RULEBOOK

ON RADIOACTIVE WASTE MANAGEMENT

("Off. Gazette RS", no. 60/2011)

I GENERAL PROVISIONS

Article 1

These Rulebook govern:

1. the method of temporary storage of radioactive waste generated in operation (hereinafter referred to as: RAW);

2. the manner and conditions under which the radioactive waste is kept, collected, recorded, stored, processed and disposed;

3. the manner of keeping records about RAW and timelines for delivering the records data to the Serbian Radiation Protection and Nuclear Safety Agency (hereinafter referred to as: Agency).

Article 2

this Rulebook is applicable to RAW in solid, liquid and gaseous state, objects and equipment no longer in use, but which contain radionuclides or are contaminated by them at levels higher than those defined in the Rulebook on limits of radioactive contamination of the people, work and living environment and the ways of performing decontamination.

this Rulebook is applicable to RAW generated as waste through a licensed radiation practice, to RAW generated during an accident and interventions, to RAW as a consequence of an expired licence, lack of licence or termination of radiation or nuclear practice for which such licence has been issued, radioactive sources with unknown owner (orphan sources) and radioactive lightning rods out of use.

This Rulebook is also applicable to spent nuclear fuel.

This Rulebook is applicable to the shipments of radioactive waste or spent fuel.

This Rulebook is not applicable to the shipments of radioactive materials which are reprocessed for further application and to the shipments of materials containing only the naturally occurring radioactive material.

Article 3

Certain terms used in this Rulebook have the following meanings:

"generator of RAW or spent nuclear fuel" – means the licensee for performing a radiation practice or nuclear activity whose operation results in generation of RAW or spent nuclear fuel;

"residual heat" - means the heat released by RAW as a result of radioactive decay;

"spent nuclear fuel (SNF)" – means the nuclear fuel, irradiated and permanently removed from a nuclear reactor's core; spent nuclear fuel may be deemed a usable resource to be processed or permanently disposed without any further use and in that case it is treated as radioactive waste;

"container" – means an object where radioactive waste is accommodated directly or post-treatment, aimed at keeping and protecting it during its storing, keeping, moving or transport, and which is standardized and approved for that application;

"RAW acceptance criteria" – means defined qualitative or quantitative physical, chemical or other parameters to be met by a RAW package in order to be placed in the RAW storage or disposal facility, which are specified in the documents of and checked by the operator of these facilities;

"clearance level" – means a limit value of specific or total activity of radioactive substance or material at or below which the radioactive substance or material may be cleared from any further regulatory control;

"treatment" – a procedure aimed at improving safety and/or cost-effectiveness by changing waste characteristics. Three main objectives of treatment procedure are: volume reduction, removal of radionuclides from the waste and change of composition. The treatment results in in a suitable form of waste;

"RAW package" – means a container including the internal barriers, absorbers and RAW

"written procedure" – means a document defining certain standardized procedures for RAW management;

"shipment" – means all activities included in transporting or moving radioactive waste or spent fuel;

"SNF reprocessing" – means a process or operation, the purpose of which is to extract radioactive isotopes from spent fuel for further use;

"RAW reprocessing" – consists of pretreatment, treatment and conditioning and makes up a series of procedures transforming RAW into forms suitable for storage or disposal, performed in designated facilities meeting the safety and security standards and owning the Agency licence for the application;

"recipient" – means any licensee to whom is sent radioactive waste or spent fuel;

"radioactive source with unknown owner (orphan sources)" – means a source which poses a considerable radiological risk based on proven practice, but which is not under regulatory

control because it has never been under it or it has been abandoned, lost, misplaced, stolen or moved otherwise without a proper approval;

"radioactive waste of domestic origin" – means radioactive waste or other product as a result of operating with open radiation sources, radioactive waste or spent fuel treatment originating from the Republic of Serbia;

"RAW collection" – means a process conducted by a RAW generator aimed at packing RAW at the time of its generation into adequate containers;

