

Pursuant to Article 17 of the Law on Radiation and Nuclear Safety in Bosnia and Herzegovina (Official Gazette of BiH 88/07) and Article 61(2) of the Law on Administration (Official Gazette of BiH 32/02 and 102/09), the director of the State Regulatory Agency for Radiation and Nuclear Safety issues the

## **REGULATION on radioactive waste management**

### **PART ONE – BASIC PROVISIONS**

#### **Article 1 (Subject)**

This regulation provides for the mandatory measures in radioactive waste management; the responsibility for the waste management; the way of classification, processing, storage, and keeping records of radioactive waste; the way of discharging radioactive waste substances into the environment, and also other important matters related to the waste management.

#### **Article 2 (Application)**

This regulation applies to the management of radioactive waste:

- a) generated through an authorized practice;
- b) generated when the authorization has expired, when there is no authorization or when the authorized practice has been terminated;
- c) in the form of disused sealed radiation sources declared as waste;
- d) generated during an emergency;
- e) in other cases in which radioactive waste is generated, including the residues generated in work activities.

#### **Article 3 (Definitions)**

The terms, as used in this regulation, mean:

- a) *Safety case* – Documented scientific, technical, administrative, and management evidence (arguments) based on a safety assessment in order to demonstrate a satisfactory level of safety of the storage facility for radioactive waste, or similar arguments for other activities of radioactive waste management.
- b) *Waste form* – Waste after treatment and/or conditioning, ready for packaging.
- c) *Radioactive waste generator* – An authorization holder, a legal person authorized by the State Regulatory Agency for Radiation and Nuclear Safety (hereinafter: Agency) or any legal person authorized for a practice generating radioactive waste.
- d) *Discharge of waste materials containing radioactive substances* – The planned and controlled release of liquid or gaseous radioactive materials into the environment by the waste generator or the storage operator (hereinafter: operator).
- e) *Radioactive waste characterization* – Assessing the physical, chemical, and radiological properties of the waste for the purpose of processing, storage or disposal.
- f) *Radioactive waste conditioning*. – The operations that convert waste into a package suitable for handling, transport, storage and disposal, and consist of immobilization activity, the conversion of the waste to a solid form, and

producing a package by enclosing the waste in protective containers or packaging.

- g) *Radioactive waste acceptance criteria* – Quantitative and qualitative criteria specified by the storage facility operator and approved by the Agency for radioactive waste to be accepted in a storage facility, or specified for accepting waste for other waste management activities.
- h) *Minimization of radioactive waste generation* – The process of reducing the volume, mass, and activity of radioactive waste to a level as low as reasonably achievable during the performance of a practice involving radiation sources.
- i) *Disposal* – Emplacement of waste at an appropriate site without the intention of retrieval. Disposal also means direct discharge of waste into the environment, previously approved by the Agency.
- j) *Disposal facility* – A facility intended for permanent disposal of radioactive waste.
- k) *Storage for decay* – The holding of radioactive waste containing very short lived radionuclides (half-life <100 days) until the activity level has fallen below the levels for clearance from regulatory control.
- l) *Storage facility operator* – An authorization holder, a legal person authorized by the Agency for the practice of technical service for radioactive waste management, which operates a storage facility for radioactive waste.
- m) *Waste containing higher concentrations of naturally occurring radionuclides* – The waste generated in work activities.
- n) *Unsealed source* – A radiation source not covered by the definition of the sealed radiation source; radioactive material in liquid, gaseous or powder form, not encapsulated and easily subject to dispersion.
- o) *Clearance from regulatory control* – Clearance of radioactive materials from further regulatory control in accordance with this regulation.
- p) *Radioactive waste package* – The product of conditioning that includes the waste itself, a protective container, and internal barriers, prepared in accordance with the specific requirements for handling, transport, storage and/or disposal.
- q) *Pretreatment* – Any or all of the operations prior to treatment, including collection, segregation, chemical adjustment, and decontamination.
- r) *Processing* – The activities that change the characteristics of waste, including pretreatment, treatment, and conditioning.
- s) *Safety assessment* – An analysis of all design and operational aspects of the radioactive waste storage facility that are relevant for radiation protection of people and radiation safety, including an analysis of the safety and protection requirements established in the facility design and operation, and an analysis of the risks associated with normal operating conditions and emergencies.
- t) *Radioactive contamination* – Undesirable presence of radioactive substances on the surface or within solids, liquids or gases. Contamination of the human body can be external (or skin) or internal, due to the intake of radioactive substances into the body by inhalation, ingestion or through skin.
- u) *Radioactive substance* – A substance containing one or more radionuclides the activity, activity concentration or massic activity of which cannot be disregarded from the perspective of radiation protection.
- v) *Radioactive waste* – Radioactive material in gaseous, solid, or liquid form for which no further use is foreseen and is declared as radioactive waste by the Agency upon proposal of the owner of the material, the authorization holder or the Agency.
- w) *Radioactive effluents* – Radioactive waste in gaseous or liquid form.
- x) *Work activities* – The activities in which naturally occurring radioactive materials are not used due to their radioactive properties.
- y) *Segregation* – An activity used to separate radioactive waste according to its radiological, chemical and physical properties in accordance with the planned processing.

