THE EIGHTH NATIONAL REPORT OF THE REPUBLIC OF BELARUS

ON IMPLEMENTING THE JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT

Minsk
2024

CONTENTS

ABBREVIATIONS

Basic organization – the Basic Organization of the CIS Member States on the Issues of Spent Nuclear Fuel and Radioactive Waste Management and Decommissioning of Nuclear and Radiation Hazardous Facilities (TVEL JSC);
Belarusian NPP SE – Belarusian NPP Republican Unitary Enterprise;
BelRAO SE – Belarusian Radioactive Waste Management Organization Republican Unitary Enterprise;
CERS – Comprehensive Engineering and Radiation Survey;
CIS – the Commonwealth of Independent States;
CNRS – State Scientific and Technical Institution “Centre for Nuclear and Radiation Safety” of the Ministry for Emergency Situations of the Republic of Belarus;
CSTO – Collective Security Treaty Organization;
DWDF – decontamination waste disposal facility;
FA – fuel assembly;
FE – fuel element;
Gosatomnadzor – Department for Nuclear and Radiation Safety of the Ministry for Emergency Situations of the Republic of Belarus;
GRW – gaseous radioactive waste;
HLW – high-level waste;
IAEA – International Atomic Energy Agency;
ILW – intermediate-level radioactive waste;
IMS – integrated management system;
IRS – ionizing radiation sources;
IRT – thermal research reactor;
LLW – low-level waste;
LRW – liquid radioactive waste;
MES – Ministry for Emergency Situations of the Republic of Belarus;
MIA – Ministry of Internal Affairs of the Republic of Belarus;
MNPP “Pamir” – mobile nuclear power plant “Pamir”;
NPP – nuclear power plant;
QAP NPP (C) – Quality Assurance Program during the NPP Power Units Commissioning;
QAP NPP (CI) – Quality Assurance Program for Nuclear Power Plant during Construction and Installation Works;
QAP (E) – Quality Assurance Program for Equipment Engineering;
QAP NPP (G) – General Quality Assurance Program for Nuclear Power Plant;
QAP (IRS) – Quality Assurance Program for Ionizing Radiation Sources Management;
QAP (M) – Quality Assurance Program for Equipment Manufacturing;
QAP NPP (O) – Quality Assurance Program at the Belarusian NPP Power Units Operation;
QAP (RWo) – Quality Assurance Program for Operational Radioactive Waste (RWo) Management;
RW – radioactive waste;
RWDF – radioactive waste disposal facility;
RWSF – radioactive waste storage facility;
SFA – spent fuel assembly;

SNF – spent nuclear fuel;
SRW – solid radioactive waste.
SSI "JIPNR – Sosny" – State Scientific Institution "Joint Institute for Power and Nuclear Research – Sosny" of the National Academy of Sciences of Belarus;
Specialized UE "Ekores" – Specialized Enterprise for Radioactive Waste Management of the Communal Unitary Enterprise for Waste Management "Ekores";
TCP – technical code of common practice;
VLLW – very low-level waste;
WWER – water-water energetic reactor.

Section A. INTRODUCTION

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (hereinafter – the Joint Convention) was adopted on September 5, 1997 by the Diplomatic Conference convened by the International Atomic Energy Agency (IAEA). In the Republic of Belarus the Joint Convention was ratified on July 17, 2002 and entered into force on February 24, 2003.

The Eighth National Report of the Republic of Belarus on implementing obligations arising from the Joint Convention requirements covers activities and events since 2021.

Individual issues of implementing the articles of the Joint Convention, presented in details in the seven previous National Reports of the Republic of Belarus and remained unchanged over the past period are reviewed briefly in this Report.

In the Republic of Belarus, IRS, nuclear and radiation methods and technologies are widely used in industry, science, medicine and other sectors of the economy, resulting in RW formation. In addition, RW and SNF are formed in the course of the Belarusian NPP operation, the first power unit of which was put into commercial operation on June 10, 2021, and the second power unit – on November 1, 2023.

Since the previous report, the following events related to regulating RW and SNF management activities occurred in the Republic of Belarus:

by the decision of the republican referendum on February 27, 2022, for the first time the Constitution of the Republic of Belarus incorporated the provision on developing nuclear energy by the Republic of Belarus for peaceful purposes (Part 3 of Article 46 of the Constitution);

amendments have been made to the Law of the Republic of Belarus No. 198-Z of June 18, 2019 “On Radiation Safety”;

the Law of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy” was adopted, which, among other things, legally established the status of the Department for Nuclear and Radiation Safety of the Ministry for Emergency Situations of the Republic of Belarus (hereinafter – Gosatomnadzor) as state regulatory body in the field of safety in the use of atomic energy;

by Decree of the President of the Republic of Belarus No. 427 of November 2, 2021 “On Improving the Radioactive Waste Management System”, the Ministry for Emergency Situations of the Republic of Belarus (hereinafter – MES) is defined as state management body in the field of RW management;

Decree of the President of the Republic of Belarus No. 101 of April 12, 2023 “On the Organization of the Radioactive Waste Management System” was adopted to ensure the functioning of the system of long-term storage and disposal of RW;

a number of regulatory legal acts, technical regulatory legal acts regulating RW and SNF management have been developed (revised) and put into effect;

the Strategy of Radioactive Waste Management was developed and approved by the Government of the Republic of Belarus No. 128 of February 15, 2023;

in February 2023, the Republican Unitary Enterprise “Belarusian Radioactive Waste Management Organization” (BelRAO SE) was established, which is the national operator for RW management and provides solution to issues related to the RWDF siting, including its construction and commissioning, safe operation and closure. BelRAO SE will perform the tasks of the operating organization;

Plan of basic organizational measures for constructing a RWDF has been developed and approved by the Government of the Republic of Belarus, which implies coordination of activities of

republican government bodies and other organizations related to the implementation of measures for the construction of the first phase of the RWDF;

intergovernmental agreements were concluded between the Republic of Belarus and the Russian Federation on cooperation in nuclear materials transportation of November 8, 2021 and in SNF management of November 21, 2022 were concluded as part of implementing the Strategy of Spent Nuclear Fuel Management of the Belarusian NPP, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 588 of August 22, 2019.

International review missions and peer reviews continue to make a significant contribution to the improvement of the nuclear and radiation safety system in the Republic of Belarus. In order to assess and enhance the nuclear and radiation safety infrastructure amidst intense schedule of activities related to the Belarusian NPP construction and commissioning, the Republic of Belarus hosted all key missions the IAEA recommended for newcomer country to nuclear energy. In the period following the 7th National Report, the IAEA Integrated Regulatory Review Service (IRRS) Follow Up Mission (2021) and International Physical Protection Advisory Service (IPPAS) (2021) took place.

In November 2021, the ENSREG plenary session adopted the National Action Plan Peer Review Report following the outcomes of the Belarusian NPP State Enterprise stress tests, conducted in line with recommendations developed by Western European Nuclear Regulators' Association (WENRA) in 2014.

Cooperation with the IAEA and other international organizations at the construction stage, commissioning and operation of the Belarusian NPP enables the Republic of Belarus to use the accumulated experience of the world community in the field of atomic energy use, receive scientific and technical support from international experts in the field of the NPP operation, emergency preparedness, nuclear and radiation safety, nuclear security, improvement and maintenance of the Belarusian specialists' qualifications in various fields of activity.

After the commissioning of the Belarusian NPP the country has continued to develop and improve the nuclear infrastructure and its individual components: legal and regulatory framework, supervisory activities, licensing, financing, emergency preparedness and response, nuclear security, SNF and RW management, scientific and technical support system for regulatory activities in the field of nuclear and radiation safety, scientific and technical support systems of the Belarusian NPP State Enterprise.

A.1. Conclusions from the Discussion of the Seventh National Report of the Republic of Belarus at the Seventh Review Meeting

During the discussion of the seventh National Report of the Republic of Belarus on Implementing the Convention, the following areas of good practices were noted:

large-scale international cooperation, as well as adaptation and use of the best international practices, including by inviting and conducting international peer review missions at the stage of developing the Strategy of Radioactive Waste Management;

involvement of an experienced organization from the supplier country for a conceptual project of the RW disposal facility in Belarus;

implementation of the first nuclear power program, which allowed a comprehensive renovation of approaches and infrastructure for management of all RW;

continuous and sustainable development of safety infrastructure in cooperation with the nuclear supplier country at the stage of RW management, including with the Basic Organization of the CIS Member States on the Issues of Spent Nuclear Fuel and Radioactive Waste Management and Decommissioning of Nuclear and Radiation Hazardous Facilities (TVEL JSC Rosatom).

The Report of the working group for the Republic of Belarus notes the following “challenges” in RW and SNF management:

implementation of the first stage of the Strategy of Radioactive Waste Management (organization of design and survey work, RWDF siting; RWDF project development, public consultations and discussions) (information on “challenge” implementation is provided in Sections H3, H4, K);

enhancement of all elements of the infrastructure for RW management (establishment and development of a national operator for RW management, further development of human resources of operating organizations, bodies performing regulatory and management functions in RW management, nuclear and radiation safety, scientific and technical support) (information on “challenge” implementation is provided in Sections D.2.1, E1, F2.2).

As planned measures to improve safety, the following are highlighted:

a National Action Plan was developed on the basis of the results of the IAEA missions such as Integrated Regulatory Review Service (IRRS), Integrated Nuclear Infrastructure Review (INIR), the International Physical Protection Advisory Service (IPPAS), including specific measures to improve safety. The Government has approved the relevant plans, their implementation is ongoing (information is provided in Section K);

implementation of measures provided for by the Strategy of Radioactive Waste Management, the Strategy of Radioactive Waste Management at the Belarusian NPP and the Strategy of Spent Nuclear Fuel Management of the Belarusian NPP within specified deadlines (information is provided in Section K).

The Decree of the President of the Republic of Belarus “On the Organization of the Radioactive Waste Management System” was adopted. This Decree regulates the issues of financing BelRAO State Enterprise activities, defines the general design organization and the organization performing scientific support for the construction of RW management facilities.

In 2023, BelRAO State Enterprise started the development of RWDF pre-design documentation, signed contracts with leading specialized organizations of the Republic of Belarus for the implementation of the first stage of a set of research and survey works in different areas. Work on the RWDF siting in compliance with the procedure established by the legislation of the Republic of Belarus and international commitments of the state is underway.

The Russian organization TVEL JSC, which is a specialized organization in the field of RW management (processing, disposal), has been involved as a consultant on safe RW management.

The Strategy of Radioactive Waste Management defines the timeframe for construction of the first phase of the RWDF as 2030.

A.2. Overview Matrix. General Information on the Radioactive Waste and Spent Fuel Management in the Republic of Belarus

Type of liability	Long-term management policy	Funding of liabilities	Current practices/facilities	Planned facilities
Spent fuel	Belarusian NPP – sending to the Russian Federation for processing, followed by return to the Republic of Belarus of RW from processing	Financial resources of the operator	Belarusian NPP – 2 reactor spent fuel cooling pools	Cumulative Facility for SNF
Radioactive waste related to the NPP operation	Temporary storage of VLLW, LLW, ILW HLW storage for the NPP operation period Disposal in the planned RWDS	Financial resources of the operating organization	RW storage facilities of the Belarusian NPP	RWDF for VLLW, LLW, short-lived ILW
Radioactive waste not related to the NPP operation	Long-term storage Disposal in the planned RWDF	Financial resources of organizations, as a result of whose activities RW are generated, or state budget	Specialized UE “Ekores” – storage of the wide range of RW DWDF – disposal of the waste that contain radionuclides of Chernobyl origin	RWDF for VLLW, LLW, short-lived ILW
Decommissioning	Operating organization develops the decommissioning program	Special Fund Financial resources of the operator State budget		Decommissioning of Belarusian NPP power units 60 years after beginning of operation
Disused sealed radionuclide sources	Return to the manufacturer or long-term storage, disposal Extending service life in justified cases	At the expense of the owner or user of the source State, if owner is not defined	Specialized UE “Ekores” – long-term storage Extending service life in justified cases	RWDF for VLLW, LLW, short-lived ILW

Section B. POLICIES AND PRACTICE

Article 32. Reporting

In accordance with the provisions of Article 30, each Contracting Party shall submit a national report to each review meeting of Contracting Parties. This report shall address the measures taken to implement each of the obligations of the Convention. For each Contracting Party the report shall also address its:

(i) spent fuel management policy;
(ii) spent fuel management practices;
(iii) radioactive waste management policy;
(iv) radioactive waste management practices;
(v) criteria used to define and categorize radioactive waste.

B.1. Spent Fuel Management Policy

Subject to the Law of the Republic of Belarus No. 208-Z of October 10, 2022 "On Safety Regulation in the Use of Atomic Energy", safety regulation in the use of atomic energy is based on the following principles:

development of nuclear energy for peaceful purposes, including a ban on the production of nuclear weapons and other nuclear explosive devices;

priority of ensuring nuclear and radiation safety and protecting life and health of the population and the environment over all other aspects of atomic use, including economic;

providing full, credible and timely information related to safety regulation in the use of atomic energy, unless such information is not information whose dissemination and (or) provision is limited;

ensuring effective separation of regulatory functions from other functions related to promoting the use of atomic energy;

independence of state regulatory bodies in the field of safety in the use of atomic energy in their decision-making and exercising their powers;

responsibility for safety;

commitment to safety culture at all levels of management of subjects of relations in the field of safety in the use of atomic energy;

ensuring the excess of benefits for citizens from the use of atomic energy over the harm that might be caused by activities for the use of atomic energy;

participation of legal entities and individuals in public hearings at the decision-making stage on regulating activities in the field of safety in the use of atomic energy;

protecting the life and health of the population and the environment from the negative effects of RW at present and in the future, not imposing an excessive burden on future generations;

preventing nuclear and (or) radiation accidents, ensuring emergency preparedness.

Apart from national legislation, SNF management policy is also based on the provisions of international treaties to which the Republic of Belarus is a party.

As per provisions of the Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Construction of a Nuclear Power Plant in the Territory of the Republic of Belarus signed in 2011, the spent nuclear fuel from reactors of NPP units purchased from the Russian performing organizations is subject to return to the Russian Federation for processing.

Resolution of the Council of Ministers of the Republic of Belarus No. 558 of August 22, 2019 approved the Strategy of Spent Nuclear Fuel Management of the Belarusian Nuclear Power Plant, which reflects the nationally agreed positions and plans for SNF management after discharge from the reactors of power units No.1 and No.2 of the Belarusian NPP. The Strategy provides for key organizational aspects for the creation and implementation of a national SNF management system,

the main directions of scientific, technical and practical activities of participants in the management process, a phased, adaptive approach to the final stage of the nuclear fuel cycle based on the consent of the subjects involved in the management process. According to the Strategy, the priority option for managing SNF of the Belarusian NPP at present is the processing of SNF in the Russian Federation with the return to the Republic of Belarus of waste included in a glass-like matrix containing radionuclides of the cesium-strontium fraction, with the exception of long-lived radionuclides. As part of the description of the mechanism for implementing the Strategy of Spent Nuclear Fuel Management of the Belarusian Nuclear Power Plant, the relevant priority measures were identified and updated in 2023.

On May 17, 2022, the Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Transportation of Nuclear Materials entered into force, which regulates the organization of transportation by rail in direct international traffic of fuel assemblies, irradiated fuel assemblies of nuclear reactors and RW (done in Moscow on November 8, 2021).

On May 22, 2023, the Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Spent Nuclear Fuel Management entered into force, the subject of which is the import of irradiated fuel assemblies of nuclear reactors to the Russian Federation for temporary technological storage with subsequent processing, as well as the return of RW to the Republic of Belarus (done in Sochi on November 21, 2022).

Work to implement priority measures aimed at further formation of the SNF management system of the Belarusian NPP in accordance with Resolution of the Council of Ministers of the Republic of Belarus No. 492 of July 28, 2023 “On the Implementation of the Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the field of Spent Nuclear Fuel Management” has been organized. This Resolution appointed authorized organizations responsible for the implementation of measures for the management of SNF of the Belarusian NPP (Belarusian NPP State Enterprise) and waste from its processing (BelRAO State Enterprise), approved the Regulation on the Procedure for Decision-Making on the Export of a Shipment of Irradiated Fuel Assemblies of Nuclear Reactors to the Russian Federation with Subsequent Return to the Republic of Belarus of Radioactive Waste and Regulations on the Interdepartmental Commission to Consider the Expediency of Exporting a Shipment of Irradiated Fuel Assemblies of Nuclear Reactors to the Russian Federation with Subsequent Return of Radioactive Waste to the Republic of Belarus.

As part of the implementation of the Agreement on Cooperation in the Field of Spent Nuclear Fuel Management on the basis of an Agreement with the Belarusian NPP State Enterprise, the State Scientific Institution “Joint Institute for Power and Nuclear Research – Sosny” of the National Academy of Sciences of Belarus (SSI “JIPNR – Sosny”) performs a set of works on the calculation and experimental substantiation of fundamental decisions to implement the Strategy of Spent Nuclear Fuel Management of the Belarusian Nuclear Power Plant. The set of works includes: development and approval of a methodology to define the nomenclature, quantity and activity of processed products to be returned to the Republic of Belarus after technological storage and processing of SNF of the Belarusian NPP in the Russian Federation; development, verification and validation of software tools for calculating dose equivalent (activity equivalent) and residual heat release for SFA, packages of short-lived HLW fraction and FA manufactured using regenerated nuclear materials; verification of the characteristics of prototypes of the short-lived HLW fraction obtained as a result of WWER SNF processing.

B.2. Spent Fuel Management Practice

The Belarusian NPP State Enterprise exercises temporary storage of SNF formed in the course of power units operation.

Starting from 2021 (from the beginning of operation of the first power unit of the Belarusian NPP), SFA formed during scheduled preventive maintenance are unloaded into the reactor storage facility (cooling pool) in accordance with the regulations.

Information on the SNF reactor storage system is also provided in Section D1 and G.2.1.

B.3. Radioactive Waste Management Policy

The main directions of the state policy in the field of RW management are determined by the Laws of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy”, No. 198-Z of June 18, 2019 “On Radiation Safety” and No. 385-Z of May 26, 2012 “On Legal Regime of Territories Subjected to Radioactive Contamination as a Result of the Catastrophe at the Chernobyl NPP” as well as by Resolution of the Council of Ministers of the Republic of Belarus No. 535 of August 15, 2023 “On Main Directions of Implementing the Unified State Policy in Ensuring Nuclear and Radiation Safety”. The State policy in the field of RW management is implemented in accordance with the Strategy of Radioactive Waste Management, which defines the main directions and approaches for making management decisions based on safe, technically optimal and cost-effective RW management.

The following principles are established in legislation for RW management:

ensuring an acceptable level of protection of personnel and the population from the radiation effects of RW in accordance with the principles of justification, rationing and optimization;

ensuring an acceptable level of environmental protection from the harmful radiation effects of RW;

consideration of interdependence between different stages of RW management, which provides that all activities, from RW generation to disposal, including processing, are considered as components of a larger whole, and the management elements of each stage are selected taking into account compatibility with other stages;

protection of future generations, which means that the predicted levels of exposure of future generations due to RW disposal should not exceed permissible levels of radiation exposure of the population established by regulatory legal acts;

non-imposition on future generations of an unreasonable burden associated with the need to ensure safety in RW management;

control over RW generation and accumulation (limiting RW generation and accumulation to the minimum practically achievable level);

prevention of accidents and mitigation of their consequences in case of their occurrence.

The state policy in the field of RW management is implemented in accordance with the Strategy of Radioactive Waste Management, which defines the main directions and approaches for making management decisions based on safe, technically optimal and cost-effective RW management.

The Strategy of Radioactive Waste Management was developed by Gosatomnadzor and approved by the Government of the Republic of Belarus.

The document defines the main directions for improving the national RW management system and provides a consolidated position of strategic needs in the field of RW management, creates conditions for the management of RW of different categories proceeding from a risk-based approach,

and offers an integrated program to create a suitable and timely infrastructure for the implementation of appropriate solutions. The Strategy is applied to RW generated earlier and currently being generated in the Republic of Belarus.

The document development involved the representatives of the republican government bodies responsible for state regulation of activities in the field of RW management, experts and specialists working in the field of RW management, including international experts and specialists.

The draft Strategy of Radioactive Waste Management was publicly discussed in October 2022 in accordance with the Resolution of the Council of Ministers of the Republic of Belarus No. 56 of January 28, 2019 “On Public Discussion of Draft Regulatory Legal Acts”. The document was published for study in the public domain on the website pravo.by and on the Internet resource of Gosatomnadzor.

In accordance with the Regulations on the Procedure for Organizing and Conducting Public Discussions of Drafts of Environmentally Significant Decisions, Environmental Reports on Strategic Environmental Assessment, Environmental Impact Assessment Reports, Accounting for Environmentally Significant Decisions Taken, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 458 of June 14, 2016, Gosatomnadzor held a meeting on November 4, 2022, as part of public discussions of the draft Strategy.

As a result of the activities, the draft Strategy of Radioactive Waste Management was finalized.

Based on compliance with the above mentioned principles in RW management, the Strategy of Radioactive Waste Management formulates the main directions for improving the national RW management system:

developing the necessary infrastructure, including RWDF creation;

maintaining RW formation at a minimum level;

developing new and improving existing technologies for the RW management;

functioning of the Unified State System of IRS Accounting and Control, the State System of Nuclear Materials, Radiation Waste Accounting and Control;

scientific, technical and information support for activities in the field of RW management;

improvement of the regulatory framework defining the requirements for regulating RW management;

training and retraining of personnel;

expanding international cooperation in RW management;

public participation in decision-making that may have potential consequences for public health or the environment.

The current state of the RW management system is characterized by active improvement of legislation and, therefore, the development of the practice of its enforcement.

The main areas of activity for safe and cost-effective management of radioactive waste generated during operation and decommissioning of the Belarusian NPP are established by the Strategy of Radioactive Waste Management of the Belarusian Nuclear Power Plant, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 460 of June 2, 2015.

RW import to the territory of the Republic of Belarus for the purpose of their storage or disposal is allowed by law only for RW formed in the Republic of Belarus.

B.4. Radioactive waste management practices

Works on RW management are performed by enterprises that have the relevant special permit (license) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources:

The Belarusian NPP State Enterprise manages RW generated during power units operation: exercises collection, sorting, processing and storage of RW.

Specialized Enterprise UE "Ekores" implements activities on management of RW generated from the use of radioactive substances and materials in different economy sectors (industry, science, medicine, etc.), with disused sealed radioactive sources, and their transportation within the territory of the republic.

Communal Specialized Unitary Enterprises "Polesie" (Gomel) and **"Radon"** (Mogilev) exercise disposal of courtyards and buildings unsuitable for further use, decontamination of territories contaminated from the Chernobyl NPP disaster, as well as collection, transportation, storage and disposal of the associated RW. These enterprises also carry out work on the arrangement and maintenance of disposal sites for such waste.

SSI "JIPNR – Sosny" implements reprocessing of LRW generated as a result of research work at the site of the Scientific Institution.

Organizations whose activities result in the generation of institutional RW (RW generated in medicine, science, industry and other spheres), in accordance with the Law of the Republic of Belarus "On Radiation Safety" have a radioactive waste management scheme agreed with Gosatomnadzor.

B.5. Criteria Used to Classify the Radioactive Waste

Subject to the Law of the Republic of Belarus "On Radiation Safety", RW is IRS used in the course of economic or other activities, the further operation of which is not expected, and containing radionuclides with activity exceeding levels established by the hygiene standards.

According to the specific activity, SRW are divided into the following categories: VLLW, LLW, ILW and HLW; LRW are divided into LLW, ILW and HLW.

Resolution of the Council of Ministers of the Republic of Belarus No. 497 of August 21, 2020 "On Implementing the Law of the Republic of Belarus No. 198-Z of June 18, 2019 "On Radiation Safety" established the classification of RW according to the radiation hazard. Following this classification, RW is divided into four classes based on radiation hazard:

Class I – RW of the highest hazard;

Class II – RW of high hazard;

Class III – hazardous RW;

Class IV – potentially hazardous RW.

If, according to different criteria, RW belongs to different classes of radiation hazard, the highest class of radiation hazard is established for them.

Criteria for classifying RW into radiation hazard classes are given in Table B.5.1.

Table B.5.1. Criteria for Classifying Radioactive Waste into Radiation Hazard Classes

Radiation hazard class	Criteria for classifying radioactive waste into radiation hazard classes							
	Radioactive waste category	Gamma ray dose rate at 0.1 m from radioactive waste surface, mSv/h ($1*10^{-3}$ Sv/h)	Level of surface radioactive contamination, part/(sq. cm×min)		Specific activity, Bq/g			
			beta-emitting radionuclides	alpha-emitting radionuclides	tritium*	beta-emitting - radionuclides (excluding tritium)	alpha-emitting radionuclides (excluding transuranic)	transuranic radionuclides
				Solid radioactive waste				
I	High-level	over 10	over 10^7	over 10^6	over 10^{11}	over 10^7	over 10^6	over 10^5
II	Intermediate-level	from 0.3 to 10	from 10^4 to 10^7	from 10^3 to 10^6	from 10^8 to 10^{11}	from 10^4 to 10^7	from 10^3 to 10^6	from 10^2 to 10^5
III	Low-level	from 0.03 to 0.3	from 10^3 to 10^4	from 10^2 to 10^3	from 10^7 to 10^8	from 10^3 to 10^4	from 10^2 to 10^3	from 10^1 to 10^2
IV	Very low-level	from 0.001 to 0.03	from 500 to 10^3	from 50 to 10^2	up to 10^7	up to 10^3	up to 10^2	up to 10^1
				Liquid radioactive waste				
I	High-level	–	–	–	over 10^8	over 10^7	over 10^6	over 10^5
II	Intermediate-level	–	–	–	from 10^4 to 10^8	from 10^3 to 10^7	from 10^2 to 10^6	from 10^1 to 10^5
III	Low-level	–	–	–	up to 10^4	up to 10^3	up to 10^2	up to 10^1

** for RW generated at nuclear facilities*

Section C. SCOPE OF APPLICATION

Article 3. Scope of application

1. This Convention shall apply to the safety of spent fuel management when the spent fuel results from the operation of civilian nuclear reactors. Spent fuel held at reprocessing facilities as part of a reprocessing activity is not covered in the scope of this Convention unless the Contracting Party declares reprocessing to be part of spent fuel management.

2. This Convention shall also apply to the safety of radioactive waste management when the radioactive waste results from civilian applications. However, this Convention shall not apply to waste that contains only naturally occurring radioactive materials and that does not originate from the nuclear fuel cycle, unless it constitutes a disused sealed source or it is declared as radioactive waste for the purposes of this Convention by the Contracting Party.

3. This Convention shall not apply to the safety of management of spent fuel or radioactive waste within military or defense programs, unless declared as spent fuel or radioactive waste for the purposes of this Convention by the Contracting Party. However, this Convention shall apply to the safety of management of spent fuel and radioactive waste from military or defense programs if and when such materials are transferred permanently to and managed within exclusively civilian programs.

4. This Convention shall also apply to discharges as provided for in Articles 4, 7, 11, 14, 24 and 26.

Provisions of the Joint Convention in the Republic of Belarus apply to the following issues:

safety of management of RW and SNF generated during the Belarusian NPP operation;

safety of management of RW resulting from the use of radioactive materials in industry, medicine, scientific research, education and other economy sectors on the territory of the Republic of Belarus;

safety of management of disused sealed sources;

safety of RW storage facilities located on the territory of the Republic of Belarus at former locations of the USSR military forces;

safety of management of radioactive waste resulting from the eliminating consequences of the Chernobyl NPP disaster.

Section D. INVENTORIES AND LISTS

Article 32. Reporting
2. This report shall also include:
(i) a list of the spent fuel management facilities subject to this Convention, their location, main purpose and essential features;
(ii) an inventory of spent fuel that is subject to this Convention and that is being held in storage and of that which has been disposed of. This inventory shall contain a description of the material and, if available, give information on its mass and its total activity;
(iii) a list of the radioactive waste management facilities subject to this Convention, their location, main purpose and essential features;
(iv) an inventory of radioactive waste that is subject to this Convention that:
(a) is being held in storage at radioactive waste management and nuclear fuel cycle facilities;
(b) has been disposed of; or
(c) has resulted from past practices.
This inventory shall contain a description of the material and other appropriate information available, such as volume or mass, activity and specific radionuclides;
(v) a list of nuclear facilities in the process of being decommissioned and the status of decommissioning activities at those facilities.

D.1. Spent Fuel Management Facilities

Belarusian NPP

On November 2, 2013, the Decree of the President of the Republic of Belarus No.499 “On the Construction of the Belarusian Nuclear Power Plant” was signed.

Power unit No. 1 of the Belarusian NPP was put into commercial operation in June 10, 2021.

Power unit No. 2 of the Belarusian NPP was put into commercial operation on November 1, 2023.

The cooling pool (SNF reactor storage system) is located in the reactor building of each of the two power units within the containment area and houses 732 cells for FAs and 24 cells for sealed bottles, which ensures SFA storage for 10 years, and also facilitates unloading of the full reactor core.

Racks of the cooling pool are designed for placement and long-term storage in the cooling pool of SFAs, sealed bottles with defective FAs, as well as for short-term storage of fresh FAs prior to loading into the reactor core.

The SFA cooling is made in borated water with a boric acid content of at least 16 g/dm^3 with a temperature from +50°C to +60°C.

The cooling pool also houses a FA inspection and repair stand, two bottles of the defective assembly detection system and two sockets for pencil plugs.

The cooling pool is connected to the shaft reactor volume and the refueling cavity by transport corridors equipped with hydraulic locks. Information on the SNF reactor storage system is also provided in Section G.2.1.

As of August 1, 2024 the cooling pool of power unit No. 1 of the Belarusian NPP houses 90 SFA with a total weight of 67,081 kg.

In the period of operation of the Belarusian NPP, three regular refueling were performed at power unit No. 1.

The cooling pool of power unit No. 2 of the Belarusian NPP has no SFA.

D.2. List of Radioactive Waste Management Facilities

D.2.1. Belarusian Organization for Radioactive Waste Management – BelRAO State Enterprise

In February 2023, the Ministry of Energy created a specially authorized Organization for Radioactive Waste Management – BelRAO State Enterprise.

Based on the Strategy of Radioactive Waste Management, BelRAO State Enterprise is addressing the following tasks:

centralized collection and transportation of RW;

study of world experience and selection of acceptable technologies for the RW management;

conducting research and development work on selecting alternative sites for the RWDF placement, developing the rationale for investing, implementing work on environmental impact assessment, organizing and conducting public discussions;

design of RWDF and related infrastructure for RW processing;

RWDF construction and development of related infrastructure for RW processing;

RWDF operation;

RWDF closure and its supervision after closure in line with regulatory requirements.

In order to implement measures aimed at the RWDF construction in the Republic, a Decree of the President of the Republic of Belarus "On the Organization of the Radioactive Waste Management System" was issued. This Decree regulates the issues of financing the BelRAO State Enterprise activities, defines the general design organization, organizations engaged in scientific support for the construction of RW management facilities.

At the time of preparation of the eighth National Report, BelRAO SE does not have a special permit (license) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources.

The Plan of basic organizational measures for the construction of RWDF provides for the timeframes for obtaining the relevant permits (licenses). BelRAO SE has prepared a licensing plan and submitted it to Gosatomnadzor.

D.2.2. Specialized Enterprise for Radioactive Waste Management UE "Ekores"

Established for collecting RW and operating RWSF, the Specialized UE "Ekores" is a structural unit of the Communal Unitary Enterprise for Waste Management "Ekores".

The Specialized UE "Ekores" is located in the southeast from the city of Minsk at a distance of 2 kilometers from Sosny microdistrict. The facility was established in 1963 to house RW from the activities of the IRT research reactor of the former Institute of Nuclear Energy of the Academy of Sciences of the BSSR. Next, being the only enterprise of a kind, the facility provided the reception of a wide range of RW resulting from the use of radioactive isotopes in the territory of the Republic of Belarus.

The Specialized UE "Ekores" has three generations of RW storage facilities.

Initially, RW was placed in special structures – typical embedded storage facilities being the monolithic structures (tanks) made of reinforced concrete, in which about 2,000 m^3 of RW were placed. The sorting of RW and the use of additional protective containers were not practiced. In the CIS and Eastern European countries, the first and the second generation facilities for RW disposal are referred to near-surface Radon-type repositories.

To bring the facility to a condition that meets modern safety requirements, two third-generation repositories have been created since 1997 as a result of reconstructing the Specialized UE "Ekores".