"RAW storage facility" – means a nuclear facility where RAW is temporarily accommodated, and which is designed and built in line with the IAEA safety standards for which the Agency, based on the safety analysis report and other delivered documentation, has established the status and issued the licence;

"RAW repository" – means a designated facility or room, meeting the radiation safety and security standards for temporary RAW storage;

"permanent disposal facility" – means a nuclear facility where RAW is placed permanently, without any intention to be extracted from or reused;

"transitional RAW" – means RAW kept until the complete decay and clearance, that is, RAW whose activity will within less than 3 years due to radioactive decay fall under the stipulated clearance levels;

"radioactive waste management" means set of administrative and operational activities, that relate to the handling, treatment, keeping, storage, transport (only within the designated location) and disposal of radioactive waste, including discharges. Radioactive waste management includes characterization, preparations for transport, 5transport, reception, treatment/conditioning, storage, database input and reception/storage certificate issuing.

"fissionable material" – means a material capable of undergoing fission;

"RAW retention" – is temporary storage of RAW with the licensee for performing a radiation practice or nuclear activity for no longer than within one year in RAW repositories;

"RAW retention for complete decay or clearance level" – means storage of RAW containing only radioisotopes with very short half-lives during a specified time period in the course of which RAW activity due to decay falls below the values stipulated for clearance level.

II MANNER OF TEMPORARY STORAGE OF RAW

Article 4

Legal persons, licensees for performing a radiation practice or nuclear activity, whose activity generates RAW undertake to collect, label and keep RAW material until it is being handed over to a licensee for RAW storage facility management.

Generated RAW under Paragraph 1 hereof, except very short lived RAW, may be kept as required in a repository until collecting sufficient quantity for transport while observing ALARA principles, but not longer than for one year.

A repository is a separate room owned or with right to use by and under supervision of the licensee for performing radiation practice where safety conditions are in place (limited access), fire protection and radiation protection and other relevant safety-related regulations.

The licensee for RAW storage facility management, may retain untreated RAW until collecting sufficient quantities suitable for its treatment.

The legal persons under Paragraph 1 undertake at the time of retaining untreated RAW to ensure the required radiation safety and security measures, radiation protection measures and environmental protection measures and according to a required procedure conduct the regular radiation monitoring within the rooms and facilities storing RAW, as well as in the vicinity of the rooms and facilities.

Article 5

The manner of keeping, container types, vessels and tanks for RAW material retention as well as rooms and facilities where RAW material is kept shall meet the stipulated safety and security requirements and be in line with the IAEA recommendations and standards.

III MANNER AND CONDITIONS OF KEEPING, COLLECTING, STORAGE, TREATMENT AND DESPOSAL OF RADIOACTIVE WASTE

Article 6

A RAW generator and licensee for RAW treatment and storage shall:

1. bear the full responsibility for generated or received RAW;

2. in all RAW management phases undertake to set up and maintain a high-level safety and security of RAW and facilities where RAW is kept, treated or stored.

The legal persons under Paragraph 1 hereof undertake to prevent access to RAW of unauthorised persons, prevent damage, loss, theft or unauthorised circulation of RAW in order to prevent the risk of exposure to radiation or misuse of RAW for the purpose of endangering people and the environment.

If RAW also owns characteristics of another hazardous substance which may threaten the lives and health of people, plant and animal world and the environment, the legal persons under Paragraph 1 hereof when handling such RAW shall take protection measures in order to prevent any such hazards.

Article 7

When handling RAW in all RAW management phases, the basic principles of radiation protection shall be observed.

RAW management shall be conducted with the following mandatory measures:

1. avoidance of generation, that is, reduction in quantity of generated RAW;

2. prevention of unsupervised RAW handling;

3. controlled RAW storage and disposal;

4. record-keeping and correct RAW records;

5. ensuring an action plan in case of an accident.

In all RAW management processes, one must react so as to prevent:

1. the environmental contamination above required limits;

2. hazard to plant and animal world;

3. uncontrolled RAW disposal and handling.

