15 Annex - Energy

77. RULEBOOK ON METHODS OF AND REQUIREMENTS FOR COLLECTING, SAFEKEEPING, RECORD KEEPING, STORING, PROCESSING AND DISPOSAL OF RADIOACTIVE WASTE MATERIALS

RULEBOOK

ON METHODS OF AND REQUIREMENTS FOR COLLECTING, SAFEKEEPING, RECORD KEEPING, STORING, PROCESSING AND DISPOSAL OF RADIOACTIVE WASTE MATERIALS

(Official Gazette of the Federal Republic of Yugoslavia 9/99)

I BASIC PROVISIONS

Article 1

This Rulebook shall prescribe the methods and requirements for collecting, safekeeping, record keeping, storing, processing and disposal of radioactive waste materials (hereinafter referred to as the “RAW material").

Article 2

For the purpose of this Rulebook, the meaning of certain terms and expressions used herein shall be as follows:

1) RAW material refers to the material which is not planned to have further use, and which contains radioactive isotopes in levels higher than prescribed;

2) Safekeeping of the RAW material refers to safe storage of this material with the user, until such material is handed over to the legal entity authorised to store, process and dispose of the RAW materials (hereinafter referred to as the "authorised legal entity");

3) Storage of the RAW material refers to storing of the RAW material in a place which is under supervision of the authorised legal entity;

4) Processing of the RAW material refers to the procedure of transforming the RAW material in forms fit for storage and disposal;

5) Disposal of the RAW material refers to placing the RAW materials in purposely built facilities (depots).

Article 3

The methods of and requirements for collecting, safekeeping, record keeping, storage, processing and disposal of the RAW materials shall be prescribed in accordance with their characteristics, i.e. their classification.

RAW materials shall be classified with regard to

1) manner and place of origin (in a nuclear fuel cycle, in industry, in scientific research laboratories, in medical facilities and alike);

2) physical characteristics (solid, liquid, gaseous, combustible, non-combustible, compressible, non-compressible);

3) chemical-biological characteristics (organic, inorganic, toxic, aggressive, explosive, inflammable, volatile, etc);

4) the amount and characteristics of radio-isotopes contained.

Article 4

Based on the amount and characteristics of radio-isotopes contained, the RAW materials shall be classified in the following categories:

1) RAW materials of the category I (LILW-SL), which contain radio-isotopes with short half-life (<30 years), with low and medium activity levels, and having thermal power not exceeding 2 kW/m*3*. Concentration of long life alpha emitters for this category of RAW materials is limited to 400 Bq/g in individual packages of RAW material, or to 400 Bq/g in the entire quantity of the RAW material;

2) RAW materials of the category II (LILW-LL), which contain radio-isotopes with long half-life (> 30 years), with low and medium activity levels and thermal power not exceeding 2 kW/m*3.* Concentration of long life alpha emitters for this category exceeds the limit value of concentration of long life alpha emitters for the category I;

3) RAW materials of the category III (HLW) – RAW materials with high activity levels and with concentrations of long life radioactive isotopes higher than the limit value for RAW materials from the category I and thermal power exceeding 2 kW/m*3*, and which have to be cooled.

II METHODS OF COLLECTING OF RAW MATERIALS

Article 5

Legal entities and entrepreneurs (hereinafter referred to as the "users") generating RAW materials in the course of their activity shall collect, mark and keep RAW material until it is handed over to an authorised legal entity.

Article 6

Solid RAW materials with low and medium activity levels shall be collected in plastic wrapping and packed in standard size metal containers (200 litres metal barrels with lid).

Solid RAW materials which cannot be packed in containers due to their weight, shape, size or intensity of radiation dose shall be stored in a separate space.

Solid RAW materials containing alpha emitters shall be collected in plastic bags which are laid in metal containers, with addition of absorbents of evaporable radioactive isotopes (activated carbon most often used).

Solid RAW materials which contain bio-waste shall be packed in plastic bags or immersed in formalin. Keeping time for these materials in plastic bags may not be longer then three days, and thereafter they shall be treated as any other solid RAW material.

Article 7

RAW materials containing fissionable materials shall be collected in stainless steel containers.

No more than 0.03 kg of fissionable material may be collected in containers with 200 litres volume, while maximum 0.15 kg/m*3* of fissionable material may be collected in larger containers.

Article 8

Any location where liquid RAW materials are generated must be equipped in such way as to enable collection of liquid RAW materials in a manner that minimises the risk of spilling and radiation exposure.

Article 9

In the case of continuous generation of liquid RAW materials during the work process, and if the daily amount of liquid radioactive effluents exceeds 200 litres for the RAW materials of the categories I and II or 100 litres for the RAW materials of the category III, it is necessary to build a special closed sewage system for draining these materials from the place of their generation to the receiving tanks.

If generation of liquid RAW material is not a permanent feature of the work process, then the places where this material is generated shall be provided with appropriate receptacles for liquid RAW materials.