- z) *Representative member of the public* – An individual receiving a dose representative of the members of the population who are subject to the higher exposures to ionizing radiation, excluding individuals with extreme or rare life habits.
- aa) *Residues* – The material generated from work activities in industrial sectors in which the concentrations of naturally occurring radionuclides increase due to technological processes.
- bb) *Storage facility for radioactive waste* – One or more buildings, either owned or with the right to use, which is used for controlled long-term storage of radioactive waste and managed by an operator.
- cc) *Storage* – A planned activity by which radioactive waste is brought into the state of rest, i.e. storage for a limited period, with the possibility of later handling, transfer or transport of the waste, and also inspection and monitoring.
- dd) *Interim storage facility* – A building or a building section, either owned or with the right to use, which is used for controlled storage for decay or short-term storage of radioactive waste and managed by a radioactive waste generator.
- ee) *Treatment* – The activities that change the characteristics of the waste in order to improve safety or decrease storage costs. The basic treatment objectives are volume reduction, removal of radionuclides, and change of chemical composition of radioactive waste. The result of the treatment is an appropriate waste form.
- ff) *Radioactive waste management* – All activities involving handling, pretreatment, treatment, conditioning, storage, and disposal of radioactive waste.
- gg) *Protective container* – The vessel into which the waste is placed and isolated from the environment for the purpose of more suitable handling, transport, storage, and disposal. The protective container is a component of the waste package.
- hh) *Disused sealed radiation source* – A sealed source which is no longer used or intended for use by the holder of authorization for an authorized practice or which is declared by the Agency as disused, but continues to require safe management.

#### **Article 4 (Mandatory measures in radioactive waste management)**

The following mandatory measures should be taken in radioactive waste management:

- a) Ensuring the prescribed level of health protection of exposed workers and the public, and the environmental protection;
- b) Planning an equal level of health protection of the future generations to avoid imposing any undue burden on them in respect of the waste;
- c) Taking into account the possible effects on human health and the environment beyond national borders;
- d) The application of graded approach in the safe management of waste in accordance with a waste classification;
- e) Using passive means in the safe management of waste;
- f) Generating reasonably practicable minimal amounts of waste both in terms of activity and volume;
- g) Ensuring appropriate safety and security in waste management;
- h) Complying with the principle of interdependency between individual steps in waste management;
- i) Keeping accurate records on the activities associated with all stages of waste management;
- j) Providing information to the public and adequate participation of the interested public in individual stages of waste management.

**Article 5**  
**(Responsibilities for waste management)**

- (1) The responsibility for radioactive waste management rests with:
  - a) The radioactive waste generator has the prime responsibility for the waste generated during its authorized practice, including the financial liability for further steps in waste management;
  - b) The storage facility operator, for the waste accepted in the facility and the waste generated during the waste management operations in the facility;
  - c) The Agency has the ultimate responsibility for the safe management of the waste generated by unknown subjects, including the financial liability for the waste.
- (2) The responsibility for the waste management may not be transferred to other legal persons, except in the cases and as provided for in the law and approved by the Agency.

