

Pursuant to Article 42 in relation to Articles 38 and 39, Article 111, paragraph 3, Article 139, paragraph 3, Article 142, paragraph 3, Article 143, paragraph 3, Article 144, paragraphs 2 and 4, and Article 22, point 3) of the Law on Radiation and Nuclear Safety and Security ("Official Gazette of RS", Nos. 95/18 and 10/19) and Article 15, paragraph 1, point 4) of the Statute of Serbian Radiation and Nuclear Safety and Security Directorate ("Official Gazette of RS", No. 9/19), the Board of Serbian Radiation and Nuclear Safety and Security Directorate on its session held on February 18, 2022 passes

## **THE RULEBOOK ON DECOMMISSIONING OF NUCLEAR FACILITIES**

### **I**

#### **INTRODUCTORY PROVISIONS**

##### **Subject Matter**

##### **Article 1**

This Rulebook shall prescribe in detail the following:

- 1) requirements governing the licence issuance for nuclear facilities decommissioning;
- 2) requirements governing nuclear facility decommissioning;
- 3) scope and the content of the Initial Decommissioning Plan and the Decommissioning Plan;
- 4) timeframes for the review and revision of the Initial Decommissioning Plan and the Decommissioning Plan, and the timeframes for the submission of reports thereon to the Directorate;

##### **Definitions**

##### **Article 2**

For the purpose of this Rulebook, the following definitions shall apply:

- 1) *international recommendations and standards* are the recommendations and standards by the International Atomic Energy Agency, the International Commission on Radiological Protection, the International Organization for Standardization, and any other relevant organizations;

The remaining definitions in this Rulebook have the meaning defined in the Law on Radiation and Nuclear Safety and Security.

### **II**

#### **ISSUANCE OF LICENCE FOR NUCLEAR FACILITY DECOMMISSIONING**

##### **Application for Licence for Nuclear Facility Decommissioning**

##### **Article 3**

A legal entity or entrepreneur owning or managing a nuclear facility, excluding the radioactive waste disposal facility, shall submit to Serbian Radiation and Nuclear Safety and Security Directorate (hereinafter: The Directorate) the application for the license for nuclear facility decommissioning in П22-01 form under Appendix 1 hereof, which is its constituent part.

The application under paragraph 1 shall be supplemented by the documentation which is a constituent part thereof, given as follows:

- 1) Safety Analysis Report;
- 2) Radiation Protection Programme;
- 3) Decommissioning Plan;
- 4) Remediation Plan;
- 5) proof of the amount of and manner of providing the financial resources for the implementation of decommissioning;
- 6) filled out П22-02 form under Appendix 1 hereof containing the data on the exposed workers and other persons performing the decommissioning activities, including outside workers and other persons engaged by the subcontractors;
- 7) Environmental Radioactivity Monitoring Programme during decommissioning activities;
- 8) filled out П22-04 form under Appendix 1 hereof containing the list of equipment and resources used during decommissioning together with the attestation and other proof of the quality or the meteorological conditions, including the equipment and the resources used by the subcontractors;
- 9) Emergency Event Response Plan;
- 10) reasoning of the Ministry responsible for the environmental protection on the Environmental Impact Assessment;
- 11) Radioactive Waste and Spent Nuclear Fuel Management Plan;
- 12) proof on the fulfilment of the requirements for the transport and storage of radioactive waste and spent nuclear fuel generated during decommissioning;
- 13) consent from the Ministry of Internal Affairs to the Security Plan;
- 14) proof of the establishment of the Integrated Management System;
- 15) proof of the payment of the republic administrative fee;
- 16) written decision on the entry into the Business Registers Agency, *i.e.* the written decision by the competent court on the entry into the Court Registry;
- 17) proof of the appointment of a radiation protection officer or the establishment of the radiation protection service in П22-03 form under Appendix 1 hereof.

The Security Plan under paragraph 2, point 1) of this Article shall be prepared in compliance with the Appendix 2 hereof. Appendix 2 is the constituent part of this Rulebook.

The applicant can compile the Security Plan based on the fulfilment of the requirements serving to obtain the approval for the Security Plan and Radiation Protection Programme compiling, which are prescribed by a special rulebook.

Upon the completion of the Security Plan, in the process of submitting the Security Plan, the applicant shall submit to the Directorate the proof of the fulfilment of the requirements under paragraph 4 of this Article.

The Radiation Protection Programme under paragraph 2, point 2) of this Article shall be compiled in compliance with the Appendix 3 hereof. Appendix 3 is the constituent part of this Rulebook.

The Emergency Event Response Plan under paragraph 2, point 9) of this Article shall be prepared in compliance with the contents under Appendix 5 hereof. Appendix 5 is the constituent part of this Rulebook.

The proof of the establishment of the Integrated Management System under paragraph 2, point 14) of this Article represents the quality rules of procedure with the list of relevant procedures or a certificate issued by a certification body.

#### Decommissioning Plan

##### **Article 4**

The scope and the content of the Decommissioning Plan under Article 3, paragraph 2, point 3) hereof is given under Appendix 4 hereof. Appendix 4 is the constituent part of this Rulebook.

The review and revision of the Decommissioning plan shall be conducted at least once every five (5) years or at the request from the Directorate, and imperatively following an emergency event.

The revision of the Decommissioning Plan shall be conducted in relation to:

- 1) changes in the Decommissioning Strategy;
- 2) changes relevant for safety;
- 3) technological development;
- 4) emergency events;
- 5) changes in legal framework;
- 6) changes in the structures, systems and components;
- 7) decommissioning activities and any possible non-compliances with the Decommissioning Plan;
- 8) operational experience;
- 9) any other events.

Preparation of Safety Analysis Report, Radiation Protection Programme and Decommissioning Plan

##### **Article 5**

The Safety Analysis Report, Radiation Protection Programme and Decommissioning Plan shall be compiled so that:

- 1) they include the table of contents, and, in case of a document consisting of more than one volumes, each volume contains the table of contents of the entire document;
- 2) each section in the documents is a well-rounded thematic whole;
- 3) the information included in the outlines, diagrams and drawings are readily apparent and the symbols and abbreviations fully defined;
- 4) the information contained in the documents can be amended provided that amendments are well-rounded wholes.