Article 8

The manners and conditions of RAW collecting, keeping, recording, storing, treating and disposal are determined based on their characteristics, that is, their classification.

RAW characteristics are:

1. Origin;

2. Criticality;

3. Radiological properties:

    1) Half-lives of radionuclides;

    2) Heat generation;

    3) Intensity of penetrating radiation (type of radiation);

    4) Activity concentration of radionuclides;

    5) Surface contamination;

    6) Dose factors of relevant radionuclides;

7) Decay products;

4. Physical properties:

1) Physical state (solid, liquid or gaseous);

2) Size and weight;

3) Compactibility;

4) Dispersibility;

5) Solubility;

6) Miscibility;

7) Free liquid content;

5. Chemical properties:

1) Chemical composition;

2) Solubility and gelatinous agents;

3) Potential chemical hazard;

4) Corrosion resistance/corrosiveness;

5) Organic content;

6) Flammability;

7) Chemical reactivity and swelling potential;

8) Gases generation;

9) Sorption of radionuclides;

6. Biological properties:

1) Potential biological hazards;

2) Bio-accumulation;

7. Other factors:

1) Volume;

2) Amount arising per unit of time;

3) Physical distribution.

According to the quantity and characteristics of present radioactive isotopes, RAW is classified in categories presented in Table 1, Appendix 1 hereto.

Article 9

When the activity of radioisotopes contained in RAW is lower than the clearance levels stipulated in the Rulebook on limits of radioactive contamination of people, work and living environment and manner of performing decontamination, RAW is cleared from regulatory control and it may be discharged into the environment based on the Agency decision.

The Agency may in specific circumstances determine special exemption or clearance levels for specific radionuclides.

Article 10

The licensee for RAW storage facility management undertakes to store treated RAW in specifically designed, engineered and constructed facilities.

Article 11

The licensee for radiation or nuclear facility use undertakes to provide that RAW management during the activity performance goes according to the RAW management plan, which is in line with the Programme on the RAW Management of the Republic of Serbia.

This plan is a separate document whose content is in line with the for a specific facility and the IAEA recommendations as well as the quality management system of the concerned nuclear or radiation facility.

The licensee under Paragraph 1 hereof delivers the Plan to the Agency for approval during the licensing procedure.

The Plan is analysed and if necessary, adjusted every two years.

Article 12

RAW classification is performed by the RAW generator according to RAW state of agreggation, category and type of RAW.

The RAW generator determines the RAW type depending on compactibility, volatility, solubility, flammability, corrosiveness and other physical, chemical and biological properties if it is important for further RAW treatment.

The licensee for RAW storage undertakes to prepare and deliver to RAW generators instructions for RAW collection, classification, labelling, keeping and preparation for transport to allow a RAW generator to meet the set criteria for RAW reception into a storage facility.

Article 13

RAW treatment is performed in line with the plan for RAW management.

Treated RAW should be packed in packages suitable for applying the acceptance criteria for RAW storage or disposal.

The containers used for packing RAW should also ensure the safety for the next phase of RAW management. The containers should meet the requirements for labelling, records, measurements, as well as technical, organizational and security requirements according to the safety analysis report of the concerned nuclear or radiation facility.

The use of specific containers should be approved during the licensing procedure for use of a radiation source or during the approval or modification of the facility safety analysis report.

The licensee shall in their application for container approval attach the container layout and description, as well as the measurement results and analysis, including any other documentation confirming the justified use of such type of container.

Article 14

All packages containing RAW must have the radioactivity symbol as defined under the standard, as well as a label which includes the package identification and its content.

The label must include the following required information:

1. unique code;

2. package mass;

3. RAW category;

4. RAW type;

5. maximum value of ambient dose equivalent rate measured on the RAW package surface.

A RAW type is determined according to the manner and place of generation and physical, chemical and biological properties as stated under Article 6, Paragraph 2.

The durability of the symbol and labels must be such as to preserve the information and withstand all activities with the RAW package. The standard label and identification label for the packages are presented in Appendix 2 hereof.