**Article 6**  
**(Management system)**

- (1) The radioactive waste generator and the operator must establish an appropriate management system in order to ensure the required level of quality commensurate with the risk of waste management.
- (2) The management system referred to in paragraph (1) must contain:
  - a) Operational policy and procedures defining radiation safety as a priority in waste management;
  - b) Organizational structure with defined powers and responsibilities of all persons involved in the waste management process;
  - c) The measures for identifying and solving problems commensurate with their influence on the waste management activities;
  - d) Provisions about relevant qualifications and training of the persons involved in the waste management process;
  - e) Provisions to ensure data confidentiality for all legal persons involved in the waste management process;
  - f) A quality assurance program demonstrating the fulfillment of requirements for the safe management of waste.

**Article 7**  
**(General obligations of the radioactive waste generator)**

- (1) The radioactive waste generator must prepare, develop, and maintain a plan of radioactive waste management for the waste under its responsibility.
- (2) The waste management plan referred to in paragraph (1) must include a description of the generated waste and the way of its management until its clearance from regulatory control or transfer to an operator.
- (3) The radioactive waste generator must prepare and maintain a radiation safety assessment for all stages of waste management.
- (4) The safety assessment referred to in paragraph (3) must comply with applicable regulations and the standards of the International Atomic Energy Agency.

**Article 8**  
**(General obligations of the storage facility operator)**

- (1) The operator must prepare, develop, and maintain a plan of radioactive waste management for the waste under its responsibility, including an annual financial plan.
- (2) The waste management plan referred to in paragraph (1) must include a description of the waste accepted in the storage facility, a description of generated secondary waste and the way of its management until its clearance from regulatory control or permanent disposal.
- (3) The operator must prepare and maintain a safety case for the storage facility for radioactive waste.
- (4) The safety case referred to in paragraph (3) must comply with the standards of the International Atomic Energy Agency.
- (5) The contents of the safety case referred to in paragraph (3) are listed in Annex 2.

**Article 9**  
**(Expert in radioactive waste management)**

A qualified expert in radioactive waste management must give an expert opinion to the authorization holder from the following fields:

- a) Achieving and maintaining an optimal level of the environmental and public protection from harmful effects of ionizing radiation through the implementation of applicable regulations and international standards from these fields;
- b) Preparation and maintenance of a waste management plan and a safety case;
- c) Checking the effectiveness of technical devices for the environmental and public protection;
- d) Acceptance into service of the equipment, and procedures for measurement and assessment of environmental and public exposures and radioactive contamination from the perspective of radiation protection;
- e) Regular verification of calibration, functioning, and proper use of measuring instruments;
- f) Hazards and risk assessments, including environmental impact;
- g) Controlling the discharge of radioactive effluents into the environment;
- h) Record keeping;
- i) Environmental monitoring in the vicinity of the storage facility and other radioactive waste management facilities;
- j) Preparation of an emergency plan for radioactive waste management;
- k) Preparation of a plan for decommissioning the storage facility for radioactive waste;
- l) Security of radioactive waste.

**PART TWO – CLASSIFICATION AND CHARACTERIZATION OF RADIOACTIVE WASTE**

**Article 10**  
**(Classification of radioactive waste by activity and half-life)**

- (1) Radioactive waste is grouped into the following classes:
  - a) Very short lived radioactive waste;
  - b) Very low level radioactive waste;

- c) Low level radioactive waste;
  - d) Intermediate level radioactive waste;
  - e) High level radioactive waste.
- (2) The characteristics of the waste classes referred to in paragraph (1) are given in Annex 1.
  - (3) The waste generator and the operator must classify the waste under their responsibility.
  - (4) The categorization of disused sealed radiation sources is the same as for sealed sources in use.
  - (5) Disused sealed radiation sources are considered radioactive waste in case they will be permanently disposed of in the territory of Bosnia and Herzegovina.