The amendments to the documentation under paragraph 1 shall include the citing of the amendments to the text, figures, tables and other elements of the document subject to such amendments.

Revision of Safety Analysis Report and Radiation Protection Programme

##### **Article 6**

The Safety Analysis Report and the Radiation Protection Programme shall be revised particularly in relation to the following:

- 1) any changes in the national or the international standards;
- 2) any changes in the status and the internal organization of the authorization holder;
- 3) any changes in the operational procedures and technologies;

- 4) any new scientific and technical knowledge;
- 5) any modifications in the structures, systems and components, and their possible impact on the safety or the availability and usability of the documents relevant for safety;
- 6) identification of major effects of or trends in the aging of the structures, systems and components;
- 7) operational experience in practise performance;
- 8) any changes or planned changes in practise performance;
- 9) any changes in the natural, industrial or demographic surroundings in the vicinity of the nuclear facility where the practise is performed.

#### Financial Capacities

##### **Article 7**

The proof of the amount of and the manner of providing the financial resources under Article 3, paragraph 2, point 5) hereof for the purpose of the implementation of decommissioning shall include:

- 1) the estimate of the amount of the decommissioning funds;
- 2) the establishment of mechanisms to provide decommissioning funds.

The estimate of the amount of the decommissioning funds under paragraph 1, point 1) includes the resources necessary for the implementation of all decommissioning stages, the management of the radioactive waste generated during decommissioning, radioactivity monitoring programme of environmental factors around the nuclear facility, as well as the resources necessary for the maintenance of the nuclear facility in case of decommissioning discontinuation.

The revision of the estimate of the amount of the decommissioning funds under paragraph 1, point 1) shall be conducted once every three years, and shall comply with the applicable Decommissioning Plan or the Initial Decommissioning Plan.

Total decommissioning funds or the established mechanisms of the provision thereof should be available on the day of the commencement of decommissioning implementation.

#### Monitoring Programme

##### **Article 8**

The Radioactivity Monitoring Programme of environmental factors around the nuclear facility during decommissioning under Article 3, paragraph 2, point 7) hereof contains:

- 1) elements of workplace environment and the environment subject to radioactivity monitoring;
- 2) locations subject to monitoring;
- 3) sampling and measurement incidence;
- 4) sampling methods, measurement methods, methods for result and dose rate assessment;
- 5) control testing.

In the process of compiling the Environmental Radioactivity Monitoring Programme in the vicinity of the nuclear facility, the following shall be taken into account:

- 1) type of radiation sources;
- 2) history of the practise performance;
- 3) data on the emergency events during practise performance;
- 4) planned activities during decommissioning;
- 5) exposure pathways;

- 6) environmental risks arising or likely to arise during decommissioning;
- 7) any other relevant data.

The licensee for nuclear facility decommissioning shall apply, review and amend the Environmental Radioactivity Monitoring Programme in the vicinity of the nuclear facility during decommissioning under paragraph 1 in compliance with the changes arising during decommissioning.

#### Integrated Management System

##### **Article 9**

The licensee shall maintain and implement the integrated management system.

The integrated management system under paragraph 1 shall be established in accordance with the national and international standards and recommendations.

The integrated management system shall include the written procedures for all activities during decommissioning relevant for radiation and nuclear safety and security, particularly those procedures which outline in detail the following:

- 1) decontamination of structures, systems and components;
- 2) dismantling of structures, systems and components;
- 3) staff monitoring, environmental monitoring and monitoring of environmental factors around the nuclear facility;
- 4) radioactive waste and other hazardous waste management;
- 5) emergency event response.

The licensee shall review and update the written procedures under paragraph 3 in accordance with the changes associated with the nuclear facility and planning and performing decommissioning.

#### End State of Decommissioning

##### **Article 10**

The end state of a nuclear facility decommissioning can be:

- 1) unrestricted use of the nuclear facility, site and the parts thereof;
- 2) restricted use of the nuclear facility, site and the parts thereof;
- 3) restricted access to the nuclear facility, site and the parts thereof.

#### III

#### DUTIES AND RESPONSIBILITIES

##### Duties and Responsibilities

##### **Article 11**

The licensee shall perform decommissioning in accordance with the Decommissioning Plan.

The licensee for a nuclear facility decommissioning shall ensure the following:

- 1) safety and security of a nuclear facility;
- 2) that the exposure of the exposed workers and the public during decommissioning is below the prescribed limits;
- 3) optimized exposure during decommissioning;

- 4) use of safe and verified decommissioning techniques and technologies in accordance with the international standards and recommendations;
- 5) safety and security of the radioactive material, radioactive sources, radioactive waste and nuclear fuel which have not been removed from the nuclear facility or handed over to the central storage.

The licensee for a nuclear facility decommissioning is responsible for the activities and procedures conducted by the subcontractors engaged in the decommissioning activities.

#### IV

### PLANNING OF DECOMMISSIONING

#### Initial Decommissioning Plan

##### **Article 12**

The Initial Decommissioning Plan shall be compiled in accordance with the scope and content of the Decommissioning Plan under Article 4 hereof.

The level of details in the Initial Decommissioning Plan is in accordance with the nuclear facility lifetime phase and the current state of the structures, systems and components.

The review and revision of the Initial Decommissioning Plan shall be performed in accordance with Article 4 hereof.

#### Selection of Decommissioning Strategy

##### **Article 13**

The legal entity or entrepreneur owning or managing a nuclear facility is responsible to select the decommissioning strategy.

The decommissioning strategy can be:

- 1) immediate dismantling;
- 2) deferred dismantling.

For sites where more than one facility is located or more than one practise performed, a decommissioning strategy must be selected with due regard to the interaction between the facilities or the practises.

The rationale of the selected strategy is a constituent part of the Decommissioning Plan.

