CoRWM GLOSSARY

Notes
1. The Glossary defines terms in the way that CoRWM uses them. Differences from definitions given in publications by the Government, the regulators, the NDA and others are intentional.
2. Definitions are in normal text; additional comments and examples are in square parentheses [ ] and italics.

Active facility	A facility where radioactive materials can be used. [*Such facilities are subject to safety, security and environmental regulation.*]
Advanced Gas-Cooled Reactor (AGR)	A UK designed, gas-cooled reactor with a graphite moderator. [*It uses enriched uranium oxide fuel with steel cladding and graphite sleeves. The primary coolant is carbon dioxide.*]
Applied research	Investigation directed primarily towards a specific practical aim or objective, which can involve using existing knowledge and understanding or acquiring new knowledge.
Basic research	See "Fundamental research".
Becquerel (Bq)	The standard international unit of measurement of radioactivity, equivalent to one disintegration per second. [*Related units are the:* *kilobecquerel (kBq) – one thousand Becquerels* *Megabecquerel (MBq) – one million Becquerels* *Gigabecquerel (GBq) – one thousand million Becquerels* *Terabecquerel (TBq) – one million million Becquerels.*]
Benefits Package	See "Community Benefits Package".
Biosphere	That part of the environment where most organisms live. [*Includes soils, surface waters and their sediments, and the atmosphere.*]
Call in	A term used in Town and Country Planning for those situations in which central government (the Secretary of State or devolved minister) decides to determine a planning application rather than leave it with the local planning authority.
Chemically disturbed zone	A region surrounding the engineered zone of a "geological disposal facility" that is affected by release of leachate. [*Particularly significant where cementitious backfill is used, since the high pH effluent from the GDF will cause extensive reaction with the host rocks.*]
Co-disposal	Generally, disposal of wastes with differing physical and chemical characteristics in the same facility. Now specifically used in the UK by Government, CoRWM and others to mean disposal of new build waste in the same facility as existing and "committed" waste. [*Often used in radioactive waste management literature to mean "co-location".*]
Co-location	Disposal of "high level waste", "intermediate level waste" and other types of "higher activity waste" in a combined "geological disposal facility" in which there are separate parts of the facility for the various types of waste. [*For example, there could be one part of the facility for intermediate level waste and another part for high level waste and "spent fuel".*]

Committed waste	Radioactive waste that will arise in future from the operation or decommissioning of existing nuclear facilities. [*As distinct from existing waste, which already exists, and new build waste, which will only arise if new facilities are built.]*
Community Benefits Package	A set of measures to enhance the social and economic well-being of a community that hosts a geological disposal facility, to recognise that the community is performing an essential service to the country.
Community Siting Partnership	A partnership of organisations with interests in the community that has expressed an interest in hosting a geological disposal facility. [*The partnership is expected to involve the host community, the "Decision Making Body" (or Bodies) and "Wider Local Interests". It will work with the Nuclear Decommissioning Authority and other relevant organisations to ensure local concerns are addressed during the geological disposal facility siting process and will advise the Decision Making Body (or Bodies).*]
Conditioning	Any process used to prepare waste for long-term storage and/or disposal. [*Usually by converting it into a suitable solid form e.g. incorporation in glass (vitrification), encapsulation in cement*.]
Contingent strategy	A strategy that can be used if it becomes clear that the "Reference strategy" is no longer appropriate. [*Colloquially, "Plan B". In most radioactive waste management situations several contingent strategies are required, in order to address various possible future scenarios ("Plans C, D etc."*).]
Decision Making Body	The Local Authority that will make the decisions for a host community in the geological disposal facility siting process.
Decision to Participate	A decision by a community to participate in the geological disposal facility siting process, without commitment to eventually host a facility.
Deep borehole disposal (DBD)	Disposal of waste in boreholes more than 1000m deep.
Desk-based studies	Review, summary, collation or evaluation of existing knowledge, information, facts and research outcomes. *[In the context of the UK geological disposal siting process, assessing the suitability of sites using existing knowledge about the geology, surface environment, communities etc.]*
Development	Progressive, systematic use of knowledge and understanding gained from research directed towards the production or improvement of materials, devices, systems or methods. [*Includes the design and development of processes*.]
Disposal	Emplacement of waste in an appropriate facility without the intention of retrieving it. [*Retrieval may be possible but if intended the appropriate term is "storage".*]
Disposable	A waste package is disposable if it can be safely removed from a store, transported to a disposal facility and emplaced in that facility, and if it will play its planned role in ensuring the post-closure safety of that facility.
Encapsulation	A conditioning process in which radioactive waste is physically enclosed in a non-radioactive material that prevents radionuclides from moving. [*The most commonly used encapsulants are types of cement. Others include polymers.*]

