that what is Best Available Techniques for a particular process will change with time in the light of technological advances, economic and social factors, as well as changes in scientific knowledge and understanding.

If the reduction of discharges and emissions resulting from the use of Best Available Techniques does not lead to environmentally acceptable results, additional measures have to be applied.

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

See Optimisation.

Best Practicable Means

Within a particular waste management option, the BPM is that level of management and engineering control that minimises, as far as practicable, the release of radioactivity to the environment whilst taking account of a wider range of factors, including cost-effectiveness, technological status, operational safety, and social and environmental factors. This term is equivalent to, and has not been replaced by, Best Available Techniques.

See also Optimisation.

Beta emitter

A radionuclide that decays by emission of an electron or positron.

Birds directive

Council Directive 2009/147/EC on the conservation of wild birds

Conditions For Acceptance

Conditions for acceptance are the requirements for the receipt and disposal of waste at 'authorised' waste disposal sites such as the Low Level Waste Repository at Drigg, Cumbria.

See Waste Acceptance Criteria.

Collective Dose

The dose received by a defined population from a particular source of public exposure, obtained by summing the dose received by each individual in the population and expressed in units of man-sieverts. Within limits, collective dose can be thought of as representing the total radiological consequences of the source on the group, over some period of time.

Component

A component is a clearly defined part of a system capable of performing specific sub-functions. Examples of mechanical components are tanks, heat exchangers, pipes, pumps and valves.

Critical group

See Representative Person

Direct radiation

Radiation received directly from a source such as nuclear power station instead of indirectly as a result of radioactive discharges.

Discharge

Release of gaseous or liquid waste into the environment.

Disposal

Disposal occurs when packages of radioactive waste are deposited in a disposal facility with no intention of retrieval. Disposal may also include discharging radioactive wastes such as liquid and gaseous effluent into the environment and transfer of wastes from one site to another.

Dose / absorbed dose

A general term used as a measure of the radiation received by man and usually measured in Sieverts.

The dose/absorbed dose is the energy imparted to matter by ionising radiation when it passes through a material. In the SI system, the unit of absorbed dose is the Gray (Gy), the absorbed dose in a 1 kilogram mass of matter to which ionising radiation imparts uniformly on average an energy of 1 Joule.

Dose constraint

A prospective and source-related restriction on the individual dose from a source, which provides a basic level of protection for the most highly exposed individuals from a source, and serves as an upper bound on the dose in optimisation of protection for that source. For public exposure, the dose constraint is an upper bound on the annual doses that members of the public could receive from the planned operation of any controlled source. Source constraints apply to the impacts associated with radioactive discharges and direct radiation from the facility for future activities. Site constraints apply to the impacts of radioactive discharges only. For the purposes of this Submission the operations of SZC Co. are defined as a source. The operations from the neighbouring facilities are considered in the site constraint.

Dose / Effective dose

The effective dose takes into account the different sensitivity of various organs and tissues to ionising radiation. The effective dose is the sum of the equivalent doses transmitted to the various organs and tissues weighted by factors specific to each organ or tissue.

The unit of effective dose is the Sievert (Sv).

Dose / Equivalent dose in an organ or tissue

The equivalent dose is the product of the dose absorbed in an organ or tissue and a weighting factor that depends on the type of radiation.

In the SI unit system, the unit of equivalent dose is the Sievert (Sv), which corresponds to an absorbed dose of 1 J kg-1 for photons.

Dose limit

Dose limits are set at a level intended to prevent radiation effects in humans which are known to occur above a certain level or threshold of dose (deterministic effects) and to ensure that the incidence of those radiation effects for which it is assumed that there is no threshold and that the risk of causing the effect increases with the level of the radiation dose (stochastic effects) is not at an unacceptable level.

The lifetime risk of contracting a fatal cancer is estimated to be 1 in 20 for a radiation exposure of 1 Sievert. This is an average figure for a population containing individuals of all ages. Based on consideration of acceptable levels of risk and this dose/risk factor, International Commission on Radiological Protection has recommended a dose limit for members of the public of 1 milliSievert (mSv) per year. This equates to an average risk of 1 in 20,000 per year of fatal cancer.

A limit of 1 to members of the public is applied for all man-made sources of radiation (other than medical exposure). This limit is incorporated within UK law.

Electronic Document and Record Management System

The system used by SZC Co. to manage documented information which is not stored in function specific applications (e.g. financial system, human resources system, etc).

Encapsulation

This is a process for fixing radioactive wastes such as sludges and resins so that the material and the radioactivity in it are both trapped. This is usually done by mixing the waste with a defined quantity of cement in a drum.