**Article 11**  
**(Characterization of radioactive waste)**

- (1) The radioactive waste generator and the operator must characterize the waste under their responsibility.
- (2) Radioactive waste is characterized as unconditioned and conditioned, specifying:
  - a) the origin;
  - b) the radiological properties relating to:
    - 1) radionuclide type and content,
    - 2) radionuclide activity,
    - 3) radionuclide half-life.
  - c) physical and chemical form that can be:
    - (1) solid:
      - flammable/nonflammable,
      - compactable/non-compactable,
      - metals/nonmetals.
    - (2) liquid:
      - aqueous solution,
      - organic solution.
    - (3) non-homogeneous (suspension, with residues, etc.)
  - d) the presence of non-fixed or fixed contamination;
  - e) whether it is a disused sealed radiation source;
  - f) non-radiological hazardous properties.

**PART THREE – THE WAY OF RADIOACTIVE WASTE MANAGEMENT**

**Article 12**  
**(Acceptance criteria for radioactive waste)**

- (1) Acceptance criteria should specify the characteristics of packaged and non-packaged radioactive waste that will be processed, stored or permanently disposed of.

- (2) As a minimum, the acceptance criteria should define the following:
  - a) Maximum package activity;
  - b) Stability of the waste form, i.e. the waste package, relating to the mechanical, chemical, structural, radiological, and biological characteristics;
  - c) Maximum permitted mass and dimensions of the package.
- (3) The criteria for accepting radioactive waste in the storage facility are defined by the storage facility operator in a separate document approved by the Agency.

**Article 13**  
**(Minimization of generated radioactive waste)**

The radioactive waste generator and the operator must take measures to generate a minimum amount of radioactive waste while handling the waste and in all stages of waste management, including:

- a) The use of minimum amounts of radioactive materials;
- b) Efficient collection, segregation, packaging, and handling of radioactive material;
- c) Reducing the amount of radioactive material through the clearance from regulatory control after the proper processing or storage;
- d) Careful handling of radioactive material in order to prevent contamination of surfaces, equipment and for the purpose of necessary decontamination;
- e) Return of disused radiation sources to the manufacturer or their transfer to any user for further use.

**Article 14**  
**(Radioactive waste processing)**

- (1) The radioactive waste generator and the operator must ensure the collection, segregation, and if needed, chemical processing of the radioactive waste under their responsibility.
- (2) Radioactive waste must be segregated by radionuclides it contains, taking account of the chemical properties in order to prevent uncontrolled chemical reactions that release heat, gases, aerosols, or create residue.
- (3) Radioactive waste must be collected and segregated in accordance with the classification, the waste management plan, and the acceptance criterion for the next stage of the waste management.
- (4) Gaseous effluents may not contain the particles contaminated with radioactive material.
- (5) Radioactive waste, both solid and liquid, must be collected in protective containers.
- (6) The protective container for the collection of radioactive waste should be physically and chemically inert in relation to the collected waste. It should ensure an appropriate isolation level for the collected waste and the protection of the individuals handling the container in relation to the radiological, chemical, biological, physical and other hazardous properties of the waste.
- (7) The radioactive waste generator and the operator must label protective containers that contain radioactive waste with the radionuclide symbol and the identification label.
- (8) The identification label referred to in paragraph (7) must contain:

- a) An identification number;
  - b) The radionuclide symbol;
  - c) The activity measured or estimated, with a reference date;
  - d) The origin;
  - e) Ambient dose equivalent rate on the surface and at 1 m, and the measurement date;
  - f) The amount (volume or mass);
  - g) A description of other hazardous properties.
- (9) If a protective container doesn't contain radioactive waste and is not contaminated by radioactive material, it may not be labeled by the radiation symbol.
- (10) The radioactive waste generator and the operator must treat radioactive waste properly in order to produce a form suitable for conditioning.