The RAW generator undertakes to pack RAW in such packaging which is in line with the acceptance criteria for RAW reception into the storage facility. The licensee for storage undertakes to provide to RAW generators standard labels in line with the central RAW registry.

The licensee for RAW storage undertakes to provide RAW generators with the required standard packaging for RAW and labels in line with the central RAW registry.

Article 15

RAW is stored in RAW storage facilities.

The licensee for RAW storage shall ensure the storage for all RAW which is not in process of keeping, treatment or redistribution.

At a RAW storage facility only such RAW packages may be stored which meet the acceptance criteria defined for storage in line with the provisions under Article 18 hereof.

RAW storage is allowed only in containers approved for storage.

The licensee for RAW storage undertakes to:

1. run periodical checks of whether the containers meet the storage conditions, and ensure that during RAW storing, where relevant, there is an adequate dissipation of decay heat, so that no criticality can occur;

2. store RAW so as to allow for the implementation of obligations according to the internationally assumed obligations from ratified conventions and agreements governing the control of nuclear materials.

The licensee for RAW storage shall provide the retention of solid, liquid or gaseous short-lived radioactive waste in a purpose-built repository until the short-lived radionuclides decay to the exemption or clearance level, as well as the periodical check of containers' condition and maintenance of required standard conditions.

Article 16

A RAW generator may hand over RAW only to the licensee for RAW storage.

A RAW generator undertakes to prepare its RAW package in line with the instructions delivered by the licensee for RAW storage and meet the acceptance criteria for RAW packages in the storage facility.

Prior to handing over, a RAW generator should submit to the licensee for RAW storage the records from the documentation relevant for the continued RAW management flow. On handing over RAW, the generator and licensee for RAW storage make a written protocol.

The RAW generator and the licensee for RAW management may move RAW within the nuclear or radiation facility in agreement with the safety analysis report and written procedures.

Article 17

Discharge of liquid and gaseous RAW into the environment shall be approved by the Agency.

Discharge of liquid and gaseous RAW into the environment shall be performed so as not to exceed the specified limit values.

The limit values under Paragraph 2 hereof are defined in the Rulebook on limits of radioactive contamination of the people, work and living environment and the ways of performing decontamination.

The liquid and gaseous RAW that may not be discharged into the environment or is not at rest, shall be treated so as to solidify.

Dilution or segregation of RAW into several parts with lower activity in order to meet clearance conditions is forbidden except in case of the approved discharge of liquid and gaseous RAW pursuant to Paragraph 1 hereof.

Article 18

At a RAW disposal facility only such RAW may be disposed which meets the set criteria for reception into a disposal facility.

The disposal of packed RAW is allowed only in such containers which are approved for RAW disposal.

The disposal of packed RAW is performed by way of ensuring criticality prevention and dissipation of decay heat in addition to meeting all other set requirements.

The safety analysis report for a specific storage or disposal facility shall define the acceptance criteria list which may be more comprehensive than the criteria stated under Paragraph 1 hereof. Storage or disposal acceptance criteria should be determined for specific packages – for certain units and for the entire storage or disposal facility alike.

The acceptance criteria for RAW storage or disposal consist of restrictions for:

1. Content of an emitters and specific activities;

2. Dose rate on the surface of the package and the dose rate on the reference distance from the package surface;

3. Specific surface contamination;

4. Solidity;

5. Seepage;

6. Corrosiveness;

7. Chemical stability;

8. Heat generation;

9. Radiation resistance of material;

10. Flammability;

11. Gas generation and gas types;

12. Toxic content;

13. Content of organic substances impacting the microbiological degradation;

14. Content of free radicals;

15. Presence of gelatin and other agents;

16. Explosiveness;

17. Combustibility;

18. Corrosion resistance;

19. Nuclear criticality;

20. Adequate labelling of RAW package;

21. Adequacy of RAW containers and packing methods.

The acceptance criteria for storage or disposal shall be prepared by the facility operator and approved by the Agency.