Environment Agency

The Environment Agency as established under the Environment Act 1995. Among its pollution control powers are those under the Radioactive Substances Regulation1.

Environment Case

The Environment Case is the totality of documented information and records which substantiates how environmental optimisation is demonstrated at a high level and sets down how Best Available Techniques are being implemented and delivered.

Environmental Impact Assessment

Generically, a process for predicting the effects of a proposed development on the environment that informs decision-makers in relation to planning permissions, consents, licences and other statutory approvals, as required by European Union Directive 85/337/EEC (the Environmental Impact Assessment Directive).

Environmental Optimisation

See Optimisation.

[1] Before 6th April 2010, the Environment Agency regulated under the Radioactive Substances Act 1993.

Environmental Permitting Regulations

The Environmental Permitting (England and Wales) Regulations 2007 created one regulatory system by streamlining and integrating Waste Management Licensing and Pollution Prevention and Control. This single environmental permitting system replaced 41 statutory instruments with one set of Regulations: the Environmental Permitting (England and Wales) Regulations 2007 which is one third of the length of the previous legislation.

The Environmental Permitting Regulations 2010 (Statutory Instruments No. 675, 2010) has extended the 2007 environmental permitting system to include those regimes for discharge consenting, groundwater authorisations and radioactive substances regulation.

The Environmental Permitting Regulations 2016 as amended (Statutory Instruments No. 1154, 2016) replaced the 2010 regulations.

The new Regulations provide industry, regulators and others with a single permitting and compliance system.

European sites

European sites are defined in Regulation 8 of the Habitats Regulations. Designation of European sites may be in respect of the habitats of certain bird species identified by the Birds Directive (Special Protection Areas), or in respect of certain habitats and species listed in annexes I and II of the Habitats Directive (Special Areas of Conservation).

Fission products

Nuclear fission products are produced when a large nucleus fissions by splitting into two smaller nuclei, along with a few neutrons and a large release of energy in the form of heat, gamma rays and neutrinos. The two smaller nuclei are the fission products.

Geological Disposal Facility

It is a long-term management option involving the disposal of radioactive waste in an engineered underground facility, where the geology (rock structure) provides a barrier against escape of radioactivity and where the depth, taken in the particular geological context, substantially protects the waste from disturbances arising at the surface. Such disturbances include those produced by weather and climate change and by people. In this context, 'depth' could imply horizontal as well as vertical distance – for example, in the case of a disposal facility sited deep within a mountain. A geological disposal facility is a facility that meets the requirements for geological disposal. Such a facility could be entirely on land or could be constructed under the seabed but accessed from land.

Habitats Directive

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. The European Directive on the conservation of Natural Habitats and of Wild Fauna and Flora.

Habitats Regulations

The Conservation of Habitats and Species Regulations 2017 consolidate and update the Conservation of Habitats and Species Regulations 2010, implementing the requirements of the Habitats Directive.

Headroom

The margin between the best-expected performance of discharge and the proposed limit provided for operational flexibility.

Health and Safety Executive

Health and Safety Executive, set up under the Health & Safety at Work, Etc., Act 1974, is responsible for ensuring that risks to people's health and safety from work activities are properly controlled. Health SE includes a Nuclear Safety Directorate, which incorporates the Nuclear Installations Inspectorate and which is responsible for regulating the safe operation of nuclear installations under the Nuclear Installations Act 1965 (NIA65). Under the provisions of the NIA65, a site in England, Wales or Scotland cannot have nuclear plant on it unless the user has been granted a site licence by Health and Safety Executive. Aspects regulated by Health and Safety Executive include the storage of radioactive waste on nuclear sites and direct radiation from sources on nuclear sites. The legal regime just described is complemented by the Ionising Radiation Regulations (IRR17) which provide for protection of workers in all industries from ionising radiations and by the generality of health and safety regulation which the Nuclear Safety Directorate also enforces on nuclear sites. Health and Safety Executive and the Environment Agency regulate nuclear sites under a joint Memorandum of Understanding. Health and Safety Executive is a statutory consultee of the Environment Agency on applications for Environmental Permits under the Radioactive Substances Regulation to dispose of radioactive waste in England and Wales.

Heat sink

A heat sink is a term for a component or assembly that transfers heat generated within a solid material to a fluid medium, such as air or a liquid.