#### Deferred Dismantling

##### **Article 14**

Where deferred dismantling has been selected as the decommissioning strategy, the licensee for decommissioning shall:

- 1) provide for, to the extent which is reasonably achievable, passive safety measures in the nuclear facility prior to deferred dismantling, and that the need for active safety systems, monitoring and human interventions is as low as reasonably achievable;

- 2) establish the measures ensuring that the nuclear facility decommissioning can be performed in a safe manner;
- 3) establish the nuclear facility maintenance programme ensuring safety in the period before the commencement of decommissioning, and that the maintenance activities have no negative impact on decommissioning;
- 4) provide for the financial resources covering the period prior to decommissioning and the period during decommissioning as well.
- 5)

#### Controls of Structures, Systems and Components

##### **Article 15**

The licensee for nuclear facility decommissioning shall conduct regular and extraordinary controls of the nuclear facility structures, systems and components so as to establish the current state thereof.

The regular controls under paragraph 1 shall be performed in accordance with the maintenance plan for the nuclear facility structures, systems and components, which is a constituent part of the Decommissioning Plan.

The extraordinary controls under paragraph 1 shall be performed in case of an emergency event, suspicion of an emergency event or circumstances likely to cause an emergency event, as well as any damage to, faults and failures of the nuclear facility structures, systems and components.

The licensee shall submit to the Directorate the report on the extraordinary control within 30 days of the control at the latest.

#### V

##### DECOMMISSIONING STAGES

###### 1. Preparation for Decommissioning

###### Duties in Decommissioning Preparatory Stage

##### **Article 16**

During the decommissioning preparatory stage, the licensee shall:

- 1) ensure the maintenance of the nuclear facility structures, systems and components;
- 2) conduct thorough nuclear facility radiological characterization in accordance with the Radiological Characterization Plan;
- 3) conduct thorough radiological characterization of the environmental elements around the nuclear facility in accordance with the Radiological Characterization Plan and the Radioactivity Monitoring Plan of the environmental elements around the nuclear facility;
- 4) conduct thorough survey of the nuclear facility and determine the quantity and the class of radioactive waste and any other hazardous material in the nuclear facility, as well as the activated and contaminated structures, systems and components, and enter such information into the Decommissioning Plan;
- 5) review and update the drawings of the nuclear facility and any other relevant documents with regard to any changes arising during the nuclear facility operation.

## 2. Implementation of Decommissioning

### Management of Structures, Systems and Components

#### **Article 17**

The licensee for the nuclear facility decommissioning shall:

- 1) ensure that the structures, systems and components, the use of which is planned during decommissioning, function in a safe and secure manner;
- 2) ensure that the installation and use of new structures, systems and components are conducted in accordance with the Decommissioning Plan and the Safety Analysis Report;
- 3) ensure maintenance, testing and surveillance or replacement of the structures, systems and components in case of changes due to their aging or use;
- 4) update the Safety Analysis Report and the Decommissioning Plan commensurate with the changes arising during decommissioning;
- 5) record, assess, check and retain all data on the installation, maintenance, testing, surveillance, replacement and dismantling of the structures, systems and components, as well as any other equipment relevant for safety.

### Radioactivity Monitoring during Decommissioning

#### **Article 18**

Radioactivity monitoring shall be conducted during the preparation for and the implementation of decommissioning.

The radioactivity monitoring under paragraph 1 includes the monitoring of workplace environment, the environmental monitoring, or both depending on the class of radiation sources, type of practise and any other elements likely to affect the radioactivity within the nuclear facility and its surroundings.

The radioactivity monitoring under paragraph 1 shall be conducted by the licensee.

The licensee can exceptionally engage other legal entity obtaining the approval for radioactivity monitoring or particular testing within the monitoring to conduct radioactivity monitoring.

For the purpose of the environmental radioactivity monitoring during decommissioning, the licensee shall engage other legal entity obtaining the approval for radioactivity monitoring or particular testing within the monitoring for the purpose of control testing in accordance with the monitoring programme.

The costs of radioactivity monitoring shall be borne by the licensee.

The control testing serve to confirm the results of the environmental radioactivity monitoring.

The control testing is conducted on at least one sample per year for each element of the workplace environment and the environment subject to monitoring.

In case of control testing, the licensee and the approval holder for radioactivity monitoring or particular testing within the monitoring shall conduct their analysis using the same sample.

## Emergency Event Response

### **Article 19**

The licensee for the nuclear facility decommissioning shall establish, maintain and regularly test the emergency event response arrangements commensurate with the assessment of the emergency events likely to occur during decommissioning.

### 3. Final Radiological Survey

#### Duty to Perform Final Radiological Survey

### **Article 20**

At the completion of all the activities foreseen by the Decommissioning Plan, the licensee for the nuclear facility decommissioning shall provide the final radiological survey of the nuclear facility and its surroundings.

The final radiological survey shall be conducted in accordance with the Plan for Final Radiological Survey which is a constituent part of the Decommissioning Plan.

The final radiological survey shall be conducted by the approval holder for radioactivity monitoring or particular testing within the monitoring, who is independent of the licensee.

The costs of final radiological survey shall be borne by the licensee.

## VI

### RESTRICTIONS

#### Restrictions

### **Article 21**

The nuclear facility building or site, or the parts thereof may have unrestricted use if:

- 1) the dose arising from the radioactive contamination in the building or the site to a member of the public is not above 300  $\mu\text{Sv}$  in a year;
- 2) there are no radioactive materials whose activities exceed the levels prescribed by a special rulebook;
- 3) there are no radioactivity or other symbols pointing at the presence of radioactive material.

Where, during decommissioning, there are no possibilities to provide for unrestricted use of the nuclear facility building or site, or the parts thereof, the licensee shall put in place the appropriate restrictions.

The nuclear facility building or site, or the parts thereof can have restricted use if the dose for a member of the public, with restriction in place, is not above 300  $\mu\text{Sv}$  in a year, and if such restrictions were to fail, it is not above 1mSv in a year.

If the nuclear facility building or site, or the parts thereof fulfil the requirements under paragraph 3, the licensee shall particularly provide for the following:

- 1) restricted access to the building and the site, or the parts thereof;
- 2) readily apparent warning signs on the nuclear facility building or site, or the parts thereof;
- 3) maintenance of the nuclear facility building or site, or the parts thereof;

- 4) radioactivity monitoring;
- 5) information to the local self-government authority responsible for spatial and urban planning;
- 6) any other restrictions.