Since 2003, a well-type repository equipped with 11 tanks for loading various radionuclides has been operated to accommodate disused sealed radionuclide sources.

To accommodate SRW, a ground-type repository for the conditioned SRW with a capacity of 3,060 m^3, divided into four modules, has been operated since 2013. Prior to placing to the repository, RW is sorted and packed into additional protective containers.

Annually, the Specialized UE “Ekores” accepts up to 10 tons of SRW and up to 3 thousand of disused sealed radionuclide sources (including radioisotope smoke detectors, calibration and control sources for dosimetry devices).

Information on SRW and disused sealed radionuclide sources amount received by Specialized UE “Ekores” for the period from 2021 to 2023 is given in Appendix 1.

The Specialized UE “Ekores” has a special permit (license) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources in terms of RW management: long-term storage of RW.

D.2.3. Belarusian NPP

The Belarusian NPP project provides for RW management system designed for the collection, processing (including conditioning), transportation (relocation) and storage of RW generated in the course of power units operation.

During the Belarusian NPP operation, gaseous, liquid and solid RW is generated. These wastes belong to VLLW, LLW, ILW and HLW categories. At the same time, the HLW amount will be about 0.9% of the total waste amount. Also, in the course of operation, VLLW are generated with the minimum content of radionuclides which can potentially be released from control. They are managed as RW before release from control.

SRW processing is implemented by shredding and compaction (compressing in a barrel). After processing, the SRW is placed in special steel barrels.

LRW is converted into a solid form at a solidification facility, which provides vat residue cementing and dewatering of ion-exchange resins and ion-selective sorbents. Solidified LRW are placed into NZK-150-1.5-type concrete non-returnable shielded casks.

Packages with SRW and solidified LRW are placed in the RW repositories located at each power unit of the Belarusian NPP.

Information on the amount of SRW placed for storage in the RW repository of the Belarusian NPP for the period from 2021 to 2023 is given in Appendix 2.

Belarusian NPP has a special permit (license) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources in terms of RW management: RW reprocessing and long-term storage of RW.

D.2.4. Facility for Processing Liquid Radioactive Waste at the State Scientific Institution “JIPNR – Sosny”

The LRW processing facility (commissioned in 2012) is located in the territory of the SSI “JIPNR – Sosny” and is designed for processing LRW resulting from research work.

LLW and ILW are subject to processing at the facility.

The facility consists of the following components:

LRW acceptance unit;

LRW purification and concentration unit;

cementing unit;

temporary storage unit.

As of February 1, 2024, the temporary storage tanks of the LRW processing facility has no LRW.

SSI "JIPNR – Sosny" has a special permit (license) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources in terms of RW management: RW processing (liquid radioactive waste processing facility).

D.2.5. Decontamination Waste Disposal Facilities

Disposal of solid decontamination waste generated as a result of overcoming the consequences of the Chernobyl NPP disaster is implemented at the DWDF. In terms of engineering arrangement, DWDFs are divided into three categories depending on the level of specific activity or surface contamination of decontamination waste.

DWDF of the first category (hereinafter referred to as DWDF-I) is a special engineering structure (container) designed for disposal of decontamination waste with a specific activity of Cs-137 from 100 kBq/kg and higher, ensuring their reliable isolation through the use of special engineering protective barriers and hydraulic engineering activities, equipped with a system of permanent monitoring of its condition and environmental impact.

At present, the Republic of Belarus has one DWDF of this type – "Khatki". It is located in the south of the exclusion zone as a part of the Polesie State Radiation-Ecological Reserve, several kilometers from the border with Ukraine and by design consists of 9 trenches equipped with concrete cells (3 m×3 m×3 m).

There are a total of 300 mothballed cells, in which (according to reporting) 3,088 tons of radioactive biological waste were disposed of in 1991. The total activity of the waste at the time of disposal was 74.5×10^{10} Bq (20.14 Ci).

DWDF of the second category (hereinafter referred to as DWDF-II) is an engineering structure for near-surface decontamination waste disposal with specific activity of Cs-137 content from 1.0 kBq/kg to 100 kBq/kg, preventing the spread of radionuclides into the environment due to the use of simple protective clay barriers. DWDF-II equipment allows monitoring its condition and the environmental impact. There are 9 disposal facilities of this type: 4 in Mogilev region, 4 in Gomel region, 1 in Brest region. Summarized data of the inventory of decontamination waste of Chernobyl origin at DWDF-II are given in Appendix 3.

DWDF of the third category (hereinafter – DWDF-III) are near-surface decontamination waste storage facilities organized in the initial post-accident period, constructed, as a rule, without projects and without taking into account hydrogeological restrictions, requiring additional measures for engineering arrangement and control of their condition and environmental impact. Almost all of them were built in extreme conditions and equipped, as a rule, in former quarries, ravines, lowlands, sometimes specially dug trenches or on flat grounds. There are 76 DWDF-III. 3of them have a base protection in the form of clay layer or a polymer film, 11 of them have wells to control groundwater contamination.

The collection, transportation and disposal of waste resulting from the territory remediation, as well as arrangement, maintenance and radiation control of the DWDF are implemented by Specialized Enterprises Polesie and Radon. These works are carried out as a part of state programs to overcome the consequences of the Chernobyl disaster in compliance with the requirements of Chapter 4 of the Law of the Republic of Belarus "On Legal Regime of Territories Subjected to Radioactive Contamination as a Result of the Catastrophe at the Chernobyl NPP". The measures provided make it possible to exclude the spread of radionuclides into the environment.

As of 2024, there are 86 DWDF in the Republic of Belarus, including:

Brest region – 3 DWDF (DWDF-II – 1, DWDF-III – 2);

Gomel region – 79 DWDF (DWDF-I – 1, DWDF-II – 4, DWDF-III – 74);

Mogilev region – 4 DWDF-II.

Specialized enterprises have special permits (licenses) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources in terms of RW management.

D.2.6. Radioactive Waste Storage Facilities in the Former Locations of Military Units of the USSR

At the moment, the only RWSF in the Republic of Belarus, located in the former deployment of military units of the USSR, is Gomel-30 facility.

Gomel-30 RWSF is located in Rechitsa district of Gomel region on the territory of a facility administered by the Ministry of Internal Affairs. The facility was built in 1964 at the deployment of military units to accommodate spent radionuclide sources of man-made origin.

Gomel-30 RWSF is a well-type facility. The outer diameter of the structure is 1,800 mm, the height is 2,500 mm. The construction of the walls, foundation plate and coating are made of 150 mm sick prefabricated concrete elements. The foundation plate and walls have a 4 mm thick metal lining made of steel. The inside metal surface and outside concrete surface of the facility are covered with 2 layers of bitumen insulation. There is a crushed clay waterproof lock around the outer contour perimeter. The inner space of the RWSF, where IRS are located, is cemented.

Currently, there is no need to take urgent measures to dispose of this facility, and its safety state is monitored. The territory of the storage facility is guarded by the Ministry of Internal Affairs, access to it is provided in accordance with the established procedure.

Due to the construction of a RWDF in the Republic of Belarus, it is planned to work out the issue of closure of the Gomel-30 RWSF facility and relocation of RW for final placement.

Section E. LEGISLATIVE AND REGULATORY FRAMEWORK

E.1. Implementation Measures

Article 18. Implementing Measures
Each Contracting Party shall take, within the framework of its national law, the legislative, regulatory and administrative measures and other steps necessary for implementing its obligations under this Convention.

National legislation in the field of nuclear and radiation safety is constantly being improved in the Republic of Belarus, taking into account the requirements of time, law enforcement practice and the latest international approaches.

Regulatory requirements in the field of nuclear and radiation safety are established by the laws of the Republic of Belarus, decrees of the President of the Republic of Belarus, resolutions of the Council of Ministers of the Republic of Belarus, documents of government bodies, as well as accepted international commitments.

New branch of legislation – "legislation on nuclear and radiation safety" – was enshrined in the Unified Legal Classifier of the Republic of Belarus by the Decree of the President of the Republic of Belarus No. 137 of April 5, 2021 "On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources". This branch of nuclear law was formed in the country in accordance with the requirements and recommendations of the IAEA.

Laws of the Republic of Belarus No. 208-Z of October 10, 2022 "On Safety Regulation in the Use of Atomic Energy", No. 198-Z of June 18, 2019 "On radiation safety", No. 385-Z of May 26, 2012 "On Legal Regime of Territories Subjected to Radioactive Contamination as a Result of the Catastrophe at the Chernobyl NPP", which comprehensively regulate the functions of state management and state regulation in the field of ensuring safety in the use of atomic energy, are the fundamental legislative acts of this branch of law.

Following the commissioning of the Belarusian NPP in order to improve the regulatory framework in the field of RW management, Decree of the President of the Republic of Belarus No. 427 of November 2, 2021 "On Improving the Radioactive Waste Management System" was prepared and issued, defining the Ministry for Emergency Situations as a state management body in the field of RW management, and assigning it the appropriate powers in the said area: implementation of state scientific and technical policy in the field of RW management, coordination of activities of state government bodies and organizations, fulfillment of international obligations undertaken by the Republic of Belarus, and other powers.

The Ministry of Energy exercises the authority to organize the creation and operation of the system of long-term storage and disposal of radioactive waste through the establishment of a specially authorized organization – the national operator for RW management – BelRAO SE.

Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Transportation of Nuclear Materials (done in Moscow on November 8, 2021), which regulates the organization of rail transportation of FA, SFA of nuclear reactors and RW in direct international traffic, measures to ensure physical protection of nuclear materials security at levels not lower than those provided for by the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities of October 26, 1979, and establish civil liability for nuclear damage in accordance with the Vienna Convention on Civil Liability for Nuclear Damage of May 21, 1963 and the Procedure for Liability Transfer for the Protection of Vehicles with SFA from Nuclear Reactors and RW.

Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in Spent Nuclear Fuel Management, the subject of which is the import of irradiated fuel assemblies of nuclear reactors to the Russian Federation for temporary

technological storage with subsequent processing, as well as the return of radioactive waste to the Republic of Belarus was done in Sochi on November 21, 2022. The Agreement appoints the competent authorities of the Parties to the Agreement (from the Belarusian side – the Ministry of Energy of the Republic of Belarus, from the Russian side – the State Atomic Energy Corporation Rosatom), defines mandatory measures for each of the Parties to the Agreement, establishes the obligation of the Republic of Belarus to receive RW generated as a result of processing and timely provision of infrastructure necessary for reception and their safe management. The Agreement also establishes the condition of equivalence of the activity of imported SFA and the activity of the returned RW, as the basis for calculating the nomenclature, quantity and activity of RW to be returned.

E.2. Legislative and Regulatory Framework

Article 19. Legislative and Regulatory Framework
1. Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of spent fuel and radioactive waste management.
2. This legislative and regulatory framework shall provide for:
(i) the establishment of applicable national safety requirements and regulations for radiation safety;
(ii) a system of licensing of spent fuel and radioactive waste management activities;
(iii) a system of prohibition of the operation of a spent fuel and radioactive waste management facility without a license;
(iv) a system of appropriate institutional control, regulatory inspection and documentation and reporting;
(v) the enforcement of applicable regulations and of the terms of the licenses;
(vi) a clear allocation of responsibilities of the bodies involved in the different steps of spent fuel and radioactive waste management.
3. When considering whether to regulate radioactive materials as radioactive waste, Contracting Parties shall take due account of the objectives of this Convention.

Legal regulation in the field of nuclear and radiation safety has a hierarchical structure: it provides for the subordination of documents of lower legal force to the relevant requirements of documents of higher legal force and is carried out based on:

laws of the Republic of Belarus;

regulatory legal acts of the President of the Republic of Belarus;

resolutions of the Government of the Republic of Belarus;

regulatory legal acts of the republican government authorities exercising state regulation in the field of ensuring safety in the use of atomic energy;

rules and regulations of nuclear and radiation safety, hygiene standards, sanitary norms and rules, mandatory for compliance with technical regulations in the field of technical regulation and standardization that establish requirements in the field of radiation safety for the objects of technical regulation and objects of standardization;

other technical regulatory legal acts.

The Law of the Republic of Belarus “On Radiation Safety” is the main legal act that establishes requirements for radiation safety, including in RW management. This Law contains a number of provisions prepared taking into account the updated IAEA requirements in the field of radiation safety, as well as recommendations of the Integrated Regulatory Review Service (IRRS mission) conducted in the Republic of Belarus in October 2016.

Management of RW of Chernobyl origin is regulated by the Law of the Republic of Belarus No. 385-Z of May 26, 2012 “On Legal Regime of Territories Subjected to Radioactive Contamination as a Result of the Catastrophe at the Chernobyl NPP”.

In order to strengthen and maintain an adequate level of nuclear and radiation safety, the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” was adopted on

October 10, 2022, which entered into force on October 14, 2023; the Law of the Republic of Belarus No. 426-Z of July 30, 2008 “On the Use of Atomic Energy” was declared invalid.

The Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” provides for comprehensive regulation of public relations in the field of safety in the use of atomic energy at all stages of the life cycle of nuclear facilities.

On May 5, 2023, the Law of the Republic of Belarus No. 265-Z “On Ratification of the Amendment to the Convention on the Physical Protection of Nuclear Material” was adopted. Therefore, the Republic of Belarus has become a full-fledged participant of the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities.

Ratification of the Amendment contributes to enhancing the national security by laying a stronger foundation for combating nuclear terrorism and ensuring nuclear material security, and promotes increased cooperation between states to detect and return stolen or smuggled nuclear material.

Adoption of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” urged the necessity to adjust and develop a number of subordinate regulatory legal acts.

Amendments were made to the Decrees of the President of the Republic of Belarus regulating the licensing of activities in the field of the use of atomic energy and IRS, financing measures to improve safety and reliability, decommissioning of power units of the Belarusian NPP State Enterprise, as well as to the Strategy of Spent Nuclear Fuel Management of the Belarusian Nuclear Power Plant in terms of updating the priority measures for its implementation.

Resolution of the Council of Ministers of the Republic of Belarus No. 668 dated October 9, 2023 approved a number of regulations on safety in the use of atomic energy and amended the Regulation on State Supervision in the Field of Nuclear and Radiation Safety, which was approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 497 of August 21, 2020.

In the implementation of state supervision in the field of radiation safety and state sanitary supervision in terms of radiation safety, a graded approach is used, which is based on the application of supervision measures corresponding to the degree of radiation hazard of ionizing radiation source, including the risk to life and health of personnel and the public.

Decree of the President of the Republic of Belarus No. 291 of September 21, 2023 amended the Regulations on Licensing of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources approved by the Decree of the President of the Republic of Belarus No. 137 of April 5, 2021. The legal regulation of licensing activities in the field of the use of atomic energy and ionizing radiation sources is described in detail in the following Section E.2.1.

Regulations on Public Hearings on the Issues of Safety Regulation of the Belarusian Nuclear Power Plant, approved by the Resolution of the Council of Ministers No. 258 of April 24, 2019, was amended regarding the organization of public hearings and informing the public on the progress and results of Gosatomnadzor’s safety review and assessment of the license applicant’s compliance with the pre-license requirements and conditions during the preparation of decisions of the Ministry for Emergency Situations related to nuclear and radiation safety, including RWSF and RWDF.

The system of mandatory technical regulatory legal acts in the field of safety in the use of atomic energy comprises rules and regulations of nuclear and radiation safety, sanitary rules and regulations, hygienic standards specifying requirements for nuclear and radiation safety in RW and SNF management.

SNF and RW management is also regulated by legislation in the field of sanitary and epidemiological welfare of the population. Resolution of the Council of Ministers of the Republic of Belarus No. 37 of January 25, 2021 adopted hygienic standards, including hygienic standard “Criteria

for Assessment of Radiation Exposure". In accordance with the abovementioned standard, the user of IRS makes a decision to classify waste contaminated with radionuclides as RW.

Regulatory legal acts in the field of nuclear and radiation safety regulating SNF and RW management that are listed in Appendix 4 constitute the regulatory framework for protection and safety of the public and employees from the harmful effects of ionizing radiation, set out the requirements of basic safety standards in terms of protection from occupational exposure and protection of the population and establish the procedure for licensing activities related to SNF and RW management.

In order to facilitate compliance with the requirements of nuclear and radiation safety standards and regulations, Gosatomnadzor develops and approves nuclear and radiation safety guidelines. Nuclear and radiation safety guidelines contain recommendations on fulfilling complying with requirements of rules and regulations of nuclear and radiation safety, including methods of work performance, appropriate techniques, conducting safety reviews and safety assessments, as well as clarifications and other recommendations on complying with safety requirements in atomic energy use.

E.2.1. Licensing of the Activities in the Field of Spent Fuel and Radioactive Waste Management

Since the previous National Report, an important change in the regulatory framework for licensing activities in the field of atomic energy and ionizing radiation sources use has become the withdrawal of licensing activities in the field of atomic energy and IRS use from the general regulation and the adoption of the Decree of the President of the Republic of Belarus No. 137 of April 5, 2021 "On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources".

Subject to the Regulations on licensing activities in the field of the use of atomic energy and IRS, approved by the Decree of the President of the Republic of Belarus "On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources", implementing activities in the field of atomic energy and ionizing radiation sources use requires a special permit (license) of the Ministry for Emergency Situations.

Gosatomnadzor has been delegated the functions of organizing the licensing process for activities in the field of atomic energy and ionizing radiation sources use. The Regulation on the licensing process for activities in the field of atomic energy and ionizing radiation sources use enshrines the right of Gosatomnadzor to determine special licensing requirements and conditions to implement licensed activities.

Licensed activities in RW and SNF management include the components of the work and services specified in the following Paragraphs:

1. Operation, decommissioning of RWSF, operation, closure of RWDF;
2. Use, processing, transportation, storage of nuclear materials, materials and facilities contaminated with transuranic elements;
3. Design, siting, construction of RWSF and RWDF;
4. Processing, long-term storage and disposal of radioactive waste;
5. Design, construction and decommissioning of radioactive waste management facilities;
6. Conducting safety review in the field of atomic energy and IRS use.

Carrying out these activities without a license is illegal.

Prior to decision-making on licensing issues, Gosatomnadzor assesses the compliance of a license applicant with pre-license requirements and conditions, and a licensee with license requirements and conditions. As a part of this assessment, Gosatomnadzor has the right to appoint a safety review, the procedure for which is determined by the Council of Ministers of the Republic of

Belarus.

The application for issuing a license, making amendments to it, extending the validity period of the license with the attached documents must be considered by Gosatomnadzor:

within 20 working days from its registration date – for works specified in Paragraphs 4-6 of this Section;

within 30 working days – for works specified in Paragraphs 1-3 of this Section.

The term of considering the application (except where the validity period is extended for the license for the right to implement works and (or) services for RWSF, RWDF design, and works and (or) services specified in Paragraphs 4-6 of this Section) is extended for the period of:

developing the Terms of Reference for conducting safety review;

conducting safety review;

consideration of the expert report submitted to Gosatomnadzor;

submission to Gosatomnadzor and consideration by Gosatomnadzor of an action plan to eliminate and (or) compensate for deviations affecting safety (for works specified in Paragraphs 1-3 of this Section, with the exception of work on RWSF, RWDF design;

conducting a conformity assessment.

The period of Terms of Reference development to implement safety review in relation to works and (or) services mentioned in Paragraphs 1-3 of this Section is 30 calendar days, works and (or) services mentioned in Paragraphs 4-6 hereof – 10 calendar days.

Reports on the results of safety reviews and conformity assessments, and other materials on licensing issues are considered by the Commission of Gosatomnadzor on Licensing Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources.

The Commission of Gosatomnadzor makes decisions on:

on approval of reports based on the results of conformity assessments;

establishing the terms for which a license is issued or suspended;

inclusion of special license requirements and conditions in licenses;

submitting materials to the Board of the Ministry for Emergency Situations for further consideration.

During meetings of the Board of the Ministry for Emergency Situations, the Head of Gosatomnadzor informs on the validity of proposals on licensing issues. Members of the Board of the Ministry for Emergency Situations make decisions on issuing licenses, amending them and extending the validity of licenses by open voting. Gosatomnadzor notifies license applicants (licensees) about the decisions taken by the Board of the MES in written form, issues licenses, and records information in the unified republican register of licenses.

A license is issued only in case of a positive conclusion based on the results of an assessment of the license applicant's compliance with pre-licensing requirements and conditions, and the licensee's compliance with licensing requirements and conditions.

With reference to the works and (or) services mentioned in Paragraphs 1 and 3 (except for works on RWDF, RWSF design), the license is issued (extended) for the period during which safety of the activity and (or) facility is documented by the license applicant (licensee) and confirmed by the safety examination results. With reference to other works and (or) services, a license is issued for a period of not more than 10 years, taking into account the results of the conformity assessment and (or) safety review.

Following the Decree of the President of the Republic of Belarus "On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources", a number of regulatory legal acts in the field of nuclear and radiation safety were adopted:

Resolution of the Council of Ministers of the Republic of Belarus No. 558 of October 6, 2021

"On Implementing the Decree of the President of the Republic of Belarus No. 137 of April 5, 2021", which approved:

Regulations on the Procedure for Conducting Safety Review in the Field of Atomic Energy and Ionizing Radiation Sources Use;

Regulations on the Procedure for Monitoring Licensees' Compliance with the Licensing Legislation, Licensing Requirements and Conditions for Activities in the Field of Atomic Energy and Ionizing Radiation Sources Use, Including Special Licensing Requirements and Conditions;

Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 64 of September 21, 2021 "On Requirements for the Composition and Content of Documents Justifying Nuclear and Radiation Safety";

Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 65 of September 24, 2021 "On Establishment of Application Forms and Conformity Assessment";

Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 58 of September 6, 2021 "On Procedure for Conducting a Periodic Safety Assessment of Nuclear Facility, Storage Facility, Disposal Facility";

Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 59 of September 6, 2021 "On Requirements for the Content of the Report on the Assessment of the Current Safety State";

Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 59 of November 15, 2023 "On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources".

Regulations on the Procedure for Monitoring Licensees' Compliance with the Licensing Legislation, Licensing Requirements and Conditions for Activities in the Field of Atomic Energy and Ionizing Radiation Sources Use, Including Special Licensing Requirements and Conditions, determines that control over the implementation by licensees of licensing legislation, licensing requirements and conditions for activities in the field of the use of atomic energy and ionizing radiation sources, including special licensing requirements and conditions, is performed by Gosatomnadzor.

E.3. State Administration and Regulation of Nuclear and Radiation Safety

Article 20. Regulatory Body

1. Each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 19, and provided with adequate authority, competence and financial and human resources to fulfill its assigned responsibilities.

2. Each Contracting Party, in accordance with its legislative and regulatory framework, shall take the appropriate steps to ensure the effective independence of the regulatory functions from other functions when organizations are involved in both spent fuel and radioactive waste management, and their regulation.

Subject to Article 7 of the Law of the Republic of Belarus "On Radiation Safety", state administration in the field of radiation safety is implemented by the President of the Republic of Belarus, the Council of Ministers of the Republic of Belarus, the Ministry for Emergency Situations, the Ministry of Health, the Ministry of Natural Resources and Environmental Protection, the Ministry of Defense, the Ministry of Internal Affairs, the State Border Committee, local executive and administrative bodies within their competence defined by the said Law and other legislative acts.

For the purpose of safety, the Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy" provides for a number of measures and mechanisms.

The most important mechanism is the differentiation of functions of management and regulation of activities related to the use of atomic energy.

State administration in the field of safety in atomic energy use is implemented by the Ministry of Energy of the Republic of Belarus, the Ministry for Emergency Situations of the Republic of Belarus, the National Academy of Sciences of Belarus, as well as other state bodies and organizations which subordinate operating organizations, within their competence.

State regulation in the field of safety in atomic energy use is performed by the Ministry for Emergency Situations of the Republic of Belarus represented by Gosatomnadzor, the Ministry of Health of the Republic of Belarus, the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, as well as other republican government bodies (hereinafter, unless otherwise provided, – state regulatory bodies in the field of safety in the use of atomic energy) within their competence.

State bodies for safety regulation in the use of atomic energy in terms of exercising their powers related to state regulation of safety, control and state supervision of activities related to the use of atomic energy, are independent from republican bodies of state administration and other state organizations carrying out state administration in the field of atomic energy use.

State bodies regulating safety in the use of atomic energy ensure the establishment of a legal framework for nuclear and radiation safety and monitor compliance with nuclear and radiation safety requirements.

The main responsibility for ensuring safety in the use of atomic energy is held by the operating organization, implementing activities on its own or with the involvement of other organizations at all stages of the life cycle of a nuclear facility, RWSF, RWDF, as well as activities related to the management of nuclear materials, SNF and (or) RW.

The President of the Republic of Belarus, in the field of safety in the use of atomic energy:

defines the main directions of the unified state policy;

makes decisions on siting, design, construction, commissioning, extending service life, limitation of operational characteristics and decommissioning of a nuclear power plant or its power unit;

defines the republican body of state administration or a state organization which subordinates the NPP;

makes decisions on safety issues, public and environmental protection in the use of atomic energy;

makes decisions on issues of prevention and elimination of consequences of emergency situations in the use of atomic energy;

defines the state bodies and legal entities ensuring the development of the use of atomic energy, which subordinates the operating organization;

exercises other powers in accordance with the Constitution of the Republic of Belarus and legislative acts.

The President of the Republic of Belarus may establish other rules and requirements in the field of safety in the use of atomic energy than those provided for by the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”.

The Council of Ministers of the Republic of Belarus in the field of safety in the use of atomic energy within its competence:

ensures the implementation of a unified state policy;

coordinates the activities of government authorities and organizations;

approves and provides implementation of state programs;

makes decisions on siting, design, construction, commissioning, extending service life of a nuclear facility and (or) RWSF, RWDF, limitation of operational characteristics and decommissioning

of a nuclear installation (with the exception of a nuclear power plant or its power unit) and (or) RWSF, RWDF closing;

defines the republican body of state administration or the state organization in charge of the nuclear facility (with the exception of nuclear power plants) and (or) RWSF, RWDF;

establishes the procedure for implementing licensing control and state supervision in the field of nuclear and radiation safety;

defines the main directions, conditions and establishes the procedure for ensuring nuclear security;

establishes the procedure for the formation and operation of a system of scientific and technical support for regulatory activities in the field of nuclear and radiation safety, including functions of the head legal entity that coordinates activities in this area, as well as the procedure and composition of the National Commission for the Safe Use of Atomic Energy under the Council of Ministers of the Republic of Belarus;

approves the Strategy of SNF Management;

takes measures to ensure the implementation of international treaties of the Republic of Belarus;

coordinates the international cooperation of the Republic of Belarus;

exercises other powers entrusted by the Constitution of the Republic of Belarus, laws and acts of the President of the Republic of Belarus.

Public administration bodies in the field of safety in the use of atomic energy within their competence (general competence of public administration bodies):

implement state scientific and technical, investment and structural policy;

develop measures to ensure safety in the use of nuclear energy;

participate in the development of draft regulatory legal acts, including technical regulatory legal acts, in the field of nuclear energy use;

develop proposals on ensuring activities in the field of nuclear energy use, including the settlement of issues in providing nuclear facilities with nuclear fuel;

develop measures to ensure physical protection;

organize the readiness of forces and means for action in case of emergency situations at nuclear facilities;

organize radiation monitoring at nuclear facilities;

form a set of measures for RW management and monitor its implementation;

ensure uniformity of measurements in the field of atomic energy use;

contribute to the formation and development of a network of accredited testing laboratories (centers);

exercise other powers in accordance with legislative acts.

The Ministry for Emergency Situations of the Republic of Belarus in the field of safety in the use of atomic energy, taking into account the general competence of public administration bodies:

makes decisions on the issuing or refusing to issue a special permit (license) for the right to implement activities in the field of atomic energy and IRS use, making or refusing to make amendments to it, extending or refusing to extend the term, suspending, renewing, terminating, canceling the license;

approves regulations of administrative procedures implemented in relation to legal entities engaged in activities in the field of atomic energy and IRS use;

approves rules and regulations for nuclear and radiation safety;

coordinates, within its competence, draft regulatory legal acts, including those mandatory for compliance with technical regulatory legal acts adopted by republican bodies of state administration;

organizes an Action Plan development to protect the population from a nuclear and radiation accident;

takes emergency response measures;

acts as a state management body in the field of RW management;

exercises other powers in accordance with legislative acts.

Gosatomnadzor carries out the functions of the state regulatory body in the field of nuclear safety in accordance with Articles 7 and 8 of the Convention on Nuclear Safety of June 17, 1994 and Articles 19 and 20 of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

In implementing state regulation, Gosatomnadzor, within the limits of its competence:

develops rules and regulations for ensuring nuclear and radiation safety;

develops draft decisions on issuing or refusing to issue a license, making or refusing to amend it, extending or refusing to extend the term, suspension, renewal, termination, cancellation of a license based on the results of reviewing documents received, conducting conformity assessment and safety review, draws up and issues licenses signed by the Head of Gosatomnadzor and certified by the official seal of Gosatomnadzor;

issues permits for the right to conduct work when implementing activities in the field of atomic energy use and for the realization of educational programs for advanced training of managers and specialists on nuclear and (or) radiation safety;

conducts knowledge assessment on the issues of radiation safety;

carries out investigation of circumstances and causes of radiation accidents and incidents;

performs licensing control;

performs state supervision in the field of nuclear and radiation safety, including in terms of supervision and control over providing physical protection, accounting and control of nuclear materials, except as provided for by legislation on radiation safety;

implements safety assessment;

exercises the formation and updating of the classifier of technical legal acts in the field of nuclear and radiation safety in accordance with the procedure established by it;

participates in the formation and maintenance of the Unified State Personnel Training System in the field of safety in the use of atomic energy;

monitors the provision of emergency preparedness;

acts as the competent authority for ensuring nuclear security;

ensures functioning of the State System of Accounting and Control of Nuclear Materials;

performs, in line with international agreements of the Republic of Belarus, the exchange of information and cooperation with state regulatory authorities in the field of safety in the use of atomic energy of other states and relevant international organizations in relation to issues arising in performing its functions;

ensures, with the involvement of stakeholders, the compliance of the Republic of Belarus with international commitments arising from the provisions and procedures of the Convention on Nuclear Safety of June 17, 1994, the Joint Convention, including the preparation of National Reports of the Republic of Belarus, consideration of reports of other Contracting Parties, participation in meetings of the Contracting Parties with the frequency established by the procedural documents (information circulars) adopted by the Contracting Parties to these conventions and the international commitments of the Republic of Belarus in the field of nuclear and radiation safety, including physical protection of nuclear material and nuclear facilities;

interacts and exchanges information (performs the functions of a point of contact) on issues related to fulfilling international commitments of the Republic of Belarus in the field of physical protection of nuclear material and nuclear facilities;

defines the main directions of research and development work in the field of nuclear and radiation safety;

organizes the work of the scientific and technical expert council in the field of nuclear and radiation safety in accordance with the procedure established by the Ministry for Emergency Situations;

organizes the implementation of scientific research to improve the nuclear and radiation safety of nuclear facilities and (or) RWSF, RWDF;

determines the need for expert support of its activities;

establishes the procedure for the formation and maintenance of a register of experts in the field of nuclear and radiation safety;

ensures the creation of appropriate mechanisms and procedures for informing the public, government agencies and legal entities, as well as conducting consultations with them regarding the regulatory process and aspects of regulated activities related to nuclear and radiation safety, including incidents, accidents and violations of the normal operation of nuclear facilities and (or) RWSF, RWDF;

organizes and conducts at the stage of decision-making on issuing a license to the operating organization for siting, construction, operation of nuclear facility and (or) a RWSF, RWDF, decommissioning of nuclear facility and (or) a RWSF, RWDF, closure of RWDF, public hearings in accordance with the procedure established by the Council of Ministers of the Republic of Belarus;

ensures the formation and organizes the operation of the scientific and technical support system;

exercises other powers in accordance with legislative acts.

The Ministry of Health of the Republic of Belarus in implementing state regulation in the field of safety in the use of atomic energy:

organizes the implementation of state sanitary supervision in terms of radiation safety;

develops drafts of specific sanitary and epidemiological requirements and hygienic standards;

coordinates, within its competence, draft regulatory legal acts, including those mandatory for compliance with technical regulatory legal acts adopted by republican bodies of state administration;

organizes the state sanitary and hygienic examination with the issuance of a sanitary and hygienic conclusion on activities related to the production, storage, use, transportation and disposal of radioactive substances;

organizes the state sanitary and hygienic examination with the issuance of a sanitary and hygienic conclusion of projects for sanitary protection zones of nuclear facilities and (or) storage and disposal facilities;

participates in the analysis of the radiation situation, development of recommendations for the protection of the population, organization of emergency response measures in the event of nuclear and (or) radiation accidents;

participates in informing the public about radiation protection issues;

exercises other powers in accordance with legislative acts.