#### **Article 15 (Conditioning)**

- (1) The radioactive waste generator and the operator carry out radioactive waste conditioning in order to prevent dissipation of the waste during handling, transport, storage, and disposal in normal conditions and in an emergency.
- (2) While choosing the conditioning process, the radioactive waste generator and the operator must take into account the improvement of safety, the compatibility of the material used for conditioning, achieving homogeneity and stable condition of the waste, maximal usability of the protective container volume, a low level of leaching of radioactive material, the durability of protective containers, and the minimization of secondary radioactive waste during the conditioning process.

#### **Article 16 (Radioactive waste package)**

- (1) The radioactive waste generator and the operator must prepare the radioactive waste package so as to meet the criteria for transport, storage or disposal of the package.
- (2) The radioactive waste generator and the operator must apply appropriate technical measures in order to fulfill the specifications for the waste package.
- (3) The specification for the package referred to in paragraph (2) should contain measurable indicators of the package quality.
- (4) The radioactive waste package must bear the radiation symbol and the identification label.
- (5) The identification label referred to in paragraph (4) must be durable and contain relevant information ensuring the traceability of information against the information in the radioactive waste records.

#### **Article 17 (Storage)**

- (1) The radioactive waste generator and the operator must define the verification procedure for the collected or accepted radioactive waste, including the acceptance criteria.

- (2) The radioactive waste generator and the operator must define procedural steps for non-conformities of the collected or accepted radioactive waste, including the acceptance criteria.
- (3) Radioactive waste containing very short lived radionuclides ( $T_{1/2} < 100$  days) is kept in an interim storage facility at the point of origin until the activity of the radionuclides contained in the waste has fallen below clearance levels.
- (4) Radioactive waste containing radionuclides with half-life greater than 100 days is kept in a storage facility for radioactive waste.
- (5) Radioactive waste may be kept in an interim storage facility but not more than one year.
- (6) Radioactive waste must be stored so that the requirements must be met for the protection of exposed workers, the public, and the environment in accordance with applicable regulations during bringing the waste inside, handling, and taking out of the storage facility.
- (7) Radioactive waste in the storage facility must be in a stable form which ensures long-term holding, access, handling, repackaging, and transport.
- (8) The traceability of data on the stored radioactive waste must be ensured by proper labelling of the radioactive waste package and record keeping for all stages of storage.

**Article 18**  
**(Management of the disused sealed radiation sources)**

- (1) The radioactive waste generator must deal with the disused sealed radiation source as follows:
  - a) return such source to the manufacturer, i.e. supplier;
  - b) transfer such source to any holder of authorization for the use of sources, with consent of the Agency.
- (2) With consent of the Agency, the radioactive waste generator must keep in an interim storage facility a disused sealed source that for justified reasons cannot be returned or transferred as provided for in paragraph (1) or ensure its transport to a waste storage facility and its acceptance by the operator.
- (3) The disused sealed radioactive source referred to in paragraph (2) may be kept in an interim storage facility maximum six months for high-activity sources and maximum one year for other sources.
- (4) Once it has become disused, the disused sealed radioactive source must be kept in its original protective container or the device in which it was used.
- (5) Disused sealed radioactive sources must be segregated and stored according to their potential hazard, i.e. according to the prescribed categorization.
- (6) Disused sealed radioactive sources are tested for leakage according to the method given in the technical documentation for the given source, i.e. the method BAS ISO 9978, Radiation protection – sealed radioactive sources – leakage test methods.
- (7) A leaking disused sealed source must be packaged so as to prevent dispersion of radioactive material.

- (8) Disused sealed sources must be properly conditioned for transport, storage, or permanent disposal.
- (9) The operator establishes conditioning methods, which are approved by the Agency.
- (10) Disused sealed sources must not be subject to compaction, cutting or fusion during conditioning.