Where the dose for a member of the public, with restrictions in place, is above 300  $\mu\text{Sv}$  in a year, the licensee for the nuclear facility decommissioning shall establish the regime of restricted access to the nuclear facility building or site, or the parts there of, particularly by:

- 1) banning unauthorized persons to access the building and site, or the parts thereof;
- 2) marking the nuclear facility building or site, or the parts thereof with readily apparent warning signs;
- 3) establishing controlled access;
- 4) establishing maintenance of the building and the site;
- 5) performing radioactivity monitoring;
- 6) informing the local self-government authority responsible for spatial and urban planning;
- 7) establishing any other restrictions.

The radioactivity monitoring under paragraph 4, point 4) and paragraph 5, point 5) shall be performed in accordance with the Radioactivity Monitoring Programme, which is prepared by the end-user and consented for by the Directorate.

The radioactivity monitoring under paragraph 4, point 4) and paragraph 5, point 5) shall be performed by a legal entity holding the approval for radioactivity monitoring or particular testing within monitoring.

The licensee shall deliver to the Directorate the Programme of Monitoring Status for Restricted Use of the nuclear facility building or site, or the parts thereof under paragraphs 3 and 5.

The scope and the content of the Programme of Monitoring Status for Restricted Use under paragraph 8 is given under Appendix 6 hereof. Appendix 6 is a constituent part of this Rulebook.

The licensee shall deliver to the Directorate the report on the status of the nuclear facility building or site, or the parts thereof under paragraphs 3 and 5 of this Article in the scope and timeframe prescribed by the Directorate.

## VII

### REPORTING AND RECORDS

#### 1. Reporting

##### Duty to Report

#### **Article 22**

The licensee for the nuclear facility decommissioning shall report to the Directorate on the following:

- 1) activities performed during decommissioning;
- 2) exposure of the exposed workers;
- 3) radioactivity monitoring around the nuclear facility;
- 4) generated radioactive waste;
- 5) material released from the regulatory control;
- 6) any other data relevant for radiation and nuclear safety and security.

The Directorate issues the license to prescribe the reporting periods and the timeframe for the delivery of the reports under paragraph 1.

### Emergency Event Reporting

#### **Article 23**

The licensee for the nuclear facility decommissioning shall inform the Directorate without undue delay on any emergency event or any non-compliances with the Decommissioning Plan.

The licensee for the nuclear facility decommissioning shall deliver to the Directorate the report on an emergency event or non-compliances with the Decommissioning Plan within eight (8) days of informing the Directorate on such an event or a non-compliance.

### Reporting on Completion of Decommissioning

#### **Article 24**

At the completion of decommissioning, the licensee for the nuclear facility decommissioning shall prepare and submit to the Directorate the following:

- 1) Decommissioning Report;
- 2) Report on Final Radiological Survey.

The Directorate prescribes the timeframes for delivery of the reports under paragraph 1.

### Decommissioning Report

#### **Article 25**

The Decommissioning Report under Article 24, paragraph 1, point 1) hereof shall particularly include the information on:

- 1) Decommissioning Plan and the amendments thereto;
- 2) Safety Analysis Report and the amendments thereto;
- 3) radiological characterization of the nuclear facility prior to and at the completion of decommissioning;
- 4) performed activities during decommissioning;
- 5) sealed radiation sources and radioactive material which were removed from the nuclear facility;
- 6) generated radioactive waste;
- 7) material released from the regulatory control or discharged into the environment as an authorized discharge;
- 8) exposure of the exposed workers;
- 9) radioactivity monitoring of the environmental elements around the nuclear facility;
- 10) emergency events and non-compliances with the Decommissioning Plan;
- 11) systems, structures and components remaining after decommissioning or added during decommissioning;
- 12) any other data relevant for radiation and nuclear safety and security.

## Report on Final Radiological Survey

### **Article 26**

The Report on the Final Radiological Survey under Article 24, paragraph 1, point 2) hereof shall contain in particular the following:

- 1) description of the nuclear facility or the site;
- 2) identification of potential contaminants and their locations;
- 3) identification of other potential hazardous materials;
- 4) applied measuring methods and analyses performed;
- 5) analysis of the Final Radiological Survey results against the end state of decommissioning;
- 6) conclusion

### 2. Records

#### Duty to Maintain Records

### **Article 27**

The licensee for the nuclear facility decommissioning shall maintain the records on:

- 1) activities performed during decommissioning;
- 2) sealed radiation sources and radioactive material in the nuclear facility with their activity level and precise location;
- 3) generated radioactive waste;
- 4) material released from the regulatory control or discharged into the environment as an authorized discharge;
- 5) exposure of the exposed workers;
- 6) medical examinations of the exposed workers;
- 7) completed trainings;
- 8) radioactivity monitoring of the environmental elements around the nuclear facility;
- 9) emergency events and non-compliances with the Decommissioning Plan;
- 10) equipment and tools used for decommissioning and, including their certificates;
- 11) any other data relevant for radiation and nuclear safety and security.

The licensee for the nuclear facility decommissioning shall ensure retention of the records under paragraph 1 for at least 30 years of the termination of the license for the nuclear facility decommissioning.

If the licensee for the nuclear facility decommissioning were to cease operations prior to the expiry of the deadline prescribed under paragraph 2, he or she shall transfer the records under paragraph 1 to their legal successor, or, if there is no such legal successor, to the competent archive.

### **Article 28**

The applicant shall deliver all data contained in the submitted forms to the Directorate electronically in the format the Directorate publishes in its website.

## VII

### HUMAN RESOURCES

#### Duties Pertaining to Human Resources

##### **Article 29**

During decommissioning, the licensee shall provide for trained, educated and medically fit staff for safe and secure performance of decommissioning.

During decommissioning, the licensee shall provide for the adequate training and re-training for the exposed workers, outside workers and other staff engaged in the decommissioning activities.

#### Requirements for Staff Education and Experience

##### **Article 30**

Nuclear facility decommissioning can be performed only by staff with secondary education of at least four (4) years of duration and professional competence for decommissioning duties.