In accordance with Article 48 of the Law of the Republic of Belarus “On Radiation Safety”, state sanitary supervision in terms of radiation safety is implemented in accordance with the procedure established by the legislation on control (supervisory) activities and legislation in the field of sanitary and epidemiological welfare of the population.

State sanitary supervision in terms of radiation safety includes supervision of compliance with specific sanitary and epidemiological requirements, hygienic standards, as well as other legislative

acts in the field of sanitary and epidemiological welfare of the population, including when managing radioactive waste.

The Ministry of Natural Resources and Environmental Protection of the Republic of Belarus in implementing state regulation in the field of safety in the use of atomic energy:

ensures the implementation of the state environmental expertise;

participates in radiation monitoring as part of the National Environmental Monitoring System in the Republic of Belarus;

performs operational control and predicts zones of spread of radioactive contamination;

coordinates, within its competence, draft regulatory legal acts, including those mandatory for compliance with technical regulatory legal acts adopted by republican bodies of state administration;

exercises other powers in accordance with legislative acts.

Other republican bodies of state administration in implementing state regulation in the field of safety in the use of atomic energy within its competence:

develop proposals for the formation and implementation of a unified state scientific, technical and investment policy;

coordinate draft regulatory legal acts, including those mandatory for compliance with technical regulatory legal acts adopted by republican bodies of state administration;

participate in the organization of conformity assessment of products for which technical requirements are established in the field of safety in the use of atomic energy, processes of its development, design, research, production, construction, installation, adjustment, operation (use), storage, transportation, sale, recycling and disposal;

ensure safety and implementation of environmental protection measures at subordinate nuclear facilities;

participate in monitoring the provision of physical protection;

implement, if necessary, protection of nuclear materials during their transportation;

participate in employees training activities;

exercise other powers in accordance with this Law and other legislative acts.

Local executive and administrative bodies in the field of safety in the use of nuclear energy:

take part in activities to ensure protection of the population and the environment from the effects of ionizing radiation exceeding limits established by mandatory technical regulations;

take part in monitoring within the relevant administrative-territorial unit over the readiness of legal entities and the population to act in the event of nuclear and (or) radiation accidents in implementing activities in the field of atomic energy use;

take part in the elimination, limitation or minimization of the consequences of nuclear and (or) radiation accidents that emerged when implementing activities in the field of nuclear energy use;

inform the population through local mass media about the radiation situation within the relevant administrative-territorial unit;

take part in environmental impact assessment;

exercises other powers in accordance with legislative acts.

E.3.1. Regulatory Body

In order to implement regulatory functions in the field of nuclear and radiation safety, in 2007, Gosatomnadzor was established within the structure of the Ministry for Emergency Situations – a separate structural unit with the rights of a legal entity, which tasks and functions are enshrined in the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” and the Regulations on the Department for Nuclear and Radiation Safety of the Ministry for Emergency

Situations of the Republic Belarus, approved by the Decree of the President of the Republic of Belarus No. 405 of November 14, 2022 “On the Ministry for Emergency Situations”.

Gosatomnadzor performs special functions (executive, supervisory, regulatory and other) in the areas of ensuring nuclear and radiation safety, overcoming the consequences of the Chernobyl disaster.

Taking into account the necessity to fulfill functions in the field of RW management, the number of Gosatomnadzor staff in 2022 increased by 16 units. As of August 1, 2024, the total number of staff is 98 units (the structure of Gosatomnadzor is presented in Appendix 5).

Gosatomnadzor has a sufficient number of competent and qualified employees corresponding to the specific nature and scope of the performed tasks.

The main tasks of Gosatomnadzor are:

state supervision in the field of nuclear and radiation safety (with the exception of state supervision in the field of radiation safety with reference to IRS used for defense purposes, management of which is not a type of activity in the field of the use of IRS subject to licensing);

participation in the implementation of state policy in the areas of nuclear and radiation safety, overcoming the consequences of the Chernobyl disaster;

implementing special functions in the field of RW management.

In accordance with the tasks assigned to it, Gosatomnadzor carries out:

coordination of activities in the field of RW management;

assesses the compliance of the license applicant with pre–license requirements and conditions, the licensee – with license requirements and conditions, appoints a safety review in the field of nuclear energy and IRS use in accordance with licensing legislation;

monitor licensees’ compliance with licensing legislation, licensing requirements and conditions for conducting activities in the field of atomic energy and IRS use, including special licensing requirements and conditions;

administrative procedures;

ensures compliance of the Republic of Belarus with international commitments in the field of nuclear and radiation safety;

ensures maintenance of a Unified State System of Accounting and Control of IRS and functioning of the State System of Accounting and Control of Nuclear Materials and RW;

develops drafts of state programs, programs of the Union State and other programs in the areas of ensuring nuclear and radiation safety, overcoming the consequences of the Chernobyl disaster, monitors their implementation, and is among the state customers of these programs;

regulates safe functioning of the system of waste generated due to the Chernobyl NPP accident;

forms proposals on expenditures of the republican budget related to the implementation of state programs to overcome the consequences of the Chernobyl disaster and ensures control over the targeted use of budget funds allocated for these purposes;

conducts inspection (assessment) of knowledge on nuclear and radiation safety;

conducts inspections of compliance with the requirements of legislation on nuclear and radiation safety, licensing, licensing requirements and conditions, including special licensing requirements and conditions, and implements preventive and precautionary measures;

organizes the publication of information, reference and other documents required to perform and implement activities in the areas of nuclear and radiation safety, overcoming the consequences of the Chernobyl NPP accident, develops and approves guidelines on nuclear and radiation safety;

summarizes the practice of applying legislation on nuclear and radiation safety in the field of overcoming the consequences of the Chernobyl disaster, develops proposals for its improvement, organizes the preparation of relevant regulatory legal acts, including technical regulatory legal acts;

organizes the work of state organizations subordinate to the Ministry for Emergency Situations, the activities of which are supervised by Gosatomnadzor;

provides information on issues related to nuclear and radiation safety, overcoming the consequences of the Chernobyl disaster;

organizes scientific research on justification of principles and criteria of nuclear and radiation safety, minimization of the long-term adverse consequences of the Chernobyl NPP accident, improvement of efficiency of state supervision in the field of nuclear and radiation safety, involves scientific organizations, scientists and specialists, including foreign ones to conduct relevant scientific research.

Due to the commissioning of units No. 1 and No. 2 of the Belarusian NPP, as well as in connection with the liquidation of the Department for the Mitigation of the Chernobyl NPP Disaster Consequences, the structure of Gosatomnadzor has been revised, functions and human resources have been redistributed between the structural units of Gosatomnadzor, which enables the maximum use of the existing experienced and qualified personnel resource. The data are given in Appendix 5.

Gosatomnadzor has implemented an integrated management system that enables efficient and result-oriented fulfillment of regulatory functions in the field of nuclear and radiation safety, including development and maintenance of safety culture at an appropriate level. Principles and attributes of Gosatomnadzor's safety culture are enshrined in the Regulations on the Integrated Management System.

To achieve the expected results of the implementation of the Regulatory Strategy and strategies for specific areas of activities, annual planning of Gosatomnadzor's activities is ensured based on a graded approach, in order to streamline and coordinate planned actions, deadlines for their implementation and the use of resources.

For the purpose of improving the fulfillment of Gosatomnadzor's functions, its activities are constantly reviewed by executives of Gosatomnadzor and the Ministry for Emergency Situations. Gosatomnadzor continuously enhances its activities by applying the results of internal audits, analyzing requests from stakeholders, requests from the website of Gosatomnadzor, and examining the experience of regulatory bodies of other countries, etc.

Financing of the activities of Gosatomnadzor is performed at the expense of the state budget and other sources in accordance with the legislation, regardless of the financial resources of organizations or bodies responsible for the promotion or application of nuclear or radiation technologies.

Financing from the republican budget is annually justified and requested for activities related to nuclear and radiation safety in order to ensure functioning of Gosatomnadzor (remuneration of employees, travel expenses, procurement of equipment and software, etc.), as well as financing for getting expert and advisory assistance, organization of scientific work, professional and advanced trainings for employees.

Maintenance of the qualifications of the regulatory body's specialists is carried out within the framework of human resources policy and the current range of planned training activities, including international workshops that are organized on a regular basis.

In order to ensure openness and transparency of the regulatory body's activities, Gosatomnadzor informs the public about safety status of radiation facilities, nuclear facilities, and atomic energy facilities. In 2021, the Information and Communication Strategy of Gosatomnadzor was

updated. This document contains a detailed description of target audiences, topics, methods and forms of communication as well as schemes of information streams.

As part of the implementation of this strategy, communication channels are established and maintained (including the Internet portal of Gosatomnadzor https://gosatomnadzor.mchs.gov.by/), and interaction with the media is arranged.

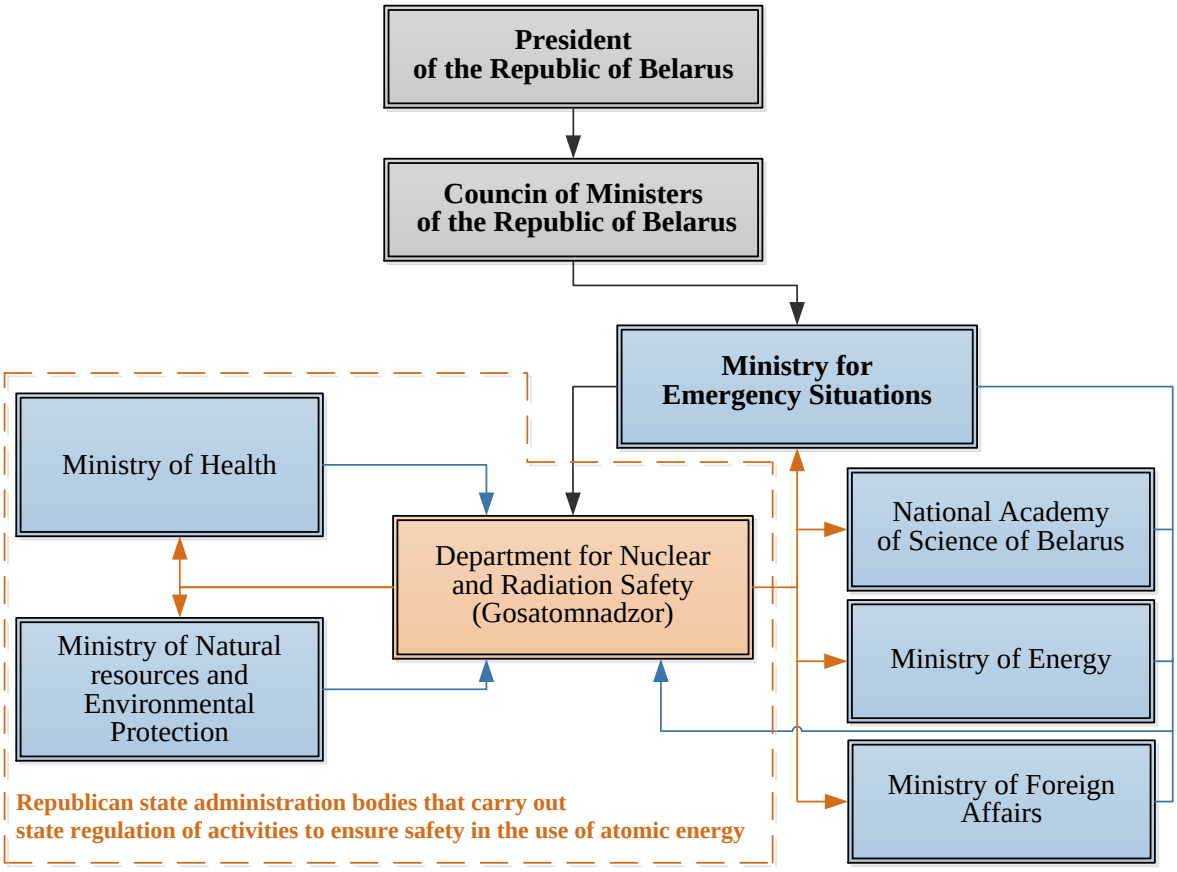
Gosatomnadzor publishes publicly available national reports on the fulfillment of obligations under the Joint Convention, the Convention on Nuclear Safety, reports of assessment missions and peer reviews, and other official documents.

On an annual basis, Gosatomnadzor prepares and publishes activity reports that contain information on the state of safety in the country with regard to the use of atomic energy and IRS.

E.3.2. Status of the Regulatory Body

According to Article 15 of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”, Gosatomnadzor is the authorized state regulatory body in the field of safety in the use of atomic energy, as well as a regulatory body in accordance with the Convention on Nuclear Safety and the Joint Convention.

The scheme of the key bodies of state administration and regulation on issues of ensuring nuclear and radiation safety, the use of atomic energy in the Republic of Belarus is presented in the figure.



State bodies for safety regulation in the use of atomic energy and IRS in terms of exercising their powers related to state regulation of safety, control and state supervision of activities related to the use of atomic energy and IRS, are independent from the republican bodies of state administration

contributing to the development of the nuclear power industry and other state organizations, users of IRS and operating organizations.

Gosatomnadzor performs regulatory functions in such a way as not to jeopardize its effective independence.

Gosatomnadzor is headed by a Head appointed and dismissed by the President of the Republic of Belarus upon the proposal of the Minister for Emergency Situations.

Head of Gosatomnadzor is subordinate to the Minister for Emergency Situations, manages Gosatomnadzor activities and is personally liable for implementing its tasks and functions.

In making regulatory decisions affecting safety, Gosatomnadzor remains independent from governing bodies in the field of safety in the use of atomic energy and IRS:

the status of the Chief State Inspector of the Republic of Belarus (Head of Gosatomnadzor), the rights of state inspectors who, when implementing state supervision in the field of ensuring nuclear and radiation safety, report directly to the Chief State Inspector are enshrined in law. Contesting (appealing) decisions of the Chief State Inspector and state inspectors does not suspend their execution;

in accordance with the Regulation on State Supervision in the Field of Nuclear and Radiation Safety state supervision in the field of nuclear and radiation safety is carried out by Gosatomnadzor, based on the results of which Gosatomnadzor prepares and sends to the supervised organizations inspection reports, which may contain mandatory requirements;

Gosatomnadzor is authorized to issue, within its competence, mandatory written orders to eliminate violations of legislation in the field of nuclear and radiation safety, including orders to fully or partially suspend activities related to handling of IRS, RW, use of atomic energy, operation of IIR, radiation facilities, nuclear facilities, requirements (orders) to eliminate identified violations of legislation on licensing, license requirements;

Gosatomnadzor establishes deadlines for the assessment and (or) safety review of license applicants based on the scope of documents submitted by them to obtain a license for the right to carry out activities in terms of RW and SNF management;

decisions on licensing issues are made by MES boards on the basis of Gosatomnadzor's conclusions;

the current legislation grants the regulatory body the right to make changes to the licensing requirements and conditions, information about which is indicated in the license, including based on the results of supervision;

the existence of an enforcement system for organizations involved in SNF and RW management and the possibility of applying administrative sanctions in case of violation of legal requirements and requirements of safety regulations.

There are no organizations subordinated to Gosatomnadzor that carry out activities in the field of the use of atomic energy, IRS and RW. The establishment and management of the national operator for radioactive waste management (BelRAO SE) is within the competence of the Ministry of Energy. Thus, there is no conflict of interest in terms of state regulation and management in the field of safety assurance.

E.3.3. Technical Support Organizations

In the Republic of Belarus, a system of scientific and technical support to the regulatory body in the field of nuclear and radiation safety for decision-making affecting safety has been formed, taking into account international requirements and recommendations regarding the independence of scientific and technical support.

The system of scientific and technical support for regulatory activities was established by the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”. It consists of three mutually complementary elements:

legal entities providing scientific and technical support in the field of nuclear and radiation safety (hereinafter referred to as technical support organizations (TSOs)), defined by the Council of Ministers of the Republic of Belarus;

National Commission for the Safe Use of Atomic Energy under the Council of Ministers of the Republic of Belarus (an expert scientific advisory body);

experts included in the register of experts in the field of nuclear and radiation safety.

Subject to the Resolution of the Council of Ministers of the Republic of Belarus “On Implementing the Law of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy”, the main tasks of the scientific and technical support system are:

identification of current research directions and topics in the field of safe use of atomic energy and IRS;

conducting fundamental and applied research in the field of the safe use of atomic energy and IRS, including research on the effectiveness of legal regulation, taking into account the international commitments of the Republic of Belarus, and developing proposals to improve legislation in the field of nuclear and radiation safety;

formation and fulfillment of tasks of state, scientific, technical and other programs related to nuclear and radiation safety;

improvement of the system of education and training of highly qualified scientists in the field of nuclear and radiation safety, formation of human resources of technical support organizations;

providing expert support in implementing state regulation in the field of nuclear and radiation safety in atomic energy and IRS use;

providing scientific and technical support to Gosatomnadzor in decision-making on nuclear and radiation safety issues, development of methods for predicting the risks and threats of emergency situations at nuclear and radiation facilities;

conducting scientifically grounded safety analysis, modeling and computational analysis in the field of nuclear and radiation safety;

conducting tests, trials, measurements in the field of nuclear and radiation safety;

development, creation, formation and maintenance of databases in the field of nuclear and radiation safety in atomic energy and IRS use.

The first element of the scientific and technical support system for regulatory activities are technical support organizations.

Subject to the Resolution of the Council of Ministers of the Republic of Belarus No. 668 of October 9, 2023 “On Implementing the Law of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy”, the list of technical support organizations in the field of nuclear and radiation safety includes 18 organizations. These are organizations from the system of the National Academy of Sciences of Belarus, the Ministry for Emergency Situations of the Republic of Belarus, the Ministry of Health of the Republic of Belarus, the Ministry of Education of the Republic of Belarus as well as the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus:

State Scientific and Technical Institution “Centre for Nuclear and Radiation Safety” of the Ministry for Emergency Situations of Belarus (CNRS);

Belarusian State University;

Belarusian National Technical University;

State Scientific Institution “Institute of Radiobiology of the National Academy of Sciences of Belarus”;

State Scientific Institution “A.V.Lykov Heat and Mass Transfer Institute of the National Academy of Sciences of Belarus”;

State Scientific Institution “Joint Institute for Power and Nuclear Research – Sosny” of the National Academy of Sciences of Belarus;

State Environmental Research Institution “Polesie State Radiation-Ecological Reserve”;

State Educational Institution “National Institute for Higher Education”;

State Educational Institution “University of Civil Protection of the Ministry for Emergency Situations of the Republic of Belarus”;

State Institution “Republican Research Center for Radiation Medicine and Human Ecology”;

State Institution “Republican Centre for Hydrometeorology, Radioactive Contamination Control and Environmental Monitoring”;

Government agency “Center for Geophysical Monitoring of the National Academy of Sciences of Belarus”;

Interstate Educational Institution of Higher Education “Belarusian-Russian University”;

Research Institute “Institute of Nuclear Problems” of the Belarusian State University;

Republican Scientific Subsidiary Unitary Enterprise “Institute of Soil Science and Agrochemistry”;

Institution “Research Institute of Fire Safety and Emergency Situations” of the Ministry for Emergency Situations of the Republic of Belarus;

Educational Institution “Belarusian State University of Informatics and Radio Electronics”;

Educational Institution “International State Ecological Institute named after A.D.Sakharov” of the Belarusian State University.

All organizations are involved in scientific and technical support of regulatory activities in various areas.

The head organization coordinating the activities of technical support organizations is the State Scientific Technical Institution “Centre for Nuclear and Radiation Safety” (CNRS). Gosatomnadzor supervises the activities of the Center.

The head organization:

organizes the interaction of the structural elements of the scientific and technical support system;

interacts, if necessary, with other organizations, including foreign ones, when performing assigned tasks;

implements measures for scientific support of state programs, tasks of state scientific and technical programs, as well as state research programs;

analyzes and summarizes the results of scientific research conducted by technical support organizations;

develops proposals for improving the scientific and technical support system;

performs other functions.

The next element of the scientific and technical support system comprises the National Commission for the Safe Use of Atomic Energy under the Council of Ministers of the Republic of Belarus and the National Commission of Belarus for Radiation Protection under the Council of Ministers of the Republic of Belarus.

The National Commission for the Safe Use of Atomic Energy under the Council of Ministers of the Republic of Belarus includes representatives of:

republican public administration bodies and other organizations subordinate to the Government of the Republic of Belarus;

scientific and other government organizations with experience and knowledge, skills and competencies in the field of nuclear and radiation safety, including specialists of the country-supplier of nuclear technologies.

At present, the Commission consists of 15 people, 5 of whom are PhDs of sciences, 7 are candidates of sciences.

The National Commission within its competence:

prepares recommendations to government agencies (organizations) on the following issues:

implementing basic principles of ensuring the safe use of atomic energy;

training and education of specialists for nuclear facilities,

scientific substantiation of requirements for nuclear and radiation safety in operating nuclear facilities and radiation facilities,

application of technological solutions at nuclear energy and radiation facilities;

reviews and evaluates the results of scientific research in the field of safety in atomic energy use and makes recommendations on their application;

considers drafts of regulatory legal acts and technical regulatory legal acts in the field of safety in atomic energy use sent by the public administration bodies;

develops recommendations for technical support organizations.

The National Commission of Belarus for Radiation Protection under the Council of Ministers of the Republic of Belarus is an inter-sectoral scientific-expert and advisory body on radiation safety issues.

The National Commission reviews and evaluates the results of scientific research in the field of radiation safety, makes recommendations on their application, and prepares recommendations on the following issues of radiation safety:

establishment of basic limits of radiation doses to personnel, population and their derived values, as well as other standards in the field of radiation safety;

implementation of the basic principles of radiation safety;

training and education of personnel on radiation safety issues;

assessment of impact on the environment and human habitat;

development of measures to protect the population of the Republic from the impact of ionizing radiation, as well as recommendations for their implementation;

assessment of the radiation situation in the Republic, accumulation and generalization of data on the consequences of exposure of various population groups to ionizing radiation of artificial or natural origin;

assessment of the effectiveness of measures applied in the Republic to protect people, farm animals and environmental objects from the impact of ionizing radiation;

regulation of rational use of natural resources in conditions of radioactive contamination;

scientific substantiation of requirements to ensure radiation protection of personnel and the population during operation of nuclear energy facilities and radiation facilities.

The third element of the scientific and technical support system are the experts included in the register of experts in the field of nuclear and radiation safety.

These are experts who received admission to the right to conduct safety review in the field of the use of atomic energy and IRS.

Subject to the Regulation on the Procedure for Admission to Conduct Safety Review in the Field of the Use of Atomic Energy and Ionizing Radiation Sources, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 59 of November 15, 2023, the

decision on admission to conduct safety review is made by the Commission for granting admission to conduct safety review in the field of the use of atomic energy and ionizing radiation sources.

The personal composition of the Commission is approved by the Order of the Head of Gosatomnadzor.

Currently, there are 57 experts in the field of atomic energy use, and 11 experts in the field of IRS. The formation of a pool of experts with access to the right to conduct safety review in the field of nuclear energy and IRSs use is continued.

The register of experts in the field of nuclear and radiation safety is published on the Gosatomnadzor website.

In order to increase safety level, technical support organizations conduct scientific, research works within the framework of state programs and scientific and technical relevant profile. The regulatory body acts as the customer. Scientific and Technical Council was established on the basis of Gosatomnadzor and includes leading specialists from the technical support system comprised of 22 experts, including 6 PhDs and 11 candidates of science.

Annually, about two dozen research and development works on various subjects are performed under the assignment of Gosatomnadzor, including independent safety review of the Belarusian NPP using program codes, seismological studies and monitoring in the area of the plant siting.

A number of studies are carried out to provide scientific and technical support to operating organizations, the customers of which are the National Academy of Sciences of Belarus and the Ministry of Energy.

Section F. OTHER GENERAL SAFETY PROVISIONS

F.1. Responsibility of the License Holder

Article 21. Responsibility of the License Holder

1. Each Contracting Party shall ensure that prime responsibility for the safety of spent fuel or radioactive waste management rests with the holder of the relevant license and shall take the appropriate steps to ensure that each such license holder meets its responsibility.

2. If there is no such license holder or other responsible party, the responsibility rests with the Contracting Party which has jurisdiction over the spent fuel or over the radioactive waste.

F.1.1. Duties of the License Holder

In accordance with the Main Directions of the Unified State Policy in the Field of Nuclear and Radiation Safety, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 535 dated August 15, 2023, the responsibility for safety is carried out by the operating organizations and users of IRS.

Article 35 of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” defines duties and responsibilities of the operating organization to ensure safety of nuclear facilities and (or) RWSF, RWDF, nuclear materials and (or) RW.

The operating organization develops and implements measures to ensure and continuously improve safety of nuclear facilities and (or) RWSF, RWDF, creates appropriate safety control services, submits information on the safety status of these facilities to state regulatory authorities in the field of safety in the use of atomic energy within time limits set by them. The operating organization creates and implements an IMS for safety purposes (including a quality management system) based on consideration and mutual consistency of applying safety requirements and other requirements in its activities, as well as ensures that the influence of human factor is taken into account.

The operating organization shall ensure the following:

use of a nuclear facilities and (or) RWSF, RWDF only for the purposes for which they are intended;

organization and execution of works in such volume and quality that meet the requirements of regulatory legal acts, including technical regulatory legal acts mandatory for compliance;

development and implementation of local legal acts establishing nuclear safety requirements;

development and adoption of measures to prevent nuclear and (or) radiation accidents in implementing activities in the field of nuclear energy use and to minimize their negative consequences;

safe management of nuclear materials and radioactive waste;

formation and targeted use of funds for financing activities to maintain and improve safety of nuclear facility and (or) RWSF, RWDF and work on decommissioning of nuclear facility and (or) RWSF, closure of RWDF;

exercising workers' rights to social guarantees;

accounting of individual radiation doses of employees;

development and adoption of measures to protect the population in the event of nuclear and (or) radiation accidents when implementing activities in the field of atomic energy use;

nuclear security, including accounting and control of nuclear materials;

radiation control and radiation monitoring in the sanitary protection zone and surveillance zone;

recruitment, training, retraining and advanced training of employees, as well as maintaining their required number;

development and adoption of measures to encourage employees to participate on a voluntary basis in civil defense formations and other structures involved in the emergency preparedness and response system;

informing the population about the radiation situation in the surveillance zone;

formation, maintenance and continuous strengthening of a high safety culture level;

regular analysis of the state of nuclear safety, radiation safety and nuclear security;

conducting periodic safety assessment during the entire operating lifetime of nuclear facility and (or) RWSF, RWDF with deterministic and probabilistic safety analysis;

submitting the results of a periodic safety assessment to Gosatomnadzor;

configuration management;

studying information on legal entities that supply goods, perform work and (or) provide services that may affect the level of nuclear and radiation safety, in terms of the sufficiency of human and other resources of such entities, including the competence of employees, to ensure the ability to fulfill their obligations in accordance with nuclear safety legislation;

integrated approach to the implementation of the requirements of legislation on nuclear safety, in the field of fire safety, protection of the population and territories from natural and man-made emergencies, on information, informatization and information protection, labor protection;

performing other duties established by nuclear safety legislation.

The operating organization bears full responsibility for the safety of nuclear facility and (or) the RWSF, RWDF in all operating modes, as well as for the proper management of nuclear materials and radioactive substances.

In case of license termination, the operating organization continues to be liable for the safety of nuclear facility and (or) the RWSF, RWDF until their transfer to another operating organization or until a new license is issued. In case the operating organization is unable to ensure safety of nuclear facility and (or) the RWSF, RWDF, responsibility for safety and proper management lies with the state body of public administration in the field of safety in atomic energy use, which has the operating organization in its subordination. The said body of public administration shall ensure safety of these facilities until a new operating organization is established. The operating organization forms its own scientific and technical support system or has the right to involve scientific and technical support organizations of scientific and technical support system, as well as experts, in order to evaluate design, engineering, technological documentation, prepare periodic safety reports, analyze calculations for safety justification, scientific, technical and engineering support of the activities implemented, perform research work in order to maintain and increase safety level.

Article 36 of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” defines the obligations of the operating organization for protection of the population and the environment in the event of nuclear and (or) radiation accidents. Developing emergency response measures and ensuring readiness for their implementation is the responsibility of the operating organization.

Article 37 of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” establishes the obligation of the operating organization to create a fund for financing work to maintain and improve safety of nuclear facility and (or) the RWSF, RWDF in order to finance R&D and other work to maintain and improve safety of nuclear facility and (or) the RWSF, RWDF.

A fund for financing work to maintain and improve safety of nuclear facility and (or) the RWSF, RWD should be established prior to the commissioning of nuclear facility and (or) the RWSF, RWDF.

In order to finance the decommissioning, early decommissioning or limitation of the operational characteristics of nuclear facility and (or) RWSF, closure of a RWDF, the operating organization creates a fund for financing decommissioning of nuclear facility and (or) RWSF, closure of a RWDF.

The fund for financing decommissioning of nuclear facility and (or) and (or) RWSF, closure of a RWDF is used only to finance measures provided for by the programs for decommissioning, early decommissioning or limiting the operational characteristics of nuclear facility and (or) RWSF, closure of a RWDF.

Article 38 of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” defines duties and responsibilities of legal entities performing work and (or) providing safety-related services to operating organizations.

Legal entities, including scientific and technical support organizations, performing work and (or) providing safety-related services to operating organizations, ensure the performance of work and (or) provision of services in such volume and quality that meet the requirements of regulatory legal acts, including mandatory technical regulatory legal acts, and are liable for the quality of the work performed and (or) services provided during the standard operating life established by the project for nuclear facility and (or) RWSF, RWDF.

Legal entities, including scientific and technical support organizations, performing work and (or) providing services directly at nuclear facility and (or) in a RWSF, RWDF or with nuclear materials and RW, are subject to the requirements of the said Law regarding operating organizations in terms of their compliance with nuclear and radiation safety requirements. Article 67 of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” defines responsibility for violation of legislation.

F.1.2. State Mechanisms in Case of Violation of License Conditions

Gosatomnadzor exercises control over licensees’ compliance with licensing legislation, licensing requirements and conditions for activities in the field of the use of atomic energy and ionizing radiation sources, including special licensing requirements and conditions (hereinafter referred to as license control), including spent nuclear materials and radioactive waste management.

License control is implemented in the form of:

conducting scheduled and unscheduled inspections of licensees' compliance with licensing legislation, licensing requirements and conditions;

systematic monitoring and analysis of licensees' compliance with licensing legislation, licensing requirements and conditions;

implementation of preventive measures aimed at preventing violations by licensees of licensing legislation, licensing requirements and conditions.

Scheduled inspections are performed on the basis of a License Control Schedule approved by the Head of Gosatomnadzor. Gosatomnadzor plans inspections using graded approach.

Grounds for conducting unscheduled inspections are:

availability of information at Gosatomnadzor, including information received from government agencies and other organizations, foreign states or individuals, which reveals an ongoing (committed) violation of licensing legislation, licensing requirements and conditions and (or) facts of a threat to cause or harm to the life and health of citizens, the environment, and state security;

failure by the audited licensee to eliminate previously identified violations of licensing legislation, licensing requirements and conditions, or failure to provide information on the elimination of such violations within the established period of time.

Systematic monitoring and analysis of licensees’ compliance with licensing legislation, licensing requirements and conditions is implemented by reviewing documents received from the licensee by Gosatomnadzor confirming licensees’ compliance with licensing legislation, licensing requirements and conditions, including those confirming elimination of violations which entailed the

issuance of a requirement (notice) or suspension of the license, for their compliance, including the organizational and technical solutions of the licensee contained in such documents, with licensing legislation, licensing requirements and conditions.

Preventive measures aimed at preventing violations by licensees of licensing legislation, licensing requirements and conditions, include:

submitting proposals to licensees to improve the resilience of the safe operation of nuclear and radiation facilities;

conducting explanatory work with the licensee on the procedure for compliance with licensing legislation, licensing requirements and conditions (including using the global network Internet, mass media), on typical violations identified in the course of license control;

other measures aimed at timely informing the licensee about the causes and conditions that contribute to violations of licensing legislation, licensing requirements and conditions.