Engagement Package	Funding and other support to a community that has made an "Expression of Interest" to assist it to consider the issues involved in geological disposal, including the setting up and running of a "Community Siting Partnership".
Engineering disturbed zone (EDZ)	A region surrounding the engineered part of a "geological disposal facility" that has been affected by the construction of the facility. [*For example, through stress or fracturing.*]
Enriched uranium	Uranium in which the mass content of the isotope uranium-235 is above the level in natural uranium ores (0.72% by mass).
Environmental Safety Case	The collection of arguments, provided by the developer or operator of a disposal facility, that seeks to demonstrate that the required standard of environmental safety is achieved.
Exotic fuel	Term used by the UK for any type of nuclear fuel that is not from a commercial nuclear power reactor. [*Mainly fuels from research reactors and nuclear powered submarines*.]
Expression of Interest	A notification to Government by a community that it is interested in entering discussions about involvement in the geological disposal facility siting process, without commitment.
Far-field	The "geosphere" beyond the "near-field". [*i.e. the rocks and subsoil undisturbed by the presence of the disposal facility.*]
Fundamental research	Original, exploratory investigation involving experimental or theoretical work undertaken primarily to acquire new knowledge and understanding of phenomena and observable facts without necessarily having any immediate application or use in view.
Geological disposal	Generally, emplacement in the Earth's crust with no intent to retrieve. Used specifically in the MRWS programme to mean "disposal" of radioactive waste in an 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.
Geological disposal concept	Any variant of geological disposal, including the use of a "mined repository", "deep boreholes" and more than one "geological disposal facility".
Geological disposal facility (GDF)	Any facility used for geological disposal. [*Includes mined repositories, natural caverns, disused man-made caverns or mines, and deep boreholes*.]
Geological disposal facility design	The detailed drawings and specifications that will allow construction of a "geological disposal facility". [*Includes nuclear, civil, mechanical, electrical, materials, chemical, geotechnical and geological engineering aspects.*]
Geological repository	See "mined repository".
Geosphere	Solid portion of the earth consisting of the crust and part of the upper mantle. [*Often used in the geological disposal context to mean rocks, subsoil and the water and organisms in them.*]

Hex tails	Uranium hexafluoride residue from the production of enriched uranium. [*Hex tails are depleted in uranium-235 to levels well below the 0.72 wt% of natural uranium, usually about 0.2 wt%. Uranium hexafluoride is a stable solid at room temperature and pressure but sublimes to a vapour at 56.5 ^{o}C.*]
Higher activity waste (HAW)	Radioactive waste with activity above the thresholds for low level waste (LLW), *i.e.* above 4 GBq/tonne alpha activity or above 12 GBq/tonne beta gamma activity. [*It is usually also taken to include LLW unsuitable for near-surface disposal.*]
High level waste (HLW)	Radioactive waste in which the temperature may rise significantly as a result of its radioactive content, so that this factor has to be taken into account in the design of waste storage or disposal facilities. [*In practice the term is only used in the UK for the nitric acid solutions arising from reprocessing spent fuels and for the vitrified form of the solutes in these solutions.*]
Historic waste, historical waste	See "legacy waste".
Host community	A community in which a geological disposal facility will be built. [*It is a community in a small geographically well-defined area, such as town or village, and includes the population of that area and the owners of the land.*]
Hot cell	A heavily shielded containment in which manipulations of highly radioactive materials can be carried out using remote handling techniques.
Immobilisation	A conditioning process in which radioactive waste is chemically incorporated into a non-radioactive material so that radionuclides cannot move. ["*Vitrification" and incorporation in ceramics are types of immobilisation processes.*]
Intergenerational equity	Balancing the needs of present and future generations.
Interim storage	Storage of radioactive waste prior to implementing a final management step, such as "geological disposal".
Intermediate level waste (ILW)	Radioactive waste exceeding the upper activity boundaries for "low level waste" (*i.e.* over 4 GBq/tonne alpha activity or 12 GBq/tonne beta gamma activity) but for which its heat output need not be taken into account in the design of storage or disposal facilities.
Legacy facility	A nuclear facility constructed several decades ago where waste has been generated or stored.
Legacy waste	Radioactive waste that arose several decades ago. [*A subset of existing waste; sometimes called "historic waste" or "historical waste". The term is usually reserved for wastes kept in, or that have arisen in, legacy facilities.*]
Low level waste (LLW)	"Radioactive waste" with activity levels that do not exceed 4 GBq/tonne alpha activity or 12 GBq/tonne beta gamma activity. [*Subsets of LLW include "very low level waste" (VLLW) and exempt waste (i.e. "radioactive waste" with activity levels below those in the various Exemption Orders made under the Radioactive Substances Act).*]