Decommissioning can be managed by persons with a higher education degree acquired in the academic studies in the scientific, *i.e.* professional field of physics, chemistry, physics and chemistry, civil engineering, electrical and computer engineering, machine or technology engineering of at least four years of duration or of 240 ECTS credits awarded, with at least five years of work experience in the field of radiation and nuclear security and professional competence for decommissioning duties.

#### Training Courses

##### **Article 31**

Professional competence development of staff under Article 30 hereof shall be conducted by means of basic courses and re-training courses.

Professional competence development of staff under Article 30 hereof shall be conducted based on the Professional Development Programme, in accordance with the Professional Development Plan.

The Professional Development Plan shall be prepared for a period of one (1) year.

The Programme and the Plan under paragraph 2 shall be prepared by the legal entity owning or managing the nuclear facility subject to decommissioning, *i.e.* the licensee.

The Professional Development Programme contains:

- 1) fields of training;
- 2) modules of the basic training course;
- 3) modules of the re-training course;
- 4) lecture schedule at the basic training course;
- 5) lecture schedule at the re-training course;
- 6) references:

The licensee for the nuclear facility decommissioning shall revise the Programme under paragraph 5 commensurate with all the amendments arising during the nuclear facility decommissioning.

The Professional Development Plan contains:

- 1) number of staff requiring professional development and the type of course;
- 2) quarterly course organization plan;
- 3) names of lecturers for each course.

The licensee shall submit to the Directorate the Professional Development Plan at least 30 days prior to the beginning of the calendar year.

Re-training shall be organized at least once every three years or in case of a change in technology or an operational procedure.

#### Qualifications of Lecturers

##### **Article 32**

The lecturers in the basic courses and re-training courses under Article 31, paragraph 1 hereof can be persons with a higher education degree acquired in the academic studies in the scientific, *i.e.* professional field of physics, chemistry, physics and chemistry, civil engineering, electrical and computer engineering, machine or technology engineering of at least four (4) years of duration or of 240 ECTS credits awarded, with at least five (5) years of work experience in the field of radiation and nuclear safety, at least two of which are in the planning or performing facility decommissioning duties.

#### Assessment

##### **Article 33**

Upon completion of a basic course and re-training course, professionally engaged persons take the professional competence test.

The commission comprising four members, the two of whom are proposed by the licensee, and the remaining two are the representatives of the Directorate, shall assess the results of professional competence tests for each professionally engaged person.

The assessment grades in the professional competence test can be either “passed” or “failed”. The grade “passed” is awarded to a professionally engaged person with more than 80 % of correct answers in the professional competence test.

In case of professionally engaged persons awarded with the grade “failed” in the professional competence test upon the completion of a basic training course, the commission is to set a new test date, which cannot be shorter than one month following the date of unsuccessful professional competence assessment.

In case of professionally engaged persons awarded with the grade “failed” in the professional competence test upon the completion of a re-training course, the commission is to set a new test date, which cannot be shorter than one month following the date of unsuccessful professional competence assessment.

A professionally engaged person awarded with the grade “failed” in the professional competence test upon the completion of a basic training or re-training course cannot perform decommissioning duties.

IX

TRANSITIONAL AND FINAL PROVISIONS

Previously Submitted Initial Decommissioning Plans

**Article 34**

The revision of the Initial Decommissioning Plans submitted to the Directorate prior to the entry into force of this Rulebook should be completed within one year of the entry into force of this Rulebook.

Dealing with Ongoing Procedures

**Article 35**

The procedures of issuing authorizations which were commenced before the Directorate prior to the entry into force of this Rulebook are to be completed in accordance with the provisions in force at the time of authorization application submission.

The holders of the authorizations issued in accordance with paragraph 1 shall comply their work and operations with the provisions of this Rulebook, at least one year since its entry into force.

Entry into Force

**Article 36**

This Rulebook shall enter into force on the eighth day of its publication in "Official Gazette of RS".

## APPENDIX 1

### П22-01 FORM

#### Application for a Facility Decommissioning Licence

- Nuclear facility
- Radiation facility

#### I Information on a legal entity/entrepreneur

Business Name			Registration Number		
			TIN		
Place			Municipality		
Address					
Postal code		Telephone		e-mail	
Radiation Protection Officer / Radiation Protection Service Manager					

#### II Information on the facility intended for decommissioning

Facility name	
Practise performed in the facility	
Facility address	
Basis for facility use	<input type="checkbox"/> Ownership <input type="checkbox"/> Other use (list):
Type, Ref.No. and date of the document setting the basis for facility use	<i>(contract, decision, itd.)</i>
Number of facility cadastral plot	

#### III Confirmation by the legal entity/entrepreneur

Under full substantive and criminal liability we hereby confirm the following data as accurate.

	Name	Date	Signature
Approval holder at the legal entity/entrepreneur			

Radiation Protection Officer / Radiation Protection Service Manager			
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**П22-02 FORM**

**List of exposed workers and other staff engaged in decommissioning duties**

Business Name		Registration Number	
		TIN	

II Information on exposed workers or other staff performing decommissioning duties including outside workers and persons engaged by subcontractors

Legal entity has no exposed workers

No.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.

1. Name and surname;
2. Personal identity number;
3. Employer;
4. Radiation zone work start-date;
5. Exposed worker category A/B;
6. Job title;
7. Occupation;
8. Date of acquiring qualifications;
9. Name of the institution issuing the certificate of acquired qualifications, degree and type of qualifications;
10. Qualification degree and type;
11. Date of issuing the medical fitness certificate not older than one year containing the conclusion that a person is fit to work in a radiation zone;
12. Date of entry into a fixed-term employment contract;
13. Duration of the fixed-term employment contract;
14. Date of issuing the certificate on training and education for radiation protection measures not older than five years;
15. Title of training and education course for radiation protection measures;
16. Name of approval holder issuing the certificate on training and education for radiation protection measures;
17. Date of issuing the certificate on professional competence for decommissioning;

- 18. Title of course for professional competence for decommissioning;
- 19. Total effective dose received for previous five years (mSv);
- 20. Radiation zone work end-date.

III Confirmation by the legal entity/entrepreneur

Under full substantive and criminal liability we hereby confirm the following data as accurate.