In case of identification of licensee's violation of licensing legislation, licensing requirements and conditions (hereinafter – violation):

not eliminated at the time of its identification or during the inspection, Gosatomnadzor, within 15 working days from the date the violation was identified, shall issue a requirement (notice) to the licensee to eliminate the identified violation and establishes a deadline for its elimination, which may not exceed six months. In parallel with the issuance of a requirement (notice) by Gosatomnadzor to eliminate the identified flagrant violation, the licensing authority has the right to suspend the license until the violation is eliminated, but not more than for six months;

committed by the licensee within 12 months after the notice of the elimination of a similar violation has been submitted to him, Gosatomnadzor has the right to make one of decisions specified in the previous paragraph, or terminate the license.

If the licensee fails to eliminate the violations specified in the requirement (notice) to eliminate the identified violations within the established period of time, and (or) no written notification of the elimination of such violations has been submitted to Gosatomnadzor, the licensing authority has the right to decide on suspending the license for up to six months.

If the licensee has not eliminated the violations that led to suspending the license within the established period of time, or no written notification of the elimination of such violations has been submitted to Gosatomnadzor, then the licensing authority, within one month from the date the period for eliminating such violation expires, shall decide on terminating the license.

If the licensee continues to implement the licensed type of activity during the license suspension period, the licensing authority within one month from the date of identifying the fact of such activity shall decide on terminating the license.

In case of:

obstruction by the licensee of Gosatomnadzor's activities in implementing measures to monitor licensee's compliance with licensing legislation, licensing requirements and conditions, including licensee's failure to comply with legal orders or requirements of Gosatomnadzor officials in performing their official duties, submission to officials of unreliable documents and other information related to the implementation of licensed activities;

making changes to the license on the basis of unreliable information provided by the licensee that is necessary (relevant) for decision-making on changing the license, the license may be terminated by a court decision.

Persons responsible or guilty of violating nuclear and radiation safety requirements may be held administratively or criminally liable in accordance with the Articles specified in Annex 7.

F.2. Human and Financial Resources

Article 22. Human and Financial Resources
Each Contracting Party shall take the appropriate steps to ensure that:
(i) qualified staff are available as needed for safety-related activities during the operating lifetime of a spent fuel and a radioactive waste management facility;
(ii) adequate financial resources are available to support the safety of facilities for spent fuel and radioactive waste management during their operating lifetime and for decommissioning;
(iii) financial provision is made which will enable the appropriate institutional controls and monitoring arrangements to be continued for the period deemed necessary following the closure of a disposal facility.

F.2.1. Financial Resources

All facilities for RW management are operated by government agencies, therefore financial resources to maintain their safety during their operation and decommissioning are stipulated and allocated from the state budget at the request of the operating organizations as needed. The work required to maintain safety and institutional control of the disposal facilities of the decontamination waste of Chernobyl origin is financed within the framework of the State Program on Overcoming the Consequences of the Chernobyl NPP Disaster.

In order to provide adequate financial resources to maintain safety of the Belarusian NPP, including when managing spent fuel and radioactive waste during its operating lifetime and for decommissioning, Decree of the President of the Republic of Belarus No. 32 of January 26, 2021 “On the Funds of the Belarusian Nuclear Power Plant” was adopted.

Under the Decree, in order to ensure financing for decommissioning, early decommissioning or limitation of the operational characteristics of the Belarusian NPP, as well as R&D and other works to maintain and improve safety of the NPP, the Belarusian NPP State Enterprise, prior to the Belarusian NPP commissioning, established a fund for financing activities in the NPP decommissioning and the fund for financing activities to maintain and improve the NPP safety. The Decree defines the procedure for allocating assets to the specified NPP funds, determines the directions for financing measures envisaged by the programs of decommissioning, early decommissioning or limitation of the operational characteristics of nuclear facility and the program of maintaining and improving the NPP safety for the NPP operating lifetime.

In accordance with the Decree “On the Organization of the Radioactive Waste Management System”, financing of BelRAO SE activities is implemented at the expense of the funds transferred by the Belarusian NPP SE from the fund for financing work to maintain and improve the NPP safety, funds from the extrabudgetary centralized investment fund of the Ministry of Energy of the Republic of Belarus, from payments under contracts concluded by the enterprise with RW producing enterprises, as well as from other sources not prohibited by law.

F.2.2. Human Resources

According to legislative acts, the operating organization is obliged to provide RW management facilities with personnel qualified in the field of nuclear and radiation safety.

The presence of personnel qualified in the field of nuclear and radiation safety is a general requirement for obtaining a special permit (license) for the right to implement activities in the field of the use of atomic energy and ionizing radiation sources.

According to the requirements of rules and regulations of nuclear and radiation safety “Safety in Ionizing Radiation Sources Management. General Provisions”, approved by the Resolution of the Ministry for Emergency Situations No. 47 of September 28, 2010, in order to implement work on RW

management, the organization must be staffed with employees (personnel) with necessary qualifications and are authorized to work independently in accordance with the established procedure.

The system of recruitment and training of employees (personnel) involved in RW management should be aimed at achieving, controlling and maintaining the level of their qualifications required for safe performance of work on RW management, as well as emergency response actions in the event of disruptions to the normal operation of the facility.

In order to organize a system of comprehensive personnel training, ensuring the acquisition of knowledge and skills necessary for safe RW management, the Republic of Belarus implements Subprogram 8 “Training of Personnel for Nuclear Energy” of the State Program “Education and Youth Policy” for 2021 – 2025 approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 57 of January 29, 2021 (previously, from 2008 to March 2016 – the State Program of Personnel Training for Nuclear Energy, from 2016 to 2020 – Subprogram 10 “Training of Personnel for Nuclear Energy” of the State Program “Education and Youth Policy” for 2016 – 2020).

Based on the needs and applications from government agencies (organizations), the state request for personnel training was formed: the annual scope of training, retraining, advanced training (qualification maintenance) of specialists, highly qualified research workers in terms of specialties and employees was determined; educational institutions that are currently providing training services were identified; annual training plans in the relevant educational institutions were communicated.

Within the framework of Subprogram 8 “Training of Personnel for Nuclear Energy”:

higher educational institutions of the country (educational institutions Belarusian National Technical University, Belarusian State University of Informatics and Radio Electronics, Belarusian State University, International State Ecological Institute named after A.D. Sakharov of the Belarusian State University (former International Ecological University named after A.D.Sakharov) provides secondary specialized education in 5 specialties: “Nuclear Physics and Technology”, “High Energy Chemistry”, “Design and Operation of Nuclear Power Plants”, “Electronic and Information Control Systems of Physical Installations”, “Nuclear and Radiation Safety”; Minsk State Energy College provides secondary specialized education in the specialty “Power Plants”;

internships for teachers and researchers of higher educational institutions abroad, industrial practices for students in countries with developed nuclear energy programs, training of masters’s degree holders, highly qualified workers, are organized;

advanced training and internships for specialists of the regulatory body in the field of nuclear and radiation safety; of state bodies implementing control (supervisory) activities over work at all stages of the life cycle of the Belarusian NPP, as well as for their subordinate organizations and territorial bodies are provided.

Additional training and advanced training are provided for the personnel of the Belarusian NPP at the training center of the Belarusian NPP, in educational institutions of the Republic of Belarus and the Russian Federation.

The need to address complex scientific, technological, legal, social, and environmental issues related to the RWDF siting resulted in interaction with expert organizations of the Russian Federation. To develop cooperation in RW management, the BelRAO SE has signed a Cooperation Agreement with TVEL JSC (Russian Federation), which establishes the main areas of cooperation in the field of creating and developing RW disposal infrastructure in the Republic of Belarus, training of personnel for the operation and monitoring of RWDF.

A framework agreement on strategic cooperation and interaction in the field of science, education and training was concluded between the chemistry departments of Master's degree programs of Belarusian State University and Lomonosov Moscow State University (Russian

Federation). A network master's degree program “Master in the field of Spent Nuclear Fuel Management” was opened to solve problems in the field of nuclear waste management.

In order to achieve the goals of effective RW management, the regulatory body implements active Belarusian-Russian cooperation with Basic Organization of the CIS Member States on the Issues of Spent Nuclear Fuel and Radioactive Waste Management and Decommissioning of Nuclear and Radiation Hazardous Facilities.

Based on the primary importance of personnel training issues, in addition to the listed activities, the IAEA technical assistance (technical cooperation projects) is used to enhance the competencies of Belarusian specialists involved in the development of nuclear energy infrastructure. These programs provide expert and advisory assistance on the creation of a training system for nuclear energy with due regard to the international experience and the IAEA recommendations, and include training events, visits by the Belarusian scientists and university professors to NPP training centers and research institutes abroad, visits by the Belarusian specialists to operating NPPs and those under construction.

Cooperation with the IAEA, other organizations and international associations is also implemented through experience exchange within the framework of membership in the World Association of Nuclear Operators (WANO) (Belarusian NPP State Enterprise), the Regulatory Cooperation Forum (RCF).

F.3. Quality Assurance

Article 23. Quality Assurance
Each Contracting Party shall take the necessary steps to ensure that appropriate quality assurance programs concerning the safety of spent fuel and radioactive waste management are established and implemented.

Regulatory requirements in the Republic of Belarus establish the need for licensees to have and comply with quality assurance programmes for the safe management of spent fuel and radioactive waste within the framework of their activities.

The operating organization shall provide and ensure execution of works in such volume and quality that meet the requirements of regulatory legal acts, including those mandatory for compliance technical regulatory legal acts.

The Belarusian NPP State Enterprise as the operating organization implements on its own and with involvement of other organizations the activities on design, construction, commissioning of the NPP, operation, limiting the performance, extending the service life and decommissioning of the nuclear facilities, as well as activities on nuclear materials and radioactive waste management.

Legal entities, including scientific and technical support organizations, performing work and (or) providing safety-related services to operating organizations, ensure the performance of work and (or) provision of services in such volume and quality that meet the requirements of regulatory legal acts, including mandatory technical regulatory legal acts, and are liable for the quality of the work performed and (or) services provided during the standard operating life established by the project for nuclear facility and (or) RWSF, RWDF.

Legal entities, including scientific and technical support organizations, performing work and (or) providing services directly at nuclear facility and (or) in RWSF, RWDF or with nuclear materials and RW, are subject to the requirements of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” regarding operating organizations in terms of their compliance with nuclear and radiation safety requirements.

Safety and reliable operation of a nuclear power plant is possible if quality is ensured at all stages of the NPP life cycle. The first priority of the Belarusian NPP State Enterprise in quality

assurance is to ensure NPP safety. This means that when considering any issues, alternative design solutions and engineering developments, selecting products and service suppliers, etc., the unconditional priority is given to the implementation of the NPP safety requirements.

To ensure the quality of the NPP construction, the Belarusian NPP SE has adopted organizational and technical solutions aimed at creating quality assurance control infrastructure, as well as at ensuring operation of such infrastructure by documenting the procedures of the quality management system, training and knowledge assessment of personnel, establishing responsibility for the implementation of quality assurance actions.

The Belarusian NPP State Enterprise shall:

provide the enterprise with the definition of all relevant legal and regulatory requirements applicable to its products, processes and activities;

provide economical and reliable operation of the equipment, systems and structures of the Belarusian NPP;

ensure compliance with environmental protection requirements;

ensure the development, implementation, certification, maintenance and improvement of the Integrated Management System of the enterprise;

ensure the allocation of necessary financial, logistical and human resources to implement work in terms of quality assurance and safety of the Belarusian NPP;

ensure the implementation and maintenance of the quality assurance programs at all stages of the NPP life cycle;

take responsibility for planning, organization and control of the quality assurance activities, regulated by the General Quality Assurance Program for Nuclear Power Plant QAP NPP (G), implement regular reviews and update of QAP NPP (G) to achieve continuous improvement;

ensure internal and external audits of the quality management system (Integrated Management System) at the enterprise, at the supplier and the involved contractors;

ensure an effective HR policy of the enterprise;

ensure the recruitment of adequately qualified personnel, arrange ongoing work on maintaining the personnel qualification, increasing their qualification level and safety culture;

ensure safe and harmless working conditions at every workplace.

In 2021, the regulatory body issued general requirements for the operator's management systems in order to ensure nuclear and radiation safety. The document implies the integration of all processes in operating organizations including the quality management system, in such a way that ensuring compliance with safety requirements is carried out on a priority basis and takes into account the existence of requirements in other areas of the operator's activities (including those not related to ensuring safety).

The Belarusian NPP State Enterprise has established and operates an IMS that takes into account the requirements and recommendations of the IAEA safety documents and ensures compliance with the requirements of STB ISO 9001-2015, STB ISO 45001-2020, STB ISO 14001-2017.

Within the current IMS:

management representative for the IMS was appointed;

IMS Coordination Council was established and is operating;

authorized representatives for the IMS was appointed;

IMS policy defines responsibilities of senior management to maintain and improve the IMS;

IMS processes were defined;

process owners and their responsibilities were defined;

IMS instruments in various areas of activity of the enterprise (policies, management, enterprise standards, regulations, processes passports, etc.) were developed;

risk registers and risk management programs for the IMS processes were developed;

internal audits of the IMS are implemented;

ongoing IMS processes are monitored and analyzed by the management.

The operating organization ensures the development and implementation of quality assurance programs at all stages of the NPP life cycle. For this purpose, the Belarusian NPP State Enterprise developed and/or approved:

General Quality Assurance Program for Nuclear Power Plant QAP NPP (G)

Quality Assurance Program at Belarusian NPP power units operation QAP NPP (O) including, inter alia, quality assurance requirements for nuclear materials (nuclear fuel) management;

Quality Assurance Program for Operational Radioactive Waste (RWo) Management QAP (RWo);

Quality Assurance Program for Ionizing Radiation Sources Management QAP (IRS);

Quality Assurance Program for Equipment Engineering QAP (E);

Quality Assurance Program for Equipment Manufacturing QAP (M);

Organizations implementing work or providing services to the Belarusian NPP State Enterprise on the basis of the QAP NPP (G), develop private quality assurance programs for the relevant types of activities (for example, when implementing construction and installation work, QAP NPP (CI) was developed, when NPP commissioning – QAP NPP (C)).

Internal and external inspections (audits), including for the purpose of quality assurance programs verification and evaluation of their effectiveness are conducted at the Belarusian NPP State Enterprise and organizations implementing work and (or) providing services to the operating organization. The results of the inspections (audits) are used to issue the relevant reports and develop corrective actions to eliminate the identified inconsistencies (if any).

F.4. Operational Radiation Protection

Article 24. Operational Radiation Protection

1. Each Contracting Party shall take the appropriate steps to ensure that during the operating lifetime of a spent fuel and radioactive waste management facility:

(i) the radiation exposure of the workers and the public caused by the facility shall be kept as low as reasonably achievable, economic and social factors being taken into account;

(ii) no individual shall be exposed, in normal situations, to radiation doses which exceed national prescriptions for dose limitation which have due regard to internationally endorsed standards on radiation protection; and

(iii) measures are taken to prevent unplanned and uncontrolled releases of radioactive materials into the environment.

2. Each Contracting Party shall take appropriate steps to ensure that discharges shall be limited:

(i) to keep exposure to radiation as low as reasonably achievable, economic and social factors being taken into account; and

(ii) so that no individual shall be exposed, in normal situations, to radiation doses which exceed national prescriptions for dose limitation which have due regard to internationally endorsed standards on radiation protection.

3. Each Contracting Party shall take appropriate measures to ensure that during the operating lifetime of a regulated nuclear facility, in the event that an unplanned or uncontrolled release of radioactive materials into the environment occurs, appropriate corrective measures are implemented to control the release and mitigate its effects.

Basic principles and requirements for the radiation protection are defined in the Law of the Republic of Belarus “On Radiation Safety”.

The requirements for ensuring radiation safety in case of different types of ionizing radiation, both quantitative and qualitative values of the ionizing radiation exposure on humans are established by the Sanitary Standards “Requirements for the Radiation Safety” and Hygienic Standard “Criteria for Assessing Radiation Exposure”, approved by the Resolution of the Council of Ministers of the

Republic of Belarus No. 37 of January 25, 2021 and Sanitary Rules and regulations "Requirements for Radiation Safety", approved by the Resolution of the Ministry of Health of the Republic of Belarus No. 213 of December 28, 2012. These documents are developed in accordance with the IAEA standard "Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards. General Safety Requirements. GSR Part 3".

The Ministry of Health of the Republic of Belarus has developed and approved: Regulation on the Procedure for Establishing and Applying Dose Constraints and Reference Levels (Order of the Ministry of Health of the Republic of Belarus No. 88 of August 31, 2020), Instructions for applying "Method for Assessing Radiation Risk to Health and Determining Dose Constraints for Personnel at Normal Belarusian NPP Operation" (Order of the Deputy Minister – Chief State Sanitary Doctor of the Republic of Belarus No. 009-1121 of January 28, 2022), which determine the methods of development and justification of the dose constraints, the procedure for their approval and application;

regulatory documents have established a dose constraint for the population from emissions and discharges of nuclear power plants of 0.1 mSv per year ($0.1*10^{-3}$ Sv per year). This dose constraint is established for the total exposure of the population from all sources of radioactive aerosol gas emissions into the atmosphere and liquid discharges into surface waters for the entire NPP site, regardless of the number of power units;

to protect the population from exposure to radioactive waste disposal facilities after their closure, Hygienic Standard "Criteria for Assessing Radiation Exposure" (approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 37 of January 25, 2021) established a dose constraint of 0.3 mSv per year ($0.3*10^{-3}$ Sv per year) and maximum allowed risks of 10^{-5} per year for persons which may be exposed to radiation in the future as a result of degradation of the engineering structures of the facility under the influence of natural processes.

To maintain exposure of the population and personnel of the RW management facility at a reasonably achievable low level, taking into account economic and social factors, national regulatory documents provide for the following measures:

development of a safety analysis report;

development and approval of dose constraints and reference levels of radiation exposure to personnel and the public, taking into account the principle of optimization and effectiveness of measures to improve the radiation situation;

creating working conditions relevant to regulatory requirements, provision of personnel with protective equipment;

systematic monitoring of the radiation situation in the workplace, in the territory of the facility, in the sanitary protection zone and the surveillance zone;

monitoring and accounting of individual radiation exposure for personnel and the population;

setting standards for allowed emissions and discharges of radioactive substances into the environment and control over their compliance.

For all radiation facilities with stationary sources of emissions and (or) discharges, for which in normal operation actual emissions and (or) discharges create an exposure doze to the population of more than 10 μSv per year ($10*10^{-6}$ Sv per year) from all exposure routes, Standards for Allowed Emissions and Discharges are developed. The procedure for the development and approval of Standards for Allowed Emissions and Discharges of radioactive substances into the environment was approved by the Government Resolution No. 497 of August 21, 2020.

In order to limit emissions and discharges of radioactive substances into the environment, the Belarusian NPP project envisages radiation monitoring at all pathways of radioactive substances entering the environment, subsequent comparison of measured values with the acceptable levels and prevention of discharge if they are exceeded.

Also, the following additional activities have been implemented in the project:

arrangement of gaseous radioactive waste release from the plant into the atmosphere through the vent stack 100 m high after pretreatment, providing a high degree of reducing radionuclide concentration in the atmosphere;

discharge of the treated NPP liquids only through control tanks with mandatory radiation control;

cleaning of liquid and gaseous radioactive fluids, and exhaust air of the ventilation systems in the controlled access zone before discharge/emission from the NPP;

conducting radiation control and monitoring in the surveillance zone, established around the NPP;

other activities.

F.5. Emergency preparedness

Article 25. Emergency Preparedness

1.Each Contracting Party shall ensure that before and during operation of a spent fuel or radioactive waste management facility there are appropriate on-site and, if necessary, off-site emergency plans. Such emergency plans should be tested at an appropriate frequency.

2. Each Contracting Party shall take the appropriate steps for the preparation and testing of emergency plans for its territory insofar as it is likely to be affected in the event of a radiological emergency at a spent fuel or radioactive waste management facility in the vicinity of its territory.

In the Republic of Belarus, the system of response to nuclear and radiation accidents is integrated into the National Emergency Response System. The State Emergency Prevention and Response System (SEPRS) has been created and is operating. Basic requirements for this System are defined in the Law of the Republic of Belarus No. 141-Z of May 5, 1998 “On Protection of the Population and Territories from Emergencies of Natural and Man-Made Origin”.

Requirements for the development of measures to ensure emergency preparedness and response in case of a nuclear or radiation accident are defined by the Law of the Republic of Belarus “On Radiation Safety” and the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”.

Regulatory requirements for preparedness to respond to nuclear and radiation accidents in the Republic of Belarus have been established in full compliance with international approaches and the IAEA recommendations, including:

graded approach to developing emergency preparedness and response measures has been introduced and legislated;

procedure for the development and approval of emergency plans has been defined;

regulatory requirements for planning and implementation of radiation monitoring in the event of a nuclear or radiation accident have been defined.

Measures to ensure emergency preparedness and response in case of accidents at nuclear facilities are established by on-site and off-site emergency plans.

On-site and off-site emergency plans have been developed, tested and approved for the Belarusian NPP. Off-site Emergency Plan was approved by the Resolution of the Government of the Republic of Belarus No. 211 of March 22, 2018. On-site Emergency Plan was approved by the Director General of the Belarusian NPP State Enterprise in May 2018. Both emergency plans were updated in 2023, taking into account changes in legislation (the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”; Regulations on the procedure for developing an action plan to protect the population from nuclear and radiation accidents, approved by Resolution of the Council of Ministers of the Republic of Belarus No. 668 of October 9, 2023).

Off-site Emergency Plan defines:

a set of measures to ensure emergency preparedness and response in the event of nuclear and radiation accidents at the Belarusian NPP at the national level;

coordination and interaction mechanisms of the republican bodies of state administration, local authorities, governmental and other organizations, citizens in implementing measures to protect the population and territories in the event of nuclear and radiation accidents at the Belarusian NPP;

measures to protect the population and territories in the event of nuclear and radiation accidents at the Belarusian NPP;

emergency response zones and actions of republican bodies of state administrations, local government and self-government bodies, state and other organizations, citizens in order to protect their life and health, environmental protection and property protection in the event of nuclear and radiation accidents at the Belarusian NPP.

On-site Emergency Plan provides for the scope, period and procedure for implementing activities for protecting NPP personnel in case of a man-made emergency, organizing and conducting emergency rescue and other urgent work, as well as forces and means to be involved.

Emergency response drills and trainings are regularly conducted, including coordination of on-site and off-site emergency plans. In September 2023, as a part of the special exercise with rescue units of the CSTO member states “Skala-2023”, a specialized tactical drill was conducted to ensure nuclear and radiation safety of the population with the involvement of management bodies, forces and means of the State Emergency Prevention and Response System, during which measures of off-site and on-site emergency plans of the Belarusian NPP were worked out.

Drills are conducted on a regular basis to check the readiness of NPP personnel for emergency response, and the procedure for interaction with stakeholders and organizations, local executive and administrative bodies has been worked out.

Gosatomnadzor monitors and evaluates the effectiveness of emergency response drills and training of operating organizations as a part of systematic monitoring of nuclear and radiation safety at nuclear facilities.

To support management decisions on the population and territories protection in the event of nuclear or radiation accidents, the information and management system of the State Emergency Prevention and Response System has established cooperating situational crisis centers of the Ministry for Emergency Situations, the Ministry of Health, the Ministry of Natural Resources and Environmental Protection, the Ministry of Energy, Belarusian NPP State Enterprise, the National Academy of Sciences of Belarus. Interaction between situational crisis centers is tested during emergency drills and trainings.

Actions of republican bodies of state administration, local government and self-government bodies, state and other organizations, citizens on protecting their life and health, environmental protection and property protection in the event of a radiation accident at nuclear facility and (or) storage facility located outside the territory of the Republic of Belarus closer than 100 km from the State Border of the Republic of Belarus, are implemented in accordance with the Radiation Accident Protection Plan being one of the sections of the Plan for Protection of the Population and Territories of the Republic of Belarus from Emergencies of Natural and Man-Made Origin.

F.6. Decommissioning

Article 26. Decommissioning

Each Contracting Party shall take the appropriate steps to ensure the safety of decommissioning of a nuclear facility. Such steps shall ensure that:

(i) qualified staff and adequate financial resources are available;

(ii) the provisions of Article 24 with respect to operational radiation protection, discharges and unplanned and uncontrolled releases are applied;

(iii) the provisions of Article 25 with respect to emergency preparedness are applied; and
(iv) records of information important to decommissioning are kept.

In accordance with the requirements of the Laws of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy" and "On Radiation Safety", a set of measures for safe decommissioning of the facility should be stipulated during its design. The nuclear facility project provides for measures for safe decommissioning of the nuclear facility, as well as measures for safe management of nuclear materials, spent fuel and (or) radioactive waste as a mandatory stage of any nuclear technology cycle.

In order to finance decommissioning, early decommissioning or limitation of the operational characteristics of the nuclear facility, the operating organization creates a fund for financing the decommissioning of nuclear facility, the procedure for formation and use of which is determined by the Decree of the President of the Republic of Belarus "On the Funds of the Belarusian Nuclear Power Plant". The relevant information is provided in Section F.2.1. "Financial resources".

The fund for financing decommissioning of the nuclear facility is used only to finance measures provided for by decommissioning programs, early decommissioning, or limiting the operational characteristics of nuclear facility.

Within two years from the date of commissioning of the nuclear facility, the operating organization develops and approves a set of measures for safe decommissioning of the nuclear facility.

Subject to the provisions of the Decree of the President of the Republic of Belarus "On the Funds of the Belarusian Nuclear Power Plant", in 2023 the Belarusian NPP SE has started developing the Concept of Decommissioning of the Belarusian NPP Power Units and a Methodology of Estimated Cost of Decommissioning of NPP Power Units in the Republic of Belarus (the deadlines for submitting work results is June – December 2024).

As a part of the Concept development, the following will be determined:

requirements for the procedure for the formation and maintenance of a database on the NPP power unit decommissioning in terms of means and methods of recording, collecting, storing and issuing data necessary for planning and performing work on preparation for decommissioning and decommissioning of the NPP power unit;

a set of measures for timely implementation of information system at the Belarusian NPP – a database on decommissioning.

Currently, prior to implementing a centralized decommissioning database system at the Belarusian NPP, the collection and storage of information, including information important for decommissioning of power units No. 1 and No. 2, is provided in various information systems, the operation of which performed as a part of the current operation of the Belarusian NPP in accordance with the legislation of the Republic of Belarus and local legal acts of the Belarusian NPP.

The operating organization, not later than five years prior to expiration of the regulatory period of the nuclear facility operation established by the nuclear facility project, shall develop a program for nuclear facility decommissioning, which should contain measures for dismantling these facilities, management of nuclear materials, SNF and (or) RW, as well as measures for further control and state supervision of these facilities.

The facility decommissioning program is coordinated with the state bodies regulating safety in the use of atomic energy and submitted by the republican state administration body or other state organization in charge of the facility for approval to the body or official who made the decision on the construction of the facility.

Rules and regulations of nuclear and radiation safety “Safety Rules at Nuclear Power Plant Unit Decommissioning”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 43 of July 4, 2023, established safety requirements for NPP power unit decommissioning, implemented throughout its full life cycle.

The operating organization, in line with regulatory requirements to ensure safety during decommissioning of a nuclear power plant unit, shall:

develop and maintain safety culture;

develop programs to ensure the quality of work implemented;

maintain in working (serviceable) condition the equipment, systems, buildings and structures necessary for safe decommissioning of NPP power unit;

control the selection and the necessary level of qualification of personnel engaged in the NPP power unit decommissioning;

maintain RW generation at a minimum level;

ensure work safety in managing radioactive substances, radioactive waste and nuclear materials, including provision of their accounting and control.

The design documentation and safety analysis report provide for technical and organizational measures aimed at safety assurance during facility decommissioning. Such measures include, inter alia:

establishing requirements for materials for the manufacture of structures, systems and elements of the NPP power unit, ensuring the minimum achievable level of their induced activity over the entire life of the NPP power unit and minimizing the amount of radioactive waste generated during NPP power unit decommissioning;

the use of methods to minimize surface contamination of systems and elements, premises of the NPP power unit with radionuclides during its operation;

ensuring the bearing capacity of building structures of buildings and structures of the NPP power unit during the NPP power unit decommissioning, taking into account potential loads during the NPP power unit decommissioning;

ensuring the operability of systems and elements of the NPP power unit operating during the operation of the NPP power unit and required for the NPP power unit decommissioning during the NPP power unit decommissioning, including by implementing work on replacing equipment and system elements when the resource is exhausted;

establishing requirements for the procedure for the formation and maintenance of a database on the NPP power unit decommissioning in terms of means and methods of recording, collecting, storing and issuing data necessary for planning and performing work on preparation for decommissioning and decommissioning of the NPP power unit.

Section G. SAFETY OF SPENT FUEL MANAGEMENT

G.1. General Safety Requirements

Article 4. General Safety Requirements

Each Contracting Party shall take the appropriate steps to ensure that at all stages of spent fuel management, individuals, society and the environment are adequately protected against radiological hazards.

In so doing, each Contracting Party shall take the appropriate steps to:

(i) ensure that criticality and removal of residual heat generated during spent fuel management are adequately addressed;

(ii) ensure that the generation of radioactive waste associated with spent fuel management is kept to the minimum practicable, consistent with the type of fuel cycle policy adopted;

(iii) take into account interdependencies among the different steps in spent fuel management;

(iv) provide for effective protection of individuals, society and the environment, by applying at the national level suitable protective methods as approved by the regulatory body, in the framework of its national legislation which has due regard to internationally endorsed criteria and standards;

(v) take into account the biological, chemical and other hazards that may be associated with spent fuel management;

(vi) strive to avoid actions that impose reasonably predictable impacts on future generations greater than those permitted for the current generation;

(vii) aim to avoid imposing undue burdens on future generations.

Measures to ensure appropriate protection of the population, workers and the environment from radiation exposure associated with spent fuel management are established by the regulatory framework of the Republic of Belarus.

Articles 39 – 41 of the Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy" define the basic requirements for nuclear materials management in terms of their transportation and storage. The main activities for safe and cost-effective management of spent nuclear fuel are defined by the Strategy of Spent Nuclear Fuel Management. Information on the Strategy for Spent Nuclear Fuel Management is given in Sections B.1 and E.1.

A set of measures to ensure nuclear safety and the removal of residual heat generated during SNF management is provided for by the Safety Rules for the Storage and Transportation of Nuclear Fuel at Complexes of Spent Nuclear Fuel Storage and Management Systems, approved by Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 36 of March 30, 2022, as well as TCP 545-2014 "Safety Assurance of Spent Nuclear Fuel Dry Storage Facilities", approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 26 of September 9, 2014.

The regulatory legal framework in force in the Republic of Belarus regulating siting, design, construction, operation, decommissioning of SNF management facilities enables to ensure safety at all stages of SNF management.

Implementation of measures aimed at protecting the population, personnel and the environment, including due to emissions and discharges during the SNF management facilities operation, is provided by the operating organization and justified in the safety analysis report.

The SNF management also takes into account physical, chemical, toxic, fire, explosive and other safety-related risks.

The non-imposition on future generations of an unreasonable burden associated with the need to ensure safety in spent fuel management is implemented by meeting the regulatory requirements in the field of nuclear and radiation safety specified in Section E.

G.2. Existing Facilities

Article 5. Existing facilities

Each Contracting Party shall take the appropriate steps to review the safety of any spent fuel management facility existing at the time the Convention enters into force for that Contracting Party and to ensure that, if necessary, all reasonably practicable improvements are made to upgrade the safety of such a facility.

Safety of the SNF management facilities is ensured by a set of measures for the site selection, establishment of the sanitary protection zone and the surveillance zone, design, reliability of the equipment, control over its condition, as well as the organization and performance of works in accordance with the requirements of the regulatory legal acts, including technical regulatory legal acts, operational documents, professional qualifications, psychological readiness and discipline of the personnel.

G.2.1. Belarusian NPP

A set of measures to ensure safety in managing spent nuclear fuel at the Belarusian NPP is provided for by design solutions.

After unloading from the reactor, SNF is sent to the system of reactor spent nuclear fuel storage. This system is a cooling pool equipped with necessary equipment and systems.

The system of reactor spent nuclear fuel storage is provided for storage of SNF unloaded from the reactor to decrease activity and residual energy release of spent fuel assemblies to admissible values allowing their transportation.