High Level Waste

The Nuclear Decommissioning Authority and UK Government [Ref 4] have defined High Level Waste as waste in which the temperature may rise significantly as a result of its radioactivity, so this factor has to be taken into account in the design of storage or disposal facilities

Integrated Waste Strategy

An integrated waste strategy is an overview of the approach to the current and future management, taking into account environmental principles, which can be applied consistently to all actual and potential sources of waste generated on site, both radioactive and non-radioactive, within the scope of the strategy.

It integrates and optimises all waste-related activities on a site ranging from operational activities through to decommissioning activities and wastes arising from contaminated land management. It also demonstrates that the waste can be appropriately managed at the time and rate at which it will arise, in particular, the lifecycle of the nuclear power plant. The scope may extend to the whole of a complex nuclear site or even to multiple sites.

Intermediate Level Waste

The Nuclear Decommissioning Authority and UK Government [Ref 4] have defined Intermediate Level Waste as waste exceeding the upper boundaries for Low Level Waste (exceeding 4 GBq te^{-1} of alpha radioactivity or 12 GBq te^{-1} of beta/gamma radioactivity), but which do not generate sufficient heat for this to be taken into account in the design of storage or disposal facilities.

Let-down

Let-down is used to describe a process, system or component which discharges or removes a product such as water. Thus, let-down of water in the primary coolant system refers to the removal of water from the primary circuit, which could either contribute to volume, reactivity or chemical control of the primary coolant.

See Make-up.

Letter of Compliance assessment process

The LoC process is the standard UK means of developing confidence in proposed waste packaging strategies. Disposability assessments and LoC are generally issued at three stages during development of a waste retrieval and packaging plant: at the conceptual stage, interim stage and final stage prior to active operations. The provision of disposability assessment and LoCs at these stages are designed to support important permissioning stages in the project. It should be noted that the LoC process is flexible and can be adapted to suit the needs of specific situations.

Low Level Waste

The Nuclear Decommissioning Authority and UK Government [Ref 4] have defined Low Level Waste as waste exceeding the upper boundaries for Very Low Level Waste (400 kBq in any 0.1 m^3, and 40 kBq per article; unless the activity is due to Carbon-14 or Tritium, in which case the limits are a factor of ten greater), but not exceeding 4 GBq te^{-1} of alpha radioactivity or 12 GBq te^{-1} of beta/gamma radioactivity.

Maintenance

Maintenance includes all the actions, technical (testing and inspection), administrative and managerial carried out during the lifecycle of an item of equipment, to maintain it or to restore it to a state in which it can accomplish its required function.

Make-up

Make-up is used to describe a process, system or component which adds a product such as water, e.g. the Reactor Boron Water Make-up System adds boron to the Extra Boration System tanks, which would then introduce borated water into the primary coolant system.

See Let-down.

Noble gas

Noble gases such as helium, neon, argon, krypton, xenon, and radon are inert and are in gaseous form at room temperature.

Normal operation

Normal operation refers to the state of a nuclear plant when it is within its normal operational range. This includes normal power operation, reasonably expected fluctuations and transients, shutting down, starting-up, maintenance, testing and refuelling.

Nuclide

A nuclide is a nuclear species characterised by a certain number of protons and neutrons that every atomic nucleus of this species contains. Two atoms of the same nuclide therefore have the same atomic number and same mass number.

Optimisation

Optimisation is the process by which the management option is selected, and the practices applied, that best meet the full range of relevant health, safety and environmental principles and criteria taking into account all relevant (e.g. social and economic) factors. Different regulatory regimes use different terminology and have their own guidance on this topic, i.e. reducing risks to As Low As Reasonably Achievable, As Low As Reasonably Practicable and use of Best Available Techniques.

In statutory guidance the Environment Agency is required to ensure that Best Available Techniques is applied in place of the current techniques of BPM. It also states that operators who currently meet the requirements of BPM will satisfy the current requirements of Best Available Techniques.

However, all of the above involve the same process, i.e. making a judgement between options by comparing benefits in terms of safety/environmental protection and costs in terms of time, effort or money.

Pathway

A defined and recognised route whereby radioactivity released into the environment may have some effect on people for example radioactivity discharged that falls onto grass could get into the milk from the cows that eat the grass. The radioactivity in the milk could then affect the person who drinks the milk.

Quarterly Notification Levels

Three-monthly emission levels that the Environment Agency specifies in an operator's Environment Permit and which, if exceeded, are to be reported to the Environment Agency.

Radiation

Radiation is a process in which energetic particles or waves travel through a medium or space. There are two distinct types of radiation, ionising and non-ionising. The word radiation is commonly used in reference to ionising radiation only (i.e. having sufficient energy to ionise an atom), but it may also refer to non-ionising radiation (e.g. radio waves or visible light). In this Submission the term radiation applies to ionising radiation.