	<b>Name</b>	<b>Date</b>	<b>Signature</b>
Approval holder at the legal entity/entrepreneur			
Radiation Protection Officer / Radiation Protection Service Manager			

**П22-03 Form****Confirmation of the appointment of a radiation protection officer or the establishment of a radiation protection service**

## I Information on the legal entity or entrepreneur

Business name	Registration number	
	TIN	

## II Information on a radiation protection officer or the radiation protection service staff

No.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.

1. Name and surname;
2. Personal identity number;
3. Radiation zone work start-date (if a person is an exposed worker);
4. Date of appointment;
5. Job title;
6. Occupation;
7. Date of acquiring qualifications;
8. Name of the institution issuing the certificate of acquired qualifications, degree and type of qualifications;
9. Qualification degree and type;
10. Date of entry into a fixed-term employment contract;
11. Duration of the fixed-term employment contract;
12. Date of issuing written proof on training and education for radiation safety measures not older than five years;
13. Title of training and education programme for radiation safety measures;
14. Name of the approval holder issuing the certificate on training and education for radiation safety measures;
15. Work end-date as a radiation protection officer/member of a radiation protection service;
16. Work experience in the use of radiation sources.

III Confirmation by the legal entity/entrepreneur

Under full substantive and criminal liability we hereby confirm the following data as accurate.

	<b>Name</b>	<b>Date</b>	<b>Signature</b>
Approval holder at the legal entity/entrepreneur			
Radiation Protection Officer / Radiation Protection Service Manager			

**Π22-04 Form****List of equipment and resources**

Business name:		Registration number:	
		TIN:	

I List of equipment and resources including attestations and other proof on the quality and meteorological conditions together with the equipment and resources of subcontractors

No.	Name	Type and characteristics	Calibration / Attestation valid to:

II Confirmation by the legal entity/entrepreneur

	Name	Date	Signature
Radiation Protection Officer / Radiation Protection Service Manager			
Approval holder at the legal entity/entrepreneur			

## APPENDIX 2

### CONTENT OF SAFETY ANALYSIS REPORT FOR NUCLEAR FACILITY DECOMMISSIONING

The document shall include the following information:

- 1) Title;
- 2) Version number and date of compiling;
- 3) Name and signature of a radiation protection officer, *i.e.* Radiation Protection Service manager;
- 4) Information on the legal entity:
  - (1) Name of the legal entity or entrepreneur;
  - (2) Address;
  - (3) Ref. No. of the entry into the Business Registers Agency, *i.e.* the written decision by the competent court;
  - (4) Registration number;
  - (5) Tax Identification Number (TIN);
  - (6) Business Activity Code;
  - (7) Telephone/Fax;
  - (8) E-mail;
- 5) Amendments records;
- 6) Information on the approved officer responsible for the preparation of Safety Analysis Report and Radiation Protection Programme
  - (1) Ref. No. and the date of the written decision on approval;
  - (2) Name, occupation and signature of a person preparing the document.

The document shall include at least the following sections:

#### **1. Introduction**

The scope and the purpose of the document, summary of the Safety Analysis Report;

#### **2. Safety approach during facility decommissioning**

Fundamental safety approach to a nuclear facility decommissioning, standpoints and methodology with particular emphasis on: fundamental safety principles, safety assessment and acceptance criteria, safety functions, criteria and standards, classification of nuclear facility safety systems, quality assurance in all stages and other actions intended to confirm the safety of a nuclear facility decommissioning;

#### **3. Nuclear facility site description and assessment**

Description of a nuclear facility site, demography and topography, meteorology, hydrology, geology, seismic and environmental protection, assessment of site features likely to affect decommissioning, interaction between a nuclear facility and its surroundings;

#### **4. Nuclear facility description and technical characteristics**

Description of the nuclear facility and its structures, systems and components, including their operation; description of all structures, systems and components relevant for safety, including their relevance for safety;

#### **5. Nuclear facility operational history**

Previous stages in a nuclear facility lifecycle, any changes in the structures, systems and components during the previous stages, practises and activities performed in the nuclear facility, operational history of the nuclear facility, history of the license and authorization issuance, past events likely to affect decommissioning and safety, previous activities associated with decommissioning.

## **6. Practise description**

In-depth description of the practise being performed or intended to be performed;

## **7. Practise Safety Assessment**

Safety assessment of the practise in normal and abnormal circumstances including an emergency event, methodology description, description of the assessment input and output in the scope commensurate with the risks and complexity of the practise, assessment of the foreseeable initiating events, assessment of the impact of other facilities, buildings and practises in the same site or associated facilities and practises;

## **8. Decommissioning performance organization**

Management method, organization, responsibilities and approvals, staff development and schooling programme, information on operational procedures and the organization of maintaining operational logs and reporting;

## **9. Operational limits and conditions**

Safety limits, defined borderline values of safety system parameters, limits and conditions in normal circumstances, internal supervision, examination and testing requirements, responsibilities in connection with reporting, consent obtaining from the competent bodies and reviews for all stages in a nuclear facility lifecycle, limits of work-related parameters, safety requirements for work-related equipment, minimum number of engaged persons meeting safety requirements;

## **10. Organization, methods and means of radiation protection**

Summary of the Radiation Protection Programme

## **11. Radioactive material, its handling and storage**

Sources and type of radioactive material, systems of radioactive material management and their operation, measures and means of radioactive material collection, supervision, handling and storage, criteria for environmental discharges and release from regulatory control, equipment and procedures for the control of radioactive material discharges, evaluation of quantities, specific activities and total activities of certain radioactive material, especially during discharges, measures and means for the record-keeping and retention of radioactive and nuclear material;

## **12 Overview of plans, measures and procedures for an emergency event prevention**

The plans, measures and procedures for an emergency event prevention, summary of the Emergency Event Response Plan;

## **13. Quality assurance programme**

The programme of quality assurance, organization, documentation control, design, procurement, material, processes, testing and inspection and non-compliances, corrective measures, documenting and archiving, programme review;

**14. Overview of physical security arrangements for a nuclear facility and radioactive and nuclear material**

Summary of the Physical Security Plan for the nuclear facility, radioactive and nuclear material, technical and administrative supervision measures at the entrance and exit points in the facility, technical and administrative measures serving to prevent unauthorized actions within the facility likely to threaten its safe and secure operation.