The main functions of the reactor SNF storage system:

placement of SNF unloaded from the reactor during refueling, as well as placement of core fuel at emergency unloading;

SNF cooling (storage) before removal from the reactor compartment for processing or off-reactor storage;

removing residual heat from spent nuclear fuel;

providing biological protection of personnel from spent fuel stored in the cooling pool.

Information on the SNF reactor storage system is also given in Section D.1.

Nuclear safety during SNF storage is provided by the following technical solutions and measures:

by limiting the step of the SFA location in the racks;

the use of heterogeneous and homogeneous absorbers and the absorber concentration control;

SFA location control;

control of the level, state and composition of the cooling water;

control of technological parameters of the SFA storage system.

Safety of the SNF reactor storage system is also ensured by the implementation of the following principles and requirements:

exclusion of cargo relocation over the cooling pool, unless they are parts of lifting and reloading devices;

stability of the racks structure under normal operating conditions and under external influences on the reactor building;

equipping the cooling pool with water supply, treatment and cooling systems, monitoring radioactivity, temperature, level and chemical composition of water, as well as a system for monitoring, collecting and returning leaks;

availability of technical means for non-hermetic SFA storage;

design and manufacture of racks using structural materials containing absorbent additives in order to prevent a decrease in absorption capacity during mechanical, chemical and radiation exposure under normal operation and design basis accidents;

defense-in-depth construction against the release of radioactive substances into the central hall of the reactor and beyond based on the use of a barrier system and a system of technical and organizational measures.

The SNF storage system ensures its storage and cooling in the reactor building of power unit for 10 years taking into account planned refueling and unloading of the entire core at any moment of NPP operation.

The cooling pool is equipped with systems for water supply, treatment and cooling, monitoring radioactivity, temperature, level and chemical composition of water, a system for monitoring the lining density of the cooling pool, an alarm system in the control room, as well as a system for monitoring, collecting and return of leaks.

Safe operation limits have been established for the SNF reactor storage system, ensuring the safety of fuel and not exceeding the allowed personnel exposure and the maximum allowed population exposure, as well as standards for allowed release and discharges of radioactive substances into the environment. The operating organization ensures control over the fulfillment of these requirements during operation, and also implements a set of necessary measures within the framework of regulations on maintenance, repair, testing, and maintenance of the water-chemical regime.

After SNF cooling in the reactor storage facility (cooling pool) to the parameters allowing its transportation from the Belarusian NPP for processing to the Russian Federation, the SFA will be relocated using a transport cask providing a high radiation protection and strength properties, including in case of possible emergency situations during SNF transportation and storage.

Based on the technology, SFA processing is implemented after intermediate storage of spent nuclear fuel on the territory of the Republic of Belarus and (or) in the Russian Federation. As an alternative option for spent nuclear fuel management, following the Strategy of Management of Spent Nuclear Fuel of the Belarusian Nuclear Power Plant, the issue of creating an SNF cumulative facility is being worked out.

Creating SNF cumulative facility will optimize the transport and logistics costs of SNF delivery to the Russian Federation by forming optimal shipments of SFA, as well as reduce the time of SFAS unloading from the cooling pool during scheduled preventive maintenance.

G.3. Siting of Proposed Facilities

Article 6. Siting of Proposed Facilities

1. Each Contracting Party shall take the appropriate steps to ensure that procedures are established and implemented for a proposed spent fuel management facility:

(i) to evaluate all relevant site-related factors likely to affect the safety of such a facility during its operating lifetime;

(ii) to evaluate the likely safety impact of such a facility on individuals, society and the environment;

(iii) to make information on the safety of such a facility available to members of the public;

(iv) to consult Contracting Parties in the vicinity of such a facility, insofar as they are likely to be affected by that facility, and provide them, upon their request, with general data relating to the facility to enable them to evaluate the likely safety impact of the facility upon their territory.

2. In so doing, each Contracting Party shall take the appropriate steps to ensure that such facilities shall not have unacceptable effects on other Contracting Parties by being sited in accordance with the general safety requirements of Article 4.

According to the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”, the decision on siting, design, construction, commissioning, extending service life of nuclear facility and (or) RWSF, RWDF, limitation of operational characteristics and decommissioning of nuclear facility (with the exception of a nuclear power plant or its power unit) and (or) RWSF, RWDF closing, shall be made by the Council of Ministers of the Republic of Belarus. Gosatomnadzor organizes and conducts public hearings at the stage of decision-making on issuing a license to an operating organization for siting, construction, operation of nuclear facility and (or) RWSF, RWDF, decommissioning of nuclear facility and (or) RWSF, closure of a RWDF in accordance with the Regulations on Public Hearings on Safety Regulation of Nuclear Facility and (or) Storage Facility,

Disposal Facility, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 258 of April 24, 2019.

Article 33 of the Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy" enshrines the rights of legal entities and individuals to participate in developing policy in the field of safety in the use of atomic energy, including by participating in public discussion of projects of environmentally significant decisions, environmental reports on strategic environmental assessment, reports on assessing environmental impact in relation to nuclear facilities, issues of siting, design, construction, operation of nuclear facility and (or) RWSF, RWDF and decommissioning of nuclear facility and (or) RWSF, RWDF closing.

Subject to the provisions of the Law of the Republic of Belarus No. 399-Z of July 18, 2016 "On State Environmental Expertise, Strategic Environmental Assessment, and Environmental Impact Assessment", stationary facilities and (or) structures intended for storage of nuclear materials, spent nuclear fuel and (or) radioactive waste are facilities for which an environmental impact assessment and the state environmental assessment, respectively, are implemented.

Environmental impact assessment, including given possible transboundary impacts, is organized and financed by the customer and implemented according to the procedure established by the Regulations on the Procedure for Environmental Impact Assessment, requirements for the composition of the impact assessment report, requirements for specialists performing environmental impact assessment, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 47 of January 19, 2017.

Public discussions of environmental impact assessment reports are conducted in accordance with the Regulations on the Procedure for Organizing and Conducting Public Discussions of Draft Environmentally Significant Decisions, Environmental Reports on Strategic Environmental Assessment, Reports on Environmental Impact Assessment, Accounting of Environmentally Significant Decisions, approved by the Resolution of the Council of Ministers No. 458 of June 14, 2016.

At this stage, no facilities for SNF management other than those provided for by the Belarusian NPP project have been identified.

The integrated project of the Belarusian NPP envisages both SNF storage within the framework of the technological process in the cooling pond for 10 years and a site for SNF placement and storage. The documents submitted during the safety review of the facility, as well as individual chapters in the safety analysis report, have undergone conformity assessment and safety review with a positive conclusion of the expert organization.

G.4. Design and Construction of Facilities

Article 7. Design and Construction of Facilities
Each Contracting Party shall take the appropriate steps to ensure that:
(i) the design and construction of a spent fuel management facility provide for suitable measures to limit possible radiological impacts on individuals, society and the environment, including those from discharges or uncontrolled releases;
(ii) at the design stage, conceptual plans and, as necessary, technical provisions for the decommissioning of a spent fuel management facility are taken into account;
(iii) the technologies incorporated in the design and construction of a spent fuel management facility are supported by experience, testing or analysis.

Subject to Article 46 of the Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy", the development of a project for nuclear facility and (or) RWSF, RWDF is implemented according to this Law and the requirements of legislation on radiation safety, on the protection and use of land, in the field of architectural, urban planning and construction activities, on

environmental protection, in the field of the population and territories protection from natural and man-made emergencies, sanitary and epidemiological welfare of the population.

In the project for nuclear facility and (or) RWSF, RWDF, it is mandatory to justify the size of the land required for the provision, the need to establish restrictions (encumbrances) of rights to use the land for the projected nuclear facility and (or) RWSF, RWDF taking into account the placement of functional capital structures (buildings, structures), other facilities of industrial, transport, engineering infrastructure and the establishment of a sanitary protection zone and a surveillance zone.

Nuclear facility project shall provide for measures for their safe decommissioning, as well as measures for safe management of nuclear materials, spent nuclear materials and (or) radioactive waste as a mandatory stage of any nuclear technology cycle.

Basic principles and requirements implemented during design and construction of facilities are established by technical regulatory legal acts in the field of nuclear and radiation safety, as well as sanitary rules and regulations given in Section E.2.

The system of technical and organizational measures to ensure safety of the facility should be presented and justified in safety analysis report. According to the project for nuclear facility and (or) RWSF, RWDF, state reviews confirming the safety of these facilities are implemented.

G.5. Assessment of Safety of Facilities

Article 8. Assessment of Safety of Facilities
Each Contracting Party shall take the appropriate steps to ensure that:
(i) before construction of a spent fuel management facility, a systematic safety assessment and an environmental assessment appropriate to the hazard presented by the facility and covering its operating lifetime shall be carried out;
(ii) before the operation of a spent fuel management facility, updated and detailed versions of the safety assessment and of the environmental assessment shall be prepared when deemed necessary to complement the assessments referred to in paragraph (i).

All stages of the life cycle of nuclear facility, including design, siting, construction, operation and decommissioning, are subject to licensing. Based on Article 7 of the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”, safety assessment is one of the elements of safety system for the use of atomic energy.

In order to obtain a license and (or) introduce amendments (additions) thereto, the license applicant must submit to Gosatomnadzor a package of documents justifying nuclear and radiation safety. The list of such documents was updated in 2023 (taking into account the studied experience of other regulatory bodies and within the framework of licensing system improvement, as well as the peculiarities of national public administration system) and is established for each type of work (services) that make the licensed activity.

Based on the submitted documents, Gosatomnadzor conducts safety assessment. As a part of the safety assessment, Gosatomnadzor, if necessary, appoints safety review and (or) organizes consulting services.

The decision on appointing safety review is made by Gosatomnadzor after a preliminary revision of documents submitted by the applicant, including determining whether the composition and content thereof meet the established requirements. Once a decision to conduct a safety review is made, Gosatomnadzor develops and approves the terms of reference, which is the basis for its conduct.

One of the main documents justifying the provision of nuclear and radiation safety necessary to obtain a license for siting, construction, operation of SNF management facility is a facility safety analysis report.

Safety analysis report should include deterministic and probabilistic safety analyses. Safety analyses should be implemented for all operational states of the facility and take into account all locations of nuclear materials, radioactive substances and RW available at the facility where violation of normal operation of the facility may occur. Deterministic safety analyses should be executed based on a conservative approach. Probabilistic safety analyses should include probability estimate of large accidental emission. Following the established requirements, safety analysis report is constantly updated and must be in line with the actual state of the facility.

Following the regulatory documents requirements, in the course of operation of nuclear facilities, safety assessment is implemented in the following cases:

when making amendments to a license, including when making amendments to documents justifying nuclear and radiation safety, based on the results of consideration of which a decision was made to issue a license;

when reviewing reports on the assessment of the current safety status of facilities;

when reviewing documents that contain the results of a periodic assessment of safety of facilities. Subject to Article 23 of the Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy", the results of the first periodic safety assessment of nuclear facility and (or) RWSF, RWDF should be submitted to Gosatomnadzor not later than 12 months prior to expiration of 10 years from the date of their operation commencement, followed by periodic safety assessment of nuclear facility and (or) RWSF, RWDF every 10 years;

as part of considering technical solutions and reports attached thereto on justification of modification safety. The procedure for implementing modifications at nuclear power plants is established by the Rules and regulations for nuclear and radiation safety "Requirements for Modifications at Nuclear Power plants and Their Safety Assessment", approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 34 of July 27, 2017.

The Belarusian NPP project and documents justifying nuclear and radiation safety, including in terms of SNF management, have passed a full safety review and resulted in the issue of a special permit (license) to the operating organization to implement activities in the field of atomic energy and IRS use in terms of operation of power units No. 1 and No. 2 of the Belarusian NPP.

G.6. Operation of Facilities

Article 9. Operation of Facilities

Each Contracting Party shall take the appropriate steps to ensure that:

(i) the license to operate a spent fuel management facility is based upon appropriate assessments as specified in Article 8 and is conditional on the completion of a commissioning program demonstrating that the facility, as constructed, is consistent with design and safety requirements;

(ii) operational limits and conditions derived from tests, operational experience and the assessments as specified in in Article 8, are defined and revised as necessary;

(iii) operation, maintenance, monitoring, inspection and testing of a spent fuel management facility are conducted in accordance with established procedures;

(iv) engineering and technical support in all safety-related fields are available throughout the operating lifetime of a spent fuel management facility;

(v) incidents significant to safety are reported in a timely manner by the holder of the license to the regulatory body;

(vi) programs to collect and analyze relevant operating experience are established and that the results are acted upon, where appropriate;

(vii) decommissioning plans for a spent fuel management facility are prepared and updated, as necessary, using information obtained during the operating lifetime of that facility, and are reviewed by the regulatory body.

G.6.1. Belarusian NPP

The operation of the Belarusian NPP is implemented in accordance with a special permit (license) for the right to perform activities in the field of the use of atomic energy and ionizing radiation sources.

One of mandatory conditions for the license applicant is to ensure that the condition of the facility complies with design, engineering, technological documentation and documents justifying nuclear and radiation safety.

Special permit (license) for the operation of the Belarusian NPP was issued after reviewing the submitted justifying documents, including conformity assessments and safety reviews of the entire complex of the NPP readiness for the operation stage, namely: readiness of administrative, technical and operational personnel, systems, elements and equipment for compliance with design solutions and parameters, including conducting the stages of unit commissioning. The final stage was the acceptance of a positive conclusion from the expert organization by Gosatomnadzor.

The main documents defining safe operation of the Belarusian NPP are the Technological Regulations for the Safe Operation of Power Units No. 1 and No. 2, containing the rules and basic techniques for safe operation, the general procedure for performing safety-related operations, as well as the limits and conditions of safe operation.

The Technological Regulations for the Safe Operation are developed on the basis of project documentation in accordance with safety analysis report.

To maintain the operability of the systems (elements) and equipment of the facility, as well as to prevent dangerous failures in systems, their maintenance, repair, testing and verification are performed. The said works are performed according to the relevant instructions, programs, schedules, technological charts developed by the operating organization on the basis of design requirements and technological regulations, and are documented. In the course maintenance, repair, testing and verification of systems (elements) and equipment, the conditions established in the technological regulations must be observed, under which safety of the facility is ensured.

Production control is implemented in line with the developed and approved regulations on the system of production control of the safety state of the Belarusian NPP SE.

A schedule of workplace checks by administrative and technical personnel is drawn up and approved at the NPP. Workplaces checks and inspections are performed by heads of the NPP and structural units, including at night shifts. The check results are analyzed by the NPP management.

Supervision of compliance with the requirements of regulatory documents within the framework of operation, including maintenance, repair and testing is provided by Gosatomnadzor in the mode of permanent supervision, taking into account the developed and approved Basic Supervision Program at the Operational Stage.

In the course of operation of nuclear facility, the operating organization shall ensure collection, processing, analysis, systematization and storage of information about failures of elements of safety-relevant systems and false staff actions, as well as its quick transfer to all organizations involved. The requirements for the functioning of the national system of operational experience accounting are established in the Rules and regulations for nuclear and radiation safety “Requirements for the Functioning of the System of Accounting and Analysis of Operational Experience of NPP” approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 34 of July 27, 2017.

Accounting and investigation of violations during the NPP operation, and informing the regulatory body about them shall be performed in accordance with the Rules and regulations for nuclear and radiation safety “Requirements for the Procedure for Investigation and Accounting of Events in the Operation of NPP” approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 52 of October 2, 2018. Additionally, the operating organization has developed on-site local proceedings regulating the procedure for investigating events at different levels.

In the reporting period, no events related to SNF and RW were recorded.

Annually, in accordance with legislation requirements, the operating organization provides Gosatomnadzor with a report on the analysis of operational experience, containing a generalized analysis of internal and external operational experience.

The operating organization provides storage of the information required for the facility decommissioning.

Subject to the Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy", the program for the Belarusian NPP decommissioning will be developed not later than five years prior to expiration of the regulatory period of its operation established by the NPP project.

Scientific, technical and engineering support of the Belarusian NPP SE on the issues of computational and experimental support of the nuclear reactor core, including period of nuclear fuel reloading, coordination of reporting documentation on nuclear fuel management is ensured by involving scientific and other organizations of the Russian Federation.

The need for timely notification of safety-significant incidents is provided for by the legislation of the Republic of Belarus. Subject to article 15 of the Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy", Gosatomnadzor shall ensure the creation of appropriate mechanisms and procedures for informing the public, state bodies and legal entities, as well as conducting consultations with them regarding the regulatory process and aspects of regulated activities related to nuclear and radiation safety, including incidents, accidents and violations of the normal operation of nuclear facilities and (or) RWSF, RWDF.

G.7. Disposal of Spent Fuel

Article 10. Disposal of Spent Fuel

If, pursuant to its own legislative and regulatory framework, a Contracting Party has designated spent fuel for disposal, the disposal of such spent fuel shall be in accordance with the obligations of Chapter 3 relating to the disposal of radioactive waste.

Following the Strategy of Spent Nuclear Fuel Management of the Belarusian Nuclear Power Plant, and in accordance with the Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in Spent Nuclear Fuel Management, it is envisaged to transport spent fuel to the Russian Federation for processing.

Section H. SAFETY OF RADIOACTIVE WASTE MANAGEMENT

H.1. General Safety Requirements

Article 11. General Safety Requirements

Each Contracting Party shall take the appropriate steps to ensure that at all stages of radioactive waste management individuals, society in general and the environment are adequately protected against radiological and other hazards.

In so doing, each Contracting Party shall take the appropriate steps to:

(i) ensure that criticality and removal of residual heat generated during radioactive waste management are adequately addressed;

(ii) ensure that the generation of radioactive waste is kept to the minimum practicable;

(iii) take into account interdependencies among the different steps in radioactive waste management;

(iv) provide for effective protection of individuals, society and the environment, by applying at the national level suitable protective methods at the national level as approved by the regulatory body, in the framework of its national legislation which has due regard to the internationally endorsed criteria and standards;

(v) take into account the biological, chemical and other hazards that may be associated with radioactive waste management;

(vi) strive to avoid actions that impose reasonably predictable impacts on future generations greater than those permitted for the current generation;

(vii) aim to avoid imposing undue burden on future generations.

Subject to Article 38 of the Law of the Republic of Belarus “On Radiation Safety”, the IRS user, with reference to radiation safety, shall:

manage IRS in compliance with the requirements of the legislation on radiation safety;

plan and implement measures to ensure radiation safety;

organize and perform production control over radiation safety;

assess and account for occupational exposure doses;

regularly inform staff about the levels of ionizing radiation at workplaces and the amount of received radiation doses;

develop and approve standards for the permissible emissions and discharges of radioactive substances into the environment;

provide authorities and institutions engaged in state sanitary supervision with justification of the dose constraints of occupational and public exposure;

take necessary measures to comply with the standards for permissible emissions and discharges of radioactive substances into the environment and to prevent exceeding the dose limits of occupational and public exposure;

provide training and assessment of knowledge on radiation safety issues;

organize medical examinations of personnel according to labor protection legislation;

comply with the requirements (orders) on the elimination of violations issued by regulatory authorities in the field of ensuring safety;

prior to the beginning of IRS supply, apply for the state registration of IRS type or make sure that the state registration of this type of IRS was made earlier;

send a notification for IRS registration (de-registration) in the Unified State System for Accounting and Control of IRS;

account for and control the IRS in circulation and ensure their safety;

assess the state of radiation safety;

after taking a decision to terminate the operation of the sealed IRS, ensure the return of such source to the manufacturer or seller (supplier) in accordance with the terms of the contract or transfer it on a contractual basis for processing, long-term storage or disposal;

perform other obligations provided for by the said Law and other legislative acts.

Radioactive waste management requires the following:

implementation of processing, long-term storage and (or) disposal of radioactive waste only at radioactive waste management facilities;

siting and construction of waste management facilities (by decision of the Council of Ministers of the Republic of Belarus, taking into account the results of an environmental impact assessment and proposals from republican bodies of public administration involved);

IRS user should have an approved scheme for RW management agreed with the state administration body in the field of radioactive waste management, taking into account the specifics and conditions of the work performed by it for planning and implementing measures to ensure radiation safety. The procedure for the development, coordination and approval of the RW management scheme is established by the relevant Instruction approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 21 of April 30, 2009;

use of transport means during RW transportation ensuring the prevention of harmful effects of transported radioactive waste on the environment, human health and property. Transportation of radioactive waste is allowed if the IRS user has an accompanying passport for the RW transportation. The requirements for the registration of an accompanying passport for the RW transportation are established by the relevant Instruction approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 20 of April 30, 2009;

reliable RW isolation during their storage or RW disposal from the environment, radiation safety in accordance with the rules and regulations for nuclear and radiation safety, specific sanitary and epidemiological requirements and design documentation of radiation facilities.

Rules and regulations for nuclear and radiation safety “Safety in Ionizing Radiation Sources Management. General Provisions”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 47 of September 28, 2010, established requirements for design and operational documentation, for radiation control at facilities, for placement for long-term storage (disposal) of radioactive waste, for the implementation of measures to eliminate a radiation accident, as well as for accounting, control and inventory of radioactive waste.

The basis for building regulatory requirements in the field of RW management are the principles that set the direction and lay the foundations for proper management decision-making, based on which legislation in the field of RW management is formed, developed and detailed.

Subject to the requirements of these rules and regulations, the following principles must be observed when managing radioactive waste:

ensuring an acceptable level of the personnel and the public protection from the radiation effects of radioactive waste in accordance with the principles of justification, rationalization and optimization;

ensuring an acceptable level of environmental protection from the harmful radiation effects of radioactive waste;

consideration of the interdependence between the various stages of RW management, which provides that all activities – from the generation to disposal of radioactive waste, including their processing, are considered as components of a large whole, and the controls of each stage are selected taking into account compatibility with other stages;

protection of future generations, which consists in the fact that the projected levels of exposure of future generations due to the radioactive waste disposal should not exceed the allowed levels of public exposure established by regulatory legal acts, including requirements of technical regulatory legal acts mandatory for compliance;

non-imposition on future generations of an undue burden associated with the need to ensure safety in RW management;

control over RW generation and accumulation (limiting RW generation and accumulation at the minimum practically achievable level);

prevention of accidents and mitigation of their consequences in case of their occurrence.

The operating organization must ensure safe management of all RW generated and (or) accumulated as a result of its activities under normal operation of the facility, during maintenance and repair, as well as in case of violations of the normal operation of the facility, including accidents. Safe management of radioactive waste must be ensured at all stages of the life cycle of the facility, including decommissioning or closure.

If nuclear hazardous fissile nuclides are present in RW, technical solutions and organizational measures should be provided to ensure nuclear safety when managing them, in accordance with the requirements of regulatory legal acts.

The requirements for the RW management at radiation facilities are established by specific sanitary and epidemiological requirements for maintenance and operation of radiation facilities, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 168 of March 24, 2020.

Requirements for ensuring radiation protection of personnel and the population when managing RW are established by the sanitary rules and regulations "Requirements for Ensuring Radiation Safety of Personnel and the Population in Radioactive Waste Management", approved by the Resolution of the Ministry of Health of the Republic of Belarus No. 142 of December 31, 2015.

General safety requirements for RW management are established by the legislative acts specified in Section E.2.

H.2. Existing Facilities and Past Practices

Article 12. Existing Facilities and Past Practices
Each Contracting Party shall in due course take the appropriate steps to review:
(i) the safety of any radioactive waste management facility existing at the time the Convention enters into force for that Contracting Party and to ensure that, if necessary, all reasonably practicable improvements are made to upgrade the safety of such a facility;
(ii) the results of past practices in order to determine whether any intervention is needed for reasons of radiation protection bearing in mind that the reduction in detriment resulting from the reduction in dose should be sufficient to justify the harm and the costs, including the social costs, of the intervention.

The radiation safety objective is addressed for all the facilities listed in Section D.

H.2.1. Specialized Enterprise for Radioactive Waste Management UE "Ekores"

UE "Ecores" carries out long-term storage of RW and disused sealed radionuclide sources.

In 2013, based on the results of the second and third stages of the facility reconstruction, the building for RW processing with laboratories and storage of conditioned SRW were commissioned.

These structures are designated to implement activities on processing and conditioning of solid or liquid RW, both new and previously received for their transfer into a safe state, with subsequent long-term storage in the conditioned state.

The method for RW conditioning is RW cementing in a special cask, for which the following may be used: 200-liter metal drums, metal containers, reinforced concrete containers.

Storage of conditioned RW is envisaged in storage sections for conditioned surface-type SRW, separated by categories. Prior to placing the cask with RW for long-term storage, it is characterized and the information is entered into an electronic database.

To justify the radiation safety of the RW storage system, safety analysis report of the Specialized UE "Ekores" is developed and maintained, periodical assessment of radiation safety is implemented. These works are performed with technical support of the SSI "JIPNR – Sosny".

The relevant task to increase radiation safety of the Specialized UE "Ekores" is to implement work on RW removal from preserved first-generation repositories (operated from 1963 to 1978) and decommissioned second-generation repositories (operated from 1978 to 2013) in order to further transfer them to a safe state by processing and conditioning.

Measures taken to improve the level of radiation safety of RW storage facilities, taking into account the CERS 2019, are given in Appendix 8.

Comprehensive engineering and radiation survey (CERS) of the storage facilities of the Specialized UE "Ekores" was performed by organizations of the Russian Federation – the Joint-Stock Company "NFC Logistics Center" of Rosatom State Atomic Energy Corporation (the legal successor of JSC "Federal Center for Nuclear and Radiation Safety"), as well as "Pilot and Demonstration Center for Decommissioning of Uranium-Graphite Nuclear Reactors" JSC, AE "KVARK" Limited Liability Company, Federal State Unitary Enterprise "United Ecological, Technological and Scientific Research Center for Radioactive Waste Disposal and Environmental Protection" (FSUE "RADON").

Following the results of CERS of the storage facilities of the Specialized UE "Ekores" conducted in 2019, it was stated that separate design solutions would be required for further management of large-sized RW (MNPP "Pamir" nuclear reactor vessel, "Stavrida" and "LMB-Gamma-1M" gamma installations), for which unified containers such as KMZ or NPC are not applicable.

In order to assess the actual technical and radiation condition of the "Stavrida" and "LMB-Gamma-1M" gamma installations, collect the necessary information to make a technical decision to ensure their safe long-term storage, as well as determine the possibility and technology of discharging these gamma installations, CERS of these gamma installations was implemented by specialists of Sibmer LLC (Russian Federation) in 2021. SSI "JIPNR – Sosny" performed scientific and methodological support of these works.

According to the CERS results it was determined that designs of protection units of gamma installations "Stavrida" and "LMB-Gamma-1M" have not lost their shielding properties and enable to ensure radiation safety during their long-term storage. However, for long-term storage of the "LMB-Gamma-1M" gamma installation with contained radionuclide sources it is recommended to use KMZ-M AT-2-00.00.00.00.000 type container, and for the "Stavrida" gamma installation – a special container PU-2STK-SK.

Additional placement of gamma installations in protective containers will ensure their reliable isolation from the environment, radiation safety in accordance with the rules and regulations for nuclear and radiation safety during storage (disposal) of radioactive waste, including when relocated to the RW disposal site when such a decision will be made.

Based on the results of the CERS 2021, it is planned to develop technical solutions to ensure safe long-term management of "Stavrida" and "LMB-Gamma-1M" gamma installations.

H.2.2. Decontamination Waste Disposal Facilities

As part of the implementation of the State Program to Overcome the Consequences of the Chernobyl Disaster for 2021 – 2025, state-owned enterprises Polesie and Radon are implementing work on maintenance and optimization of the waste disposal system.

Monitoring the condition of all categories of DWDF includes an inspection of their technical condition. The technical state of the DWDF is inspected, as a rule, together with its radiation monitoring, as well as after floods, heavy rains, hurricane winds, etc. The visual inspection of the DWDF engineering systems identifies the condition of the fence, upper shelter, radiation hazard signs, access roads.

Annually, systematic radiation monitoring and monitoring of their physical condition is implemented in all DWDF-I and DWDF-II.

For the DWDF-II, the following types of radiation monitoring are established

dose rate measurements at permanent control points;

measurement of specific activity of Cs-137, Sr-90 in water samples from control wells at least twice a year;

measurement of the groundwater level in control wells.

To prevent unauthorized access to the DWDF-II and ensure safety of the disposed waste, a fence has been installed around the perimeter with radiation hazard signs. A sanitary protection zone of at least 500 m in radius has been established around the DWDF, where all types of activities not related to the DWDF-II operation are prohibited.

As the DWDF-II pit is filled with decontamination waste and their compaction, an upper protective shield of crushed clay 0.5 m thick is arranged, followed by laying a layer of local soil 1 m thick.

H.2.3. Radioactive Waste Storage Facilities in Places of the Former Location of the Soviet Military Units

Since the publication of the previous National Report, no new RW storage facilities in the former locations of the Soviet military units were found.

Currently, there is one RWSF in the Republic of Belarus formed in the former locations of the Soviet military units, “Gomel-30”.

The structure of “Gomel-30” RWSF corresponds to the standard design of RWSF No. 62-II-04 (outer diameter of the structure – 1,800 mm, height – 2,500 mm). Radionuclide composition of the placed sources include radioactive isotopes Cs-137 and Co-60. The state of the structural radiation shielding materials at RWSF ensures the necessary tightness and protection against penetration of radionuclides into the environment. There is no threat of the exposure above the established dose limits for the population and employees of the nearby facilities. The technical state and constructive scheme of the RWSF indicates the ability of the facility to perceive installation and transport load. There is no need for urgent measures for the disposal of this facility. The safety state of the facility is monitored. There is a guarded facility of the Ministry of Internal Affairs in the territory where the RWSF is located, unauthorized access to this territory is impossible.

H.2.4. Facility for Processing Liquid Radioactive Waste at the State Scientific Institution “JIPNR – Sosny”

Facility performs work on processing of LRW generated from research activities at the site of the SSI “JIPNR – Sosny”

Facility processes LRW using the following methods: selective sorption, microfiltration, reverse osmosis, ion exchange.

RW conditioning is performed using the cementing method.

SRW generated as a result of processing and conditioning are sent for long-term storage to the specialized UE “Ekores”.

Safety of the LRW processing facility is justified in the design project and presented in the safety analysis report.

In the period of 2021 – 2023, the following measures were taken to ensure safety of the facility:

additional equipment for systems of conditioning and temporary storage of RW has been put into operation;

additional equipment for dosimetry control systems has been put into operation.

H.2.5. Belarusian NPP

The design decisions of the Belarusian NPP provide for the following procedure for radioactive waste management.

Collection and sorting of solid RW at the Belarusian NPP is implemented taking into account radiation characteristics of waste and ways of their further management. Processing of solid VLLW, LLW and ILW is implemented at the SRW processing complex, which provides for RW shredding and compaction (compressing in a barrel). SRW is loaded into steel barrels with a capacity of 0.2 m^3. Barrels with SRW are sealed with lids, certified and sent to SRW repository located at the Belarusian NPP site.

HLW is loaded into special metal capsules, certified and placed for storage in a special compartment of the repository for the operating lifetime of the Belarusian NPP.

LRW processing is performed at the LRW solidification facility, which provides:

mixing of vat residue with cement and loading into a NZK-150-1.5P-type non-returnable reinforced concrete protective container;

dewatering of spent ion-selective sorbents and ion-exchange resins with their subsequent packing into a NZK-150-1.5P-type non-returnable reinforced concrete protective container without mixing with cement;

sealing of containers with solidified LRW, their certification and further placement in RW repository.

Storage of formed packages with SRW and solidified LRW is implemented separately by categories in the RW repositories located at each power unit of the Belarusian NPP.

Barrels with solid VLLW, LLW and ILW and NZK containers with solidified LRW at the Belarusian NPP site are stored for 10 years.

Storage of capsules with HLW at the site of the Belarusian NPP is carried out during its entire operating lifetime.

Upon expiration of the period of temporary storage of RW in the Belarusian NPP repository, it is envisaged to transfer them to the proposed RWDF for long-term storage and (or) disposal. The Belarusian NPP repository envisaged by the design is aimed at SRW storage for 10 years.

In accordance with the Strategy of Radioactive Waste Management of the Belarusian NPP it was envisaged to construct the first phase of RWDF by 2028.

The Strategy for Radioactive Waste Management sets the date for construction of the first phase of RWDF by 2030.

At the same time, taking into account the commissioning of the Belarusian NPP in October 2023, the construction and commissioning of the first phase of RWDF may be postponed.