Low Level Waste Repository (LLWR)	The UK national disposal facility for low level waste. [*Located near the village of Drigg in Cumbria.*]
Magnox reactor	A UK designed gas-cooled reactor with a graphite moderator. [*It uses uranium metal fuel with a magnesium alloy cladding.*]
Mined repository	A facility specifically excavated and constructed for the "geological disposal" of radioactive waste. ["*Mined and engineered repository" is a more correct description. Most designs consist of shafts or adits leading to tunnels and vaults*.]
Near-field	The part of a disposal facility near or in contact with the "waste packages", including filling or sealing materials, and those parts of the host rock whose characteristics have been or could be altered as a result of the presence of the disposal facility and its contents.
Near-surface disposal	Disposal at or close to the surface of the Earth. [*Includes underground disposal in the Earth's crust at depths less than a few tens of metres, and emplacement in engineered structures at or just below ground level. Formerly called "shallow land burial" or emplacement in a "near surface repository".*]
Neutron transport modelling	Simulation of pathways, energetics and lifetimes of neutrons. [*Used particularly in the control of criticality that is mediated by neutrons.*]
Overpack	An additional container for a waste package. [*Usually to make it more suitable for storage, handling, transport or disposal*.]
Package	See "Waste package".
Packaging	Placing waste into a container for long-term storage and/or disposal. [*In most cases this includes conditioning but sometimes waste is simply placed in containers, with or without compaction to reduce its volume*.]
Primary research	The obtaining of knowledge, facts and data that did not previously exist. [*All fundamental and much applied research is primary.*]
Pond	A water-filled structure in which nuclear fuel is stored. [*Usually made of concrete, the water provides cooling and shielding*.]
Pressurised water reactor (PWR)	A nuclear reactor in which water is used as the coolant and moderator. [*The fuel is enriched uranium oxide with "zircaloy" cladding. PWRs operate above atmospheric pressure to prevent the water boiling.*]
Public	People who have no particular interest in, and are not affected by, radioactive waste management. [*CoRWM distinguishes between "stakeholders" and the public.*]
Radioactive waste	Radioactive waste is defined in the Radioactive Substances Act 1993. In essence it is any substance for which there is no further use and in which artificial radionuclides are present at any level and/or natural radionuclides are present above the levels given in Schedule 1 of the Act. [*Note that spent fuels, plutonium and uranium are not radioactive wastes unless it has been decided that there is no further use for them and they are declared to be wastes*. *The Radioactive Substances Act definition of radioactive waste is under review and it is expected that a revised definition will be put in place in 2010.*]