## APPENDIX 3

### SCOPE AND CONTENT OF RADIATION PROTECTION PROGRAMME FOR NUCLEAR FACILITY DECOMMISSIONING

The document shall include the following information:

- 1) Document title;
- 2) Version number and date of compiling;
- 3) Name and signature of a person responsible for radiation protection, *i.e.* Radiation protection service manager;
- 4) Information on the legal entity:
  - (1) Name of the legal entity or entrepreneur;
  - (2) Address;
  - (3) Ref. No. of the entry into the Business Registers Agency, *i.e.* the written decision by the competent court;
  - (4) Registration number;
  - (5) Tax Identification Number (TIN);
  - (6) Business Activity Code;
  - (7) Telephone/fax number;
  - (8) E-mail;
- 5) Amendments records;
- 6) Information on the approved person responsible for the preparation of the Safety Analysis Report and the Radiation Protection Programme
  - (1) Ref. No. And the date of written decision on the approval;
  - (2) Name, occupation and signature by the person preparing the document.

The document shall include at least the following sections:

#### **1. Authorization Holder duties and responsibilities**

Allocation of responsibilities to all management levels during occupational exposure to ionizing radiation, responsibilities towards the outside workers, radiation protection officer, *i.e.* the organization and duties of a radiation protection service;

#### **2. Workplace classification**

Classification criteria, designation of the controlled and supervised areas, rules of conduct within workplace premises;

#### **3. Local rules and procedures**

Rules and procedures pertaining to a radiation practise performance, guidelines on radiation protection measures, established rules for workers and supervision of their work, methods and means for protection and provision of the adequate radiation safety;

#### **4. Exposed workers and environmental monitoring**

The manner of conducting individual monitoring of the exposed workers, criteria of the exposed workers categorization, monitoring of workplace environment, radiation and contamination monitors, supervision of premises, systems, effluents, radioactive contamination control, supervision of systems, dosimetry control of workplace

environment, personal dosimetry supervision, personal protection means, supervision of liquid and gaseous radioactive effluents;

**5. Public and environmental protection**

The measures applied with the aim of ensuring public protection, structural protection, monitoring, access restrictions;

**6. Recording and informing**

The system of recording of and reporting all necessary information on the control of the exposure to ionizing radiation, the decisions on the radiation protection measures and individual monitoring of the exposed workers;

**7. Training and education**

The programme of training and education for the implementation of radiation and nuclear safety measures;

**8. Periodic review and revision of document**

Methods and timeframe for the periodic review and revision of the Radiation Protection Programme;

**9. Emergency event response**

The plans implemented in case of emergency events;

**10. Health screening**

The programme of health screening of the exposed workers;

**11. Quality control**

The requirements pertaining to the implementation and assurance of the quality control

## APPENDIX 4

### CONTENT OF DECOMMISSIONING PLAN

The document shall include the following information:

- 1) Document title;
- 2) Version number and date of compiling;
- 3) Name, occupation and signature of the person compiling the document;
- 4) Name and signature of a person responsible for radiation protection, *i.e.* Radiation Protection Service manager
- 5) Information on the legal entity:
  - (1) Name of the legal entity or entrepreneur;
  - (2) Address;
  - (3) Ref. No. of the entry into the Business Registers Agency, *i.e.* the written decision by the competent court;
  - (4) Registration number;
  - (5) Tax Identification Number (TIN);
  - (6) Business Activity Code;
  - (7) Telephone/Fax number;
  - (8) E-mail;
- 6) Amendments records;

The document shall include at least the following sections:

#### 1. Introduction

The scope and the purpose of the document, summary of the Decommissioning Plan;

#### 2. Nuclear facility description

The location and the description of the nuclear facility site; the description of the nuclear facility, buildings, structures, systems and components, their function during decommissioning and relevance for safety, radiological status of the nuclear facility including in particular the data on the contaminated structures, systems and components and the equipment and contamination of the environmental elements around the nuclear facility; organizational diagram for the nuclear facility management including the description of tasks; the nuclear facility operational history, the activities performed in the nuclear facility and the history of license and authorization issuance; previous events likely to affect decommissioning and safety; previous activities related to decommissioning; radioactive waste in the nuclear facility or its site; other facilities, buildings and practises located in the site and their impact on decommissioning;

#### 3. Decommissioning strategy

The selected decommissioning strategy, the assessment of the alternative decommissioning strategies, rationale of the decommissioning strategy selection;

#### 4. Project management

Legal and regulatory requirements; project management approach; the organization and responsibilities for the project management of the project, special project tasks and

activities during decommissioning; safety culture; trainings, engagement of subcontractors; planning and schedule of the activities;

#### **5. Decommissioning activities**

The activities pertaining to the structures, systems, components and equipment, the environmental elements around the nuclear facility, plan of activities and their schedule, interdependence and the interaction of decommissioning activities, the plan of in-depth radiological characterization;

#### **6. Maintenance, investigation, testing, supervision and replacement**

The maintenance, investigation, testing, supervision and replacement of the structures, systems, components and equipment, the plan of maintenance, investigation, testing and supervision including the schedule thereof; the measures to ensure the availability of the required structures, systems, components and equipment; the assessment of the needs for the replacement of the existing or the installation of new structures, systems and components;

#### **7. Waste management**

The identification of waste streams, radioactive waste management, non-radioactive waste management, the management of other hazardous waste, the management of radioactive waste containing other hazardous substances;

#### **8. Cost estimate and fund mechanisms**

The estimate of costs and the mechanisms to provide funds;

#### **9. Safety Assessment**

The summary of the Safety Analysis Report which particularly includes: the identification of the relevant safety criteria, operational limits and conditions, the summary of the assessment of foreseeable initiating events, safety assessment during normal work regime, safety assessment during abnormal regime of work, assessment of potential consequences, preventive and mitigating measures, risk assessment, comparison between the analysis results and relevant safety criteria, conclusions;

#### **10. Environmental impact assessment**

The legal framework in the field of environmental protection, project description from an environmental protection point of view, environmental protection programme, monitoring programme of the environmental elements around the nuclear facility;