In 2016 – 2018, as part of implementing pre-investment stage of the mentioned RWDF construction according to the Agreement between the Ministry of Energy and the SSI “JIPNR – Sosny” the task to develop a conceptual design of disposal facility for very low-level, low-level and short-term intermediate-level radioactive waste of the Belarusian NPP, generated in the process of operation and decommissioning of the Belarusian NPP, based on the reference technologies and existing projects, was fulfilled.

For further elaboration of technical concept of the planned RWDF, Task 5.4 “Perform Pre-Design Study of the Main Technical Solutions for Technological Structures of the Radioactive Waste

Disposal Facility of the Belarusian NPP in Accordance with its Conceptual Design" is being implemented within subprogram 3 "Scientific Support for the Efficient and Safe Operation of the Belarusian Nuclear Power Plant and Promising Areas of Nuclear Energy Development" of the State program "High Technologies and Equipment" for 2021 – 2025.

The Strategy of Radioactive Waste Management of the Belarusian NPP provides for conducting research on the possibility of constructing a HLW disposal facility in a deep geological formation. To this end, within subprogram 6 "Scientific Support of the Nuclear Power Development in the Republic of Belarus" of the State Program "High Technologies and Equipment" for 2016 – 2020, the SSI "JIPNR – Sosny" together with the leading Russian organization in the field of RW management facilities design (St. Petersburg branch of JSC "FCSHT "SSPA "Eleron" – VNIPIET") in 2019 – 2020 implemented the task "To Develop Technical Suggestions for the Organization of System for Management of High-Level and Long-Lived Intermediate-Level Radioactive Waste Generated During the Operation and Decommissioning of the Belarusian NPP".

As a result of the work performed:

forecast data for the expected volumes, nomenclature, radiation characteristics and morphological composition of the high-level and long-lived intermediate-level radioactive waste generated during the operation and decommissioning of the Belarus NPP were obtained;

possible options of technology for conditioning and long-term intermediate storage of radioactive wastes before disposal were analyzed, optimal solutions were selected, specifications for radioactive waste packaging were developed taking into account the acceptance criteria for the disposal and transportation requirements;

possible technical solutions for the arrangement of the said RW disposal system were analyzed based on the international experience and existing projects. Conceptual solutions on the composition and design of the disposal facility structures were developed taking into account the stock materials by potentially suitable sites for the disposal of the radioactive waste of the corresponding class, aggregate assessment of its value was performed. The forecast schedule for the management of such radioactive waste during decommissioning of the Belarusian NPP was developed.

The final decision on the management of high-level radioactive waste will be made based on the results obtained during the implementation of this set of research activities.

H.3. Siting of Proposed Facilities

Article 13. Siting of Proposed Facilities

1. Each Contracting Party shall take the appropriate steps to ensure that procedures are established and implemented for a proposed radioactive waste management facility:

(i) to evaluate all relevant site-related factors likely to affect the safety of such a facility during its operating lifetime as well as that of a disposal facility after closure;

(ii) to evaluate the likely safety impact of such a facility on individuals, society and the environment, taking into account possible evolution of the site conditions of disposal facilities after closure;

(iii) to make information on the safety of such a facility available to members of the public;

(iv) to consult Contracting Parties in the vicinity of such a facility, insofar as they are likely to be affected by that facility, and provide them, upon their request, with general data relating to the facility to enable them to evaluate the likely safety impact of the facility upon their territory.

2. In so doing, each Contracting Party shall take the appropriate steps to ensure that such facilities shall not have unacceptable effects on other Contracting Parties by being sited in accordance with the general safety requirements of Article 11.

The Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy" and the Law of the Republic of Belarus "On Radiation Safety" establish requirements for siting, design and construction of the RW management facilities.

Siting and construction of RW management facilities are implemented according to the decision of the Council of Ministers of the Republic of Belarus given the results of environmental impact assessment and proposals of the interested republican state management bodies. Land plots and subsoil plots for siting such facilities are allocated in accordance with the legislation on protection and use of land and subsoil.

Project design documents for radioactive waste management facilities is developed in accordance with legal requirements on the construction, architecture and town planning, on environmental protection and rational use of natural resources, on the sanitary and epidemiological well-being of the population.

When designing radioactive waste management facilities, the factors that affect safety of these facilities both during their operation and after decommissioning, are taken into account, and the impact of these facilities on the environment is assessed in accordance with an environmental legislation.

Requirements to the site selection, design of radiation facilities, including radioactive waste management facilities are defined by Rules and regulations for nuclear and radiation safety “Siting of Nuclear Material Storage Facilities, Radioactive Waste Storage Facilities, Radioactive Waste Disposal Facilities”, approved by the Decree of the Ministry for Emergency Situations No. 48 of August 18, 2022 and other regulatory legal acts, including technical regulatory legal acts.

In order to implement the requirements set out in the Rules and regulations for nuclear and radiation safety “Siting of Nuclear Materials Storage Facilities, Radioactive Waste Storage Facilities, Radioactive Waste Disposal Facilities”, Gosatomnadzor developed and approved by the Order No. 49 of November 22, 2023, the Guidelines on nuclear and radiation safety “Siting of Near-Surface Radioactive Waste Disposal Facility”.

The document contains recommendations for the organization and management of site selection, the selection process description, as well as an overview of the General Guidelines for siting and the necessary data that are recommended to be obtained during the site selection for RWDF siting, as well as their safety assessment.

Following the Strategy of Radioactive Waste Management, the construction of the first phase of the RWDF is planned to be completed in 2030. To implement the tasks provided for by the Strategy of Radioactive Waste Management, Gosatomnadzor has developed a Plan of main organizational measures for RWDF construction, as well as ensures coordination of activities of involved state bodies and organizations to agree on the activities of this Plan. Structurally, the Plan of main organizational measures for the radioactive waste disposal facility construction is divided into 6 sections, including separate directions of joint actions of public administration bodies: general management measures, organization and conduct of environmental impact assessment, regulatory and legal regulation of RWDF construction issues, licensing activities, RWDF design and construction, HR development in the field of RW management. The document was approved by the Deputy Prime Minister of the Republic of Belarus on September 29, 2023.

The first step to implement the measures of this Plan is creating an interdepartmental working group (Order of the Minister of Energy No. 203 of September 21, 2023) to make appropriate decisions on the coordination of activities related to the RWDF construction. The meetings of the interdepartmental working group review the materials prepared by the BelRAO State Enterprise with the involvement of relevant organizations on the issue of RWDF siting.

Also, in line with the Plan of main organizational measures for the radioactive waste disposal facility construction, Resolution of the Council of Ministers No. 158 of March 7, 2024 “On the Establishment of the State Commission for the Priority Site Selection for Radioactive Waste Disposal Facility Construction” was adopted. The draft was developed by Gosatomnadzor and agreed with the

interested state bodies and organizations. The regulation on the activities of the said State Commission defines the tasks, including examination of materials based on the results of scientific and survey work on selecting alternative sites for the facility placement, consideration of proposals on RWDF siting and the selection of a priority site for the RWDF construction.

The Commission includes representatives of republican bodies of public administration and other organizations subordinate to the Government of the Republic of Belarus, authorized to make decisions in accordance with their competence on issues related to RWDF siting.

Subject to the provisions of the Law of the Republic "On State Environmental Expertise, Strategic Environmental Assessment and Environmental Impact Assessment", facilities where radioactive waste is neutralized, processed, stored and (or) disposed are facilities for which environmental impact assessment is implemented and which are subject to state environmental expertise.

Environmental impact assessment, including given possible transboundary impact, shall be carried out according to the procedure established by the Regulation on the Procedure for Environmental Impact Assessment, Requirements for the Composition of the Impact Assessment Report, Requirements for Specialists Performing Environmental Impact Assessment, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 47 of January 19, 2017.

Public discussions of environmental impact assessment reports are conducted in accordance with the Regulations on the Procedure for Organizing and Conducting Public Discussions of Drafts of Environmentally Significant Decisions, Environmental Reports on Strategic Environmental Assessment, Environmental Impact Assessment Reports, Accounting for Environmentally Significant Decisions Taken, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 458 of June 14, 2016.

Following the Law of the Republic "On State Environmental Expertise, Strategic Environmental Assessment and Environmental Impact Assessment" and as part of implementing the Plan of main organizational measures for the RWDF construction, guided by the practice of applying the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), in August 2023, the Ministry of Natural Resources and Environmental Protection sent information to potentially affected countries (Latvia, Lithuania, Poland, Ukraine) about the planned activities on RWDF construction on the territory of the Republic of Belarus.

Lithuania, Latvia and Poland confirmed the receipt of this information within the deadline set by the Ministry of Natural Resources and Environmental Protection, stressing that they intend to participate in the procedure of environmental impact assessment in a transboundary context as Affected Parties, as provided for by the Espoo Convention.

H.4. Design and construction

Article 14. Design and Construction of Facilities
Each Contracting Party shall take the appropriate steps to ensure that:
(i) the design and construction of a radioactive waste management facility provide for suitable measures to limit possible radiological impacts on individuals, society and the environment, including those from discharges or uncontrolled releases;
(ii) at the design stage, conceptual plans and, as necessary, technical provisions for the decommissioning of a radioactive waste management facility other than a disposal facility are taken into account;
(iii) at the design stage, technical provisions for the closure of a disposal facility are prepared;
(iv) the technologies incorporated in the design and construction of a radioactive waste management facility are supported by experience, testing or analysis.

Requirements for the design of radioactive waste management facilities are established by the Rules and regulations for nuclear and radiation safety "Safety in Radioactive Waste Management.

General provisions" and other regulatory legal acts, technical regulatory legal acts, according to which:

safety in RW management must be ensured through the implementation of multi-barrier principle, based on the application of the system of physical barriers preventing the spread of ionizing radiation and radioactive substances into the environment;

the amount and purpose of the barriers should be identified and justified in the project design documents for radiation facility and nuclear facility;

when designing RW management facilities intended for long-term storage and (or) disposal of RW, preference should be given to safety systems based on the passive principle of action and internal self-protection properties;

technical solutions and organizational measures to ensure the safe RW management must be presented and justified in the project design and in the safety analysis report of radiation and nuclear facilities.

The project design documents of radiation and nuclear facilities shall determine:

types of radiation monitoring;

radiation monitoring facilities;

controlled parameters and their allowed values;

procedure and intervals of radiation monitoring;

list of technical measuring instruments for radiation monitoring, their technical specifications and corresponding methodological support;

list of job positions, number and qualifications of employees to perform radiation monitoring;

procedure for registering the radiation monitoring results.

Project of radiation facility or nuclear energy facility should contain data on sources of radioactive waste formation and their characteristics, including:

sources of gaseous RW, solid RW and liquid RW generation during normal operation of radiation facility, nuclear facility, their quantity (volume), activity, composition and annual planned quantity (volume);

estimate of the quantity (volume) and activity of RW generated during the project (designated) operating lifetime of the radiation facility, nuclear facility;

estimate of the quantity (volume), activity and composition of RW generated at violations of the normal operation of a radiation facility, nuclear facility, including design basis accidents;

estimate of the quantity (volume), activity and composition of the accumulated RW subject to processing and storage;

estimate of the quantity (volume), activity and composition of RW generated at decommissioning or closure of a radiation facility, nuclear facility.

The design and operational documentation of radiation and nuclear energy facilities should include technical solutions and organizational measures to ensure safety in managing RW of each category (radiation hazard class), including:

measures to reduce RW generation by its activity value, mass (volume);

justification of methods of collection, sorting (separation) by radiation hazard classes of RW;

justification of selecting the RW management systems;

justification of RW transportation methods at the site of the radiation facility, nuclear facility and (or) to the RW long-term storage facilities or disposal facilities;

limits and conditions of safe operation of RW management systems;

methods and means of radiation monitoring in RW management;

methods and means of process control, including methods and means of RW characterization and control;

measures to prevent emissions and discharges of radioactive substances into the environment in quantities exceeding the established standards, and measures to reduce emissions and discharges of radioactive substances into the environment;

physical protection, accounting and control of RW.

H.5. Safety Assessment

Article 15. Assessment of Safety of Facilities
Each Contracting Party shall take appropriate measures to ensure that:
(i) before construction of a radioactive waste management facility, a systematic safety assessment and an environmental assessment appropriate to the hazard presented by the facility and covering its operating lifetime shall be carried out;
(ii) in addition, before construction of a disposal facility, a systematic safety assessment and an environmental assessment for the period following closure shall be carried out and the results evaluated against the criteria established by the regulatory body;
(iii) before the operation of a radioactive waste management facility, updated and detailed versions of the safety assessment and of the environmental assessment shall be prepared when deemed necessary to complement the assessments referred to in paragraph (i).

Safety assessment of facilities is one of the elements of the system for ensuring safety in the use of atomic energy.

In accordance with the Decree of the President of the Republic of Belarus No. 137 of April 5, 2021 “On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources”, siting, construction, operation and decommissioning of RWSFs and RWDFs can only be carried out on the basis of a license for the right to conduct activities in the field of the use of atomic energy and ionizing radiation sources, issued in accordance with the results of a comprehensive (systemic) safety assessment of RWSFs and RWDFs, including review of documents regarding safety of the facilities.

According to the Law of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy”, the purpose of safety assessment is to determine safety level of nuclear facility and implementation of the main safety criteria established by the design documentation, regulatory legal acts, including mandatory technical and regulatory legal acts in the field of nuclear and radiation safety, taking into account safety analysis as well as deterministic and probabilistic safety analysis.

Legislation on nuclear and radiation safety with application of a graded approach that takes into account proportional risks associated with specific stages of the entire operating lifetime of facilities, defines regulatory requirements for the composition and content of documents justifying nuclear and radiation safety, which should be drafted by the operating organization and reviewed by the regulatory body. The list of justifying documents and extent of safety justifications to be submitted increase from stage to stage and are sufficiently specified by the regulatory body for each specific case.

Thus, prior to the siting of RWSF, RWDF, in accordance with the above mentioned criteria stipulated in the Decree of the Ministry for Emergency Situations No. 64 of September 21, 2021, the operating organization shall develop:

technical and economic feasibility study;

safety analysis report of the RWSF, RWDF containing justification of the selected site covering safety-related aspects, general description of RWSF, RWDF and its safety for the environment and the general public, including a preliminary analysis of physical protection;

data on the administrative management system of the operating organization, including copies of quality assurance programs.

In addition to these documents, in order to begin the construction of RWSF, RWDF, it is necessary to develop:

design documents (including designs of systems important for safety), R&D reports, test reports referenced in the safety analysis report;

statement on physical protection of nuclear facilities.

In addition to the information submitted for the stage of its siting, the safety analysis report for the construction of RWSF or RWDF should contain safety analysis for the construction of RWSF or an RWDF.

For the operation of RWSF, RWDF to be commissioned after its construction, additional documents shall be prepared:

organizational and administrative documents regulating the procedure for quality control of equipment supplies and activities affecting safety of nuclear facilities;

information on recruitment, training, advanced training and authorization of personnel to work independently;

guidelines on accident elimination at RWSF and RWDF;

guidelines on management of beyond design basis accidents;

action plan for protection of personnel and the general population from nuclear and radiation accidents;

radiation safety guidelines;

radiation control guidelines;

statement on accounting and control of nuclear materials, IRS and RW;

statement on physical protection of nuclear facilities;

program for commissioning of RWSF and RWDF;

documents on operation of RW management systems;

RW management scheme;

results of monitoring of buildings and structures of RWDF belonging to categories I and II in terms of safety impact for the entire period of monitoring (foundation settlement, tilts, etc.);

a report on the results of the study of the initial radiation state of the environment in the sanitary protection zone and the surveillance zone of RWDF (a report on “zero” radiation background);

norms of permissible emissions and discharges of radioactive substances into the environment.

Safety analysis report of RWDS should be supplemented with justification of operation of RWDF to be commissioned after its construction.

In accordance with the Regulations on Licensing of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources, approved by the Decree of the President of the Republic of Belarus No. 137 of April 5, 2020, the licensing requirements (conditions) imposed on a license applicant for the right for siting, construction, operation and decommissioning of RWSF and RWDF include:

ability to ensure conditions for safe termination of the licensed activity and decommissioning of RWSF or RWDF, as well as availability of relevant design documentation;

monitoring of characteristics of RWSF, RWDF site and consideration of the results of these observations during design and construction of such facilities, engineering, manufacturing, installation and adjustment of systems (elements) important for safety, ensuring their normal functioning during the established operation periods and decommissioning of RWSF, RWDF;

availability of a positive statement of state environmental expertise conducted in accordance with the legislation in the field of performing state environmental expertise, strategic environmental assessment and environmental impact assessment.

Corresponding documents are submitted by the operating organization to the regulatory body and are also subject to safety assessment.

Technical requirements for safe management of radiation facilities, in terms of determining structure and content of the safety analysis report for RW management facilities, are established by Gosatomnadzor in Rules and regulations for nuclear and radiation safety “Safety of Radiation Facilities. Requirements to the Structure and Content of Safety Analysis Report of Radioactive Waste Management Facilities” approved by the Decree of the Ministry for Emergency Situations No. 64 dated December 13, 2010.

Safety analysis report is developed on the basis of the results of assessment of radiation safety status of RW management facility over the operational and post-operational periods.

Prior to the commissioning of RW management facility, the operating organization shall ensure development of safety analysis report and maintenance of its compliance with the actual state of RW management facility during its entire operating lifetime.

Safety analysis report in the part of safety justification for post-operational period shall be reviewed taking into account operational experience and radiation monitoring data.

Information presented in the report should be based on the materials of the technical and economic feasibility study and design documentation of RW management facility, as well as confirm the sufficiency and completeness of consideration of man-made and natural impacts affecting safety of RW management facility.

Safety analysis report should contain the following main sections:

characteristics of RW management facility site conditions;

main design solutions;

information on RW and its characterization;

construction of RW management facility;

operation of RW management facility;

management of RW generated during the operation of RW management facility;

physical protection of RW management facility;

radiation safety of the RW management facility;

fire safety;

environmental impact assessment;

decommissioning of RW management facility;

quality assurance.

Section of the safety analysis report “Characteristics of RW management facility site conditions” specifies:

characteristics of natural, economic and demographic conditions and the area of its siting, as well as the initial radiation state of the environment;

justification of compliance of RW management facility siting conditions with the requirements of regulatory legal acts, including those mandatory for compliance with technical regulatory legal act;

detailed description of the site location area, as well as adjacent areas that may be affected by the operation of RW management facility.

The “Main Design Solutions” section of the safety analysis report should include:

information on the initial data for the design documentation of RW management facility;

information on the approved design decisions of RW management facility, its operating lifetime, expected characteristics and amounts of RW, and possible changes in site characteristics that may affect safety level of RW management facility;

information on potential radiation hazard category of RW management facility;

description of RW management facility design, types of engineering barriers, buildings and premises where technological and supporting equipment, automation and control systems, systems of physical protection, maintenance and repair with indication of elements, structures, facilities and devices essential for safety;

information on compliance of design solutions of RW management facility with the requirements of regulatory legal acts, including mandatory technical regulatory legal acts in the field of nuclear and radiation safety and ensuring sufficient isolation of RW from the biosphere and the environment during normal operation of RW management facility and in the event of an accident.

Section of the safety case report "Environmental Impact Assessment" provides:

information on availability of a legally approved report on environmental impact assessment of RW management facility;

information on the principal parameters of radiation impact of RW management facility on environmental components, as well as conclusions contained in the report on environmental impact assessment of RW management facility.

Section of safety case report "Decommissioning of RW management facility" should contain information that is sufficient to evaluate the proposed decommissioning project of RW management facility:

description of methods of equipment disassembly and dismantling as well as an assessment of the quantity and characteristics of RW that will be generated during decommissioning of RW management facility, organizational and technical solutions for their management;

description of measures to ensure long-term stability of the site, justification of the duration and type of periodic radiation monitoring after decommissioning of RW management facility;

description of potential site flooding controls, drainage systems, and systems to prevent wind and water erosion;

description of site remediation methods and information on potential long-term restrictions on the use of site;

description of radiation monitoring program for the site after decommissioning of RW management facility, including the list of monitored parameters, equipment and its location, procedure for registration, accounting and storage of radiation monitoring results;

justification of radiation monitoring system's ability to ensure timely detection of radionuclide releases from RW storage before they reach the site boundaries, description of hypothetical accident scenarios and their impact levels (levels of radiation contamination of the environment).

Design documentation should include measures necessary to bring RW management facility to a condition that will not require active post-operational maintenance.

The operating organization ensures that a periodic safety assessment is carried out throughout the entire operating lifetime of RWSF, RWDF, with deterministic and probabilistic safety analysis, and that its results are submitted to Gosatomnadzor.

Results of the first periodic safety assessment of RWSF, RWDF should be submitted to Gosatomnadzor no later than 12 months before the expiration of 10 years from the date of their operation, with further periodic safety assessment of nuclear facility and (or) storage or disposal facility every 10 years.

Assessment of safety status of RWSF or RWDF as part of their periodic safety assessment is aimed at ensuring an appropriate level of safety throughout its entire operating lifetime.

Requirements for the content of the report on the assessment of the current state of safety of RWSF, RWDF are established by the regulatory body in the Instruction, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 59 of September 6, 2021.

H.6. Operation of Facilities

Article 16. Operation of Facilities

Each Contracting Party shall take the appropriate steps to ensure that:

(i) the licence to operate a radioactive waste management facility is based upon appropriate assessments as specified in Article 15 and is conditional on the completion of a commissioning programme demonstrating that the facility, as constructed, is consistent with design and safety requirements;

(ii) operational limits and conditions, derived from tests, operational experience and the assessments as specified in Article 15 are defined and revised as necessary;

(iii) operation, maintenance, monitoring, inspection and testing of a radioactive waste management facility are conducted in accordance with established procedures. For a disposal facility the results thus obtained shall be used to verify and to review the validity of assumptions made and to update the assessments as specified in Article 15 for the period after closure;

(iv) engineering and technical support in all safety-related fields are available throughout the operating lifetime of a radioactive waste management facility;

(v) procedures for characterization and segregation of radioactive waste are applied;

(vi) incidents significant to safety are reported in a timely manner by the holder of the licence to the regulatory body;

(vii) programmes to collect and analyse relevant operating experience are established and that the results are acted upon, where appropriate;

(viii) decommissioning plans for a radioactive waste management facility other than a disposal facility are prepared and updated, as necessary, using information obtained during the operating lifetime of that facility, and are reviewed by the regulatory body;

(ix) plans for the closure of a disposal facility are prepared and updated, as necessary, using information obtained during the operating lifetime of that facility and are reviewed by the regulatory body.

General license requirements for the licensee are availability of qualified employees who have undergone training and knowledge testing (evaluation) on nuclear and radiation safety, availability of a management system for safety and quality control of the licensed activities, availability of premises, equipment and documents defining the procedure for carrying out works and (or) services, including applied methods and technologies.

To obtain a license for operation, decommissioning of nuclear installations, RWSF, operation, closure of RWDF, a license applicant must have documents justifying safety, conditions for storage of nuclear materials, spent nuclear materials and (or) RW, accounting and control systems for such materials and waste. Physical protection in accordance with the legislation, the ability to ensure conditions for safe termination of the licensed activity and decommissioning of the nuclear facility, RWSF, closure of the RWDF in accordance with the requirements of the legislation, as well as the availability of the relevant project documentation must be ensured. At the same time, in order to obtain a license it is necessary to have a positive conclusion of the state environmental expertise conducted in accordance with the legislation in the field of state environmental expertise, strategic environmental assessment and environmental impact assessment. Observations must be made of the characteristics of the site of a nuclear facility, RWSF or RWDF, and the results of these observations must be taken into account in the design and construction of such facilities, in the design, manufacture, installation and adjustment of systems (elements) important for safety, and in ensuring their normal functioning during the established operating lifetime of the nuclear facility, RWSF or RWDF, decommissioning of the nuclear facility, RWSF or closure of the RWDF.

The license is issued for the period of time during which the safety of the activity is justified and confirmed by the results of safety review.

In accordance with the Law of the Republic of Belarus “On Radiation Safety”, organizations, whose activities generate RW, must have a Scheme for Radioactive Waste Management, agreed with Gosatomnadzor.

The Belarusian NPP State Enterprise has also put into effect a quality assurance program for RW management, establishing a set of quality assurance measures aimed at implementing the established criteria and principles for safety in radioactive waste management.

Subject to Rules and regulations for nuclear and radiation safety “Safety Rules in Radioactive Waste Management of Nuclear Power Plants” approved by the Resolution of the Ministry for

Emergency Situations of the Republic of Belarus No. 43 of October 12, 2017, the operational documents of the Belarusian NPP provide for separate collection, sorting (separation) by radiation hazard classes, reducing volumes of generation and transfer of radioactive waste to a state optimally suitable for temporary storage and subsequent transfer to disposal, including minimizing the radiation impact on the personnel, population and the environment, determining RW characteristics at all stages of its management, accounting and control at all stages of RW management, as well as RW registering in the Unified State System of Accounting and Control of IRS.

The said Rules and regulations establish the requirement for annual safety analysis when managing radioactive waste. The Regulations on Assessment of Operational Activity Performance Indicators developed by the operating organization defines the operational safety indicators of the Belarusian NPP (including radioactive waste management), methodology of their calculation and analysis, identification of trends in changes in the state of operational safety.

The Regulations on Operational Supervision establishes procedures for trial and testing NPP systems, technical diagnostics, monitoring of metal condition of equipment and pipelines, technical inspection of equipment and pipelines, analysis of personnel activities at the Belarusian NPP.

The Belarusian NPP State Enterprise has developed and introduced a system for analyzing and using the experience of operating the Belarusian NPP, foreign NPPs and electric power facilities, which can be applied to ensure safe, reliable and efficient operation of the Belarusian NPP.

Safety analysis report of the Belarusian NPP contains the sequence of necessary actions during the NPP decommissioning, assessment of the volumes of generated radioactive waste, and also covers the main stages and time periods of the Belarusian NPP power units decommissioning.

In accordance with the license requirements and conditions and the Instruction on the requirements for the content of the report on the assessment of the current state of safety of a nuclear facility, storage facility, disposal facility or works and (or) services performed, approved by Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 59 of September 6, 2021, a report on the assessment of the current state of safety is prepared and submitted to Gosatomnadzor on an annual basis.

In accordance with the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy”, the operating organization, not later than five years prior to the expiration of the standard operating period established by the NPP project, shall develop the NPP Decommissioning Program, which is subject to coordination with state bodies implementing state regulation in the field of safety in the use of atomic energy, and approval by the body or an official who made the decision on the NPP construction.

RW storage at the Specialized UE “Ecores” is carried out on the basis of a special permit (license) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources, issued by Gosatomnadzor.

The organization has a quality management system “Radioactive Waste Management” DP P QMS 8.5-02-2022, which complies with STB ISO 9001-2015.

To ensure radiation safety in RW management at the Specialized UE “Ecores” the criteria of acceptability of RW for their transfer to the specialized enterprise have been developed. All RW received from organizations for the purpose of long-term storage undergoes incoming control for compliance with the eligibility criteria and is documented in accordance with the legislation.

RW management is carried out in accordance with the Rules and regulations for nuclear and radiation safety “Safety in Radioactive Waste Management. General Provisions” approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 47 of September 28, 2010.

The Specialized UE "Ecores" has developed and complies with operational documentation, including instructions and manuals regulating RW management and personnel actions during normal operation and violations of normal operation.

In accordance with the above-mentioned Rules and regulations, a periodic safety assessment of the specialized enterprise is carried out in order to determine the need to implement technical solutions and organizational measures aimed at improving the level of safety.

The SSI "JIPNR-Sosny" has a special permit (license) for the right to carry out activities in the field of the use of atomic energy and ionizing radiation sources in terms of RW management: RW processing (liquid radioactive waste processing facility). Since the publication of the Seventh National Report, RW reprocessing at the liquid radioactive waste processing facility of the SSI "JIPNR-Sosny" has not been carried out.

RWSF decommissioning is regulated by the Rules and regulations for nuclear and radiation safety "Safety Requirements for the Decommissioning of Radioactive Waste Storage Facilities", approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 25 dated February 22, 2019.

H.7. Institutional Measures after Closure

Article 17. Institutional measures after closure
Each Contracting Party shall take the appropriate steps to ensure that after closure of a disposal facility:
(i) records of the location, design and inventory of that facility required by the regulatory body are preserved;
(ii) active or passive institutional controls such as monitoring or access restrictions are carried out, if required; and
(iii) if, during any period of active institutional control, an unplanned release of radioactive materials into the environment is detected, intervention measures are implemented, if necessary.

In accordance with the Rules and regulations for nuclear and radiation safety "Radioactive Waste Disposal. Principles, Criteria and Basic Safety Requirements", approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 7 of January 20, 2012, the operating organization shall implement systematic planning of activities of RWDF closure at all stages of its life cycle preceding closure. When developing a RWDF project, initial planning of closure activities should be carried out, and current planning should be carried out during its operation. The results of closure planning should be reflected in the RWDF project and its safety analysis report.

RWDF closure activities should be carried out in accordance with the closure program (plan) and the project for RWDF closure developed for the selected closure option.

After the closure of RWDF, the operating organization should conduct periodic radiation monitoring and monitoring of the radioactive waste disposal system, including monitoring the condition of engineering and natural safety barriers, fences and warning signs, the condition of the host rocks and the state of the environment.

Duration of periodic radiation monitoring and monitoring of the RW disposal system is established and justified in the project for RWDF closure depending on the total activity of the disposed RW and their radionuclide composition. Monitoring of the RW disposal system stops when its results confirm safety of the RW disposal system.

In order to determine the radiation impact of the RWDF on the population and the environment after the RWDF closure in the period of potential hazard of disposed radioactive waste, the long-term safety of the facility is assessed. Assessment of the long-term RWDF safety is implemented at all stages of RWDF life cycle, starting with RWDF siting and placement, its design, construction, commissioning and operation, including during reconstruction and modernization, as well as during RWDF closure and in the period after closure.

When assessing the long-term RWDF safety, the existing experience of siting, design, construction and operation of the RWDF under consideration is taken into account, including data from radiation monitoring and monitoring of the radioactive waste disposal system, the results of theoretical and experimental studies and observations, RWDF safety assessments implemented earlier, as well as experience in the siting, design, operation and closure of similar RWDFs and their long-term safety assessment results. Recommendations for assessing the long-term safety of near-surface radioactive waste disposal facilities intended for the disposal of RW belonging to Classes 3 and 4 are given in nuclear and radiation safety Guidelines “Assessing Long-Term Safety of Near-Surface Radioactive Waste Disposal Facilities”, approved by the Head of Gosatomnadzor No. 55 of October 4, 2022.

Decommissioning of RWSF requires meeting the basic principles and general safety requirements established by regulatory legal acts, including mandatory technical regulatory legal acts on ensuring nuclear and radiation safety.

Subject to Rules and regulations for nuclear and radiation safety “Safety Requirements for the Decommissioning of Radioactive Waste Storage Facilities”, decommissioning planning at all stages of the RWSF life cycle preceding its decommissioning, should be implemented through developing and subsequently updating the concept of RWSF decommissioning. At the same time, the history of RWSF operation should be taken into account, including the modernization and (or) replacement of the main systems and equipment of RWSF, repair of buildings and structures of RWSF, results of inspections of technical and radiation condition of RWSF.

Decommissioning of RWSF should be carried out in accordance with RWSF decommissioning program and the design documentation of RWSF decommissioning, developed on the basis of the decommissioning concept.

Requirements for the design documentation in designing RWSF, safety analysis report, and RWSF decommissioning program are established by the Rules and regulations for nuclear and radiation safety “Safety Requirements for the Decommissioning of Radioactive Waste Storage Facilities”. Discrepancies between the information contained in the safety analysis report during RWSF decommissioning and the design documentation for RWSF decommissioning are not allowed.

After completion of all works, the operating organization must ensure that the final inspection of the RWSF is performed to the extent necessary to determine the compliance of the actual state of the RWSF with the final state defined in the RWSF decommissioning program and the design documentation for RWSF decommissioning.

Work on RWSF decommissioning is considered completed only after reaching the specified final state defined in the design documentation for RWSF decommissioning.

Currently, there are no facilities in the Republic of Belarus that have been decommissioned or are at the stage of decommissioning.

Section I. Transboundary Movement

Article 27. Transboundary Movement

1. Each Contracting Party involved in transboundary movement shall take the appropriate steps to ensure that such movement is undertaken in a manner consistent with the provisions of this Convention and relevant binding international instruments.