Article 19

Solid RAW materials of low and intermediate level of activity are collected in polyethylene packaging and packed into metal containers of standard sizes. Solid RAW materials which due to their mass, shape, sizes or radiation dose rate cannot be placed in the containers are stored in a separate space. Solid RAW materials containing alpha emitters are collected in polyethylene sacks fed into metal containers with an added adsorbent of volatile radioactive isotopes (e.g. active charcoal).

Solid RAW materials containing biological waste material are packed in polyethylene sacks or soaked into formalin. The retention time for such substances in polyethylene sacks may not be longer than three days, after which they are treated the same as other solid radioactive waste materials.

Needles and other sharp metal objects, glass and plastic that cannot be broken during handling and transport are packed in specifically labelled and impenetrable containers.

RAW materials containing fissionable materials are collected in line with the IAEA recommendations for safe transport of radioactive materials.

Article 20

Each site where liquid RAW is generated must be equipped so as to allow the adequate collection of liquid RAW, and the exposure to ionising radiation must be minimized as much as possible.

If liquid RAW materials are generated continually in a work process, where the daily quantity of liquid radioactive effluents is higher than 200 litres for RAW materials under *LLW* or *ILW* category or 100 litres for RAW materials under *HLW* category, then the dissipation of such substances from the point of generation to the reception tanks requires that a separate, closed special sewer system should be built.

If the generation of liquid RAW material does not follow the work process, the points where such material is generated should be supplied with adequate vessels for receiving liquid RAW materials.

The sewer system under Paragraph 2 hereof is separate from other sewer systems and must be accessible in terms of inspection, control and repairs. The construction material for the system must be adapted to the properties of all types of liquid RAW materials which are received or may be received in such sewer system.

Article 21

To collect low-level liquid RAW, whose production is not continual, suitable portable capped vessels are used, which are made of polyethylene or other suitable material hard to break and resistant to chemical agents. The volumes of these vessels may not be higher than 100 litres. The vessels larger than 25 litres must have handles which allow easy carrying and handling.

The vessels under Paragraph 1 hereof are moved to a repository on condition that ambient dose equivalent rate of gamma radiation at 1 m distance does not exceed 10 μSv/h.

Any vessel containing liquid RAW must be closed, labelled and placed in a suitable vessel with a capacity sufficient to receive the entire volume of liquid RAW.

Intermediate- and high-level liquid RAW generated in laboratories and experimental facilities with volumes less than 100 litres per day is collected into containers consisting of an inside vessel, made of stainless steel and a protective shell. The containers must be hermetically closed.

The containers for high-level liquid waste must have cooling in place and other characteristics provided for under the standards, depending on the activity, chemical composition, RAW material quantity, as well as the time period of their holding RAW materials.

IV RECORDS OF RAW

Article 22

The licensee for a radiation practice or nuclear activity undertakes to keep records on the quantities of produced, collected, conditioned, treated, packed, transported, stored, disposed and temporarily or permanently exported RAW, as well as on the RAW quantity cleared from regulatory control, that is, whose activity decreased below the level defined in the Rulebook on

limits of radioactive contamination of the people, work and living environment and the ways of performing decontamination.

The records under Paragraph 1 hereof are kept for each package, that is, for each RAW quantity, and contains the following information:

1. Unique code;

2. Origin;

3. Category, type (information on physical, chemical and biological properties);

4. Date, place and manner of generation, collection, conditioning, treatment, packing or transport;

5. Number of pieces in case of collective packages;

6. Volume and mass;

7. Total specific activity and/or activity and date of measurement or assessment, as well as radionuclide content whose activity is higher than 1% of total activity;

8. Ambient dose equivalent rate on the package surface;

9. Place and manner of retention;

10. Date of storage or disposal;

11. Date, place, quantity and discharge rate.

The records on disused closed radioactive sources of ionising radiation shall be kept separately.

Article 23

The licensee for performing a radiation practice or nuclear activity undertakes to make listing of its RAW on the annual basis until 31 December of the current year.