Radioactive period (or half-life) of a radioactive nuclide

The half-life is the period at the end of which half of the initial quantity of a radionuclide has disintegrated. It is a fixed characteristic of a radionuclide.

Radioactive Substances Regulation

The Environmental Permitting Regulations 2016, Schedule 23, i.e. Radioactive Substances Regulation replaces the relevant parts of the Radioactive Substances Act 1993 (RSA93) for the legislative controls on keeping and use of radioactive substances and the accumulation, discharge or disposal of radioactive waste.

Radioactive waste

Radioactive waste is any material that is either radioactive itself or is contaminated by radioactivity, for which no further use is envisaged. Government policy means that certain nuclear materials such as uranium, plutonium and spent nuclear fuel have not been declared as wastes by their owners.

Radioactivity

Spontaneous emission of radiation, either directly from unstable atomic nuclei or as a consequence of a nuclear reaction such as alpha particles, beta particles and gamma rays.

Radionuclide

A general term for an unstable atomic nuclide that emits ionising radiation.

Representative person

The representative person is intended to be representative of those individuals in the population expected to receive the highest dose from a given source. The group should be small enough to be relatively homogeneous with respect to age, diet and those aspects of behaviour that affect the doses received. A refined dose assessment will consider a number of potential groups that could be impacted by the proposed operations, these are known as Candidates for the Representative Person. Of these assessed groups the most exposed one is referred to as the Representative Person.

This term is equivalent to, and replaces, the term critical group.

Site of Special Scientific Interest

Sites designated pursuant to the Wildlife and Countryside Act 1981 by reason of any of its flora, fauna, or geological or physiographical features. The purpose of Site of Special Scientific Interest s are to safeguard for present and future generations a series of sites that are individually of high natural heritage importance.

Spent Fuel

Nuclear fuel that has been irradiated and permanently removed from a reactor core. Spent fuel from currently operating nuclear power stations is not categorised as waste, because it still contains uranium and plutonium which could potentially be separated out through reprocessing and used to make new fuel, however it is not expected that the fuel from Sizewell C will be reprocessed. Due to the long half-life of the nuclides contained within spent fuel and the associated high levels of radioactivity, the management of spent fuel is a key issue for the design of nuclear power stations.

Source term

The source term relates to the amount and isotopic composition of radioactive material either in the facility (contained in the fuel, primary coolant or radioactive waste) or released to the environment.

System

A system is a set of components, which form a unit capable of performing specific functions within the plant.

Very Low Level Waste

Under certain conditions disposal of solid radioactive waste may fall under the exemption provision for the disposal of low volumes of solid radioactive waste)[2]. Prior to 2011, this included the category of waste termed Very Low Level Waste. Post 2011, the term Very Low Level Waste was superseded by this provision. Waste falling under this Exemption Provision will be disposed of at available licensed disposal sites. Very Low Level Waste from nuclear power stations with maximum concentrations of 4MBq per tonne of total activity can be disposed to specified landfill sites under the exemption provisions [Ref 4]. There is an additional limit for Tritium in wastes containing this radionuclide. The waste would be subject to controls on its disposal which would be specified by the Environment Agency.

[2] Department for Business, Energy & Industrial Strategy, *Scope of and Exemptions from the Radioactive Substances Legislation in England, Wales and Northern Ireland – Guidance document*, Crown, London 2018

Waste Acceptance Criteria

Waste Acceptance Criteria describes the nature, form, physical, chemical and radiation characteristics that can be accepted for onward management and disposal by a waste management operator or disposal site. Originally Waste Acceptance Criteria were defined for landfill sites but are now more commonly applied across the waste management industry. Waste Acceptance Criteria if often used interchangeably with Conditions for Acceptance.

1.4 Common Units

Abbreviation	Unit description
Bq	Becquerel
g	grams
Gy	Gray
hr	hour
kg	kilogram
m	metre
ppm	parts per million
s	second
Sv	Sievert
te	tonne
W	Watt
y	year

1.5 Unit Prefixes

Prefix	Symbol	10^n	Decimal
Tera	T	10^{12}	1,000,000,000,000
Giga	G	10^{9}	1,000,000,000
Mega	M	10^{6}	1,000,000
Kilo	k	10^{3}	1,000
		1^{0}	1
milli	m	10^{-3}	0.001
micro	µ	10^{-6}	0.000,001
nano	n	10^{-9}	0.000,000,001

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