In so doing:

(i) a Contracting Party which is a State of origin shall take the appropriate steps to ensure that transboundary movement is authorized and takes place only with the prior notification and consent of the State of destination;

(ii) transboundary movement through States of transit shall be subject to those international obligations which are relevant to the particular modes of transport utilized;

(iii) a Contracting Party which is a State of destination shall consent to a transboundary movement only if it has the administrative and technical capacity, as well as the regulatory structure, needed to manage the spent fuel or the radioactive waste in a manner consistent with this Convention;

(iv) a Contracting Party which is a State of origin shall authorize a transboundary movement only if it can satisfy itself in accordance with the consent of the State of destination that the requirements of subparagraph (iii) are met prior to transboundary movement;

(v) a Contracting Party which is a State of origin shall take the appropriate steps to permit re-entry into its territory, if a transboundary movement is not or cannot be completed in conformity with this Article, unless an alternative safe arrangement can be made.

2. A Contracting Party shall not licence the shipment of its spent fuel or radioactive waste to a destination south of latitude 60 degrees South for storage or disposal.

3. Nothing in this Convention prejudices or affects:

(i) the exercise, by ships and aircraft of all States, of maritime, river and air navigation rights and freedoms, as provided for in international law;

(ii) rights of a Contracting Party to which radioactive waste is exported for processing to return, or provide for the return of, the radioactive waste and other products after treatment to the State of origin;

(iii) the right of a Contracting Party to export its spent fuel for reprocessing;

(iv) rights of a Contracting Party to which spent fuel is exported for reprocessing to return, or provide for the return of, radioactive waste and other products resulting from reprocessing operations to the State of origin.

Transboundary movement of ionizing radiation sources, radioactive waste, spent fuel is implemented in accordance with the Laws of the Republic of Belarus “On Radiation Safety”, “On Safety Regulation in the Use of Atomic Energy” and other legislative acts, including legislation on customs regulation, and international treaties of the Republic of Belarus.

Subject to the Law of the Republic of Belarus “On Radiation Safety”, entry of radioactive waste for storage or disposal into the territory of the Republic of Belarus is allowed only for radioactive waste formed in the Republic of Belarus.

The Resolution of the Council of Ministers of the Republic of Belarus “On Certain Issues of the Procedure for the Movement of Certain Types of Goods Across the State Border of the Republic of Belarus” No. 1397 of September 23, 2008, establishes that import and (or) export of IRS, RW, SNF is allowed with appropriate permission of Gosatomnadzor. The Resolution approves the following:

Regulations on the Procedure and Conditions to issue licenses to import to the Republic of Belarus and (or) export from the Republic of Belarus of IRS;

the list of IRS restricted for movement across the State border of the Republic of Belarus for import into the Republic of Belarus and (or) export from the Republic of Belarus.

A permit for transit through the Republic of Belarus or export of spent nuclear fuel from the Republic of Belarus can be issued only on condition that the competent authority of the destination state and the neighboring state has agreed to receive the specified materials and has the appropriate administrative and technical capabilities for this. Transboundary movement of spent fuel of the Belarusian NPP is regulated by the Agreements between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Transportation of Nuclear Materials of November 8, 2021 and on Cooperation in the Field of Spent Nuclear Fuel Management of November 21, 2022.

In accordance with the Regulations on the Procedure for Decision-Making on the Export of a Batch of Irradiated Fuel Assemblies of Nuclear Reactors to the Russian Federation with Subsequent

Return of Radioactive Waste to the Republic of Belarus, approved by the Resolution of the Council of Ministers of the Republic of Belarus No. 492 of July 28, 2023 “On the Implementation of the Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Spent Nuclear Fuel Management”, a permit for SNF export is issued by the Ministry of Energy on the basis of the statement of a special Interdepartmental Commission that will be established to consider the expediency of exporting a batch of SFA to the Russian Federation not later than three years before the first export of SFA for processing to the Russian Federation. At the same time, the Belarusian NPP State Enterprise, as an authorized organization, is required to submit to the Ministry of Energy an application for obtaining such a decision with the following documents attached:

justification of the need to make a decision on export, including an analysis of alternative options for managing SFA batch (if any);

written confirmation from the Russian authorized organization of its readiness to accept SFA for temporary technological storage with subsequent processing;

agreement (contract) between the Belarusian NPP State Enterprise and the Russian authorized organization, defining the basic conditions for export from the Republic of Belarus and import into the Russian Federation of SFA, conditions and procedure for managing regenerated uranium and plutonium formed in the course of SFA processing, conditions, procedure and timing of RW return to the Republic of Belarus;

draft supplementary agreement to the agreement (contract) defining the terms and cost of all stages of SNF processing in the Russian Federation.

To obtain a permit for export of sealed radionuclide sources of Categories 1 and 2 according to the degree of radiation hazard, the applicant should submit to Gosatomnadzor a completed declaration for shipped sealed radionuclide sources. The declaration is filled by the consignee and the competent authority of the consignee country and shall contain:

period of validity of the declaration;

names and contact details of the consignee and consignor;

source description;

information from the consignee if they have a license, authority and other permits to receive a source(s), compliance with the necessary national requirements regarding safe storage, use or sale of sources listed in the declaration;

confirmation by the competent authority of the consignee’s country of acceptance of the declaration.

Resolution of the Council of Ministers of the Republic of Belarus No. 560 of April 30, 2009 “On Approving the Regulations on the Procedure for Interaction of Republican Government Bodies and Other State Bodies (Organizations) upon Detection of Ionizing Radiation Sources, whose Owners Have Not Been Identified, as well as in Cases of Detention of Ionizing Radiation Sources during Import into the Republic of Belarus and (or) Export from the Republic of Belarus” defines goals, objectives and procedure for interaction of state bodies in the detection of IRS, the owners of which have not been identified, as well as in cases of their detention when moving across the state border of the Republic of Belarus.

The State Customs Committee of the Republic of Belarus and the State Border Committee of the Republic of Belarus work to counteract illicit transboundary trafficking of nuclear and radioactive materials at the state border of the Republic of Belarus.

Section J. Disused Sealed Sources

Article 28. Disused Sealed Sources

1. Each Contracting Party shall, in the framework of its national law, take the appropriate steps to ensure that the possession, remanufacturing or disposal of disused sealed sources takes place in a safe manner.

2. A Contracting Party shall allow for reentry into its territory of disused sealed sources if, in the framework of its national law, it has accepted that they be returned to a manufacturer qualified to receive and possess the disused sealed sources.

Sealed IRS not intended for further use are considered as RW in the Republic of Belarus.

Operation of sealed IRS is allowed only during the designated or extended operating lifetime beyond the designated operating lifetime of IRS. Upon expiration of the designated operating lifetime of the sealed IRS its use or storage should be discontinued.

In justified cases, while maintaining radiation parameters within limits satisfying the IRS user, maintaining tightness and the absence of detectable defects, as well as their signs, it is allowed to consider extending the IRS service life. To solve this issue, the IRS user shall organize testing of the sealed IRS by organizations possessing qualified employees, as well as the necessary methods and technologies, including the methodology for performing work to extend the IRS operating lifetime. As of January 5, 2024, performing a set of works to extend the operating lifetime of the sealed IRS is a type of work for which a special permit (license) is required for the right to implement activities in the field of the use of atomic energy and ionizing radiation sources (Paragraph 11 of Annex 1 to the Regulations on Licensing Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources, approved by the Decree of the President of the Republic of Belarus “On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources”, Paragraph 9 of Annex 1 to the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 59 of November 15, 2023 “On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources”). The issue of potential extension of the sealed IRS operation is reviewed by a commission composed of representatives of the IRS user and the bodies exercising state supervision in the field of radiation safety, and if the sealed IRS was manufactured in the Republic of Belarus – by a representative of the manufacturer as well.

The Law of the Republic of Belarus “On Radiation Safety” defines the obligation of the IRS user after making a decision to terminate the operation of the sealed IRS, ensure the return of such IRS to the manufacturer (producer) or seller (supplier) in accordance with the terms of the contract, or transfer it on a contractual basis for processing, long-term storage or disposal. Temporary storage of spent sealed IRS on the IRS user territory is allowed for a period of not more than 1 (one) year after the expiration of the designated operating lifetime or additional operating lifetime of the sealed IRS (Paragraph 107 of the Rules and regulations for nuclear and radiation safety “Safety in Ionizing Radiation Sources Management. General Provisions” approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 42 of October 19, 2020).

The Closed Belarusian-Russian Joint Stock Company “Isotope Technologies” supplies IRS outside the territory of the Republic of Belarus. The current practice envisages the return of disused sealed IRS to the manufacturer in the Republic of Belarus which complies with the provisions of the Code of Conduct on Safety and Security of Radioactive Sources, to which the Republic of Belarus has joined, as well as Guidelines for the Management of Disused Radioactive Sources and the Manual for the Management of Disused Radioactive Sources.

Long-term storage of the sealed IRS after their decommissioning is performed at the Specialized UE “Ekores”.

Section K. General Efforts to Improve Safety

The current system of the Republic of Belarus to ensure safety of RW and SNF management continues to improve given the IAEA recommendations and the international best practices.

On the part of the Government of the Republic of Belarus, the regulatory body in the field of nuclear and radiation safety and other state bodies and organizations involved, the consistent actions and efforts, financial and other means for its development are planned and implemented.

The tasks, the relevance of which was noted at the Seventh Meeting of Contracting Parties, include the need to develop a RW management strategy, to implement its first phase, to improve all elements of the infrastructure for RW management, including the establishment and development of a national operator for RW management.

The current state of affairs shows that the country is taking effective and appropriate measures to achieve the set objectives.

The Republic of Belarus, in cooperation with the nuclear technology supplier country, is continuously and sustainably developing its safety infrastructure.

By the decision of the CIS Economic Council, TVEL Joint Stock Company (the management company of Rosatom Fuel Company TVEL, Russian Federation) was given the status of a Basic Organization of the CIS member states on the issues of spent nuclear fuel and radioactive waste management and decommissioning of nuclear and radiation hazardous facilities.

In its activities, the Basic Organization is guided by the CIS basic documents which define the main areas of cooperation, and in terms of atomic energy – by provisions of the Framework Program of Cooperation of the CIS Member States in the field of Peaceful Use of Atomic Energy for the Period up to 2030, and the Action Plan for the Implementation of its First Stage (2021 – 2025), approved by the Decision of the Council of Heads of Government of the CIS of November 6, 2020.

The Basic Organization was created in order to develop proposals for authorized bodies on the formation, monitoring and implementation of environmentally sound strategies for technological development and innovation policy on these issues in the CIS Member States.

The main areas of activities of the Basic Organization are:

organization of interstate information exchange (scientific, technical, methodological information, etc.) in the field of SNF, RW management, decommissioning of nuclear and radiation hazardous facilities;

assistance in implementing joint projects and programs aimed at improving safety of the final stage of the life cycle of facilities for the peaceful use of atomic energy, the development of cooperation between the CIS Member States in the field of the final stage of the nuclear fuel cycle;

providing information to public administration and regulatory bodies, as well as relevant organizations of the CIS Member States in the field of peaceful use of atomic energy on a non-commercial basis;

professional retraining and advanced training of personnel in the field of SNF, RW management and decommissioning of nuclear and radiation hazardous facilities;

assistance in implementing integrated projects and programs for RW and SNF management, decommissioning of nuclear and radiation hazardous facilities, including decommissioning of radiation sources, storage facilities for nuclear materials, radioactive substances and radioactive waste in the CIS Member States;

assistance in the construction and operation of storage facilities for nuclear materials, radioactive substances and radioactive waste, including SNF repositories on the territories of the CIS Member States;

exchange, consolidation and systematization of scientific and technical knowledge in the field of SNF, RW management and decommissioning of nuclear and radiation hazardous facilities;

implementation of expert and assessment activities in relation to nuclear and radiation hazardous facilities and nuclear fuel cycle production facilities;

study, generalization and dissemination of best practices in the field of SNF, RW management and decommissioning of nuclear and radiation hazardous facilities.

As part of the work of the Basic Organization, 5 expert groups of representatives from the CIS Member States have been established and are working:

Expert Group No. 1 “Development of Proposals for Implementation of Projects at SNF, RW Facilities and Decommissioning of Nuclear and Radiation Hazardous Facilities of the CIS Member States”;

Expert Group No. 2 “Development of a Document on Cooperation between the CIS Member States on RW Management and Decommissioning of Nuclear and Radiation Hazardous Facilities”;

Expert Group No. 3 “Issues of Unification and Harmonization of Documents in the Field of Legal, Regulatory and Technical Regulation of the CIS Member States”;

Expert group No. 4 “Promising Directions for Development of Technical Solutions and Technologies for RW and SNF Management and Decommissioning of Nuclear and Radiation Hazardous Facilities”;

Expert group No. 5 “Development and Implementation of Professional Training and Retraining Programs for Personnel in the Field of RW and SNF Management and Decommissioning of Nuclear and Radiation Hazardous Facilities”.

Representatives of the Republic of Belarus take part in the work of each group.

Brief information on the measures taken by the country to implement the proposals noted during the review of the seventh National Report of the Republic of Belarus on the implementation of the Convention.

Further development of the regulatory legal framework

The Republic of Belarus has continued to improve the regulatory legal framework in the field of RW and SNF management, including in accordance with the recommendations of the IAEA guidance documents.

A comprehensive Resolution of the Government of the Republic of Belarus No. 497 of August 21, 2020 “On Implementing the Law of the Republic of Belarus No. 198-Z of June 18, 2019 “On Radiation Safety” was prepared and adopted.

On October 14, 2023, the Law of the Republic of Belarus “On Safety Regulation in the Use of Atomic Energy” came into force; Government resolutions and decrees of State administration bodies have been drafted and approved in furtherance of its provisions.

The Decree of the President of the Republic of Belarus “On Improving the Radioactive Waste Management System” has been adopted, providing for the creation of a state management body in the field of radioactive waste management, as well as the creation, provision and operation of a system for long-term RW storage and disposal.

The Decree of the President of the Republic of Belarus “On the Organization of the Radioactive Waste Management System” has been adopted.

The Deputy Prime Minister of the Republic of Belarus has approved a Plan of basic organizational measures for the construction of a radioactive waste disposal facility.

Technical regulatory legal acts establishing safety requirements for RW management have been prepared and put into effect:

Rules and regulations for nuclear and radiation safety “Safety Requirements for Decommissioning of Radioactive Waste Storage Facilities”;

Rules and regulations for nuclear and radiation safety “Safety in Nuclear Material Management. Requirements for Accounting and Control of Nuclear Material and Ensuring the State Safeguards System Operation”;

Rules and regulations for nuclear and radiation safety “Criteria for the Acceptability of Radioactive Waste for Disposal”;

Rules and regulations for nuclear and radiation safety “Near-Surface Disposal of Radioactive Waste. Safety Requirements”;

Rules and regulations for nuclear and radiation safety “Siting of Nuclear Materials Storage Facilities, Radioactive Waste Storage Facilities, Radioactive Waste Disposal Facilities” and others.

In order to implement the requirements established in the rules and regulations for nuclear and radiation safety, Gosatomnadzor has developed and approved guidelines on nuclear and radiation safety “Siting of Near-Surface Radioactive Waste Disposal Facility” and “Assessment of Long-Term Safety of Near-Surface Radioactive Waste Disposal Facilities”.

Improving the safety of the Specialized UE “Ekores”

In 2021, CERS of “Stavrida” and “LMB-Gamma-1M” gamma installations stored at the Specialized UE “Ekores” was implemented.

In the period from 2021 to 2023, a set of measures aimed at improving radiation safety of the Specialized UE “Ekores” was implemented. An urgent task to improve safety of the Specialized UE “Ekores” is to perform works on RW removal from the first and second generation repositories in order to further transfer them to a safe state through processing and conditioning. The list of measures taken to improve the level of radiation safety of the RW repositories of the Specialized UE “Ekores” is given in Appendix 8.

By the decision of the Council of Ministers of the Republic of Belarus, the SSI “JIPNR – Sosny” is defined as an organization for scientific support of work in RW removal from old repositories.

Construction of a near-surface radioactive waste disposal facility

On the basis of reference technologies and existing projects, a conceptual design has been developed for the disposal facility for VLLW, LLW and short-lived ILW, the generation of which will be conditioned by the operation and decommissioning of the Belarusian NPP. As part of the RWDF conceptual design, model solutions have been developed without reference to a specific location of the facility, but taking into account the engineering and geological conditions in the areas where competitive and optimal RWDF sites are located.

For the proposed conceptual design, an assessment of radiation safety of RWDF during its operation and long-term safety after its closure (in the post-operational period) was performed in accordance with possible scenarios of the evolution of disposal facilities. A list of possible accidents at the RWDF and necessary emergency measures has been determined; limits of the RWDF safe operation in terms of radionuclides emissions and discharge were justified. Proposals for the organization of a radiation control and monitoring system for the RW disposal in the course of the RWDF operation and in the post-operational period were given.

The performed predictive calculation assessment of the long-term safety of RW disposal system after the RWDF closure has shown that the proposed RWDF concept would ensure safety of RW disposal during the period of their potential hazard, taking into account possible external impacts of natural and man-made origin.

An assessment of the enlarged technical and economic indicators of the proposed RWDF project as a whole and its first phase was performed.

Based on the results of developing the RWDF technical concept, a schematic diagram of the organization of work on the construction of this facility (including by phases), as well as a draft terms of reference for the development of the investment feasibility in RWDF creation, has been developed.

Establishment of a procedure for public consultations on radioactive waste and spent nuclear fuel management facilities

The Law of the Republic of Belarus "On Safety Regulation in the Use of Atomic Energy" establishes that legal entities and individuals have the right to participate in public discussion of projects of environmentally significant decisions, environmental reports on strategic environmental assessment, environmental impact assessment reports on nuclear facilities, issues of siting, design, construction, operation of nuclear facility and (or) RWSF, RWDF and decommissioning of nuclear facility and (or) RWSF, RWDF closing.

The Law of the Republic of Belarus No. 1982-XII of November 26, 1992 "On Environmental Protection" enshrines the definition of public discussions of drafts of environmentally significant decisions, environmental impact assessment reports, environmental reports on strategic environmental assessment, being a set of mandatory measures to ensure informing legal entities and individuals, including individual entrepreneurs, about drafts of environmentally significant solutions, environmental impact assessment reports, environmental reports on strategic environmental assessment, as well as the opportunity for participants of public discussions to express their attitude to these projects, reports, statements in order to take into account public interests and respect the rights of legal entities and individuals, including individual entrepreneurs.

Article 18 of the Law of the Republic of Belarus "On Environmental Protection" (the new version of the Law came into force on April 26, 2024) establishes a list of projects of environmentally significant decisions submitted for public discussion, including concepts, programs, plans, strategies, schemes, regional complexes of measures, the implementation of which has an impact on the environment and (or) related to the use of natural resources, as well as amendments and additions thereto not being of a technical nature, as well as regulatory legal acts in terms of provisions aimed at regulating relations related to the implementation of economic and other activities related to environmentally hazardous in accordance with the criteria for classifying economic and other activities, which has a harmful effect on the environment, to environmentally hazardous activities established by the President of the Republic of Belarus, and others.

If, in accordance with the legislation in the field of state environmental expertise, strategic environmental assessment and environmental impact assessment are implemented regarding facilities, reports on environmental impact assessment and environmental reports on strategic environmental assessment are also subject to public discussion. Conducting the state environmental expertise, strategic environmental assessment and environmental impact assessment of planned economic and other activities is regulated by the Law of the Republic of Belarus No. 399-Z of July 18, 2016 "On State Environmental Expertise, Strategic Environmental Assessment, and Environmental Impact Assessment", as indicated in Sections H.3 and H.5.

The procedure for conducting the state environmental expertise, including requirements for the composition of documentation submitted for the state environmental expertise, the opinion of the state environmental expertise, the procedure for its approval and (or) cancellation, special conditions for the implementation of design decisions, as well as requirements for specialists implementing the state environmental expertise is established by the Resolution of the Council of Ministers of the Republic of Belarus No. 458 of June 14, 2016.

The procedure for conducting public (or professional) discussion of draft regulatory legal acts is enshrined in the Resolution of the Council of Ministers of the Republic of Belarus No. 56 of January 28, 2019 “On Public Discussion of Draft Regulatory Legal Acts”, which provides for the procedure for public participation in the consideration of a draft regulatory legal act, a list of objects and organizers of public discussion, the procedure for submitting comments and (or) proposals for the specified project and taking into account public opinion, as well as regulates other issues.

Public discussion of draft regulatory legal acts is made on the global computer network Internet on the website “Legal Forum of Belarus”. The specified regulatory legal act provides for the possibility of public participation through parliamentary hearings in accordance with the regulations of the Chambers of the National Assembly of the Republic of Belarus, in the mass media and in other ways that do not contradict legislation, including through meetings of scientific, advisory, public councils under state bodies. Comments and (or) proposals on the draft regulatory legal act are submitted in writing or electronically.

Within the framework of the above-mentioned regulatory legal acts, public discussions were held on the draft Strategy of Radioactive Waste Management, as indicated in Section B.3.

The Law of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy” established that at the stage of decision-making on regulating activities in the field of safety in the use of atomic energy affecting the safety of the Belarusian NPP, Gosatomnadzor shall conduct public hearings.

Procedure for organizing and conducting public hearings at the stage of decision-making on issuing a special permit (license) to the operating organization for siting, construction, operation of nuclear facility and (or) RWSF, RWDF, decommissioning of nuclear facility and (or) RWSF, closure of RWDF, as well as cases of public hearings, is determined by the relevant Regulations. This Regulations has been developed in accordance with the IAEA document SSG-12 “Licensing Process of Nuclear Facilities”.

Development and approval of strategies of radioactive waste and spent nuclear fuel management

In the Republic of Belarus, three strategies of radioactive waste and spent nuclear fuel management have been developed and approved:

Strategy of radioactive waste management of the Belarusian Nuclear Power Plant (Resolution of the Council of Ministers of the Republic of Belarus No. 460 of June 2, 2015);

Strategy of spent nuclear fuel management of the Belarusian Nuclear Power Plant (Resolution of the Council of Ministers of the Republic of Belarus No. 558 of August 22, 2019);

Strategy of Radioactive Waste Management (Resolution of the Council of Ministers of the Republic of Belarus No. 128 of February 15, 2023).

These documents reflect a general analysis of the RW and SNF management system in the Republic of Belarus, as well as establish the concept of official views and approaches for making management decisions in order to ensure safe, technically optimal and economically efficient RW management.

The listed strategies contain a list of short- and long-term measures aimed at achieving the goals defined by these documents.

The Republic of Belarus plans to ensure the implementation of these priority areas through the implementation of existing republican programs in the field of nuclear and radiation safety, interaction between involved public administration bodies, as well as international cooperation with partner countries and international organizations.

In order to put into practice the principles of openness, transparency and publicity on nuclear

and radiation safety, Gosatomnadzor informs the interested public through its website (https://gosatomnadzor.mchs.gov.by/en), mass media and other channels in accordance with its Information and Communication Strategy (the document was adopted in 2013 and updated in 2021).

The website also contains national reports of the Republic of Belarus on the fulfillment of its obligations under the Joint Convention and the Convention on Nuclear Safety, annual reviews of the state of nuclear and radiation safety in the Republic of Belarus, regulatory legal acts, other important documents and information.

As a country implementing its first nuclear power program, Belarus has widely used the tools of international assessment missions, primarily IAEA missions, and peer reviews to obtain expert recommendations on further enhancing nuclear and radiation safety and its individual components based on best international experience and practices.

The Republic of Belarus has accepted all the key IAEA missions that the IAEA recommends to a newcomer country. Inviting each of these missions is a voluntary decision of the country.

The Republic of Belarus has accepted the following IAEA missions: Integrated Nuclear Infrastructure Review (INIR) (twice, in 2012 and 2020); Integrated Regulatory Review Service (IRRS) (in 2016 and the follow-up mission in 2021); Site and External Events Design Review Service (SEED) (2017); Emergency Preparedness Review (EPREV) (2018); State System of Accountancy and Control of Nuclear Material Mission (ISSAS) (2019); Pre-Operational Safety Review Team (pre-OSART) (2019, follow-up mission in 2021); International Physical Protection Advisory Service (IPPAS) (2021). In 2016-2018, Belarus voluntarily conducted stress tests of the Belarusian NPP according to the European procedure.

Following each mission, the proposals and recommendations of international experts became the basis for a corresponding action plan aimed at improving nuclear and radiation safety infrastructure and its individual components. In addition, the experts noted good practices and areas of successful work available in the country, which are further recommended for use by other countries.

In the context of the forthcoming site selection and construction of a radioactive waste disposal facility, the IAEA Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) is being considered.

* * *

The article-by-article review of the implementation of the provisions of the Joint Convention presented in this National Report shows that the Republic of Belarus fulfills all its obligations under the Joint Convention and follows the fundamental safety principles enshrined in the main directions of the unified State policy in the field of nuclear and radiation safety.

Appendix 1

Amount of RW received for long-term storage at the Specialized UE "Ekores" in the period from 2021 to 2023

Information about spent sealed radionuclide sources received for storage at the Specialized UE "Ekores" in 2021 – 2023

Year	Quantity, pcs.	Total activity, Bq
2021	1495	4.66×10^{15}
2022	1434	1.27×10^{16}
2023	2040	4.24×10^{15}

Information about solid radioactive waste received for storage at the Specialized UE "Ekores" in 2021 – 2023

Year	Quantity, kg	Main radionuclides	Total activity, Bq
2021	9110	Co-60, Cs-137, Ir-192, Ra-226	1.26×10^{13}
2022	1280	Co-60, Cs-137, Ir-192, Ra-226	4.92×10^{11}
2023	4038	Co-60, Cs-137, Ir-192, Ra-226	1.47×10^{13}

Appendix 2

**Amount of SRW placed for storage
in RWSF of the Belarusian NPP in the period from 2021 to 2023**

Year	RW Quantity, m^3	Main radionuclides	Total activity, Bq
2021	9.2	Mn-54, Cr-51, Co-58, Fe-59, Co-60, Nb-95, Zr-95	2.77×10^8
2022	62.2	Mn-54, Cr-51, Co-58, Fe-59, Co-60, Nb-95, Zr-95	8.65×10^{11}
2023	57.1	Mn-54, Cr-51, Co-58, Fe-59, Co-60, Nb-95 Zr-95, Sb-124	5.53×10^{15}

Appendix 3

**Summarized data on the inventory of decontamination waste
of Chernobyl origin at DWDF-II**

Quantity and location	4 – Gomel region 4 – Mogilev region 1 – Brest region
Total area of land allotment, m^2	315,200
Total design capacity, m^3	244,465
Total waste activity for Cs-137, Bq	18.195×10^{11}
Total waste amount, thousand tons	243.6

Appendix 4

List of regulatory legal acts of the Republic of Belarus in the field of nuclear and radiation safety regulating SNF and RW management

International treaties of the Republic of Belarus

Conventions

1. Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. Ratified by the Decree of the Presidium of the Supreme Council of the Republic of Belarus No. 1216-XI of December 18, 1986.
2. Convention on the Physical Protection of Nuclear Material. Resolution of the Presidium of the Supreme Council No. 2381-XII of June 14, 1993 “On the Succession of the Republic of Belarus in Relation to the Convention on the Physical Protection of Nuclear Material”. The Law of the Republic of Belarus No. 265-Z of May 5, 2023 ratified the Amendment to the Convention on the Physical Protection of Nuclear Material.
3. Vienna Convention on Civil Liability for Nuclear Damage. Ratified by the Law of the Republic of Belarus No. 76-Z of November 11, 1997.
4. Convention on Nuclear Safety. Accession by the Decree of the President of the Republic of Belarus No. 430 of September 2, 1998 “On the Accession of the Republic of Belarus to the Convention on Nuclear Safety”.
5. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. Ratified by the Law of the Republic of Belarus No. 130-Z of July 17, 2002.
6. Convention on Environmental Impact Assessment in a Transboundary Context. Adopted by Decree of the President of the Republic of Belarus No. 487 of October 20, 2005 “On the Adoption by the Republic of Belarus of the Convention on Environmental Impact Assessment in a Transboundary Context”.
7. The Treaty on the Non-Proliferation of Nuclear Weapons of July 1, 1968. The Republic of Belarus acceded the Treaty by the Resolution of the Supreme Council of the Republic of Belarus No. 2166-XII of February 4, 1993.

Agreements and treaties

8. Agreement between the Government of the Republic of Belarus and the Government of the Republic of Poland on Prompt Notification of Nuclear Accidents and Cooperation in the Area of Radiation Safety of October 26, 1994.
9. Agreement of 14 April 1995 between the Republic of Belarus and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons.
10. Agreement between the Government of the Republic of Belarus and the Government of the Republic of Austria on Exchange of Information in the Field of Nuclear Safety and Protection from Ionizing Radiation of June 9, 2000.
11. Agreement between the Government of the Republic of Belarus and the Cabinet of Ministers of Ukraine on Prompt Notification of Nuclear Accident and Cooperation in the Area of Nuclear Safety of October 16, 1994.

12. Agreement on Mutual Assistance in Cases of Accidents and Other Emergencies at Electric Power Facilities of the Commonwealth of Independent States Member States of May 30, 2002.

13. Agreement between the Government of the Republic of Belarus and the Government of the Republic of Latvia on Cooperation in the Area of Prevention of Catastrophes, Natural Disasters and Other Emergencies and Elimination of their Consequences of July 8, 2003.

14. Agreement between the Government of the Republic of Belarus and the Government of the Republic of Latvia on Prompt Notification of Nuclear Accidents, Information Exchange and Cooperation in the Field of Nuclear Safety and Radiation Protection (entered into force on September 3, 2018).

15. Agreement on Exchange of Information on Emergencies of Natural and Man-Made Origin, on Information Exchange in the Elimination of their Consequences and Assistance to the Affected Population of September 18, 2003. Signed by the Commonwealth of Independent States Member States represented by the Governments.

16. Agreement between the Government of the Republic of Belarus and the Government of the Republic of Lithuania on Cooperation in the Field of Prevention of Catastrophes, Natural Disasters and Major Accidents, as well as the Elimination of their Consequences. Signed in Vilnius on December 16, 2003. Entered into force on July 27, 2004. Ratified by the Law of the Republic of Belarus No. 296-Z of July 5, 2004 “On Ratification of the Agreement between the Government of the Republic of Belarus and the Government of the Republic of Lithuania on Cooperation in the Field of Prevention of Catastrophes, Natural Disasters and Major Accidents, as well as the Elimination of their Consequences”.

17. Agreement between the Government of the Republic of Belarus and the Government of the People's Republic of China on Cooperation in the Peaceful Use of Atomic Energy (2008).

18. Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Peaceful Use of Atomic Energy (2009).

19. Agreement on the Customs Code of the Eurasian Economic Union (signed in Moscow on April 11, 2017).

20. Decision of the Customs Union Commission No. 240 of April 16, 2010 “On the Control Over the Movement of Ionizing Radiation Sources” (adopted in Moscow on April 16, 2010).

21. Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Construction of a Nuclear Power Plant on the Territory of the Republic of Belarus of March 15, 2011.

22. Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Nuclear Safety of February 1, 2013.

23. Agreement between the Government of the Republic of Belarus and the Government of the Republic of Armenia on Information Exchange and Cooperation in the Field of Nuclear Safety and Radiation Protection (2013).

24. Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Prompt Notification of a Nuclear Accident and Information Exchange in the Field of Nuclear and Radiation Safety of December 13, 2013.

25. Agreement between the Ministry for Emergency Situations of the Republic of Belarus and the State Nuclear Power Safety Inspectorate of the Republic of Lithuania on Prompt Notification of a Nuclear Accident and Exchange of Information on Nuclear Facilities and Nuclear Activities (signed on May 8, 2020, entered into force on May 25, 2020).

26. Agreement between the Ministry for Emergency Situations of the Republic of Belarus and the Federal Environmental, Industrial, and Nuclear Supervision Service of the Russian Federation on

Cooperation in the Regulation of Nuclear and Radiation Safety in the Use of Atomic Energy (signed on December 20, 2013).

27. Agreement between the Ministry for Emergency Situations of the Republic of Belarus and the State Committee of Industrial Safety of the Republic of Uzbekistan on Cooperation in the Field of Industrial, Nuclear and Radiation Safety in the Use of Atomic Energy (signed on December 27, 2021).

28. Memorandum of Understanding between the Ministry for Emergency Situations of the Republic of Belarus and the UAE Federal Authority for Nuclear Regulation (FANR) on Cooperation, Training and Exchange of Information in the Field of Prevention and Response to Nuclear and Radiation Emergencies, Radiation Safety and Regulatory Activities (signed on July 31, 2020).