The report on the listing is delivered to the Agency not later than 1 March for the previous year. The report shall also contain the information on changes occurred in relation to RAW, as follows:

1. RAW under regulatory control;

2. RAW cleared from regulatory control and discharged into the environment;

3. RAW discharged into the environment as the permitted emission of effluents;

4. RAW handed over to the licensee for RAW storage management;

5. RAW disappropriated or exported, including disused sources returned to the manufacturer;

6. RAW disposed.

The licensee for performing a radiation practice or nuclear activity undertakes to keep the documentation and records as follows:

1. for RAW under regulatory control and kept in a repository of a licensee, for at least two years after the retention has terminated;

2. for RAW cleared from regulatory control, for at least two years following the clearance;

3. for RAW handed over to the licensee for RAW storage management, for at least 2 years following the hand-over;

4. for RAW discharged into the environment as the permitted emission of effluent, for at least 10 years following the discharge;

5. for disappropriated or exported RAW, including the disused sources returned to the manufacturer, for at least 2 years following the disappropriation or export.

Article 24

The licensee for a radiation practice or nuclear activity undertakes to inform the Agency within 15 days about any individual RAW storage, disposal, disappropriation, export or the return of the source to its manufacturer.

The licensee for a radiation practice or nuclear activity undertakes, at the time of hand-over, to deliver to the licensee for storage management the information from the records pertaining to the RAW being handed for storage.

The licensee for performing a radiation practice or nuclear activity undertakes in case of discontinuing its operation, to hand over the full documentation pertaining to RAW to the legal entity competent for further RAW management and to communicate it to the Agency not longer than within 7 days.

Article 25

The licensee for RAW management undertakes to set up and keep the RAW records that contain enough information on the RAW inventory and the monitoring of RAW flow and movement, as well as certain packages through various RAW management processes.

The records under Paragraph 1 hereof relate to:

1. RAW that has been stored;

2. RAW that has been handed over to the disposal facility for permanent disposal

3. RAW that is being temporarily kept and is waiting for treatment, that is, conditioning;

4. RAW that has been cleared from regulatory control;

5. RAW received for retention until the full decay and discharge;

6. RAW that has been treated, that is, conditioned;

7. RAW that has been exported.

The data in the records under Paragraph 2 hereof should contain information on the manner used for the previous RAW treatment as well as the information required to meet the criteria for reception into the RAW storage or disposal facility for each RAW package.

The information about RAW under Paragraph 2, Items 4 and 5 mandatorily include for each and every single discharge the information on the source and discharged quantities, as well as the information from which it is possible to show or check that the discharge levels approved by the Agency have not been exceeded.

The licensee for RAW management undertakes to keep separate records on the nuclear material located within the RAW storage facilities in line with the Rulebook on Records on Nuclear Materials and Assumed Obligations pursuant to Ratified International Conventions and Agreements.

The licensee for RAW management undertakes to keep the documents and records for:

1. RAW that has been stored, for at least 10 years after the storage terminates;

2. RAW that has been handed over for disposal until the termination of long-term oversight of the disposal facility;

3. RAW that has been conditioned, for at least two years after the treatment ends;

4. RAW that has been cleared from regulatory control, for at least two years following the clearance;

5. RAW that has been discharged into the environment as the permitted emission of effluent, for at least 10 years following the discharge.

Article 26

The Agency shall set up and maintain the national RAW registry and prepare analyses and reports for the needs of the national Programme on RAW Management in the Republic of Serbia.

The central registry contains, in addition to the required data, the information on:

1. RAW sources and spent fuel located with the user;

2. Exported RAW;

3. RAW discharged in the environment;

4. Projected annual quantity of generated RAW produced in radiation and nuclear facilities during the operation, or decommission.

The central registry shall be kept by inventory in the calendar year when RAW is generated. The format of data kept and delivered to the central registry is presented in Appendix 4 hereto as follows:

1. For solid and liquid RAW in tables 1 and 2;

2. For RAW discharged into the environment, tables 3 and 4;

3. Annual projections of generated RAW, tables 5, 6, and 7.

The licensee shall deliver data to the centralised registry electronically in the format defined in Paragraph 3 hereof.