Radioactive waste management	All the activities involved in managing radioactive wastes. [*Includes minimising arisings, all types of treatment (e.g. decontamination, sorting, segregation), "conditioning", "packaging" and "disposal"*.]
Raw waste	Waste that has not been conditioned.
Recoverability	The ability to remove wastes from a closed disposal facility by mining, drilling boreholes etc. [*Unlike "retrievability", recoverability does not entail the inclusion of any specific design features in a disposal facility*.]
Reference strategy	A strategy that is based on realistic assumptions about the future and that represents the course of action that is to be followed unless circumstances change. [*Colloquially, "Plan A". See also "Contingent strategy"*.]
Repository	A facility where waste is emplaced for disposal. [*Often used as shorthand for "mined repository", but also used in other contexts, e.g. the UK's Low Level Waste Repository (LLWR)*.]
Research	An investigation directed to the discovery of some fact or principle by a course of study or scientific enquiry.
Retrievability	An ability to withdraw wastes from a disposal facility that is achieved by means designed into the facility other than simply reversing waste emplacement. [*See also "reversibility" and "recoverability"*.]
Reversibility	The ability to withdraw wastes from an open disposal facility by reversing the emplacement process.
Rock Characterisation Facility (RCF)	An underground facility for use in characterising the physical, chemical, mechanical and hydrological suitability of the geological environment for "geological disposal". [*A term used mainly by Nirex for the facility it proposed to construct in Cumbria*.]
Safety assessment	An assessment of whether a nuclear facility or operation is or, if particular actions are taken, will be safe.
Safety case	The complete set of arguments that demonstrates that a nuclear facility or operation is or, if particular actions are taken, will be safe.
Secondary research	Review, summary, collation or evaluation of existing knowledge, facts and outcomes of basic and applied research.
Scientific research	The application of the scientific method to obtaining new information to explain the nature, properties or behaviour of something in the universe.
Silo	A structure used for storage or disposal of radioactive waste. [*The term is applied in the UK mainly to concrete structures (buildings) used for temporary storage of wastes, but it can also apply to vertical shafts in rock used for underground storage or disposal*.]
Spent fuel	Fuel that has been used in a nuclear reactor and for which there is no further use as fuel.
Stakeholder	A person or organisation who has an interest in or is affected by radioactive waste management. [*In the context of CoRWM's work, stakeholders include waste producers, regulators, non-governmental organisations, local authorities and communities near existing nuclear sites and potential disposal sites*.]

Stakeholder fatigue	A situation in which stakeholders are overwhelmed by communications and consultations on a particular topic, and do not respond to requests for their views.
Stillage	A metal frame used to hold drums of radioactive waste.
Storage	Placing wastes or other materials in a facility with the intention of retrieving them at a later date.
Surface-based investigations	Investigations of a potential geological disposal site that are carried out from the surface, rather than underground. [*For example, seismic investigations and boreholes.*]
Tonne	One thousand kilograms.
Underground research facility (URF)	A site or host rock specific underground facility for characterisation and R&D related to "geological disposal".
Underground research laboratory (URL)	An underground facility for research into "geological disposal". [*Some URLs are at prospective geological disposal sites, others are in geological settings similar to those proposed for geological disposal but remote from potential disposal sites.*]
Very low level waste (VLLW)	Very low level radioactive waste (VLLW) is LLW that has radioactivity levels well below the maximum for the category. It can be disposed of with non-radioactive waste, rather than being placed in the Low Level Waste Repository or other specialised facility. [*There are two types of VLLW: low volume and high volume. Low volume VLLW is radioactive waste that can be disposed of safely to an unspecified destination with municipal, commercial or industrial waste (so-called "dustbin disposal"). It has an activity not exceeding 400 kBq in any 0.1m^3 and no individual item in the waste should have an activity above 40 kBq. These levels are increased by a factor of ten for tritium or carbon-14 (ie 4 MBq in 0.1m^3 and 400 kBq per item, where the limits apply to tritium and carbon-14 taken together). High volume VLLW is radioactive waste that can only be disposed of to a specified landfill site. Its activity level must not exceed 4 MBq/tonne or 40 MBq/tonne for tritium.*]
Vitrification	The process of converting wastes into a glass or glass-like form.
Voluntarism	An approach to siting geological disposal facilities that involves communities voluntarily expressing an interest in holding discussions with Government, then deciding whether to participate any further.
Waste hierarchy	The hierarchy of principles used in waste management. These consist of: (1) non-creation of wastes where practicable; (2) minimisation of arisings; (3) recycling and re-use; (4) disposal.
Waste package	A container and all its contents . [*Includes the waste, any encapsulating material, any capping grout, etc*.]
Wider Local Interests	Communities outside the "host community" that have an interest in the development of a geological disposal facility. [*For example, nearby villages, communities on transport routes to the "host community".*]
Zircaloy	An alloy of zirconium used for cladding nuclear fuel.