29. Memorandum of Understanding between the Department for Nuclear and Radiation Safety of the Ministry for Emergency Situations of the Republic of Belarus and the Nuclear Regulatory Authority of the Republic of Turkey on Cooperation and Information Exchange in the Field of Nuclear Safety and Radiation Protection (signed on August 17, 2020).

30. Memorandum of Understanding between the Ministry for Emergency Situations of the Republic of Belarus and the Hungarian Atomic Energy Authority in the Field of Peaceful Use of Atomic Energy (signed on September 26, 2016).

31. Memorandum of Understanding between the Ministry for Emergency Situations of the Republic of Belarus and the Nuclear Regulatory Authority of the Slovak Republic on Information Exchange and Cooperation in the Field of State Regulation of Nuclear Safety (signed on April 28, 2017).

32. Memorandum of Understanding between the Ministry for Emergency Situations of the Republic of Belarus and the Slovenian Nuclear Safety Administration on the Exchange of Information on Nuclear and Radiation Safety (signed on November 8, 2018).

33. Memorandum of Understanding between the Ministry for Emergency Situations of the Republic of Belarus and the Norwegian Radiation Protection Agency (NRPA), the Finnish Radiation and Nuclear Safety Authority (STUK) and the Swedish Radiation Safety Authority (SSM) on Cooperation and Information Exchange (signed on September 28, 2016).

34. Memorandum of Understanding between the Department for Nuclear and Radiation Safety of the Ministry for Emergency Situations of the Republic of Belarus and the Vietnam Agency for Radiation and Nuclear Safety (VARANS) on Cooperation and Information Exchange in the Field of Nuclear Safety and Radiation Protection (signed on December 7, 2023).

35. Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Transportation of Nuclear Materials (signed on November 8, 2021, entered into force on May 17, 2022).

36. Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Field of Spent Nuclear Fuel Management (signed on November 21, 2022, entered into force on May 22, 2023).

Legislative acts

Codes and Laws of the Republic of Belarus

1. Law of the Republic of Belarus No. 141-Z of May 5, 1998 “On Protection of the Population and Territories from Emergencies of Natural and Man-Made Origin”.
2. Criminal Code of the Republic of Belarus No. 275-Z. of July 9, 1999.
3. Law of the Republic of Belarus No. 32-Z of June 6, 2001 “On the Transportation of Dangerous Goods”.

4. Code of the Republic of Belarus on Administrative Offences No. 91-Z of January 6, 2021.
5. Law of the Republic of Belarus No. 262-Z of January 5, 2004 “On Technical Regulation and Standardization”.
6. Law of the Republic of Belarus No. 340-Z of January 7, 2012 “On Sanitary and Epidemiological Welfare of the Population”.
7. Law of the Republic of Belarus No. 385-Z of May 26, 2012 “On Legal Regime of Territories Subjected to Radioactive Contamination as a Result of the Catastrophe at the Chernobyl NPP”.
8. Law of the Republic of Belarus No. 363-Z of May 11, 2016 “On Export Control”.
9. Law of the Republic of Belarus No. 399-Z of July 18, 2016 “On State Environmental Expertise, Strategic Environmental Assessment and Environmental Impact Assessment”.
10. Law of the Republic of Belarus No. 198-Z of June 18, 2019 “On Radiation Safety”.
11. Law of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy”.
12. Law of the Republic of Belarus No. 265-Z of May 5, 2023 “On Ratification of the Amendment to the Convention on the Physical Protection of Nuclear Material”.

Decrees of the President of the Republic of Belarus

13. Decree of the President of the Republic of Belarus No. 565 of November 12, 2007 “On Some Measures for the Construction of a Nuclear Power Plant”.
14. Decree of the President of the Republic of Belarus No. 279 of May 28, 2010 “On Determination of the State Body Responsible for the Implementation of Obligations under Certain International Agreements”.
15. Decree of the President of the Republic of Belarus No. 124 of March 29, 2011 “On Measures to Implement International Agreements in the Field of Civil Liability for Nuclear Damage”.
16. Decree of the President of the Republic of Belarus No. 418 of September 15, 2011 “On Siting and Design of the Nuclear Power Plant in the Republic of Belarus”.
17. Decree of the President of the Republic of Belarus No. 499 of November 2, 2013 “On the Construction of the Belarusian Nuclear Power Plant”.
18. Decree of the President of the Republic No. 62 of February 16, 2015 “On Safety Assurance during the Construction and Operation of the Belarusian Nuclear Power Plant”.
19. Decree of the President of the Republic of Belarus No. 361 of October 5, 2017 “On the Establishment of an Institution”.
20. Decree of the President of the Republic of Belarus No. 32 of January 26, 2021 “On the Funds of the Belarusian Nuclear Power Plant”.
21. Decree of the President of the Republic of Belarus No. 137 of April 5, 2021 “On Regulation of Activities in the Field of the Use of Atomic Energy and Ionizing Radiation Sources”.
22. Decree of the President of the Republic of Belarus No. 427 of November 2, 2021 “On Improving the Radioactive Waste Management System”.
23. Decree of the President of the Republic of Belarus No. 405 of November 14, 2022 “On the Ministry for Emergency Situations”.
24. Decree of the President of the Republic of Belarus No. 101 of April 12, 2023 “On the Organization of the Radioactive Waste Management System”.

Regulatory legal acts of the Government of the Republic of Belarus

25. Resolution of the Council of Ministers No. 495 of April 10, 2001 “On the State System of Prevention and Liquidation of Emergency Situations”.

26. Resolution of the Council of Ministers of the Republic of Belarus No. 576 of May 17, 2004 “On Radiation Monitoring and the Use of its Data”.

27. Resolution of the Council of Ministers of the Republic of Belarus No. 1397 of September 23, 2008 “On Certain Issues of the Procedure for the Movement of Certain Types of Goods Across the State Border of the Republic of Belarus”.

28. Resolution of the Council of Ministers of the Republic of Belarus No. 411 of April 2, 2009 “On the Procedure for Coordination, Establishment and Marking of the Boundaries of the Sanitary Protection Zone, Surveillance Zone of Nuclear Facility and (or) Storage Facility, Disposal Facility, and Requirements for their Protection and Use”.

29. Resolution of the Council of Ministers of the Republic of Belarus No. 560 of April 30, 2009 “On Approving the Regulations on the Procedure for Interaction of Republican Government Bodies and Other State Bodies (Organizations) upon Detection of Ionizing Radiation Sources, whose Owners Have Not Been Identified, as well as in Cases of Detention of Ionizing Radiation Sources during Import into the Republic of Belarus and (or) Export from the Republic of Belarus”.

30. Resolution of the Council of Ministers of the Republic of Belarus No. 561 of April 30, 2009 “On the National Commission of Belarus for Radiation Protection under the Council of Ministers of the Republic of Belarus”.

31. Resolution of the Council of Ministers of the Republic of Belarus No. 1109 dated December 3, 2012 “On Approving the Regulations on the Procedure for Issuing Permits for the Disposal of Radioactive Waste Resulted from the Chernobyl Disaster, as well as Other Waste, Products, Materials and Other Substances Contaminated with Radionuclides as a Result of the Chernobyl Disaster below the Level Established by Regulatory Legal Acts, including Technical Regulatory Legal Acts for Radioactive Waste”.

32. Resolution of the Council of Ministers of the Republic of Belarus No. 133 of February 25, 2015 “On Approving the Regulations on the Organization and Implementation of Control (Supervision) over Safety during the Construction and Commissioning of the Belarusian Nuclear Power Plant”.

33. Resolution of the Council of Ministers of the Republic of Belarus No. 854 of October 14, 2015 “On the Issue of Permits to Implement Activities on the Use of Atomic Energy”.

34. Resolution of the Council of Ministers of the Republic of Belarus No. 460 of June 02, 2015 “On Approving the Strategy of Radioactive Waste Management of the Belarusian Nuclear Power Plant”.

35. Resolution of the Council of Ministers of the Republic of Belarus No. 458 of June 14, 2016 “On Approving the Regulations on the Procedure for Organizing and Conducting Public Discussions of Drafts of Environmentally Significant Decisions, Environmental Reports on Strategic Environmental Assessment, Environmental Impact Assessment Reports, Accounting for Environmentally Significant Decisions Taken”.

36. Resolution of the Council of Ministers of the Republic of Belarus No. 479 of June 21, 2016 “On Approving the Concept of Creating a System of Situational Crisis Centers in the Republic of Belarus”.

37. Resolution of the Council of Ministers of the Republic of Belarus No. 47 of January 19, 2017 “On the State Environmental Expertise, Environmental Impact Assessment and Strategic Environmental Assessment”.

38. Resolution of the Council of Ministers of the Republic of Belarus No. 211 of March 22,

2018 “On Approving the Action Plan to Protect Population from Nuclear and Radiation Accidents”.

39. Resolution of the Council of Ministers of the Republic of Belarus No. 168 of March 24, 2020 “On Approving Specific Sanitary and Epidemiological Requirements”.

40. Resolution of the Council of Ministers of the Republic of Belarus No. 258 of April 24, 2019 “On Approving the Regulations on Public Hearings on Safety Regulation of Nuclear Facility and (or) Storage Facility, Disposal Facility”.

41. Resolution of the Council of Ministers of the Republic of Belarus No. 443 of July 29, 2020 "On the Radiation and Hygiene Passport of the User of Ionizing Radiation Sources".

42. Resolution of the Council of Ministers of the Republic of Belarus No. 558 of August 22, 2019 “On Approving the Strategy of Radioactive Waste Management of the Belarusian Nuclear Power Plant”.

43. Resolution of the Council of Ministers of the Republic of Belarus No. 497 of August 21, 2020 “On Implementing the Law of the Republic of Belarus No. 198-Z of June 18, 2019 “On Radiation Safety”.

44. Resolution of the Council of Ministers of the Republic of Belarus No. 37 of January 25, 2021 “On Approving Hygienic Standards”.

45. Resolution of the Council of Ministers of the Republic of Belarus No. 159 of March 22, 2021 “On the State Program for Overcoming the Consequences of the Catastrophe at the Chernobyl Nuclear Power Plant for 2021 – 2025”.

46. Resolution of the Council of Ministers of the Republic of Belarus No. 245 of April 23, 2021 “On the State Program “High Technology and Equipment” for 2021 – 2025”.

47. Resolution of the Council of Ministers of the Republic of Belarus No. 548 of September 24, 2021 “On Administrative Procedures Implemented in Relation to Business Entities”.

48. Resolution of the Council of Ministers of the Republic of Belarus No. 558 of October 6, 2021 “On Implementing the Decree of the President of the Republic of Belarus No. 137 of April 5, 2021”.

49. Resolution of the Council of Ministers of the Republic of Belarus No. 128 of February 15, 2023 “On the Strategy of Radioactive Waste Management”.

50. Resolution of the Council of Ministers of the Republic of Belarus No. 535 of August 15, 2023 “On Main Directions of Implementing the Unified State Policy in the Field of Nuclear and Radiation Safety”.

51. Resolution of the Council of Ministers of the Republic of Belarus No. 668 of October 9, 2023 “On Implementing the Law of the Republic of Belarus No. 208-Z of October 10, 2022 “On Safety Regulation in the Use of Atomic Energy”.

Regulatory legal acts of ministries and other republican bodies of state administration

1. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 20 of April 30, 2009 “On Approving the Form of the Accompanying Passport for the Transportation of Radioactive Waste and Instructions on the Procedure for Registration of the Accompanying Passport for the Transportation of Radioactive Waste”.

2. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 21 of April 30, 2009 “On Approving the Instructions on the Procedure for Developing, Harmonizing and Approving the Scheme for Radioactive Waste Management”.

3. Resolution of the Ministry of Health of the Republic of Belarus, the State Customs Committee of the Republic of Belarus, the State Border Committee of the Republic of Belarus No. 135/34/16 of December 30, 2013 “On Approving the Instruction on the Procedure for Actions

(Interaction) of Customs Authorities, Border Service Bodies, Bodies and Institutions Exercising the State Sanitary Inspection during Sanitary Quarantine Control at Checkpoints across the State Border of the Republic of Belarus".

4. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 35 of April 25, 2019 "On the Lists of Works (Services) and Equipment for Nuclear Facilities".

5. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 16 of April 13, 2020 "On Accounting and Control of Ionizing Radiation Sources".

6. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 18 of April 16, 2020 "On Training and Verification (Assessment) of Knowledge on Nuclear and Radiation Safety".

7. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 64 of September 21, 2021 "On Requirements for the Composition and Content of Documents Justifying Nuclear and Radiation Safety".

8. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 58 of September 6, 2021 "On Procedure for Conducting a Periodic Safety Assessment of Nuclear Facility, Storage Facility, Disposal Facility" ("Instructions on the Procedure for Periodic Safety Assessment of Nuclear Facility, Storage Facility, Disposal Facility").

9. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 59 of September 6, 2021 "On Requirements for the Content of the Report on the Assessment of the Current Safety State" ("Instruction on the Requirements for the Content of the Report on the Assessment of the Current State of Safety of Nuclear Facility, Storage Facility, Disposal Facility or Works and (or) Services Performed").

10. Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 64 of September 21, 2021 "On Requirements for the Composition and Content of Documents Justifying Nuclear and Radiation Safety".

11. Regulations for Ensuring Safety of Transportation of Dangerous Goods by Rail, approved by Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 85 of December 28, 2021.

Technical regulatory legal acts of ministries and other republican bodies of state administration

Rules and regulations for nuclear and radiation safety

12. Rules and regulations for nuclear and radiation safety "Safety Rules for the Storage and Transportation of Nuclear Fuel at Spent Nuclear Fuel Storage and Management Systems Complexes", approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 72 of December 30, 2006.

13. Rules and regulations for nuclear and radiation safety "Safety in Ionizing Radiation Sources Management. General Provisions" approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 47 of September 28, 2010.

14. Rules and regulations for nuclear and radiation safety "Safety of Radiation Facilities. Requirements for the Structure and Content of the Safety Assessment Report for Radioactive Waste Management Facilities", approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 64 of December 13, 2010.

15. Rules and regulations for nuclear and radiation safety "Near-Surface Disposal of Radioactive Waste. Principles, Criteria and Basic Safety Requirements", approved by the Resolution

of the Ministry for Emergency Situations of the Republic of Belarus No. 7 of January 20, 2012.

16. Rules and regulations for nuclear and radiation safety “Safety of Nuclear Power Plants in the Event of a Nuclear and (or) Radiological Emergency. Requirements for Planning and Ensuring Radiation Monitoring”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 11 of April 12, 2017.

17. Rules and regulations for nuclear and radiation safety “Safety of Nuclear Power Stations. Requirements for the Development of Emergency Preparedness and Response Measures in the Event of a Radiation Accident”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 24 of June 2, 2017.

18. Rules and regulations for nuclear and radiation safety “Requirements for Categorization of Emergency Planning in the Event of a Nuclear and (or) Radiation Accident”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 38 of August 21, 2017.

19. Rules and regulations for nuclear and radiation safety “Requirements for the Composition and Content of the Action Plan for the Protection of Personnel in the Event of an Accident at a Nuclear Research Facility”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 43 of August 8, 2018.

20. Rules and regulations for nuclear and radiation safety “Safety of Nuclear Power Plants in the Event of Nuclear and (or) Radiological Emergency. Requirements for Classifying the Radiation Emergency, Procedure For Declaring An Emergency Situation, Prompt Exchange of Information”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 52 of October 2, 2018.

21. Rules and regulations for nuclear and radiation safety “Requirements for the Procedure for Investigation and Accounting of Events in the Operation of NPP”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 52 of October 2, 2018.

22. Rules and regulations for nuclear and radiation safety “Safety Requirements for Radioactive Waste Storage Facilities Decommissioning”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 25 of February 22, 2019.

23. Rules and regulations for nuclear and radiation safety “Safety in Nuclear Material Management. Requirements for Accounting and Control of Nuclear Materials”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 26 of February 22, 2019.

24. Rules and regulations for nuclear and radiation safety “Criteria for the Acceptability of Radioactive Waste for Disposal”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus of July 16, 2019.

25. Rules and regulations for nuclear and radiation safety “Conceptual Design of a System of Physical Protection of Nuclear Energy Facilities”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 60 of November 16, 2019.

26. Rules and regulations for nuclear and radiation safety “General Provisions for Ensuring Safety of Nuclear Power Plants”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No.15 of April 13, 2020.

27. Rules and regulations for nuclear and radiation safety “Safety of Nuclear Facilities. Requirements for the Quality Assurance Program for Physical Protection System”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 36 of September 21, 2020.

28. Rules and regulations for nuclear and radiation safety “Safety in Ionizing Radiation Sources Management. General Provisions”, approved by the Resolution of the Ministry for Emergency

Situations of the Republic of Belarus No. 42 of October 19, 2020.

29. Rules and regulations for nuclear and radiation safety “Near-Surface Disposal of Radioactive Waste. Safety Requirements”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 32 of May 3, 2021.

30. Rules and regulations for nuclear and radiation safety “General Requirements for Integrated Management Systems of Operating Organization to Ensure Nuclear and Radiation Safety”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 73 of October 18, 2021.

31. Rules and regulations for nuclear and radiation safety “Requirements for Ensuring Physical Protection of Nuclear Materials During Transportation”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 4 of January 28, 2022.

32. Rules and regulations for nuclear and radiation safety “Siting of Nuclear Materials Storage Facilities, Radioactive Waste Storage Facilities, Radioactive Waste Disposal Facilities”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 48 of August 18, 2022.

33. Rules and regulations for nuclear and radiation safety “Safety Rules for Nuclear Power Plant Power Unit Decommissioning” approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 43 of July 4, 2023.

34. Rules and regulations for nuclear and radiation safety “Safety in Nuclear Material Management. Requirements for Accounting and Control of Nuclear Material and Ensuring the Functioning of the State Safeguards System”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 4 of February 6, 2024.

Sanitary rules and regulations

35. Sanitary Rules and regulations 2.6.6.8-8-2004 “Management of Decontamination Waste Generated as a Result of Activities to Overcome the Consequences of the Chernobyl NPP accident (SPOOD-2004)”, approved by the Resolution of the Chief State Sanitary Doctor of the Republic of Belarus No. 121 of November 23, 2004.

36. Sanitary Rules and regulations 2.6.1.13-60-2005 “Hygienic Requirements for Personnel and the Public Radiation Safety during Radioactive Material (Substance) Transportation”, approved by the Resolution of the Chief State Sanitary Doctor of the Republic of Belarus No.284 of December 30, 2005.

37. Sanitary Rules, Regulations and Hygienic Standards “Hygienic Requirements for Nuclear Power Plants Design and Operation”, approved by the Resolution of the Ministry of Health of the Republic of Belarus No.39 of March 31, 2010.

38. Sanitary Rules and regulations “Radiation Safety Requirements”, approved by the Resolution of the Ministry of Health of the Republic of Belarus No. 213 of December 28, 2012.

39. Hygienic standard “Radiation Impact Assessment Criteria”, approved by the Resolution of the Ministry of Health of the Republic of Belarus No. 213 of December 28, 2012.

40. Sanitary Rules and regulations “Requirements for Radiation Safety of Personnel and Population in Exercising Activities on the Use of Atomic Energy and Ionizing Radiation Sources”, approved by the Resolution of the Ministry of Health of the Republic of Belarus No. 137 of December 31, 2013.

41. Sanitary Rules and regulations “Requirements for Radiation Safety of Personnel and Population in Radioactive Waste Management”, approved by the Resolution of the Ministry of Health of the Republic of Belarus No. 142 of December 31, 2015.

Environmental rules and regulations

42. Environmental Rules and regulations 17.02.06-001-2021 “Environmental Protection and Nature Management. Rules for Environmental Impact Assessment”, approved by the Resolution of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus No. 19-T of December 31, 2021.

Technical codes of practice

43. TCP 101-2007 “Siting of Nuclear Power Plants. The Procedure for Developing a General Quality Assurance Program for Nuclear Power Plant”, approved by the Resolution of the Ministry of Energy, the Ministry of Architecture and Construction and the Ministry for Emergency Situations of the Republic of Belarus No. 35/17/86 of October 10, 2007.

44. TCP 113-2007 “The Procedure for the Inspection of Territories, Facilities and Equipment for Decontamination Work”, approved by the Order of the Ministry for Emergency Situations of the Republic of Belarus No. 168 of December 10, 2007.

45. TCP 144-2008 “Organization and Implementation of Works on Decontamination of Territories, Facilities and Equipment”, approved by the Order of the Ministry for Emergency Situations of the Republic of Belarus No. 140 of October 02, 2008.

46. TCP 389-2012 “Rules for Physical Protection of Ionizing Radiation Sources”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus, the Ministry of Internal Affairs of the Republic of Belarus, the State Security Committee of the Republic of Belarus No. 31/142/20 of May 18, 2012.

47. TCP 504-2013 “Organization and Implementation of Works on Facilities Liquidation in Territories Contaminated as a Result of the Chernobyl Disaster”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 69 of December 17, 2013.

48. TCP 505-2013 “The Procedure for Interaction in Physical Protection Systems of Nuclear Facilities”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus, the Ministry of Internal Affairs of the Republic of Belarus, the State Security Committee of the Republic of Belarus No. 70/553/55 of December 19, 2013.

49. TCP 531-2014 “Procedure for Analyzing the Vulnerability of Nuclear Facilities and Evaluating the Effectiveness of the Physical Protection System”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus and the Ministry of Internal Affairs of the Republic of Belarus No. 8/110 of April 7, 2014.

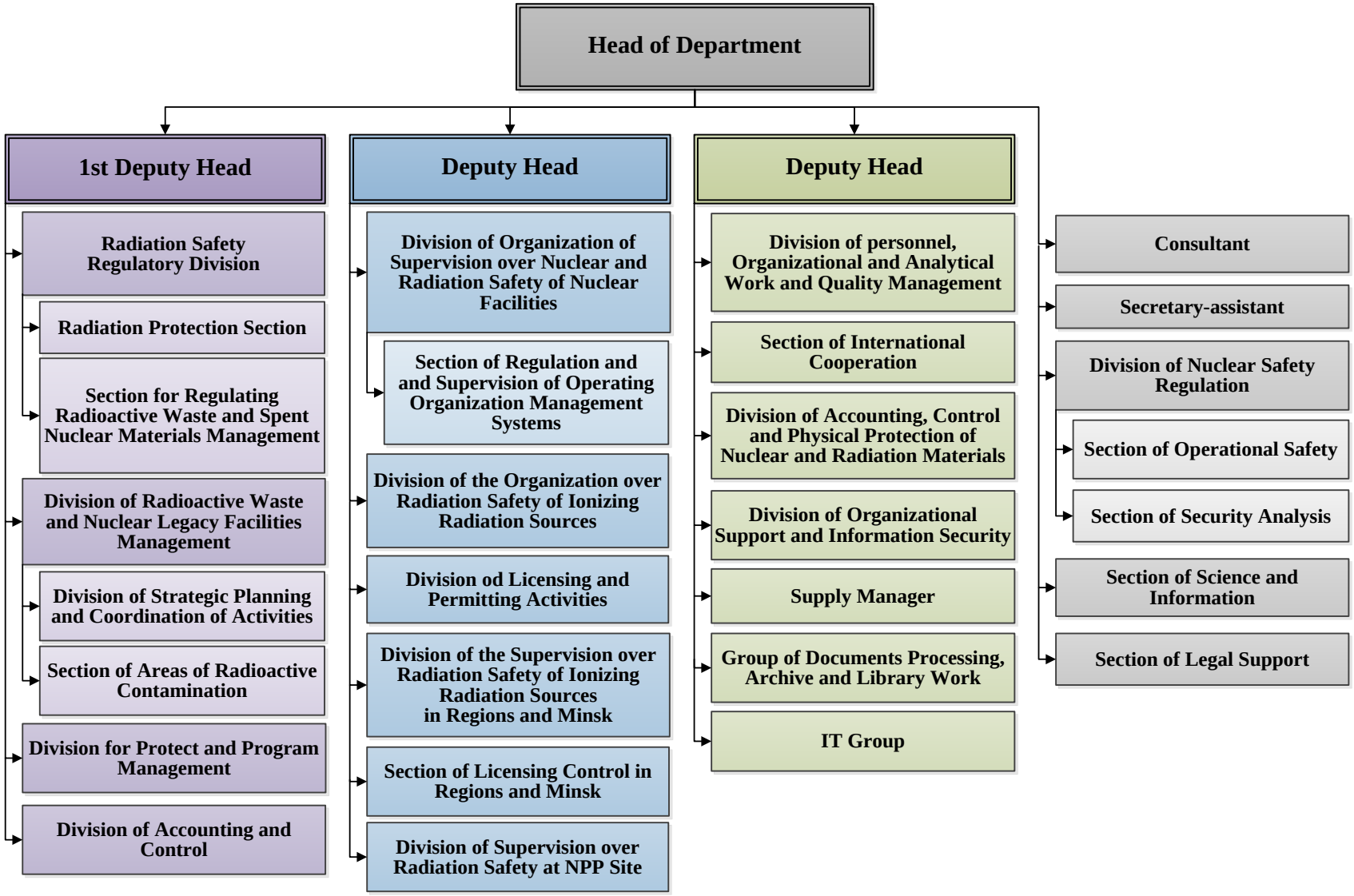
50. TCP 545-2014 “Ensuring Safety of Spent Nuclear Fuel Dry Storage Facilities”, approved by the Resolution of the Ministry for Emergency Situations of the Republic of Belarus No. 26 of September 9, 2014.

Nuclear and radiation safety guidelines

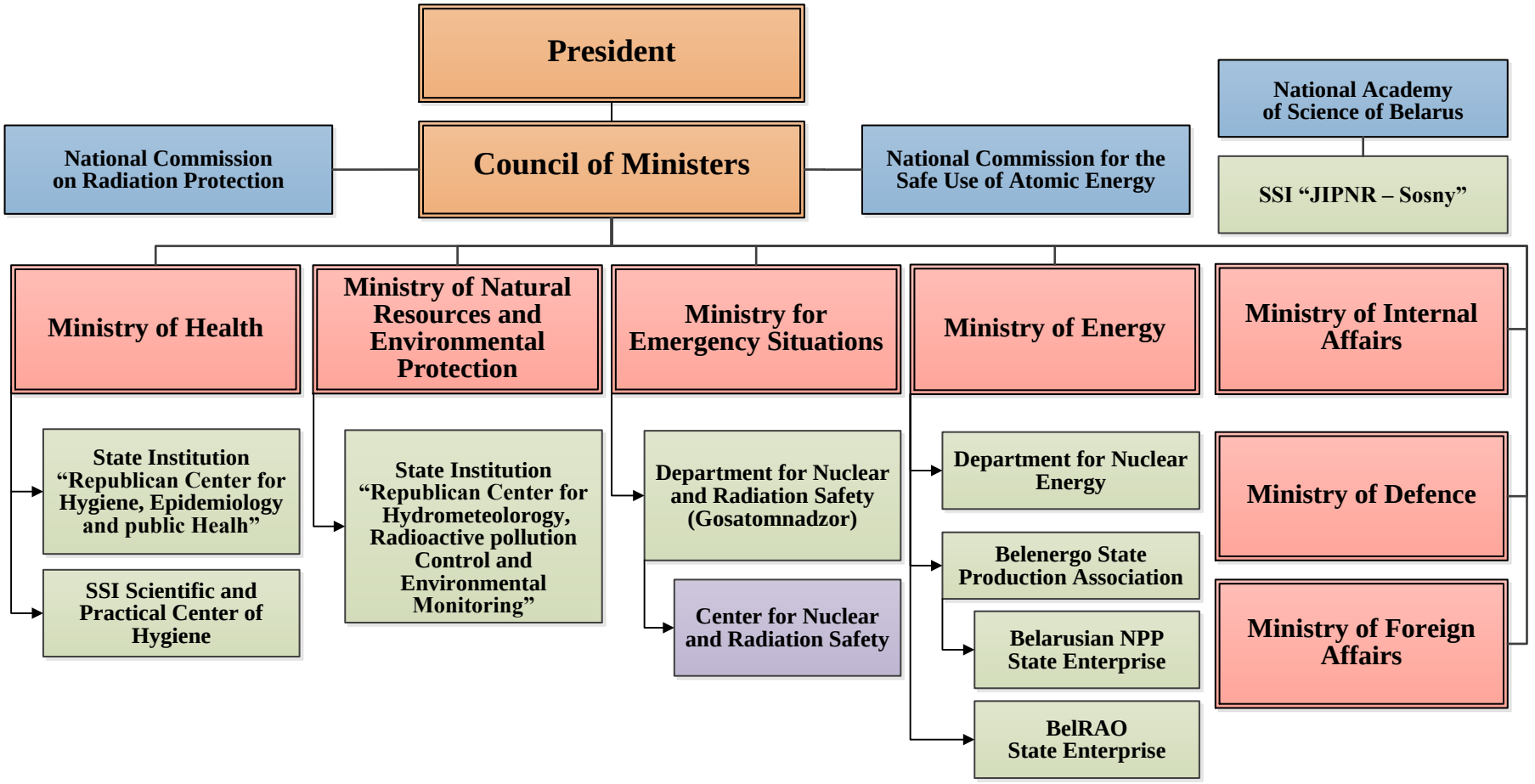
51. Nuclear and radiation safety guidelines “Siting of Near-Surface Radioactive Waste Disposal Facility”, approved by the Order of the Head of Gosatomnadzor No. 49 of November 22, 2023.

52. Guidance on Nuclear and Radiation safety “Assessment of Long-Term Safety of Near-Surface Radioactive Waste Disposal Facilities”, approved by the Order of the Head of Gosatomnadzor No. 55 of October 4, 2022.

Structure of Gosatomnadzor



Government agencies and organizations involved in ensuring nuclear and radiation safety



Appendix 7

Articles of the Criminal Code of the Republic of Belarus establishing liability for violations in the field of RW and SNF management

Article	Contents
268	Concealment or deliberate distortion of information about environmental pollution
269	Deterioration of land
278	Violation of safety rules when managing genetically engineered organisms, environmentally hazardous substances and waste
301	Violation of the rules of industrial and technical discipline or safety rules at nuclear facilities
322	Illegal acquisition, storage, use, sale or destruction of radioactive materials
323	Theft of radioactive materials
324	The threat of the dangerous use of radioactive materials
325	Violation of the rules for radioactive materials management
333-1	Illegal movement of potent, poisonous, toxic substances, radioactive materials, firearms, ammunition, explosives, explosive devices, weapons of mass destruction or their means of delivery, as well as other types of weapons and military equipment across the customs border of the Eurasian Economic Union or the state border of the Republic of Belarus
463	Violation of the rules of handling weapons, materials, substances and objects that pose an increased danger to others

Articles of the Code of the Republic of Belarus on Administrative Offenses establishing liability for violations in the field of RW and SNF management

Article	Contents
16.4	Violation of safety rules when managing genetically engineered organisms, environmentally hazardous substances and waste
16.5	Violation of the requirements for the disposal of radioactive waste, as well as other waste, products, materials and other substances contaminated with radionuclides.
16.6	Violation of the requirements of the legal regime of radioactive contamination territories
16.11	Deterioration of land
17.2	Violation of the rules of radiation control
17.3	Violation of regulatory legal acts in the field of nuclear and radiation safety
17.5	Violation of sanitary and epidemiological requirements, requirements of restrictive measures, submission of false data for the procedure of state registration of products

Appendix 8

Measures taken to increase the radiation safety level of RW repositories in the Specialized UE "Ekores" in 2021 – 2023

No.	Types of work performed	Year of completion
1.	CERS of two gamma installations located in the near-surface SRW storage facility	2021
2.	For the preserved "old repositories" of radioactive waste, restoration was implemented in accordance with the design solutions for waterproofing and dike of the underground part of the facilities: ceiling joints sealing with cement mortar; waterproofing on top of ceiling with rolled material; restoration of the design dike with plant soil 1.2 m thick	2023
3.	Modernization of ventilation systems of near-surface storage facilities with the installation of an exhaust ventilation system to ensure that the concentration of radon and its decay products is reduced to safe levels	2023
4.	Construction of additional, more informative observation wells to the depth of groundwater in areas directly adjacent to the repositories	2023
5.	Arranging collection of lysimetric waters in soils adjacent to repositories to control the potential release of mobile easily migrating radionuclides (^{3}N, ^{14}S, ^{36}Cl, ^{90}Sr) beyond the outer boundary of enclosing structures	2023
6.	Purchase of protective containers for two gamma installations according to CERS 2021	2023