The Agency shall define the instructions for licensees and the protocol for electronic data delivery to the registry.

V COMING INTO FORCE

Article 27

This Rulebook shall come in force eight days following the publication in the "Official Gazette of the Republic of Serbia".

Appendix 1.

Table 1. RAW categories with the description of typical characteristics and disposal method

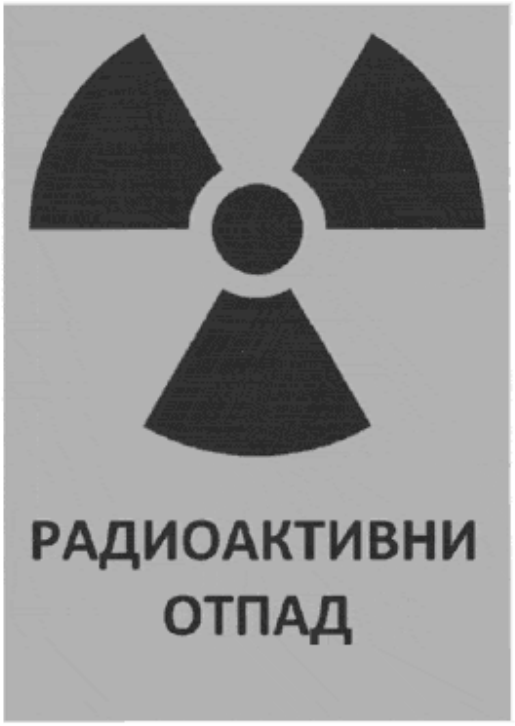
Category	Typical characteristics and disposal method
Exempt waste EW	Specific activity concentration or total activity in radioactive waste is equal to or lower than the required levels for exception or clearance from regulatory control.
Very short lived waste VSLW	Waste that can be stored for decay over a limited period of up to a few years and subsequently cleared from regulatory control according to approval of the Agency, for uncontrolled disposal, use or discharge. This class includes waste containing primarily radionuclides with very short half-lives usually used for research and medical purposes.
Very low level waste VLLW	Waste that does not necessarily meet the criteria of exempt RAW (EW), but that does not need a high level of containment and isolation and, therefore, is suitable for disposal in near surface disposals with limited regulatory control. Such disposals may also contain other hazardous waste. Typical waste in this class includes soil and rubble with low levels of activity concentration. Concentrations of longer lived radionuclides in VLLW are generally very limited.
Low level waste LLW	Waste that is above clearance levels, but with limited amounts of long lived radionuclides. Such waste requires isolation and containment for periods of up to a few hundred years and is suitable for disposal in engineered near surface facilities. This class covers a very broad range of waste. LLW may include short lived radionuclides at higher levels of activity concentration, and also long lived radionuclides, but only at relatively low levels of activity concentration.
Intermediate level waste ILW	Waste that, because of its content, particularly of long lived radionuclides, requires a greater degree of containment and isolation than that provided by near surface disposal. However, ILW needs no provision, or only limited provision, for heat dissipation during its storage and disposal. ILW may contain long lived radionuclides, in particular, alpha emitting radionuclides that will not decay to a level of activity concentration acceptable for near surface disposal during the time for which institutional controls can be relied upon. Therefore, waste in this class requires disposal at greater depths, of the order of tens of metres to a few hundred metres.
High level waste HLW	Waste with levels of activity concentration high enough to generate significant quantities of heat by the radioactive decay process or waste with large amounts of long lived radionuclides that need to be considered in the design of a disposal facility for such waste. Disposal in deep, stable geological formations usually several hundred metres or more below the surface is the generally recognized option for disposal of HLW.

Appendix 2.

Figure 1. Package identification label

Unique code	
RAW generation date	
RAW type	
RAW category	
Present radioisotopes	
Control date	**Ambient dose equivalent rate, [μSv/h]**
RAW storage date	

Figure 2. Standard pictogram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