**Article 19**  
**(Discharge of radioactive effluents)**

- (1) The radioactive waste generator may perform controlled discharge of material containing radioactive substances into the environment only if the discharged amounts are below the limits approved by the Agency.
- (2) The radioactive waste generator submits an application for discharging, which must contain a description of effluents, including the radionuclide amount, activity or activity concentration, physical and chemical characteristics of the effluent, chemical form of radionuclides, and the discharge point.
- (3) The limits referred to in paragraph (1) are determined by the Agency based on assessing the impact on a representative member of the public by using suitable methods.
- (4) The impact assessment for a representative member of the public referred to in paragraph (3) must include all relevant pathways of public exposure to discharged radionuclides, an individual dose assessment, and a risk assessment of other hazardous properties of the discharged material referred to in paragraph (1).
- (5) The impact assessment for a representative member of the public referred to in paragraph (3) must meet the dose constraint requirement for the public of 0.3 mSv in a year, in accordance with applicable regulations.

**Article 20**  
**(Clearance of waste from regulatory control)**

- (1) As in the case of exemption, clearance from regulatory control is based on an assessment that radioactive waste out of regulatory control for the purpose of radiation protection (exempt waste) will not, in reasonably foreseeable conditions, inflict a dose greater than 10  $\mu$ Sv in a year on any member of the public, while the dose constraint may be set to 1 mSv in a year for low probability exposure scenarios.
- (2) Radioactive waste is cleared from regulatory control if the activity concentrations of radionuclides in the waste are below the clearance levels as defined in applicable regulations.
- (3) In order to verify the activities in the radioactive waste for clearance from regulatory control, the radioactive waste generator and the operator must conduct controls during the discharge of radioactive waste material, either by direct measurement or by sampling and laboratory measurement.
- (4) Radioactive waste containing higher radionuclide content than authorized for clearance from regulatory control referred to in paragraph (2) may be cleared from regulatory control with a specific approval of the Agency if an assessment for the given case shows that the clearance of the waste will not result in exceeding the dose constraints for the public referred to in paragraph (1).

- (5) Radioactive waste may not be diluted or separated in order to reduce the activity and meet the clearance requirements.

**Article 21  
(Disposal)**

The Agency will prescribe the requirements for radioactive waste disposal site and the disposal, taking into account the characteristics and amounts of both existing and planned radioactive waste, and their effect on the public and the environment.

**Article 22  
(Waste containing higher concentrations  
of naturally occurring radionuclides)**

Waste containing higher concentrations of naturally occurring radionuclides, generated in work activities, will be managed in a way approved by the Agency while applying the principles of protecting exposed workers, the public, and the environment in accordance with applicable regulations.

**Article 23  
(Transport of radioactive waste)**

- (1) The radioactive waste generator bears the transport costs for the radioactive waste under its responsibility.
- (2) The transport of radioactive waste must be conducted in accordance with applicable regulations.

**Article 24  
(Emergency preparedness)**

- (1) The radioactive waste generator and the operator must prepare an emergency plan for the management of radioactive waste under their responsibility.
- (2) As a minimum, the emergency plan must contain:
  - a) A description of a potential emergency;
  - b) Identification of critical conditions during the waste management that could cause an emergency and the need for intervention;
  - c) A description of methods and activities for emergency assessment and remediation of emergency consequences;
  - d) The way of informing the Agency and other relevant institutions for the purpose of possible initiating an intervention and assistance (medical, firefighting, etc.);
  - e) A deadline for revision of the plan.
- (3) The emergency plan referred to in paragraph (1) must comply with applicable regulations.

**PART FOUR – STORAGE FACILITY FOR RADIOACTIVE WASTE**

**Article 25  
(Requirements for the storage facility for radioactive waste)**

- (1) The storage facility for radioactive waste must be purposely designed and constructed for radioactive waste management.

- (2) The storage facility for radioactive waste must be designed and constructed in accordance with applicable building regulations.
- (3) The storage facility for radioactive waste must be constructed in accordance with a safety case demonstrating radiation safety and security of the storage facility and waste management activities during operations (performance of a practice) and decommissioning of the facility, including an environmental impact assessment in accordance with applicable regulations.
- (4) The storage facility must be designed and constructed to meet the following requirements:
  - a) Sufficient capacity for reception, processing, and holding of the existing and foreseen radioactive waste both from licensed practices and emergencies;
  - b) Ensuring an appropriate isolation of radioactive waste for the intended storage period;
  - c) Enabled access to radioactive waste for the purpose of inspection, checking the situation, clearance from regulatory control, or transport.
- (5) The operator must analyze and assess the suitability of the storage facility capacities once a year, taking into account the estimated amount of generated radioactive waste and the foreseen operating lifetime of the storage facility.