#### **11. Radiation protection and work-related security and health**

The summary of the Radiation Protection Programme, the summary of the plan of security and health during work including other non-radiological hazards; the assessment, control and optimization of the applied protection measures; the environmental discharge criteria and the regulatory control release criteria; measures in the nuclear facility ensuring radiation and nuclear safety and security in case of an emergency event;

## **12. Quality assurance**

The programme of quality assurance, document control, control of measuring equipment, corrective actions, quality assurance logs and records, audits and surveillance, collection and analysis of operating lessons learned;

## **13 Emergency event response**

The organization of and responsibilities for the response in case of an emergency event, emergency event response procedures, emergency event reporting procedure;

## **14 Radiation and nuclear security**

The organization of and responsibilities for the implementation of radiation and nuclear security measures and the radiation and nuclear security programme and measures;

## **15 Safeguards implementation**

The organization of and responsibilities for the implementation of safeguards and safeguards implementation programme and measures;

## **16 Final radiological survey**

The plan of final radiological survey, the drawing of the buildings and the site with indicated areas subject to the final radiological survey, the equipment and equipment requirements, the rate and timeframes, requirements for the achievement of the decommissioning end state, reporting on the final radiological survey results.

## APPENDIX 5

### CONTENT OF EMERGENCY EVENT RESPONSE PLAN DURING DECOMMISSIONING

The Emergency Event Response Plan during decommissioning shall include the following information:

- 1) Document title;
- 2) Version number and date of compiling;
- 3) Name, occupation and signature of the person compiling the document;
- 4) Name and signature of a person responsible for radiation protection, *i.e.* Radiation Protection Service manager;
- 5) Information on the legal entity:
  - (1) Name of the legal entity or entrepreneur;
  - (2) Address;
  - (3) Ref. No. of the entry into the Business Registers Agency, *i.e.* the written decision by the competent court;
  - (4) Registration number;
  - (5) Tax Identification Number (TIN);
  - (6) Business Activity Code;
  - (7) Telephone/Fax;
  - (8) E-mail;
- 6) Amendments record.

The document shall include at least the following sections:

#### 1. Introduction

The purpose of the document, the organizations included in the emergency event response during decommissioning, the scope of the plan including the information on the nuclear facility and the practises it relates to, the legal rationale for the plan passing, the plans and documents related to the Emergency Event Response Plane during decommissioning, which are inclusive of the local self-government plans and the information on the interconnection between these plans and documents;

#### 2. Planning rationale

The types of hazards and characteristics of the emergencies considered at the time of the plan preparation, definitions, roles and responsibilities in the response, including the roles and responsibilities of other organizations that can play a part in the emergency event response, organizational diagram of an emergency event response, buildings included in the response, description of communication systems during the response, responsibilities in terms of logistics and resources, the concept of operations in the emergency event response;

#### 3. Emergency event response procedure

The description of the manner in which the organizations (the licensee, first responders, local self-government units and other organizations included in the response) perform their duties in the emergency event response during decommissioning, the identification of the competent level in the organizational structure and relevant procedures for each function in the emergency event response. The description of the procedures for informing, initial stage assessment, activation and seeking of assistance, emergency

management system, the description of the implementation of mitigating measures and the mechanism of activating external technical assistance. The description of the manner in which the licensee ensures the support to the organizations responsible for urgent protective measures, informing, warning and instructing the public, implementation of protection measures in agriculture, foodstuffs and the implementation of long-term protection measures. The description of the manner of ensuring protection of the workers engaged in the emergency, provision of medical care and mitigation of non-radiological consequences, including the manner in which the licensee provides support to the organizations responsible for medical care in mitigating non-radiological consequences. The description of the coordinated implementation of recovery measures and the return to normal conditions with other organizations and local self-government. The means of financing the emergency event response activities, record-keeping and data management;

#### **4. Response preparedness**

The description of a manner to ensure the functions needed to develop and maintain the capabilities an emergency event response (the organizations and their responsibilities in developing and maintaining the Plan; ensuring sufficient staff in the organizational system of an emergency event response; coordination between the decommissioning Emergency Event Response Plan during decommissioning and other plans; development, distribution and maintenance of the plans and procedures; provision of logistic support and availability of the buildings needed to implement the plan; provision of trainings; development and performance of exercises; quality assurance and programme maintenance), including the list of persons responsible for the implementation of all functions, list of relevant procedures to be regularly implemented in order to ensure the adequate preparedness for an emergency event response during decommissioning;

#### **5. Appendix:**

The list of procedures needed to implement the Emergency Event Response Plan during decommissioning.

## APPENDIX 6

### PROGRAMME OF SURVEILLANCE OF SITE OR FACILITY WITH RESTRICTED USE

The document shall include the following information:

- 1) Document title;
- 2) Version number and date of compiling;
- 3) Information on the legal entity or natural person (if applicable):
  - (1) Name of the legal entity or entrepreneur / name of the natural person;
  - (2) Address;
  - (3) Ref. No. of the entry into the Business Registers Agency, *i.e.* the written decision by the competent court;
  - (4) Registration number;
  - (5) Tax Identification Number (TIN);
  - (6) Business Activity Code;
  - (7) Telephone/Fax;
  - (8) E-mail;
- 4) Amendments record.

The document shall include at least the following sections:

#### **1. Radiological status of the site or facility**

The results of in-depth radiological characterization of the site or the facility, graphic layout of the spatial contamination and the dose rate;

#### **2. Access to site or facility**

The administrative procedures necessary to access the site or the facility, the activities performed in the site or the facility;

#### **3. Preventive or exposure reduction measures**

The measures to prevent or reduce exposure within the site or the facility, the measures to curb the contamination or within the site or the facility, as well as off-site or outside the facility (by wind, water, human activities, etc.), the measures to maintain engineering barriers to control and restrict the access to the contaminants;

#### **4. Site or facility monitoring programme**

The programme of monitoring the radioactivity level in the site or the facility following the project finalization, which particularly includes the parameters to be monitored, testing incidence, etc;

#### **5. Changes in physical or chemical properties**

The analysis of the changes in the physical or chemical properties in the contaminants over time;

#### **6. Changes in exposure pathways**

The analysis of possible changes in the exposure pathways over time.