The sewage system referred to in paragraph 1 hereof must be detached from other sewage systems, with easy access for inspection, control and repairs. The materials used to build this sewage system must be appropriate considering the characteristics of the liquid RAW materials that will run – or could run – through the system.

Article 10

Liquid RAW materials with low activity levels which are not continuously produced shall be collected in adequate transportable vessels with lids, made of plastic or some other adequate hard to break material, which is resistant to chemically active substances. Respective volumes of these vessels may not be greater than 100 litres. Vessels with volumes larger that 25 litres must have handles for easy manipulation and carrying.

The vessels referred to in the paragraph 1 hereof shall be transferred to a collection point under the condition that intensity of the absorbed radiation dose at one metre distance does not exceed 10 uSv/h. Every vessel containing liquid radioactive materials must be marked and sealed.

Article 11

RAW material with medium and high level of activity generated in laboratories and research facilities, in quantities of less than 100 litres a day, shall be collected in containers consisting of an inner stainless steel vessel and protective casing. These containers must be hermetically sealed.

Containers for highly active RAW materials must have cooling provided as well as other characteristics prescribed by the standards – depending on the activity, chemical composition, quantity of the RAW material, as well as the time the RAW materials are to spend in the containers.

III RECORDING OF THE RAW MATERIALS

Article 12

The users that produce or collect, keep, process and dispose RAW materials shall enable such work process as to keep the quantities of the generated RAW materials to a minimum, as well as to log and keep records of all generated, collected, kept, processed, stored or disposed amounts of RAW material.

Record keeping referred to in the paragraph 1 hereof shall be performed for every package, i.e. amount, of RAW material and it shall include as follows:

1) filing number;

2) origin, type and category of the RAW material (with the data about relevant physical and chemical characteristics);

3) date of generation, collection, processing, storage or disposal;

4) values for mass and density;

5) types of radio-isotopes and their overall specific activity;

6) intensity of radiation dose at the surface of packaging, container or parcel of RAW material;

7) the place, manner and conditions of keeping/storage/disposal;

8) processing procedures.

Based on the data from paragraph 2 hereof, every package of RAW material shall be marked with stickers – provided as Templates 1 and 2 in the Appendix to this Rulebook and constituting an integral part thereof.

IV SAFEKEEPING, PROCESSING, STORAGE AND DISPOSAL OF RAW MATERIALS

Article 13

The users generating RAW materials in their work process shall – in a prescribed way – collect and keep them until they are handed over to a legal entity authorised for transportation, safekeeping, processing, storage and disposal of RAW materials.

The users generating RAW materials in their work process may keep them in a prescribed way until sufficient quantities for transportation are accumulated, but no longer than one year.

Article 14

Legal entity authorised for keeping, processing, storage and disposal of RAW materials may keep unprocessed RAW materials until quantities sufficient for processing are accumulated.

The manner of keeping, container types, vessels and tanks for RAW materials keeping as well as the premises and facilities in which RAW materials are kept must fulfil the prescribed requirements and meet recommendations and standards of the International Atomic Energy Agency.

An authorised legal entity – while keeping unfenced RAW materials, shall ensure that the prescribed measures for radiation safety measures, radiation protection and environment protection are applied; also, they shall carry out radiation monitoring on regular basis within the premises and facilities where RAW materials are kept as well as in their surroundings, in accordance with the prescribed procedure.

Article 15

In the procedure of processing the RAW materials, standards and technologies prescribed by the International Atomic Energy Agency shall be applied.

Article 16

An authorised legal entity shall store the processed RAW materials in the facilities designed and built for that purpose.

Objects for RAW material storage must fulfil the conditions prescribed for nuclear facilities.

Article 17

Packages of RAW materials in warehouses shall be sorted according to types and categories of RAW materials.

All types and categories of RAW materials in warehouses must be accessible.

Types and categories of RAW materials in warehouses should be arranged in such way as to minimise radiation exposure for those employed in these warehouses.

Article 18

Permanent disposal of RAW material means placing of the standardized packages of RAW materials in purposefully designed and built facilities – depots – without any intention to further move or take out packages of RAW materials.

The depot must fulfil the prescribed conditions for a nuclear facility.

V FINAL PROVISIONS

Article 19

The Rulebook on methods of collecting, record keeping, processing, safekeeping, final disposal and emission of radioactive waste materials into the environment (Official Gazette of the Socialist Federal Republic of Yugoslavia 40/86) shall be repealed on the day of entry into force of this Rulebook.

Article 20

This Rulebook shall enter into force on the eighth day following that of its publication in the Official Gazette of the FRY.

Template 1 – Sticker size: 0.15 x 1.10 metres, yellow background with black lettering

Template 2 – Sticker size 0.15 x 0.10 meters, yellow background with black lettering

REF.
No

DATE OF
GENERATION

TYPE OF RAW

CATEGORY OF
RAW

RADIOACTIVE
ISOTOPES
CONTAINED

CONTROL RADIATION DOSE INTENSITY
DATE (mSv/h)

DATE OF
DISPOSAL
OF RAW