**Article 26**  
**(Requirements for the interim storage facility)**

- (1) The interim storage facility for decay storage and storage of radioactive waste may be a purposely designed building or a building section.
- (2) The interim storage facility must be constructed in accordance with a safety assessment demonstrating radiation safety and security of the facility and the waste management activities.

**Article 27**  
**(Signposting of the storage facility and the interim storage facility)**

The storage facility and the interim storage facility must be signposted in accordance with applicable regulations.

**Article 28**  
**(Decommissioning of the storage facility for radioactive waste)**

- (1) The operator must prepare a decommissioning plan for the waste storage facility, demonstrating that the planned decommissioning is in line with the radiation safety requirements under the provisions of this regulation and applicable regulations.
- (2) The storage facility is decommissioned with a prior approval of the Agency that verifies the completion of the decommissioning process.
- (3) As a minimum, the decommissioning plan referred to in paragraph (1) must contain:
  - a) A description of buildings within the storage facility;
  - b) A description of decommissioning process;
  - c) A description of waste management;
  - d) A description of costs;
  - e) A safety assessment of the storage facility during decommissioning;
  - f) An environmental impact assessment;

- g) A description of the final inspection procedure and verification of the decommissioning.
- (4) The decommissioning plan must be revised every five years.

**Article 29**  
**(Security of the storage facility and the interim storage facility)**

- (1) The radioactive waste generator and the operator must ensure appropriate security measures for the interim storage facility and the storage facility in accordance with applicable regulations.
- (2) Considering the characteristics of the stored radioactive waste, the security of the interim storage facility and the storage facility must be proportional to the potential risk of unauthorized handling and comply with applicable regulations.
- (3) In cooperation with the competent bodies and authorities, i.e. relevant institutions, security of the interim storage facility and the storage facility is assessed against vulnerability and threat assessments.
- (4) The extent of technical protection of the interim storage facility and the storage facility must be consistent with the safety case and the safety assessment under the provisions of this regulation, the equipment and technical standards of applicable regulations, and the standards of the International Agency for Atomic Energy.

**PART FIVE – RECORD KEEPING**

**Article 30**  
**(Records)**

- (1) The radioactive waste generator and the operator must keep records with information about the radioactive waste under their responsibility.
- (2) Radioactive waste records include the information on generated waste, waste cleared from regulatory control, discharged waste that contains radioactive substances, disused sealed radiation sources, stored, and permanently disposed radioactive waste.
- (3) The records referred to in paragraph (1) should include the traceability of data on radioactive waste from its generation through all stages of processing, transport, storage, and permanent disposal.
- (4) The traceability of data on the stored radioactive material must be ensured through proper labelling and records for all stages of the waste management.

**Article 31**  
**(Contents of the records)**

The records on radioactive waste should contain the data on each individual package or the amount of radioactive waste, as follows:

- a) Origin, date, the place and way of generation, collection processing, packaging, transport, storage, and permanent disposal;
- b) Radiological characteristics;
- c) Data on the physical and chemical properties;
- d) The amount (volume and/or mass);
- e) Ambient dose equivalent rate on the packaging surface and at 1 m;

- f) A description of the package type and design, accompanied by the handling instructions;
- g) Information about other hazardous properties.

**Article 32  
(Retention of records)**

- (1) The radioactive waste generator and the operator must retain records of radioactive waste permanently.
- (2) In case of losing the licence, the radioactive waste generator and the operator must hand over the entire documentation relating to radioactive waste to the Agency within maximum seven days.

**Article 33  
(Sending information to the Agency)**

- (1) The radioactive waste generator and the operator must make an inventory of radioactive waste every year by 31 December the current year.
- (2) The inventory referred to in paragraph (1) must be sent to the Agency at the latest by 31 January the following year for the previous year.
- (3) The inventory referred to in paragraph (1) should contain the following information:
  - a) Radioactive waste under regulatory control;
  - b) Radioactive waste cleared from regulatory control;
  - c) Radioactive waste discharged into the environment as an authorized emission of effluents;
  - d) Exported radioactive waste, including the disused sealed radiation sources that have been returned to the manufacturer.

**Article 34  
(Radioactive waste register)**

- (1) The Agency establishes and maintains a separate register of radioactive waste within the National Register of Radiation Sources.
- (2) The register referred to in paragraph (1) is kept in inventory sense by the calendar year in which the radioactive waste was generated.

**Article 35  
(Export of radioactive waste)**

The Agency approves the export of radioactive waste if the following requirements are met:

- a) The country of destination is a party to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management;
- b) The country of destination has a radioactive waste management and disposal program with objectives representing a high level of safety, in line with international recommendations, and equivalent to the requirements laid down in this regulation.
- c) The recipient of radioactive waste is authorized for radioactive waste management by the competent authority of the country of destination.

PART SIX – TRANSITIONAL AND FINAL PROVISIONS

**Article 36  
(Harmonization of regulations)**

- (1) Radioactive waste generators must harmonize their operations with this regulation within one year from the date of entering of this regulation into force.
- (2) If the generator of radioactive waste generated in the past period cannot be identified, the Agency will allocate responsibilities for the waste management.

**Article 37  
(Existing temporary storage facilities and interim storage facilities)**

The legal persons managing the existing temporary storage facilities and interim storage facilities for radioactive material must:

- a) make a radiation safety assessment of the existing temporary storage facilities within six months from the date of entering of this regulation into force;
- b) harmonize their operations with this regulation within the deadline determined by the Agency for each storage facility individually on the basis of the safety assessment referred to in point a).

**Article 38  
(Entering into force)**

This regulation enters into force on the eighth day following the date of its publication in the Official Gazette of BiH.

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**D I R E C T O R**

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**Annex 1.** Characteristics of radioactive waste classes

<b>Radioactive waste class</b>	<b>Characteristics</b>
Very short lived radioactive waste	Radioactive waste contains radionuclides with a half-life less than 100 days that will decay to clearance levels within three years from the date of generation.
Very low level radioactive waste	Radioactive waste containing radionuclide concentrations slightly above clearance levels and suitable for disposal in near surface landfill type facilities. As a rule, the waste generated in work activities containing higher concentrations of naturally occurring radionuclides belongs to this class.
Low level waste	Radioactive waste containing radionuclides with half-life less than 30 years (for long lived emitting radionuclides, the limitation of activity concentrations to 4000 Bq/g in individual waste packages and 400 Bq/g on average for the total radioactive waste)
Intermediate level radioactive waste	Radioactive waste with long lived radionuclide concentrations exceeding limitations for short lived waste
High level radioactive waste	Thermal power of radioactive waste is greater than 2 kW/m <sup>3</sup> and long lived radionuclide concentrations exceed limitations for short lived waste

## **Annex 2. Safety case elements**

The minimum required safety case elements are:

1. Purpose and scope of the safety case
2. Demonstration of safety
3. Graded approach
4. Legislative framework for the safety case and safety assessment
5. Public participation
6. Radioactive waste management system
7. A description of the storage facility, activities, and radioactive waste
8. Safety assessment
  - A description of the safety assessment methodology
  - Safety criteria
  - Assessment of:
    - radioactive waste management system
    - storage facility and activities
    - radiation safety (developing scenarios, a qualitative and quantitative analysis)
    - non-radiation safety
9. Iteration and optimization
10. Identification of safety measures
11. Limits and constraints
12. Integration of safety arguments:
  - Comparison with the safety criteria
  - Plan for addressing open questions
13. Assessment of uncertainties
14. Summary
15. Main conclusions